

**DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**

**Water Quality Control Commission**

**CHERRY CREEK RESERVOIR CONTROL REGULATION**

**5 CCR 1002-72**

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# DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

## Water Quality Control Commission

### CHERRY CREEK RESERVOIR CONTROL REGULATION

#### 5 CCR 1002-72

#### 72.1 AUTHORITY

The Water Quality Control Commission is authorized to promulgate this Control Regulation pursuant to sections 25-8-202(1)(c) and 25-8-205, C.R.S.

#### 72.2 DEFINITIONS

See the Colorado Water Quality Control Act and other Water Quality Control Commission regulations for additional definitions.

1. "Authority" means the Cherry Creek Basin Water Quality Authority established pursuant to section 25-8.5-101, et seq., C.R.S.
2. "Background sources" include concentrations to the reservoir that are not the result of human-related activities, such as groundwater in its natural condition and precipitation on the reservoir.
3. "Best management practice (BMP)" means the best schedules of activities, prohibitions or practices, operation and maintenance procedures, and other management practices to prevent or reduce the introduction of pollutants into state waters. BMPs include, but are not limited to, structural and nonstructural controls, treatment requirements, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs can be applied before, during, and after pollution-producing activities.
4. "Cherry Creek watershed" consists of all lands that drain into the following: (a) the mainstem of Cherry Creek, from the source of East and West Cherry Creek to the inlet of Cherry Creek Reservoir (Segment 1), including alluvial groundwater; (b) Cherry Creek Reservoir (Segment 2), including alluvial groundwater; (c) all tributaries to Cherry Creek, including wetlands and alluvial groundwater, from the sources of East and West Cherry Creeks (parts of Segment 4); and all lakes and reservoirs in the Cherry Creek Reservoir watershed (Segment 5, in part) as described in the Classifications and Numeric Standards - South Platte River Watershed, Regulation #38 (5 CCR 1002-38). The Cherry Creek Watershed is delineated in Figure 1 attached to this regulation.
5. "Concentration" for the purposes of this regulation only, means the total phosphorus concentration in discharges related to existing or future non-point source and regulated stormwater discharges, wastewater facility sources, industrial process wastewater sources, individual sewage disposal systems and background sources.
6. "Concentration-Based Control of Phosphorus" means the flow-weighted concentration of total phosphorus in the inflow to Cherry Creek Reservoir that is intended to result in the attainment of water quality standards for Cherry Creek Reservoir.
7. "Designated water quality management agency" means the agency identified by the Denver Regional Council of Governments Metro Vision Clean Water Plan and by the Governor to implement specific control recommendations.

8. "Direct discharge" means any discharge to any surface waters or subsurface waters, including discharge from rapid infiltration basins, related to Cherry Creek or its tributaries, except by land disposal or land treatment. "Direct discharge" does not include discharges from regulated stormwater and background sources.
9. "Disturbed areas" means any site, area or lands in the Cherry Creek watershed where a land disturbance has commenced but has not been permanently stabilized and/or revegetated.
10. "Division" means the Water Quality Control Division of the Colorado Department of Public Health and Environment.
11. "Enhanced BMP" means a BMP that uses water quality capture volume as the design basis and incorporates one or more of the following treatment technologies: retention, wetlands, filtration, infiltration, or other technology with similar capabilities to reduce phosphorus concentrations in the discharge.
12. "Effluent limitation" means any restriction or prohibition established pursuant to this regulation, the Colorado Water Quality Control Act, or the federal act on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into state waters, including, but not limited to, standards of performance for new sources, toxic effluent standards, and schedules of compliance.
13. "Flow-weighted phosphorus concentrations" means the total external load, including precipitation, groundwater, stream flow, and ungaged runoff, divided by total inflow volume.
14. "Individual home construction" means any land disturbance or development for a single home, not including land disturbances for roads, road gutters or road improvements, that disturbs less than one acre of land and where the Owner of the single home holds a permit for construction of only one dwelling within the subdivision, if any, containing the single home.
15. "Individual sewage disposal system (ISDS)" means a system or facility for treating, neutralizing, stabilizing, or disposing of wastewater that is not a part of or connected to a wastewater facility, as defined in this section.
16. "Industrial process wastewater sources" include, but are not limited to, facilities, or activities that discharge non-domestic process wastewater, such as effluent from construction dewatering and sand and gravel mining or any water that, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. "Industrial process wastewater sources" do not include facilities or activities that discharge into a wastewater facility, as defined in this section. For the purpose of this regulation only, such sources also do not include such activities as hydrostatic testing operations, hydrant flushing, water main repairs, drinking water treatment facilities, dewatering or foundation draining, and swimming pool drainage.
17. "Land application" is any discharge being applied directly to the land for land disposal or land treatment and does not include discharges to surface waters, even if such waters are subsequently diverted and applied to the land.
18. "Land application return flow factor" means the return flow factor for land application sites in an augmentation plan decreed by the Colorado District Court, Water Division, or, where an augmentation plan has not been decreed, a study similar to that which would be required to support an augmentation plan.

19. "Land disposal" means any discharge of pollutant-containing waters being applied to land for which no land treatment is intended.
20. "Land disturbance" means a man-made change in the natural cover or topography of the land, including grading, cutting and filling, building, paving, excavating and any other activities that may result in or contribute to soil erosion or sedimentation in waters or discharge of pollutants, as identified in section 72.7.2(b) of this regulation, except individual home construction, as defined in this section.
21. "Land treatment" means any discharge of pollutant-containing waters being applied to the land for the purpose of treatment.
22. "Local government" means a city, town, county, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency under section 208 of the federal Clean Water Act.
23. "Municipal separate storm sewer system" or "MS4" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):
  - (a) owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to state waters;
  - (b) designed or used for collecting or conveying stormwater;
  - (c) which is not a combined sewer; and
  - (d) which is not part of a Publicly Owned Treatment Works (POTW).
24. "Nonpoint source" means any activity or facility other than a point source from which pollutants are or may be discharged. For the purposes of this regulation, nonpoint source includes all runoff that is not subject to the requirements provided under Regulation #61, section 61.3(2)(e), (f), or (g), including those designated by the Division under section 61.3(2)(f)(iii), whether sheet flows or collected and conveyed through channels, conduits, pipes or other discrete conveyances.
25. "Point source" means any discernible, confined, and discrete conveyance, including but not limited to, and any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. "Point source" includes conveyances of regulated stormwater. "Point source" does not include irrigation return flows.
26. "Pollutant Reduction Facility (PRF)" means projects that reduce nonpoint source pollutants in stormwater runoff that may also contain regulated stormwater. PRFs are structural measures that include, but are not limited to, detention, wetlands, filtration, infiltration, and other technologies with the primary purpose of reducing pollutant concentrations entering the Reservoir or that protect the beneficial uses of the Reservoir.
27. "Process wastewater" means any water, which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

## 72.3 CONCENTRATION-BASED MANAGEMENT STRATEGY FOR PHOSPHORUS CONTROL IN THE BASIN

28. "Regulated stormwater" means stormwater discharges to state waters that are from regulated entities; i.e., industrial or commercial facilities, or municipal separate storm sewer systems regulated under Regulation #61, section 61.3(2)(e), (f), or (g), including those designated by the Division under section 61.3(2)(f)(iii).
29. "Stormwater" for purposes of this regulation shall have the same meaning given in Regulation #61 (5 CCR 1002-61).
30. "Wastewater facility" means a system or facility for treating, neutralizing, stabilizing, or disposing of domestic wastewater which system or facility has a designed capacity to receive more than two thousand gallons of domestic wastewater per day. The term "wastewater facility" also includes appurtenances to such system or facility, such as outfall sewers and pumping stations, and to equipment related to such appurtenances. The term "wastewater facility" does not include industrial wastewater treatment plants or complexes whose primary function is the treatment of industrial wastes, notwithstanding the fact that human wastes generated incidentally to the industrial processes are treated therein.
31. "Water quality capture volume (WQCV)" means the runoff retention capacity of a BMP that is designed to capture and treat, at a minimum, the 80th percentile runoff event from an entire site, i.e., 80 percent of the most frequent occurring storms are fully captured and treated and larger events are partially treated.

### **72.3 CONCENTRATION-BASED MANAGEMENT STRATEGY FOR PHOSPHORUS CONTROL IN THE BASIN**

Activities necessary to reduce the inflow total phosphorus concentrations to Cherry Creek Reservoir will be implemented throughout the watershed. Point source controls and discharge effluent limitations are specified in Section 72.4.

Activities, which include, but are not limited to, construction of nonpoint source projects, called PRFs, and regulated stormwater projects, called BMPs, shall be implemented and designed to reduce phosphorous concentrations to the maximum extent practicable. The construction of any PRFs and BMPs shall be consistent with the requirements in Section 72.6.1. The Authority and the permittees shall implement these activities prior to the next triennial review, as allowed by applicable funding levels. The Authority shall annually submit an updated list of activities in their annual report to the Commission, due March 31 of each year.

### **72.4 POINT SOURCE EFFLUENT LIMITATIONS**

1. The Division shall not issue industrial process wastewater and wastewater facility discharge permits (pursuant to Regulation #61) or notices of authorizations for use of reclaimed water (pursuant to Regulation #84) to any point source discharges, including new point sources, that allow effluent limitations (permitted phosphorus concentration) exceeding 0.05 mg/l total phosphorus.
2. The Division shall not issue discharge permits (pursuant to Regulation #61) for discharges from drinking water treatment facilities that allow effluent limitations exceeding 0.2 mg/l total phosphorus concentration as a 30-day average except that, at the request of a permittee, the Division is authorized to allow up to a 90-day averaging period for this limit in the discharge permit. Nothing in this regulation should be construed to supersede the Colorado Primary Drinking Water Regulations.
3. Nutrient monitoring for industrial process wastewater sources and wastewater facilities shall be in accordance with the requirements of subsection 72.8.1.

4. No industrial process wastewater source or wastewater facility within the Cherry Creek watershed shall discharge an effluent with a total phosphorus concentration greater than 0.05 mg/l total phosphorus as a 30-day average except that, at the request of a permittee, the Division is authorized to allow up to a 90-day averaging period for this limit in the discharge permit or in the notice of authorization issued pursuant to Commission Regulation #84. No land application with a return flow factor established in accordance with section 72.4.5(a) or (b) shall discharge a 30-day flow-weighted average phosphorus concentration greater than 0.05 mg/l divided by the return flow factor except that, at the request of a permittee, the Division is authorized to allow up to a 90-day averaging period for this limit in the discharge permit or in the notice of authorization issued pursuant to Commission Regulation #84. Where land application is relying on lysimeters to determine the amount of water returned to ground water in accordance with section 72.4.5(c), the effluent concentration prior to being applied to the land shall not exceed 1.0 mg/l total phosphorus as a 30-day flow weighted average except that, at the request of the permittee, the Division is authorized to allow up to a 90-day averaging period in the discharge permit or in the notice of authorization issued pursuant to Commission Regulation #84.
5. For purposes of this regulation, return flow factors for land application sites shall be determined as follows:
  - (a) For land application sites with decreed augmentation plans, the return flow factor shall be determined from the applicable augmentation plan.
  - (b) For land application sites with available studies of return flow factors, but no approved augmentation plan, the return flow factor may be determined upon Division approval from the study results.
  - (c) Where no approved augmentation plan or available study exists, or where the Division has not approved the use of an available study, lysimeters shall be installed in accordance with a plan approved by the Division and readings from such lysimeters will be used to determine the monthly volume discharged at each land application site.
6. Whenever a discharger requests a compliance schedule in connection with a permit issuance or permit renewal, the discharger shall (on the same date) notify the Authority of that request, solicit Authority comments, and submit evidence of that notice to the Division. The Division shall not take final action on any compliance schedule until Authority comments are received or 45 days after the date that notice was provided to the Authority, whichever occurs first. This provision shall not apply in the case of minor modifications to permits as defined by Regulation #61, section 61.8(8)(e).
7. For all land application sites, the phosphorus concentration shall be determined by:
  - (a) Phosphorus concentrations for each direct discharge and land disposal site using a return flow factor will be calculated by the following formula:
$$\text{Applied Phosphorus Concentration (mg/l)} = (\text{Sum of the concentrations of all samples (mg/l as P) for the outfall or land application site for the month} / \text{the number of samples collected and analyzed for that month}) / \text{the return flow factor}$$
  - (b) Phosphorus concentrations for each land treatment site using lysimeters will be calculated by the following formula:
$$\text{Applied Phosphorus Concentration (mg/l)} = \text{Sum of concentrations of all samples (mg/l as P) for each lysimeter in the land application site for the month} / \text{the number of lysimeters}$$

**72.5 POINT SOURCE EFFLUENT LIMITATION MODIFICATIONS (RESERVED)****72.6 NONPOINT SOURCE AND INDIVIDUAL SEWAGE DISPOSAL SYSTEM NUTRIENT CONTROLS**

The nonpoint source nutrient controls identified in subsections 72.6.1 through 72.6.2 below shall be implemented.

**1. NONPOINT SOURCE BEST MANAGEMENT PRACTICES**

- (a) Local governments, individuals, corporations, partnerships, associations, agencies, or other entities with responsibility for activities or facilities that cause or could reasonably be expected to cause nonpoint source pollution of waters in the Cherry Creek Watershed shall adopt and implement/install BMPs and Pollutant Reduction Facilities (PRF) to the maximum extent practicable to reduce nutrient concentrations from such sources.
- (b) The choice of nonpoint source control measures shall be made by such local governments, individuals, corporations, partnerships, associations, agencies, or other entities, either individually or jointly. Entities with responsibility for existing flood and drainage control facilities shall consider application of nonpoint source BMPs for those facilities.
- (c) A prioritized list of future PRFs designed to permanently reduce phosphorus concentration, including a schedule for construction, shall be developed by the Authority and submitted to the Division on an annual basis. These PRFs will be compiled based upon their ability to reduce phosphorus concentrations to the maximum extent practicable. The list of PRFs and associated schedule may be updated as necessary when new information becomes available.
- (d) The Authority shall provide for the long-term operation and maintenance of Authority nonpoint source projects, and individual PRFs shall be operated and maintained by PRF owners, with oversight from the Authority.
- (e) The Division shall collaborate with owners/operators of agricultural or silvicultural facilities in the Cherry Creek Watershed in pursuing incentive, grant, and cooperative programs to study and control nonpoint source pollution related to agricultural and silvicultural practices. Pursuant to section 25-8-205(5), C.R.S., the Commission may consider adopting, in consultation with the commissioner of agriculture, control regulations specific to agricultural and silvicultural practices if the Commission determines that such programs are inadequate and that control regulations are necessary to attain water quality standards in the reservoir.
- (f) The Division shall collaborate with local governments in the Cherry Creek watershed to encourage connection of existing ISDS and new development to central wastewater facilities in an effort to reduce nutrient concentrations from individual sewage disposal systems.

**2. PUBLIC INFORMATION AND EDUCATION**

- (a) The Authority is identified by the Denver Regional Council of Governments Metro Vision Clean Water Plan and by the Governor to implement specific control recommendations as the designated water quality management agency for the Cherry Creek watershed. The Authority shall develop and implement a public information and education program in addition to the stormwater requirements in section 72.7. This program will focus on the prevention of pollution from sources that could be mobilized during storm events from

present and future activities as well as measures that could abate known nonpoint source pollution. Areas for abatement include, but are not limited to, general agricultural and silvicultural practices, individual sewage disposal systems, large lot development greater than one acre, and other potential nutrient sources.

- (b) The Authority shall consult with the Division and other interests in developing the program. The program will be consistent with the voluntary, incentive-based approach and focus on the general public, work force, and local government sectors within the Cherry Creek watershed. The program shall be implemented on an annual basis.

### 3. NONPOINT SOURCE PHOSPHORUS ADJUSTMENT

If voluntary controls on phosphorus contributions from nonpoint sources are not effective in reducing the phosphorus concentration in the inflow to the reservoir and attaining water quality standards, the Commission may adjust the phosphorus concentration outlined in subsection 72.3 of this Regulation to attain the chlorophyll a standard.

### 4. LIMITATION ON CONSTRUCTION OF NEW INDIVIDUAL SEWAGE DISPOSAL SYSTEMS

Within the Cherry Creek Watershed in Arapahoe and Douglas counties, no new ISDS shall be constructed within the 100-year flood plain as designated by Urban Drainage and Flood Control District, or the Federal Emergency Management Agency if no Urban Drainage and Flood Control District designation exists. This restriction shall not apply to the replacement of, or improvements to the operation of, existing ISDS systems located within the 100-year flood plain.

### 5. ADDITIONAL PROHIBITIONS AND PRECAUTIONARY MEASURES

If voluntary controls on phosphorus contributions from nonpoint sources are not effective in reducing phosphorus concentration and attaining water quality standards, the Commission may consider the adoption of prohibitions or precautionary measures to further limit nutrient concentrations, including but not limited to, the following nutrient sources:

- (a) Individual sewage disposal systems;
- (b) Sod farms;
- (c) Plant nursery facilities;
- (d) Chemical de-icers;
- (e) Commercial fertilizer retail facilities;
- (f) Phosphate detergents;
- (g) Golf courses; and
- (h) Road and highway sand.

### 6. FLOODPLAIN PRESERVATION AREAS AND CONSERVATION EASEMENTS

The Commission recognizes protection of floodplain, riparian corridor, and other environmentally sensitive lands through public acquisition or conservation easement and restoration of the same lands for nutrient control through erosion control, revegetation or other means, as nonpoint source nutrient controls. The Authority and local governments may collaborate with other entities in pursuing easements, ownerships, and rights to protect the streams, riparian corridors, tributaries, and wetlands in the Cherry Creek watershed.

## 72.7 STORMWATER PERMIT REQUIREMENTS

### 1. Definitions



- (a) "Owner," for the purposes of this section of the regulation only, means the owner or authorized representative of the facility or construction project.
  - (b) "Permittee," for the purposes of this section of the regulation only, means the Municipal Separate Storm Sewer System or MS4 that has been issued a stormwater discharge permit by the Division.
  - (c) "Large lot single family development" for the purpose of this section of the regulation only, means a land disturbance greater than one acre on a single-family residential lot with an area greater than or equal to two and one-half acres in size and having a total site imperviousness, including, but not limited to roadways, building footprints, and driveways, less than ten percent gross density.
  - (d) "Excluded Roadway Project" for the purpose of this section of the regulation only, means activities associated with the maintenance, repair, preservation, and associated minor modifications to roadways, and associated appurtenant features, that do not permanently expand the original footprint of the roadway and do not increase the impervious area.
  - (e) "Rural road construction and maintenance" for the purpose of this section of the regulation only, means land disturbances greater than one acre for rural residential roads and rural collector roads that serve or are adjacent to large lot single family developments. Rural Roads are typically characterized by having parallel ditches for conveyance of storm runoff, rather than curb and gutter. Although urban roadways sometimes use roadside ditches for runoff conveyance, they are not classified as rural roads. In the context of this regulation, the word road does not include temporary haul roads used for construction purposes. Construction activities occurring within a Census Designated Urbanized Area are excluded from this definition.
  - (f) "Tier 1 development and redevelopment" for the purpose of this section of the regulation only, means any land disturbance less than one acre that is developed independently of a larger common plan of development or sale, and which results in less than 500 square feet of imperviousness for new development or 500 square feet of increased imperviousness for redevelopment.
  - (g) "Tier 2 development and redevelopment" for the purpose of this section of the regulation only, means any land disturbance less than one acre that is developed independently of a larger common plan of development or sale, and which results in more than 500 square feet but less than 5,000 square feet of imperviousness for new development, or more than 500 square feet and less than 5,000 square feet of increased imperviousness for redevelopment, including disturbances of existing impervious areas.
  - (h) "Tier 3 development and redevelopment" for the purpose of this section of the regulation only, means any land disturbance greater than one acre, or which results in more than 5,000 square feet of imperviousness for new development or 5,000 square feet of increased imperviousness for redevelopment, including disturbances of existing impervious areas.
  - (i) "Trails" for the purpose of this section of the regulation only, means permanent access areas constructed primarily for the purpose of recreation but also provide access for operations and maintenance. This includes trails that consist, for at least some portion of the trail, of sidewalks adjacent to roadways.
2. The following requirements, at a minimum, shall be incorporated into any Stormwater Permit issued to a Municipal Separate Storm Sewer System (MS4) in the Cherry Creek watershed, in addition to the requirements included in Regulation #61 (5 CCR 1002-61). Permittees may also

incorporate requirements into their programs that are more restrictive than those outlined in this control regulation.

At a minimum, the MS4 permit will require that the regulated MS4 develop, implement, and enforce a stormwater management program designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Colorado Water Quality Control Act (25-8-101 et seq., C.R.S.). Implementation of BMPs consistent with the applicable MS4 requirements included in Regulation #61 (5 CCR 1002-61) and the requirements of the subsection herein constitute compliance with the standard of reducing pollutants to the MEP.

- (a) Public education and outreach on stormwater impacts. The permittee must implement a public education program that includes the following:
  - (1) Distribution of educational materials or equivalent outreach focused on residential, industrial, agricultural, and/or commercial sources that have the potential to contribute significant nutrient concentrations to State waters at a rate that could result in or threaten to result in exceedance of the chlorophyll a standard in Cherry Creek Reservoir. Examples of sources that may need to be addressed by the MS4's program include chemical deicing, retailers with outdoor storage of fertilizers, concentrated agricultural activities such as turf farms and landscape plant facilities, and animal feeding operations.
- (b) Construction site stormwater runoff control.
  - (1) Regulated Activities. The permittee must develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to the MS4 from construction activities that disturb land, including, but not limited to, the following:
    - (i) Clearing, grading, or excavation of land;
    - (ii) Construction, including expansion or alteration, of a residential, commercial or industrial site or development; and
    - (iii) Construction of public improvements and facilities such as roads, transportation corridors, airports, and schools.
  - (2) Individual Homes. Individual Home Construction, including any Land Disturbance or Development for a single home, not including Land Disturbance for roads, road gutters or road improvements, that disturb less than one acre of land and where the Owner of the single home holds a permit for construction of only one dwelling within the subdivision, if any, containing the single home, must be required to meet the requirements of section 72.7.2(b)(5)(i)(D), but is not required to meet the other requirements in section 72.7.2(b) of this regulation.
  - (3) Exclusions.
    - (i) Automatic Exclusions. The permittee may exclude the following activities from the requirements in section 72.7.2(b) of this regulation.
      - (A) Agricultural Activities; (i.e., agricultural and silvicultural activities generating nonpoint source discharges, including runoff from orchards, cultivated crops, pastures, range lands, and forest lands, but not CAFOs. This exclusion does not extend to the

- construction of facilities or other activities generating stormwater runoff associated with industrial (i.e., construction) activity);
- (B) Emergency and routine repair and maintenance operations for all underground utilities;
  - (C) Land Disturbances at residential or commercial subdivisions that already have adequate Construction BMPs and Post-construction BMPs installed and operating for the entire subdivision, approved in compliance with this regulation, and where the original owner who obtained approval retains legal authority; and
  - (D) Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility (maintenance operations performed by the permittee may still be covered under the Municipal Operations minimum control measure).
  - (E) Emergency operations related to flood, fire, or other force majeure.
- (ii) Authorized Exclusions. The permittee may exclude the following activities from the requirements in section 72.7.2(b) of this regulation, if authorized through a developed procedure for determination that water quality is adequately protected without imposing the requirements. This procedure may either be on a site-specific basis, upon submission by the owner of a written request for exemption to the permittee, or, if the determination can be simplified to allow for determination by the owner, through certification by the owner to the permittee that the waiver criteria have been met.
- (A) Construction of a sidewalk or driveway; and
  - (B) Underground utility construction including the installation and maintenance of all utilities under hard surfaced roads, streets, or sidewalks, provided such land disturbance activity is confined to the area which is hard surfaced and provided that stormwater runoff and erosion from soil and materials stockpiles are confined and will not enter the drainage system.
- (iii) Additional Exclusions. The permittee may allow for additional automatic and/or authorized exclusions, with approval of the Division, when it can be reasonably shown that excluding the activity will not pose an increased threat to water quality, or that the cost of administering the program for a specific activity with low risk of stormwater pollution outweighs the benefits to water quality. The Division reserves the right to not allow any additional exclusions.
- (4) Submittal requirements.
- (i) An Erosion and Sediment Control Plan describing permittee-approved construction BMPs For Land Disturbance regulated by this program must be submitted to and, following adequate review, approved by the permittee prior to the commencement of Land Disturbances.

- (5) Required Construction BMPs.
- (i) The following requirements for construction BMPs to be implemented prior to the commencement of Land Disturbances must be included in the permittee's program.
- (A) Phase Construction. Owner shall schedule construction activities to minimize the total amount of soil exposed, including stockpiles, at any given time in order to reduce the period of accelerated soil erosion. Areas of Land Disturbance equal to 40 acres or greater must not be exposed for more than 30 consecutive days without temporary or permanent stabilization.
- The Permittee may allow authorized exemptions to the 40-acre limit for removal and storage of cut material where geotechnical limitations restrict the use of temporary or permanent stabilization of the stored material (e.g. swelling soils, rock).
- The Permittee may allow authorized exemptions to the 40-acre limit when the Owner can demonstrate that the 40-acre limit is physically and/or financially impracticable. For sites granted this exemption, a phasing and earthwork quantities plan shall be submitted to and, following adequate review, approved by the Permittee prior to the commencement of land disturbance activities. Submittal requirements include:
- (I) Phasing Plan showing cut and fill volumes and locations for each Phase and project totals.
- (II) Earthwork Quantity Plan showing cut and fill volumes and locations for each phase and project totals,
- (III) Erosion Control Plan showing specific erosion and sediment controls for each phase.
- (B) Reduce Stormwater Runoff Flow to Non-Erosive Velocities when practicable using BMPs, which include, but are not limited to:
- Swales,  
Roadside swales,  
Slope diversion dikes,  
Terracing/Contouring,  
Slope drains, and/or  
Check dams.
- (C) Protect State Waters Located on Construction Sites from Erosion and Sediment Damages resulting from Land Disturbance, using BMPs such as, but not limited to:
- Waterway crossing protection,  
Outlet protection,  
Temporary diversions, and/or  
Bank stabilization.
- (D) Control Sediment before it Leaves a Construction Site

- (I) All stormwater runoff from Disturbed Areas must be managed by at least one sediment entrapment BMP before the stormwater exits the site, such as, but not limited to:
    - Silt fence,
    - Filter strips,
    - Sediment basins,
    - Straw bale barriers, and/or
    - Inlet protection.
  - (II) Vehicle Tracking. Owners must prevent deposition of sediment off-site by controlling vehicle tracking onto paved surfaces, using BMPs such as, but not limited to:
    - Grates, and/or
    - Vehicle tracking control pads.
- (ii) The following construction BMPs must be required within 14 days after the commencement of Land Disturbances. Schedules for requiring stabilization and revegetation may be modified by the permittee to allow for physical considerations, including, but not limited to constraints on establishing vegetation due to weather, such as temporary excessive soil moisture conditions, adverse to stabilization or revegetation goals.
- (A) Stabilize soils. All Disturbed Areas that remain exposed and where construction activities are not taking place for longer than 14 days shall be stabilized to protect the soils from erosion, using BMPs such as, but not limited to:
    - Mulching,
    - Erosion control mats, blankets, and nets,
    - Seeding,
    - Soil Binders,
    - Cover crops, and/or
    - Soil Roughening.
  - (B) Re-vegetate Disturbed Areas. Within 14 days after construction activity has temporarily or permanently ceased, owners must plant temporary and, where applicable, permanent vegetative cover on Disturbed Areas.
    - (I) Temporary Revegetation. Owners must provide temporary revegetation on all Disturbed Areas that will be exposed prior to completion of Land Disturbance activities. When seeding is not practicable (e.g., growing season constraints) the permittee may allow for temporary stabilization until planting is practicable.
    - (II) Permanent Revegetation. Owners must provide permanent revegetation and/or stabilized landscaping on all Disturbed Areas that will be exposed for more than two years or for an indeterminate amount of time.

- (C) Variances. Schedules for requiring stabilization may be modified by the permittee to allow for special considerations such as stabilizing access areas and areas in close proximity to continuing construction. Additionally, the permittee may allow for alternative approaches to stabilization if they can be shown to have erosion control capabilities similar to temporary or permanent revegetation.
- (iii) Inspection/Operation and Maintenance.
    - (A) Inspection.
      - (I) The owner must be held responsible for inspection of construction BMPs at the following times and intervals at a minimum:
        - After installation of any Construction BMP;
        - After any runoff event; and
        - At least every 14 days.
      - (II) For sites where construction activities are completed but final stabilization has not been achieved due to a vegetative cover that has been planted but has not become established, the permittee may allow for the owner to reduce inspection frequency to once per month.
    - (B) Operation and Maintenance. The owner must be held responsible for operation and maintenance of BMPs, and must make any necessary repairs to BMPs immediately after a defect or other needed repair is discovered.
- (c) Post-construction stormwater management in new development and redevelopment.
    - (1) Regulated Activities. The permittee must develop, implement, and enforce a program that ensures that a combination of structural and/or nonstructural controls are in place that would prevent or minimize water quality impacts to the MS4 from new development and redevelopment projects.
    - (2) Provisions for specific BMPs or equivalent protection included in Section 72.7, that for the purpose of reducing nutrient concentrations to Cherry Creek Reservoir go beyond the requirements in the Colorado Discharge Permit Regulations, Regulation #61, for post-construction BMPs, do not need to be required prior to discharge to a State water as long as BMPs are in place to control stormwater runoff from new development and/or redevelopment in compliance with Regulation #61 (5 CCR 1002-61) and a regional facility(ies) is(are) in place to control phosphorus concentrations to Cherry Creek Reservoir, that result in pollutant removal in compliance with parts 72.7.2(c)(6), 72.7.2(c)(7), and/or 72.7.2(c)(8) of this regulation.
    - (3) Individual Homes. Individual Home Construction, including development for a single home, not including for roads, road gutters or road improvements, that disturb less than one acre of land during construction and where the Owner of the single home holds a permit for construction of only one dwelling within the

subdivision, if any, containing the single home is not required to meet the requirements in section 72.7.2(c) of this regulation.

- (4) Exclusions.
- (i) Automatic Exclusions. The permittee may exclude the following activities from the requirements in Section 72.7.2(c) of this regulation:
- (A) Agricultural Activities; (i.e., agricultural and silvicultural activities generating nonpoint source discharges, including runoff from orchards, cultivated crops, pastures, range lands, and forest lands, but not CAFOs. This exclusion does not extend to the construction of facilities or other activities generating stormwater runoff associated with industrial construction activity);
  - (B) Emergency and routine repair and maintenance operations for all underground utilities;
  - (C) Land Disturbances at residential or commercial subdivisions that already have adequate Post Construction BMPs installed and operating for the entire subdivision, approved in compliance with this regulation, and with adequate capacity to treat any additional discharges;
  - (D) Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility (maintenance operations performed by the permittee may still be covered under the Municipal Operations minimum control measure);
  - (E) Emergency operations related to flood, fire, or other force majeure that maintain the original line and grade, hydraulic capacity, or original purpose of the facility;
  - (F) Land disturbance to undeveloped land that will remain undeveloped following disturbance and will be reclaimed in accordance with subsection 72.7.2(b)(5)(ii)(B);
  - (G) Excluded Roadway Projects;
  - (H) Large Lot single family development using Runoff Reduction Practices, where the Permittee implements a set of requirements and/or standards for such practices with the intent of meeting WQCV requirements for typical sites and expected conditions, which may be used either in place of or in combination with the site-specific calculations and analysis otherwise required by 72.7.2(c)(6)(ii)(K) for runoff reduction practices BMPs; and
  - (I) Underground utility construction, provided that stormwater runoff and erosion from soil and material stockpiles are confined and will not enter the drainage system.
- (ii) Authorized Exclusions. The permittee may exclude the following activities from the requirements in Section 72.7.2(c) of this regulation on a site-specific basis, upon submission by the owner of a written request

for exemption to the permittee and following adequate review and determination by the permittee that a permit is not needed to insure adequate protection of water quality:

- (A) Construction of a sidewalk or driveway;
  - (B) Rural road construction and maintenance, provided that the permittee requires post-construction BMPs specific to this activity;
  - (C) Trails construction provided that permittee requires post-construction BMPs specific to this activity.
- (iii) Additional Exclusions. The permittee may allow for additional automatic and/or authorized exclusions, with approval of the Division, when it can be reasonably shown that excluding the activity will not pose an increased threat to water quality, or that the cost of administering the program for a specific activity with low risk of stormwater pollution outweighs the benefits to water quality. The Division reserves the right to not allow any additional exclusions.
- (5) Submittal requirements.
- (i) Post-construction BMP Plan. A post-construction BMP Plan must be submitted to and, following adequate review, approved by the permittee prior to the commencement of Land Disturbances.
  - (ii) Inspection and Maintenance. The Post-construction BMP Plan must also contain, at a minimum, the following information to address long term operation and maintenance of Post-construction BMPs:
    - (A) Procedures for maintenance and inspection protocols to ensure continued effectiveness of BMPs, and commitments from responsible agency/Owner to maintain Post-construction BMPs.
    - (B) Procedures for dedication by easements or other legal means for access at the Post-construction BMP sites for operation, maintenance, and inspection of Post-construction BMPs.
- (6) Post-construction BMPs.
- (i) For all development and redevelopment, the permittee must require the installation, operation, and maintenance of Post-construction BMPs as follows:
    - (A) For all Tier 3 development and redevelopment, the permittee must require installation of post-construction BMPs that provide a WQCV designed to capture and treat, at a minimum, the 80th percentile runoff event. All BMPs must be designed in accordance with good engineering practices and the permittee may require additional design restrictions.
    - (B) For all Tier 2 development and redevelopment, the permittee must require the installation, operation, and maintenance of



Post-construction BMPs and/or hydrologic conditions at the site that meet one or more of the following criteria:

- (I) The WQCV storm event is assumed not to leave the site, as demonstrated by suitable hydrologic analysis;
  - (II) Runoff is discharged as sheet flow across a grass buffer area, designed in accordance with Urban Drainage Flood Control District Volume 3 requirements.
  - (III) Runoff is discharged from the site through a grass swale in combination with implementation of Minimize Directly Connected Impervious Areas (MDCIA) practices.
  - (IV) Runoff is discharged from the site through a constructed wetland channel.
  - (V) Runoff is discharged across undisturbed and vegetated land a minimum distance of 50 feet or 3 times the distance criteria for grass buffers, whichever is greater, with a slope not exceeding 4 percent over that distance;
  - (VI) Allowed discharge of a storm event adequately protects water quality, as demonstrated by a hydrologic analysis accepted by permittee; or
  - (VII) Alternative BMPs and/or site condition requirements may be used if they are shown to have comparable or better nutrient removal characteristics for the given use, in comparison to the above listed BMPs/site condition requirements, when properly designed and implemented. These BMPs/ site condition requirements must be determined to be acceptable by the permittee on a case-by-case basis, or, if appropriate, may be added to the menu of acceptable BMPs.
- (C) For all Tier 1 development and redevelopment, the permittee need not require installation of post-construction BMPs.
- (ii) Approved BMPs. One or more of the following BMPs shall be required to meet the WQCV. All BMPs must be designed in accordance with good engineering practices; the permittee may provide additional design restrictions. Alternative BMPs may be used if they are shown to have comparable or better nutrient removal characteristics for the given use, in comparison to the below-listed BMPs, when properly designed and implemented. These BMPs must be determined to be acceptable by the permittee on a case-by-case basis, or, if appropriate, may be added to the menu of acceptable BMPs.
- (A) Constructed wetland channel, in conjunction with extended detention basin, retention pond, constructed wetlands basin, porous pavement detention, porous landscape detention, or sand filter extended detention watershed.

- (B) Grass swale in combination with porous pavement detention or porous landscape detention.
  - (C) Constructed wetland channel preceded by modular block porous pavement.
  - (D) MDCIA. This combination BMP of MDCIA in conjunction with extended detention watershed retention pond, constructed wetlands basin, porous pavement detention, porous landscape detention, or sand filter extended detention basin. At a minimum, for MDCIA, all impervious areas at the development must flow over grass buffer trips before reaching a stormwater conveyance system.
  - (E) Extended-Detention Basins (Dry Ponds).
  - (F) Retention Ponds (Wet Ponds).
  - (G) Constructed Wetlands Basin.
  - (H) Porous Pavement Detention.
  - (I) Porous Landscape Detention.
  - (J) Sand Filter Extended Detention Basin.
  - (K) Runoff Reduction Practices. A combination of planning techniques to reduce runoff peaks, volumes, and pollutant loads from urbanizing areas that includes low impact development (LID) strategies and MDCIA to reduce unnecessary impervious areas and route runoff from impervious surfaces over permeable areas to slow runoff and promote onsite storage and infiltration. The effectiveness of this BMP to reduce peak flows, volumes, and pollutant loads shall be demonstrated by site-specific calculations and analysis approved by the MS4.
- (iii) WQCV Alternatives. The permittee may allow alternative BMPs that do not use the WQCV approach or are in combination with the WQCV, if they are shown to have comparable or better nutrient concentration reduction characteristics for the given use when properly designed, implemented, and maintained. These BMPs must be determined to be acceptable by the permittee on a case-by-case basis, or, if appropriate, may be added to the menu of acceptable BMPs. Specifically, the permittee may allow for the owner to use stream bank stabilization at the development site, and conservation of open space through clustering of development or setbacks from drainage ways, to reduce the need for the WQCV for the whole site.
  - (iv) Operation and Maintenance. The permittee must develop a program that requires owners to be responsible for operation and maintenance of BMPs and requires that they provide sufficient legal access, by dedicating easements for the sites of the permanent BMPs and access thereto for the Owner/agency responsible for operation and maintenance, the permittee, and for inspections, operation, and maintenance.

- (7) **Additional BMP Requirements.** In addition to other requirements in this regulation for post-construction BMPs, the permittee must develop, implement, and enforce a program that ensures that permanent controls are in place at completed projects at the following: those facilities requiring coverage under both part 72.7.2(c)(1) of this regulation and Regulation #61, section 61.3(2)(e)(iii); and from other designated commercial and industrial facilities as discussed below. The program must address any stormwater pollutant sources at these facilities that may require unique management strategies. The permittee shall:
- (i) Develop a program to designate commercial facilities on a case-by-case basis or by addition of a general commercial sector, based on a determination that they have a significant potential to contribute nutrient concentrations to State waters at a rate higher than typical for other commercial or industrial land uses (e.g., stores with outdoor fertilizer storage, facilities with deicing operations).
  - (ii) The Permittee must require Owners to satisfy additional special Post-construction BMP requirements designed to prevent or reduce the amount of pollutants generated and/or released from the area of Land Disturbance, which include but are not limited to:
    - (A) Covering or enclosing activity in buildings or roofs;
    - (B) Providing secondary containment area to collect leaks and spills of fuels, lubricants, and other chemicals;
    - (C) Segregating or diverting stormwater runoff away from or around pollutant generating activity; and
    - (D) Routing site drainage to recycling or otherwise preventing direct discharge of vehicle or equipment wash-water.
- (8) **Stream Preservation Areas.** The following requirements provide special standards and procedures for Land Disturbances in Stream Preservation Areas, which include Cherry Creek Reservoir, all of Cherry Creek State Park, drainage and discharges to the park within 100 feet of the park boundary; lands overlying the Cherry Creek 100-year floodplain; and all lands within the 100-year floodplain of Cherry Creek tributaries, as defined by the Urban Drainage and Flood Control District.
- (i) **Additional BMP Requirements.** For Tier 2 and Tier 3 New Development and Redevelopment in Stream Preservation Areas, the permittees must, in addition to meeting all the Post-construction BMP requirements in section 72.7.2(c)( 6) and/or (7), require owners to implement BMPs that promote filtration, or infiltration where appropriate, to treat the WQCV for all runoff from the developed areas within the Stream Preservation Area. Examples of such BMPs include, but are not limited to:
    - (A) constructed wetland basins;
    - (B) sand filter basins;
    - (C) porous landscape detention; and
    - (D) porous pavement detention.

- (ii) Authorized Exclusions. The permittee may exclude the following activities from the requirements in section 72.7.2(c)(8)(i) where the disturbance is the result of implementation of an approved BMP, in accordance with requirements in section 72.7.2.(c), unless the post-construction BMP is required for new development.

Construction of roadway, highway, and underground utility crossings, provided construction BMPs are implemented as required in section 72.7.2(b) and post-construction BMPs are implemented as required in Section 72.7.2(c).

Rural road construction and maintenance, except for a land disturbance associated with a rural road within a Stream Preservation Area, and provided that permittee requires post-construction BMPs specific to this activity.

Those automatic and authorized exclusions defined in section 72.7.2(c)(4).

## **72.8 NUTRIENT MONITORING**

1. Monitoring of wastewater facilities shall be consistent with the requirements of section 72.4.4 of this control regulation. Wastewater facilities shall monitor nutrient concentrations including, but not limited to, nitrate, nitrite, ammonia, total phosphorus, total soluble phosphorus and orthophosphate.
2. The Authority shall develop and implement, in conjunction with local governments, a routine annual water quality monitoring program of the Cherry Creek watershed and Cherry Creek Reservoir. The monitoring program shall include monitoring of the reservoir water quality and inflow volumes, alluvial water quality, and nonpoint source flows. Monitoring shall include, but not be limited to nitrate, nitrite, ammonia, total phosphorus, total soluble phosphorus, and orthophosphate concentrations.
  - (a) Routine monitoring of surface water, ground water, and the reservoir shall be implemented to determine the total annual flow-weighted concentration of nutrients to the reservoir.
  - (b) Monitoring of PRFs shall be implemented to determine inflow and outflow nutrient concentrations.
3. The Authority shall consult with the Division in the development of the monitoring program to ensure that the monitoring plan includes the collection of data to evaluate nutrient sources and transport, to characterize reductions in nutrient concentrations, and to determine attainment of water quality standards in Cherry Creek Reservoir.
4. The Authority shall consult with the Division and other appropriate entities in development of any water quality investigative special studies.

Special studies may include, but are not limited to, the following areas of investigation:

- (a) Feasibility study of nutrient removal from point sources;
- (b) Quantification of effectiveness of nonpoint source concentration-based phosphorus control strategies called PRFs; and

- (c) Quantification of effectiveness of regulated stormwater concentration-based phosphorus control strategies called BMPs;and
  - (d) Quantification of the effectiveness of source control BMPs that include low-impact development techniques.
5. The monitoring data shall be used by the Authority to determine phosphorus fate and transport, calculate annual flow-weighted phosphorus concentrations, document compliance with the applicable water quality standards, analyze long-term trends in water quality for both the reservoir and the Cherry Creek watershed, and calibrate water quality models.
  6. The Authority shall maintain all data collected pursuant to this section in an electronic database for evaluation and transfer to the Division and other entities.

## **72.9 REPORTING**

1. The Authority shall submit an annual report on the activities required under this regulation to the Commission and Division by March 31 of each year. The report shall include the following categories and items:
  - (a) Point Source Controls: phosphorus concentrations; permit violations; approved site applications; and effectiveness in reducing nutrient contributions.
  - (b) Regulated Stormwater Controls: Sediment and erosion control permit, inspection, and enforcement actions; Construction BMPs inspection and enforcement actions; Permanent BMPs construction, inspection, and maintenance actions; Flood control facilities retrofitting, inspection, and maintenance actions; Effectiveness in reducing phosphorus concentration; Funding and monitoring of nonpoint source control projects; and Public information and education actions.
  - (c) Nonpoint Source Stormwater Controls: Effectiveness in reducing phosphorus concentration; Funding and monitoring of PRFs.
  - (d) Riparian and Wetlands Protection: Protection, enhancement, and restoration actions.
  - (e) Concentration-based phosphorus control measures: The annual report shall provide data and information on water quality monitoring, point sources, regulated stormwater sources, nonpoint sources, status of compliance with discharge permit limits and conditions, recommendations on any new or proposed expansion of treatment facilities, and recommendations for improving water quality. The format of annual reports and information within the reports shall provide comparability among previous years.
2. The annual report shall include evidence of decisions and/or agreements for the financing of nonpoint source control projects, the implementation of the regulated stormwater permit requirements, and the adoption and implementation of BMPs by local governments. The annual report must demonstrate implementation of nonpoint source controls and regulated stormwater controls are reducing phosphorus concentrations into the Reservoir to the maximum extent practicable.

## **72.10 COMMISSION REVIEW**

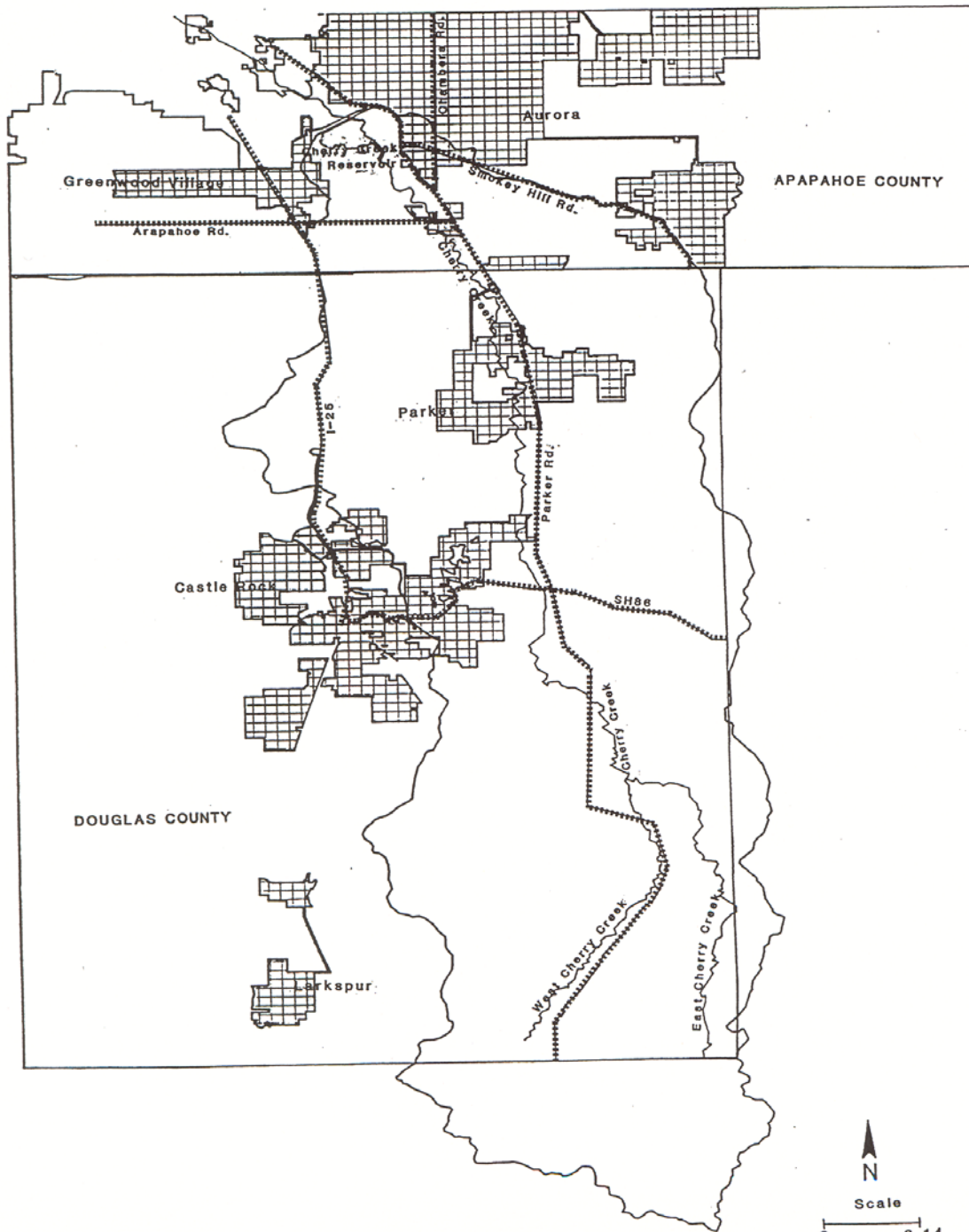
1. The Division and the Authority shall report to the Commission at each triennial review of this regulation on the progress made to control phosphorus concentration, and the characterization of phosphorus sources in the Cherry Creek watershed. The Commission shall review the

performance of the Authority or local governments in implementing point source, nonpoint source, and regulated stormwater controls at each triennial review of this regulation.

2. Recommendations may be made to the Commission at each triennial review as to the need for additional controls or practices to review the flow-weighted concentration-based approach for phosphorus control, for revised wastewater facility effluent limits based upon updated 20-year population projections, and additional characterization of phosphorus concentrations in the Cherry Creek watershed. Nothing herein shall abrogate the discharge permit requirements for stormwater, as outlined in Regulation #61 (5 CCR 1002-61).

**72.11-72.14**    **RESERVED**

# CHERRY CREEK BASIN



### **72.15 BASIS AND PURPOSE**

The Colorado Water Quality Control Commission adopted a phosphorus standard of 0.035 mg/l for Cherry Creek Reservoir on August 14, 1984. The Statement of Basis and Purpose for the 0.035 mg/l phosphorus standard (5 C.C.R. 3.8.11) notes that the standard was based upon water quality data and hydrologic conditions of 1982.

Control of both point and nonpoint sources of total phosphorus is essential to protect the quality and uses of Cherry Creek Reservoir over the long term. This regulation is based on a state/local partnership in controlling total phosphorus. This relationship is described in the Upper Cherry Creek Basin Water Quality Management Plan. These regulations provide the basis for state actions in protecting Cherry Creek Reservoir's quality. Local regulations will be used to control nonpoint sources. Taken together, these state and local regulations provide a mechanism for protecting the quality of Cherry Creek Reservoir, given modeling based upon the hydrologic condition of 1982.

Total phosphorus loading varies with the water yield from the Cherry Creek basin watershed. For the purpose of determining progress in achieving phosphorus controls, 1982 will be used as the base year. Mathematical relationships contained in the Cherry Creek Clean Lakes Study will be used to index future yields of phosphorus to the 1982 base year. At higher water yields the total phosphorus loading and inflake concentrations may be exceeded. The 14,270 pounds equate to the inflake total phosphorus standard of 0.035 mg/l as a growing season average, and an inflake chlorophyll a concentration of 15.0 ug/l.

Total annual phosphorus pounds of 14,270 are based upon the number and type of wastewater treatment facilities and land uses described in the Upper Cherry Creek portion of the 208 Water Quality Plan. These total annual pounds of phosphorus were determined through the use of the Canfield-Bachman model as described in the plan.

The allocation of phosphorus pounds for point source discharges are predicated upon nonpoint source controls, as outlined in Section 4.2.6, being implemented throughout the basin and effectively removing 50% of the nonpoint source pollution. The purpose of Section 4.2.6(2) is to encourage a basin-wide approach to phosphorus controls. If the requirements of this provision are not met the Commission will consider the adoption of control regulations or permit requirements to insure compliance.

### **72.16 FISCAL IMPACT STATEMENT**

The fiscal impact statement from the phosphorus standard on Cherry Creek Reservoir defined estimated benefits of the adopted standard. The master plan does not readdress the benefits of the standard but does define the costs of providing wastewater treatment and storm water treatment in the basin. To reduce phosphorus loads from nonpoint sources, the plan estimates a total cost of \$2 to 4 million per year. The initial phase of subbasins contracts for five subbasins will have an annual cost of one million dollars per year. These costs will be borne by the residents of the basin since there is no known outside source of funding.

The point source costs are based on providing capacity up to the estimated phosphorus loading limit. This limit of 14.4 mgd is much less than the capacity needed to support buildout of the basin but was used in the plan until other methods of phosphorus control (primarily nonpoint) can be identified.

To provide that amount of capacity in the basin is estimated to cost \$30-35 million dollars on an annualized basis, including both capital and operation and maintenance costs. Estimating the portion of that cost that is strictly for phosphorus removal is very difficult since some phosphorus removal will occur in secondary treatment plants. Also the land application systems in the basin plan are used for water resources management regardless of the phosphorus removal benefit. However, the analysis suggested



that plan components added strictly for phosphorus removal account for approximately 10 percent of the capital costs and the operating and maintenance costs of about 3 to 3.5 million dollars per year.

These costs fall within the range of benefits estimated by the Commission for the reservoir. It should be noted that the costs and benefits do not always fall upon the same individuals. The costs will be the responsibility of the basin residents and landowners while the benefits will primarily accrue to those persons, both in and out of the basin, who directly enjoy the beneficial uses of the reservoir.

**72.17 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (1989 REVISIONS)**

The provisions of sections 25?8?202(1)(c), (h) and (2); and 25?8?205; C.R.S., provide the specific statutory authority for adoption of the attached regulatory amendments. The Commission also adopted, in compliance with sections 24?4?103(4) C.R.S., the following statement of basis and purpose.

**BASIS AND PURPOSE:**

In 1988, the Water Quality Control Division and the Cherry Creek Basin Water Quality Authority recommended that the Water Quality Control Commission consider revising this control regulation for the purpose of:

1. Clarifying section 4.2.5 so that the requirements for phosphorus controls in point source discharge permits are clear as to how and when these limits apply,
2. Extension of the compliance date for 50% removal of phosphorus contained in stormwater runoff from October 1, 1988 to January 1, 1992 in section 4.2.6,
3. Eliminating provisions in section 4.2.8 which are outdated or no longer apply.

The rationale for the change in section 4.2.5 is based on the conclusions of the Cherry Creek Basin Master Plan, which was approved by the Commission in 1985 but the recommended point source control strategy in that plan was not stated specifically in the control regulation.

The compliance date of October 1, 1988 for 50% removal of stormwater runoff source of phosphorus was not realistic in terms of the timeframe allowed for both construction of control structures and monitoring of their relative effectiveness. There is a lack of data to substantiate the effectiveness of recommended best management practices in the 1985 Master Plan. Until control structures can be built and monitored, and an extension of the compliance date in section 4.2.6 (2) appears reasonable.

Section 4.2.8 contained provisions which expressed the Commission's intent to review progress in controlling phosphorus within the Basin after the first two years of the control regulation being in effect. The two year review by the Commission has taken place. The intergovernmental agreement which formed the Cherry Creek Basin Authority in 1985 is no longer in effect because the Basin Authority is now authorized by legislation adopted by the General Assembly in 1988. Other statements in this section, paragraphs 3, 4, 5, and 6 were outdated or do not relate specifically to enforceable provisions of this control regulation and hence have been deleted.

New section 4.2.5(2) was added to address the concern raised by the Cherry Creek Basin Water Quality Authority that the Authority was not being provided adequate notice and opportunity to comment on compliance schedules for permits and enforcement actions involving dischargers in the Basin. The provision states that, where a discharger requests a compliance schedule in connection with permit issuance or renewal, the discharger must simultaneously notify the Authority of the request. The discharger also is required to submit evidence of the notification to the Division and to solicit comments on the compliance schedule from the Authority. With respect to compliance schedules referred to in this provision, the Division shall not take final action until at least 45 days after the date that notice of the

## 72.18 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (1991 REVISIONS)

request for a compliance schedule was provided to the Authority, unless comments from the Authority are received earlier. This provision does not include minor modifications to permits, which consist of such items as correcting typographical errors and changing interim dates in compliance schedules.

With regard to permit-based compliance schedules not requested by the discharger, these would be in the form of draft permits released to public notice by the Division. The normal public comment period for permits (except where a public meeting is held) is 30 days. Upon request by the Authority, however, the Division would extend that period to allow for comment by the Authority, as allowed by section 6.6.2(3) (5 CCR 1002?2).

An issue was raised at the hearing concerning notification of the Authority where the Division or discharger proposed a compliance schedule as part of a Division enforcement action, or resolution thereof. The Division expressed a concern regarding a set time limitation of 45 days as contained in section 4.2.5(2), on the basis that this might unduly hamper the Division's ability to address enforcement situations. The Division made it clear at the hearing, however, that it would have no objection to the Authority being informed of such compliance schedules and would provide to the Authority a copy of enforcement-related orders containing such compliance schedules.

As revised, section 4.2.8 provides that the Commission is to receive an annual report regarding the activities of the Authority. At the hearing, the Authority agreed to prepare the annual report, so long as it is understood that it will contain the same level of detail as in the past. This is the Commission's understanding and intent.

Two minor changes have been made to section 4.2.2. The definition of "Cherry Creek Basin" has been revised to refer to a map that will be incorporated into the regulation. Second, a definition of the term "Authority" has been added.

Finally, the title of the regulation has been shortened, for ease of reference.

### **72.18 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (1991 REVISIONS)**

The provisions of 25-8-202(1)(c) and 25-8-205, C.R.S., provide the specific statutory authority for adoption of the attached regulatory amendments. The commission also adopted, in compliance with 24-4-103(4), C.R.S., the following statement of basis and purpose.

The Cherry Creek Reservoir Control Regulation imposes wasteload allocations for total phosphorus and also specifies effluent limitations for phosphorus. The wasteload allocations provide poundage limitations for major domestic dischargers, as well as for other types of point and nonpoint source discharges. (See sections 4.2.3 and 4.2.4)

The effluent limitations contained in sections 4.2.5(1) and (3) have been revised to require that point source discharges of phosphorus, for a 30-day average, shall not exceed 0.2 mg per liter throughout the year. This change was based on the following factors. Some major domestic dischargers in the Cherry Creek Basin, particularly those utilizing rapid infiltration for treatment and disposal of effluents, have encountered difficulties in meeting the 0.1 mg/l (October-March) and 0.05 mg/l (April-September) limitations previously contained in the regulation. In order to meet those limitations, the dischargers would have been required to construct new wastewater treatment facilities at considerable expense to their residents. When the Cherry Creek Basin Water Quality Management Master Plan was approved, it was assumed that these rapid infiltration systems, operating in their current configuration, would be able to achieve the 0.1/0.05 mg/l effluent limitations. Also, wastewater treatment facilities utilizing other systems, including land application, have encountered difficulties from time to time in achieving the effluent limitations. The master plan provided the basis for adoption of the effluent limitations previously contained in the regulation. Although the dischargers have rehabilitated their systems to improve the quality of their discharges, they have not been able to meet the 0.1/0.05 mg/l effluent limitations.

It should be noted that the wasteload allocations contained in the regulation have not been revised. The wasteload allocations dictate the maximum quantity (pounds) of phosphorus which may be discharged each year by each domestic wastewater discharger. In order to meet their wasteload allocations while discharging at a concentration of 0.2 mg/l phosphorus, hydraulic capacities for some or all of these facilities may be reduced in their discharge permit. All hydraulic capacities in future site approvals shall be determined using the annual phosphorus allocation and an effluent phosphorus concentration of 0.2 mg/l.

Where the applicant for a discharge permit or a site approval can demonstrate, to the Division's satisfaction, that the treatment process is capable of producing an effluent phosphorus concentration of less than 0.2 mg/l, on an annual or seasonal basis, the hydraulic capacity will be established on the basis of the demonstrated phosphorus concentration(s) and the annual allocation. Such demonstration must include, at a minimum, design or operating data which establishes that the process can attain the requested effluent quality over the full range of expected operating conditions during the period in question.

Because the total poundage of phosphorus discharge will continue to be regulated at the same level, the water quality of the reservoir is expected to be protected at the same level under the revisions to the regulation. Moreover, the revisions will allow the Cherry Creek Basin Authority to utilize its collective resources in a manner more beneficial to the water quality of the reservoir. If the revisions had not been made, costly new wastewater treatment plant improvements would have been necessary. The poundage allocation can be met in the short-term by allowing a less restrictive effluent limit and using more of the existing design capacity. Site approvals may require phosphorus concentrations of less than 0.2 mg/l if necessary to meet the wasteload allocation at the design capacity of the treatment facility. No new site approvals shall be granted which would allow construction of treatment facilities which would not meet their wasteload allocation. Under the revisions, however, the Authority will be able to focus on addressing nonpoint source control of phosphorus.

#### **72.19 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE (1992 REVISIONS)**

A temporary wasteload allocation of 365 pounds of phosphorus was established for the Denver Southeast Suburban Water and Sanitation District ("Denver Southeast") facility until 1990 or until completion of their new wastewater treatment facility, whichever occurred first. A footnote stated that the temporary phosphorus allocation to Denver Southeast would be reduced from 365 pounds to 213 pounds. Denver Southeast has completed construction of their new wastewater treatment facility. The Control Regulation has been amended to reflect the permanent wasteload allocation to Denver Southeast, as originally contemplated, of 213 pounds of phosphorus annually.

Allocations of phosphorus or modifications to phosphorus wasteload allocations required a rulemaking hearing by the Commission. The Authority believed that certain modifications to the wasteload allocations should be made more expeditiously. The Authority recommended, and the dischargers in the Basin and the Division supported, amending the Control Regulation to allow temporary transfers of phosphorus wasteload allocations between dischargers, provided both affected dischargers requested the transfer and it was approved by the Authority and the Division. This will not increase the total point source phosphorus allowed annually. However, it will allow consenting dischargers to transfer all or a portion of their phosphorus allocations, as may be appropriate. Such temporary transfers of phosphorus between dischargers may be particularly appropriate if a discharger treats another discharger's effluent for an interim period. It is not the intent for the Control Regulation to allow temporary transfers of phosphorus wasteload allocation to a discharger that has, throughout the applicable year, failed to comply with the phosphorus concentration for effluent set forth in the discharger's permit if the temporary transfer is solely to prevent the receiving discharger from exceeding its wasteload allocation.

A Reserve Pool for point source discharges of 303 pounds of phosphorus annually was established. The intent, as reflected in the Cherry Creek Basin Master Plan (1985), was that the Reserve Pool could be used for temporary allocations of phosphorus in events of emergencies, upsets or facility malfunctions.

However, allocations from the Reserve Pool could only be obtained after notice, hearings and deliberations by the Commission through its rulemaking process. Also, because allocations from the Reserve Pool were to satisfy emergencies or interim needs, it was not necessary that the Control Regulation be amended to permanently reflect such interim allocations. In fact, reflecting such interim allocations in the Control Regulation meant that the Regulation would need to be amended repeatedly. These amendments authorize the Division to allocate phosphorus from the Reserve Pool temporarily, provided that the discharger requesting the Reserve Pool allocation has a recommendation of approval by the Authority. In determining whether to make phosphorus allocations from the Reserve Pool, the Division must consider the discharger's need for the allocation, whether the discharger has taken or is committed to taking reasonable interim steps to decrease, to the extent practicable, the total phosphorus loading and the long-term plan for phosphorus control and the period of time necessary to implement those phosphorus controls.

All decisions of the Division pertaining to approvals or temporary transfers of phosphorus between dischargers or phosphorus allocations from the Reserve Pool, must be appealed to the Commission by any person adversely affected or aggrieved. The Commission shall utilize the criteria set forth in 4.2.4(4) in determining whether to approve temporary transfers of phosphorus, and the criteria set forth in 4.2.4(5) in determining whether to allocate phosphorus from the Reserve Pool.

**72.20 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: (1995 REVISIONS)**

The provisions of sections 25?8?202(1)(c), (h) and (2); and 25?8?205; C.R.S., provide the specific statutory authority for adoption of the attached regulatory amendments. The Commission also adopted, in compliance with sections 24?4?103(4) C.R.S., the following statement of basis and purpose.

**BASIS AND PURPOSE:**

The regulations were amended regarding land application of treated wastewater.

[Section 4.2.2(6),(7),(8) and (9)] First, consistent with Section 6.15.0, et seq., 5 CCR 1002-2, these regulations now distinguish between the two types of land application: land disposal and land treatment.

[Section 4.2.3(1)] The regulations reflect that wasteloads for all sources represent total permissible loads to the Reservoir, according to the 1984 modeling. The phosphorus standard was adapted for Cherry Creek Reservoir so the modeling has considered loads to the Reservoir not the Basin, as the limiting factor. Phosphorus which may be contributed to the Basin is either removed or controlled in the Basin and, therefore, would not affect the Reservoir wasteloads. The regulation was clarified to accurately reflect that the wasteloads are for the Reservoir.

[Section 4.2.4(1)] The modification to the table in section 4.2.4.1 is made to harmonize the control regulation with a consolidation of the wastewater service areas of the Arapahoe Water and Sanitation District and the Cottonwood Water and Sanitation District which has been incorporated in the approved Clean Water Plan for the basin.

[Section 4.2.4(1)] This regulation was modified to set forth the formulas that are used for calculating phosphorus concentrations and for calculating wasteloads from point source dischargers. The calculations clarify how the monthly volume of total effluent will be measured and how analytical results of effluent samples will be incorporated into the formulas.

[Section 4.2.4(4)(a)(1) and (d)] For dischargers utilizing land treatment, the land application is an important step in their final treatment process, reducing the concentration of pollutants in the effluent and providing uptake for nutrients. Therefore, for dischargers utilizing land treatment, the quantity and quality of the effluent is determined from the effluent percolate that reaches lysimeters placed in the land application area.

Generally, for land application sites the treated effluent is land applied at agronomic rates. When effluent is applied at agronomic rates no water reaches the lysimeters, so the return flow and phosphorus concentrations are zero. Although the fields or land application areas are uniformly irrigated with effluent, on occasions some of the lysimeters will be dry and others have return flow. A percentage of those lysimeters recording flow, even though other lysimeters in the same field were dry and reported no phosphorus concentrations, have had effluent concentrations exceeding 0.2 mg/l. Thirty-day average phosphorus concentrations exceeding 0.2 mg/l have been reported in violation of phosphorus limits.

[Section 4.2.4(a)(2)] For land disposal, the discharger does not account for any reductions in volume or nutrient uptake resulting from the land application. Therefore, dischargers using land disposal will measure the effluent quantity and quality at the wastewater treatment plant, after treatment, but before land application.

[Section 4.2.5(1)] The regulation has been amended to allow a 30-day flow-weighted average phosphorus concentration for dischargers using land treatment of 1.0 mg/l total phosphorus. The regulations maintain the phosphorus concentration limit for direct dischargers and dischargers using land disposal at .2 mg/l as a 30-day average, and .5 mg/l as a daily maximum concentration. The 1.0 mg/l total phosphorus limit is consistent with the phosphorus concentrations allowed in the Bear Creek and Chatfield Basin Control Regulations, two other phosphorus limited reservoirs in the state. It is understood that in order to reach permitted hydraulic capacities it may be necessary for dischargers to maintain average phosphorus concentration levels less than 1.0 mg/l.

[Section 4.2.5(3)] Estimated return flows from new land treatment sites must be calculated for the purpose of issuing site approvals and discharge permits. For the purpose of determining the phosphorus concentrations and wasteloads from new land treatment sites, when the discharger has an augmentation plan approved by Water Division One, District Court, State of Colorado, the augmentation plan will be used to calculate anticipated return flows. When a discharger for new land treatment sites does not have an approved augmentation plan that sets forth the means for calculating the return flows, the applicant will generally use the Soil Conservation Service Technical Manual Release No. 21, "Irrigation Water Requirements" (Rev. Sept. 1970) and the Cottonwood curve for return flows to determine the estimated return flows. Upon actual land treatment of wastewater effluent, the return flows or effluent volume shall be the amount measured in the lysimeters and calculated by the formula.

[Section 4.2.6(1)] The wasteload analysis and allocation for nonpoint sources includes stormwater, even that stormwater which is now subject to an NPDES permit. The nonpoint source load has been and remains 10,290 pounds of phosphorus annually. This load was determined assuming approximately 20,580 pounds of nonpoint phosphorus contributed to the Basin and that 50% of that phosphorus load would be removed or controlled through best management practices and water quality facilities. The regulation acknowledges that the load to the Reservoir is 10,290 pounds, however, it is still anticipated that loads to Cherry Creek Basin will be greater than 10,290 pounds but will be reduced or controlled by such means as are appropriate to reduce and maintain the total nonpoint source load to the Reservoir at 10,290 pounds per year or less.

[Section 4.2.6(3)] The control regulation previously allowed a nonpoint source credit program, which is now further detailed. Phosphorus credits from nonpoint source projects may be granted to allocations to the reserve pool or the point source dischargers sponsoring the project provided that the projects demonstrate removal of nonpoint source phosphorus. The project sponsors will need to conduct appropriate water quality monitoring to demonstrate the quantity of phosphorus removed. Upon application by a project sponsor for nonpoint source phosphorus credits, the Authority will review the proposal and make recommendations to the Division regarding the grant of phosphorus credits. Phosphorus credits approved by the Division will be incorporated and reflected in the 208 Plan. At the next rulemaking hearing or triennial review of the regulation amendments to the regulation will be proposed to incorporate the credits.

#### PARTIES TO THE RULEMAKING HEARING

1. Cherry Creek Water Quality Authority
2. Arapahoe County Water and Wastewater Authority
3. The Cottonwood Water and Sanitation District

**72.21 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; JULY, 1997 RULEMAKING**

The provisions of sections 25-8-202 and 25-8-401, C.R.S., provide the specific statutory authority for adoption of the attached regulatory amendments. The Commission also adopted, in compliance with section 24-4-103(4) C.R.S., the following statement of basis and purpose.

**BASIS AND PURPOSE**

The Commission has adopted a revised numbering system for this regulation, as a part of an overall renumbering of all Water Quality Control Commission rules and regulations. The goals of the renumbering are: (1) to achieve a more logical organization and numbering of the regulations, with a system that provides flexibility for future modifications, and (2) to make the Commission's internal numbering system and that of the Colorado Code of Regulations (CCR) consistent. The CCR references for the regulations will also be revised as a result of this hearing.

**72.22 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE (1997 REVISIONS)**

The provisions of 25-8-202(1)(c), and (2) and 25-8-205, C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted, in compliance with 24-4-103(4) C.R.S., the following statement of basis and purpose.

**BASIS AND PURPOSE**

The 1997 revisions to the Cherry Creek Reservoir Control Regulation authorize and establish the general parameters for a phosphorus Trading Program for the Cherry Creek Basin. The Trading Program, to be administered primarily by the Authority in accordance with guidelines drafted by the Authority, allows credits for nonpoint source phosphorus reduction projects, that remove phosphorous beyond required BMPs, to be allocated to point source dischargers. (See Section 72.4(8)(a).) The goal of the Trading Program is to allow those trades which will have a net water quality benefit in the Basin and maintain the inlake chlorophyll a level of 15 ug/l.

Because of the Authority's basinwide activities and the condition of the Cherry Creek watershed, the Cherry Creek Basin is suitable for a Trading Program, and the Authority has the experience to implement the Trading Program. The Authority has, and continues, to monitor nutrients and other parameters, from point and nonpoint sources in the surface water and alluvial groundwaters in the watershed and to evaluate the condition of the Reservoir. In part, these data have shown that phosphorus loading to the Basin is less than projected in the 1985 Cherry Creek Basin Water Quality Management Master Plan ("Master Plan"). The Authority is developing a trend line to track the relationship, over time, of phosphorus loads and inlake chlorophyll a levels. The Authority is reevaluating and refining, as appropriate, the models and or bases for calculating the assimilative capacity of the Basin, determining the phosphorous/chlorophyll a relationship in the Reservoir, and predicting point and nonpoint phosphorus loads in the watershed, all of which will be considered for the 1998 update to the Master Plan. In addition, the Authority has constructed four major nonpoint source projects, located close to the Reservoir, that have demonstrated effective phosphorus removal. The Authority is committed to ensure the operation and maintenance of these projects into the future.

Under the Trading Program, the Authority is authorized to approve two types of trades. (See Section 72.4(8)(b).) The Authority may: (1) approve the award of Trading Pool phosphorus pounds from Authority projects to point source dischargers, and (2) approve credits from individual (non-Authority) nonpoint

source projects that remove phosphorus. The "Trading Pool" consists of phosphorus pounds from Authority nonpoint source projects determined by the Authority to be available for award to dischargers in the Trading Program. A trade ratio will be established for each Authority or individual nonpoint source project, on a project-specific basis, in the range of 1.3:1 to 3:1, meaning that for every 1.3 to 3 pounds of phosphorus removed by a nonpoint source project, a discharger may be awarded one (1) phosphorus wasteload allocation pound. (See Section 72.4(8)(f).) The Authority will consult with the Division and consider their comments and analysis when evaluating projects and quantifying credits for inclusion in the Trading Pool, when establishing trade ratios, and when reviewing applications for individual nonpoint source trades. Applicants for all trades under the Trading Program are encouraged to review the Authority's guidelines for trading and meet with the Authority before submitting applications for trades.

Net water quality benefit will be specifically considered for each trading project, trade ratio, and award of trade credits. Only nonpoint source projects that remove phosphorous beyond required BMPs will qualify for trading. Required BMPs are those temporary BMPs such as construction erosion controls or longterm BMPs for new development mandated by the local jurisdiction or the Authority. Trade credits will not be awarded for those projects, or those portions of projects, implemented to meet the required BMPs. Moreover, all approved trades, trade projects, trade ratios, and phosphorus pounds awarded in trades remain subject to continued Authority oversight and may be rescinded or modified, as appropriate, in accordance with monitoring data or other evidence. In addition to the stringent requirements for trades and projects, dischargers who wish to receive trade credits must demonstrate compliance with several criteria, including compliance with effluent limitations and optimal treatment efficiency of the discharger's facility. Lastly, all point source dischargers awarded trade credits remain subject to the limitations in their discharge permits, and no discharge based upon the award of phosphorus from the Trading Program shall be permitted until the subject discharge permit is amended, as appropriate, by the Division. When considering permit applications for increased phosphorus based upon allocations from trading, the Division may, if appropriate for the phasing of the facility, include less than the facility's total wasteload allocation in the facility's discharge permit. In issuing the permit, the Division must comply with this Control Regulation and any other applicable statutory or regulatory requirements, including the Colorado Discharge Permit System Regulations.

The Authority has agreed with the Division to implement the Trading Program in two phases. In the first phase, commencing upon approval of these 1997 revisions, the Authority will proceed with the Trading Pool and award of credits therefrom pursuant to Section 72.4(8)(b)(1) (and as further described under Sections 72.4(8)(c) and (d)). The Trading Pool in this initial phase also will be limited to phosphorus pounds from the Authority's four largest, established nonpoint source projects: Shop Creek Water Quality Improvements, Quincy Outfall Water Quality Improvements, Cottonwood Creek Water Quality Improvements, and East Shade Shelter Shoreline Stabilization Project. As an additional safety margin, the Authority has proposed, during Phase I trading, to set aside -- and not use -- 500 pounds per year from the total nonpoint source phosphorus wasteload allocation (10,290 pounds per year), thus reducing the total nonpoint source allocation to 9,790 pounds per year during Phase I trading.

Once allocated to the Trading Pool during Phase I, the phosphorus pounds from the four projects may be awarded to any eligible discharger. Phase I trades will only be implemented to allocate phosphorous to either, new dischargers that do not have an existing allocation, or to existing dischargers that are providing advanced phosphorous treatment to achieve the greatest possible reduction of phosphorous yet, due to growth pressures, are in imminent danger of exceeding their allocation.

The entire Trading Program may be implemented after the Authority has completed evaluations of the Reservoir and assimilative capacity of the watershed and, in consideration of these findings, the Authority has prepared and the Commission approved the 1998 update to the Master Plan and revisions to this Control Regulation. After these evaluations and Commission approval of the Master Plan update, the Authority will have a greater scientific basis for the final phase of the Trading Program. In addition to first phase trades, the Authority may then approve trades for individual nonpoint source projects under Section 72.4(8)(b)(2) and (e), and the Trading Pool may be augmented with phosphorus pounds from additional Authority projects.

In addition to the Trading Program, the 1997 revisions establish a new Emergency Pool for temporary phosphorus allocations (Section 72.4(6)), and modify the Reserve Pool to consist of pounds available for permanent phosphorus allocations to dischargers. (Section 72.4(7).) Formerly, the "Reserve Pool" was used for temporary allocations; the more aptly-named Emergency Pool now serves this function.

### **SPECIFIC AMENDMENTS**

Definitions for the following terms were added to Section 72.2: "Emergency Pool," "Reserve Pool," "trade ratio," "Trading Pool," and "Trading Program."

Section 72.3 has been amended to reflect that the total phosphorus allocation for point sources may be exceeded if the point source dischargers' allocations have been increased with phosphorus pounds from the Trading Program.

Section 72.4(1), which lists specific phosphorus wasteload allocations by individual source, likewise has been amended to reflect that a discharger may exceed its designated allocation to the extent of phosphorus pounds awarded from the Trading Program, Reserve Pool, Emergency Pool, or through temporary transfers. Section 72.4(1) also sets forth an allocation of 100 pounds to the Emergency Pool and changes the allocation for the Reserve Pool to 203 pounds.

Section 72.4(5), "Temporary Transfer of Phosphorus," has been amended to streamline and expedite phosphorus awards. These changes are addressed below along with the discussion of similar amendments to Sections 72.4(6) and 72.4(7).

Section 72.4(6) has been renamed "Emergency Pool." The Emergency Pool will be used for temporary phosphorous allocations in emergencies. The Reserve Pool will be used to provide longterm wasteload allocations, based upon, in addition to the other factors enumerated at Section 72.4(7)(a), the need of the applicant and a comparison of the need of the applicant, other dischargers, and availability of phosphorous pounds.

Section 72.4(7), now provides for a "Reserve Pool" and sets forth the procedures for awards of phosphorus pounds from the Reserve Pool.

Sections 72.4(5) (temporary transfers), 72.4(6) (Emergency Pool), and 72.4(7) (Reserve Pool) all streamline and expedite the award of phosphorus by authorizing the Authority to accept applications and make decisions on these three types of phosphorus awards. In the previous version of this Control Regulation, the Division, not the Authority, made decisions on temporary transfers and temporary allocations. The change was appropriate because the Authority, as the agency specifically responsible for water quality in the Basin, is well suited to make informed and timely decisions on applications. As reflected in all three revised Sections, the allocations of phosphorus shall become effective upon the Authority's final decision, subject to appeal. However, no discharge based upon these allocations is permitted until the Division's issuance or amendment of the applicant's discharge permit incorporating the allocation.

New Section 72.4(8) establishes the Trading Program. In addition to the procedures and criteria set forth in this Control Regulation, the Authority will implement the Trading Program in accordance with guidelines developed by the Authority.

Section 72.4(8)(a) describes the general scope of the Trading Program and the Authority's primary role in implementation of the program. Section 72.4(8)(b) identifies the two types of trading -- awards of Trading Pool phosphorus pounds and individual nonpoint source projects trades -- authorized under the program.

Section 72.4(8)(c) sets forth the criteria for approving Authority nonpoint source projects for inclusion in the Trading Pool. The Authority will consider comments from the Division on proposals to include projects in the Trading Pool, evaluations of project removal efficiencies, and determinations of appropriate trade



ratios. During the first phase of the Trading Program, the Authority will propose and consider comments from the Division on four Authority projects -- Shop Creek, Quincy Drainage, Cottonwood Creek, and East Shade Shelter.

Section 72.4(8)(d) describes the criteria for awards of phosphorus pounds from the Trading Pool to point source dischargers discharging in the Basin. The Authority may approve awards based upon, in addition to other factors, need, the facility's treatment efficiency, compliance with effluent limitations, completeness of application for phosphorus pounds, consistency with the trading guidelines, Master Plan and this Control Regulation, the facility's plans for expansion, and net effect on water quality. When determining need for credits from the Trading Pool, the Authority will consider whether the facility's treatment flows are at or near capacity, whether the facility's wasteload allocation is insufficient to accommodate wastewater flows from the facility's expansion, and whether the facility's plans for expansion and quantity of desired credits are reasonable. When determining the treatment efficiency of applicants for credits from the Trading Pool, the Authority will consider whether the facility is operated efficiently and achieves optimal results expected for the facility's wastewater treatment technology.

Section 72.4(8)(e) identifies the criteria for Authority approval of individual nonpoint source project trades. In addition to other factors, the Authority will consider generally the same criteria enumerated at Section 72.4(8)(d) for awards of Trading Pool pounds, the technical specifications of the project, and quantification of the project's phosphorus removal. The Authority will consider, in its decision-making, comments from the Division on applications for trades for individual nonpoint source projects, evaluations of project effectiveness, and determinations of appropriate trade ratios and number of phosphorus pounds to be awarded.

Section 72.4(8)(f) describes the factors to be considered when determining the trade ratio for each project in the range of 1.3:1 to 3:1. These factors include operation and maintenance of the project, effect of net water quality, and a margin of safety. Trade ratios for all projects remain subject to Authority oversight and may be adjusted from time to time based upon monitoring data or other evidence. In order to reflect the effects on varying hydrologic years on project effectiveness, phosphorus removals for projects will be determined on the basis of representative data and will be reevaluated periodically.

Section 72.4(8)(g) sets forth operation and maintenance requirements for all trade projects. The Authority shall ensure operation and maintenance of Authority projects, and project owners of individual nonpoint source projects must own, operate, and maintain the projects in order for their phosphorus trade credits to remain viable.

Section 72.4(8)(h) provides that all allocations awarded pursuant to the Trading Program and all Authority decisions on trades will be effective upon the Authority's final decision. However, dischargers are required to obtain from the Division any necessary new or revised discharge permits before discharging phosphorus credits awarded.

Section 72.4(8)(i) reflects that all trades, trade ratios, pounds in the Trading Pool, and pounds awarded in trades remain subject to Authority oversight indefinitely and may be modified, as appropriate.

New Section 72.4(9), entitled "Adjudicatory Hearings," describes the procedures for appeals under this revised Control Regulation. Under Section 72.4(9)(a), persons adversely affected or aggrieved by Authority final decisions on temporary transfers and awards of phosphorus from the Emergency or Reserve Pool may request a hearing before the Commission. Section 72.4(9)(b) provides that persons adversely affected or aggrieved by Authority final decisions on assignment of pounds to the Trading Pool, on awards of phosphorus from the Trading Pool, or on trades involving individual nonpoint source projects, may request a hearing before the Commission. Section 72.4(9)(c) indicates that all appeals must be filed no later than thirty (30) days after the Authority's final decision and that all adjudicatory hearings will be conducted pursuant to C.R.S. 1973, 24-4-105.

Section 72.5(3), regarding wastewater treatment plant sizing for site approval and permits, has been amended to include consideration of allocations from temporary transfers, Emergency Pool, Reserve Pool, or the Trading Program.

Section 72.6(3) has been deleted, because the concept of point source discharges receiving credits for nonpoint source removals is now addressed in Section 72.4(8), "Trading Program." Section 72.6(4) becomes Section 72.6(3).

Section 72.8(1) has been amended to require that the Authority's annual report to the Commission includes information on the Trading Program. New Section 72.8(3) provides that during the Commission's regular reviews of the Control Regulation, phosphorus allocations from the Reserve Pool, Emergency Pool or Trading Program not already reflected in the listings in Sections 72.3(1) and 72.4(1) shall be reviewed and, if appropriate, codified in such listings.

#### PARTIES TO THE RULEMAKING HEARING

1. Cherry Creek Basin Water Quality Authority
2. City of Westminster
3. Chatfield Watershed Authority
4. Happy Canyon Partnership

#### **72.23 FINDINGS REGARDING BASIS FOR EMERGENCY RULE ADOPTED JANUARY 12, 1998**

The Commission held this emergency rulemaking hearing to readopt the revisions adopted by the Commission on November 3, 1997. The readopted provisions are effective immediately and will remain in effect on an emergency basis until June 30, 1998, to provide time for a non-emergency rulemaking hearing. The Commission recently determined that due to an administrative error, an incorrect version of the amended rules was filed with the Secretary of State following the November 3, 1997 rulemaking.

The Commission finds that the immediate adoption of this regulation is imperatively necessary for the preservation of public health, safety, or welfare and that compliance with normal notice requirements would be contrary to the public interest. Emergency adoption is necessary to assure that the published regulation is consistent with the regulation that the Commission adopted, to avoid confusion for the public and be consistent with the Water Quality Control Commission's action.

#### **72.24 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE (APRIL, 1998)**

The provisions of 25-8-202(1)(c), and (2) and 25-8-205, C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted, in compliance with 24-4-103(4) C.R.S., the following statement of basis and purpose.

#### **BASIS AND PURPOSE**

The Commission held this rulemaking hearing to make permanent readoption of the regulation changes adopted in a November, 1997 Rulemaking Hearing and readopted in an Emergency Rulemaking Hearing that was held on January 12, 1998.

#### **72.25 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE (May 2001)**

The provisions of 25-8-202(1)(c), and (2) and 25-8-205, C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted, in compliance with 24-4-103(4) C.R.S., the following statement of basis and purpose.

#### **BASIS AND PURPOSE**

In September of 2000 the Commission adopted a new standard for the protection of Cherry Creek Reservoir. The new standard, a maximum growing season average of 15 ug/L of chlorophyll a, was determined to be protective of the uses of the reservoir. The Commission requested that the Division, in association with the Cherry Creek Basin Water Quality Authority (Authority) and other interested parties, draft an amended control regulation in accordance with the new standard.

The Commission expressed concerns about the deterioration of water quality in the Cherry Creek Reservoir. The Commission recognized the likelihood that additional point source and nonpoint source control efforts beyond those set forth in the proposed control regulation revisions will be necessary in the future. The authority was directed to proceed expeditiously in implementing the technology and information based controls required in the control regulation to meet the new water quality standards and protect the designated uses.

The Commission determined that it was appropriate to adopt the control regulation as a "phased TMDL" (Total Maximum Daily Load), or in the case of a reservoir, a "Total Maximum Annual Load" (TMAL). The "phased TMAL" process provides for the adoption of both point source and nonpoint source requirements that will provide protection for the reservoir, while additional studies of contributing problems to reservoir quality are investigated, and any additional necessary control programs are formulated. The Commission intends that this first phase of the TMAL will be in place within 3 to 6 years. An in-depth analysis of reservoir quality problems, the success or failure of existing control strategies, and new control requirements will be reviewed at future triennial hearings of the regulation.

Many changes to the numbering of the subsections of the regulation have occurred. This basis and purpose statement provides information about the major substantive changes to the regulation, rather than focusing on the details of numbering. The following provides an analysis of the basis and purpose for changes to each of the major sections of the control regulation.

## **72.2 Definitions**

The following changes or additions were made to terms relating to nonpoint and regulated stormwater sources. Several existing definitions were modified and several new definitions were included to correspond with terms used in the newly-added sections of the regulation dealing with nonpoint sources (Section 72.6) and regulated stormwater sources (Section 72.7). They are intended to clarify the distinction in the amended regulation between these categories of sources. Although nonpoint and regulated stormwater sources share an annual load allocation, they are subject to different control requirements under the regulation.

Accordingly, the definition of "nonpoint source," was made more restrictive, for purposes of this regulation, to include only activities or facilities that are not subject to the requirements of the stormwater regulations in Regulation 61 (5 CCR 1002-61). A definition for "regulated stormwater" was included to explain the distinction in this regulation between stormwater discharges from entities that are regulated under Regulation 61, and stormwater from other sources. Along these lines, the definition for "point source" was amended to expressly include conveyances of regulated stormwater. The definition for "stormwater" was added to clarify that the term, when not accompanied by the word "regulated," encompasses all sources of stormwater (regulated sources, as well as other sources).

A definition for "Municipal Separate Storm Sewer System" taken from Regulation 61 was included to clarify the term as used in Section 72.7. The newly-added definitions for "disturbed areas," "individual home construction," and "land disturbance" were taken directly from the "Cherry Creek Reservoir Watershed Stormwater Quality Model Ordinance" (February 16, 2000), and they relate specifically to requirements for MS4s in Section 72.7 of this regulation. The term "best management practices" was expanded to clarify its applicability to nonpoint and regulated stormwater sources of pollution. A definition for "Water Quality Capture Volume" was added to explain the term as used in Section 72.7(2)(e)(6) concerning permanent BMP requirements for all land disturbances. The WQCV concept is more comprehensively discussed in the Urban Drainage and Flood Control District's Urban Storm Drainage Manual, Volume 3, which the Commission acknowledges as a nationally recognized reference on the

subject. The Commission encourages use of this reference to those choosing to use the WQCV approach for determining the minimum requirements for areas of land disturbance.

The following changes or additions were made to terms of general applicability. A definition of "TMAL" was included to explain the term's use in Section 72.3 concerning the sum of total phosphorus allocations for the various sources. A definition for "Industrial Process Wastewater Sources" was added to clarify the scope of the term as used in Section 72.3 as a category for phosphorus load allocations. "Process Wastewater" was added to define the term as used in the definition of "Direct discharge". "Direct discharge" was modified to encompass a broader category of subsurface discharges, and to clarify that the term does not include discharges from regulated stormwater sources. The definition for "Wastewater Facilities" is identical to the definition for "domestic wastewater treatment works" in the Colorado Water Quality Control Act. The term was added to Section 72.3 as a phosphorus source category with corresponding load allocations that are further detailed in Section 72.4. "Semi-urban Areas" was included to define the term as added to the list of wastewater facilities in Section 72.4 with corresponding wasteload allocations. A definition for "Land Application Return Flow Factor" was included to explain the term as used in the formula in Section 72.4(8)(a) for calculating the monthly volume of phosphorus discharged by point source dischargers utilizing land treatment. "Phosphorus bank" was added to define the term as referred to in the Trading Program under Section 72.5(3)(i). "Cherry Creek Watershed" was expanded to more properly describe the nature of the area subject to this regulation and to elaborate on the meaning of tributaries, i.e., that they include wetlands and alluvial groundwater. "Background Sources" was modified to clarify that "groundwater" as used in the definition is limited to groundwater in its natural condition. Definitions for "Local Government" and "Division" were added for clarification. "Designated regional management agency" was changed to "Designated water quality management agency" to reflect the water quality-related functions of such entities.

### **72.3 Phase 1 Total Maximum Annual Phosphorus Load Allocations and Activities**

Review of the Total Maximum Annual Load (TMAL) has revealed that the current allocations are not attaining water quality standards or protecting current designated uses. The Commission recognizes that this situation requires that the necessary controls be identified that will attain the applicable standards and protect the uses. The identification of the necessary controls will require considerable more investigation and evaluation before the Control Regulation can be revised to reflect these changes. During this period, the process for attaining water quality standards must continue by pursuing known technologies and processes throughout the Cherry Creek watershed.

The total maximum annual load (TMAL) of phosphorus for the reservoir was maintained at 14,270 pounds. The allocations of pounds to Nonpoint point sources, Background sources, Wastewater facility sources, Industrial process wastewater sources, and Individual sewage disposal systems also remain unchanged. The Commission recognizes that until additional investigations are completed, a new TMAL cannot be calculated. The Commission also recognizes that the reservoir is not attaining the chlorophyll a standard, and that a "phased TMAL" was the appropriate way to proceed at this time. The Environmental Protection Agency agreed with this approach. The Commission intends that the phased approach be implemented consistently with EPA Guidance (Guidance for Water-Quality Based Decisions: The TMAL Process, U.S. EPA, 1991. EPA 440-4-91-001). Section 72.3(2) was modified by the addition of a Margin of Safety factor to the TMAL formula. Section 72.3(3) was also modified to reflect changes in the trading program. In the past trades were allowed which could lead to an exceedance of the point source allocation. This section makes it clear that any phosphorus awarded to wastewater facilities from the trading program will not exceed the TMAL allocation of 2,360 pounds. This change is reasonable since there is adequate phosphorus available in the wastewater facility allocation.

A new Section 72.3(4) was added to identify the future activities to be implemented by the Authority. These activities include additional point source controls, construction of nonpoint source projects, and investigative studies to better define the hydrology, phosphorus sources, chemical processes, and relative loads to the watershed and reservoir. The intent of the schedule is to identify appropriate activities implemented during the first phase of the TMAL that will result in reasonable progress in attaining water quality standards and to support future revisions to the control regulation if necessary.

#### **72.4 Point Source Wasteload Allocation and Effluent Limitations**

In determining appropriate wasteload allocations (WLA) and effluent limitations for total phosphorus, the Commission sought to strike a balance between near term (2010) facility capacity needs, population and employment projections in the Metro Vision Plan, reasonably available treatment technology, and the fact that the recently adopted chlorophyll a standard is not being met in the reservoir.

The population projections in the Denver Regional Council of Government's (DRCOG) Metro Vision Plan used to project necessary wasteload allocations for the period during the Phase 1 TMAL proved to be problematic. The figures from the Metro Vision Plan were not consistent with many of the wastewater facility's recently approved site applications and/or utility plans. The Commission expects the Division and DRCOG to work together to establish accurate population and employment projections in the next Metro Vision Plan. This will ensure that accurate population and employment projections are used in planning efforts that support new or expanded wastewater facilities. The Commission has established wasteload allocations in the control regulation based on maximum allowable effluent concentration of 0.05 mg/l and the hydraulic capacities listed below, which are based on the near term (2007-2010) population and employment levels in the Metro Vision Plan. Where a site application for a hydraulic capacity in excess of the those listed below is approved, the applicant shall either accept an effluent phosphorus concentration limitation based on their current wasteload allocation, or obtain an additional wasteload allocations in accordance with the provisions of 72.4(6) or 72.5(2)(a), or 72.5(3) of the control regulation.

Arapahoe Co. W&WW Auth.	2.40 MGD
Parker Water & San. Dist.	3.50 MGD
Inverness Water & San. Dist.	0.90 MGD
Denver SE Suburban Water & San. Dist.	2.00 MGD
Meridian Metropolitan District	0.74 MGD
Stonegate Center Metropolitan District	1.06 MGD

The Commission set the wasteload allocations for wastewater treatment facilities at levels that were based on the design capacity that is expected to serve the respective service area until the 2007 to 2010 planning horizon. This is intended to provide dischargers with some certainty for additional growth during the period that the final TMAL is being developed. These figures were generally supported by recently approved site applications or utility plans. However, in some instances where recent planning was lacking or projected population and employment numbers significantly exceeded DRCOG projections, as in the case of Arapahoe County Water and Wastewater Authority and Cottonwood Water and Sanitation District, the flow used to calculate the respective wasteload allocation was reduced to a level that will accommodate the year 2007 to 2010 growth based on information obtained from the affected entities. Arapahoe/Cottonwood presented an alternate proposal for a combined allocation of not less than 83% (471 lbs.) of the original allocation (567 lbs.). Based on additional discussions between the Division and Arapahoe/Cottonwood, the Commission reallocated 37 pounds from the Reserve Pool to increase the Arapahoe/Cottonwood total combined wasteload allocation from 365 to 402 pounds.

An allocation was also set aside for future growth within the Semi-urban Areas based on predictions by DRCOG. This allocation can be accessed by new wastewater facilities or existing facilities that are serving development that would otherwise be served by a new wastewater facility outside of their urban growth boundary. Any increase in a wasteload allocation for existing facilities, other than through acceptance of out-of-service-area wastewater flows, can occur only as a result of a trade of nonpoint phosphorus for point source phosphorus in accordance with the revised trading requirements.

The table in Section 72.4(2) was modified to include the Semi-urban Areas wasteload allocation of 236 pounds of phosphorus. The wasteload allocation for Industrial Process Wastewater Facilities is now recognized in the table with its 50 pounds of phosphorus. This new category recognizes activities such as mining, industrial processes, and confined animal feeding operations. Specific wasteload allocations for facilities falling into this category may become necessary by the next triennial review. This additional category increases the wasteload allocation for all wastewater facilities to 1,928 pounds of phosphorus.

The Reserve Pool and Phosphorus Bank (formerly Trading Pool) phosphorus pounds were modified based on alternate proposals by the Division and the Authority to changes to Section 72.5. The Division proposed that the Reserve Pool be a consolidation of the pounds of phosphorus previously allocated to the Emergency Pool, the Reserve Pool, and the additional pounds gained from the loading reduction as a result of lowering effluent limitations for phosphorus in point source discharges (432 lbs.). The Division proposed that the Phosphorus Bank is initially contain 0 pounds of phosphorus for immediate trading. The pounds of phosphorus gained from the construction of future nonpoint source projects or the stormwater permit requirements that exceed the minimum phosphorus removal requirement of 50% would be available for trading. The Authority proposed a reversal of the phosphorus pound allocations, with the Reserve Pool containing 0 lbs. and the Phosphorus Bank containing 432 lbs. Discussion of the both proposals by the Commission resulted in a reallocation of 216 lbs. to both the Reserve Pool and Phosphorus Bank. The addition of the Reserve Pool The total annual wasteload allocation now increases the total annual wasteload allocation to for wastewater facilities, industrial process wastewater sources, and developing areas, including the Reserve Pool and Phosphorus Bank, is now 2,360 pounds of phosphorus.

The Commission established a maximum 30-day average effluent limit for total phosphorus for direct discharges at 0.05 mg/l, and this level is significantly less than the previous limit of 0.2 mg/l. This reduction is necessary to make progress towards attainment of the chlorophyll a standard and the technology required to meet the lower concentration is within the economic means of the dischargers. Several types of technology that can meet the limit are well established in Colorado. Facilities that are not capable of meeting the applicable effluent limit immediately will be given a reasonable period of time, not to exceed the allowable date of July 1, 2004, to construct the necessary improvements under a schedule of compliance in their discharge permit.

Section 72.4 has been revised by identifying the area of Additional Prohibitions and Precautionary Measures as a component of future point source phosphorus controls. The revisions identify that the Commission may consider the adoption of future prohibitions or precautionary measures if controls on point sources are not effective in reducing phosphorus loads and attaining water quality standards. Several potential phosphorus point sources in the watershed are identified for possible consideration of additional control in the future. The Commission determined that the identification of these point sources would assist in complying with the TMAL and attaining water quality standards.

## **72.5 Point Source Wasteload Allocation Modifications**

This section of the regulation provides three different mechanisms for adjusting wasteload allocations to point source discharges. Changes to these three subsections are summarized below.

Section 72.5(1) (Temporary Transfer of Phosphorus Allocations) was modified with one minor change. A new subsection (d) was added to provide a mechanism for review of any temporary transfers at the triennial review hearing to determine if permanent changes of the wasteload allocations are necessary.

Section 72.4(6) (Emergency Pool) in the previous regulation was eliminated from the regulation. Since the reservoir is not attaining water quality standards, the Commission determined that an Emergency Pool of phosphorus designed to accommodate exceedances of the point source wasteload allocations of phosphorus was not appropriate. The pounds in the Emergency Pool were added to the Reserve Pool.

Section 72.5(2) (Reserve Pool) provides phosphorus pounds for either new or expanded discharges, or for trading program projects that meet the requirements of the regulation. Point sources are limited to

trading from within the Reserve Pool as an additional conservative action under the Phase 1 TMAP approach.

The allocation of total phosphorus to wastewater facilities is limited to 2,360 pounds per year and any increase in wasteload allocation will result in a corresponding decrease in the amount of phosphorus in the Reserve Pool. In the event that the Reserve Pool is fully depleted, increases in a wasteload allocation, outside of a temporary transfer of an allocation from another wastewater facility, can only occur as a result of a hearing by the Commission. The Commission found that the use of the Reserve Pool in this manner is necessary in order to reduce the amount of phosphorus reaching the reservoir.

The Reserve Pool is also the mechanism for providing phosphorus for trades of nonpoint source phosphorus that may be either directly traded and reflected in the appropriate discharge permit, or placed in the Phosphorus Bank as referred to in Section 72.5(3).

Section 72.5(3) (Trading Program) was modified in several significant ways. The program was restricted in several ways in recognition of the fact that the reservoir is not attaining the chlorophyll a standard or the phosphorous target adopted by the Commission in September, 2000. Recent trends indicate deteriorating water quality in the reservoir from the standpoint of phosphorus concentrations, general algal populations and increases in the relative abundance of undesirable blue-green algae.

First, the trading program was modified to preclude the trading of phosphorus from past or future nonpoint source projects funded by the Authority to 216 pounds (which are available for sale by the Authority), and to preclude trading from future nonpoint source projects funded by the Authority and from municipal water supply operations that may incidentally reduce phosphorus loading. Water supply activities that are specifically modified or designed to remove phosphorus in addition to beyond the incidental reductions from regular normal operations may be used in the trading program. Only the additional phosphorus pounds removed beyond the incidental reductions may be used in the trading program. The Commission determined that this provision would allow the trading program to create the incentive for more innovative water supply operations that are operated to remove additional phosphorus.

Second, the pounds of phosphorous in the Reserve Pool (formerly in the Trading Pool and Emergency Pool) that were generated through nonpoint source projects constructed by the Authority were removed. The Commission recognized that the benefits of those projects have already been realized by the reservoir, while water quality has continued to degrade. Utilization of those credits by point source discharges would have the effect of exacerbating the present exceedances of standards. The Commission also determined that because the Authority is financed through property taxes and user fees, it should pursue the construction of phosphorus removal projects that are intended solely for the improvement of water quality in the reservoir.

Third, the program was modified to allow trades for only three types of nonpoint source projects. One type of project was designed to provide retrofit enhancements for existing BMPs constructed prior to July 1, 2001, to achieve a higher level of phosphorus removal. A second type will provide BMPs for areas that were developed without providing for these water quality protective features. The third type of trade is aimed at achieving exemplary levels of phosphorus control and reduction in newly developing areas. By virtue of other provisions in this amended control regulation (see Section 72.7), new development is required to provide high level BMPs in line with the requirements of the specific criteria for stormwater permitting included in this regulation. However, it may be possible to remove phosphorous loading beyond these minimum requirements. In order to encourage such approaches in new and proposed developments, the Commission has authorized trades and banking of phosphorus credits subject to the criteria set forth in 72.5(3) for projects that can demonstrate reductions in phosphorus loading greater than a 50% removal efficiency. Phosphorus trading can occur on the increment of phosphorus removed above the 50% threshold. An applicable trading ratio and adjustment factors would apply only to the amount of phosphorus loading removed above the 50% threshold. The Commission determined that providing trading for other types of situations was unwarranted at this time due to the non-attainment of water quality standards.

Fourth, the trading program in 72.5(3)(g) also provides for a minimum trading ratio of two pounds of nonpoint source phosphorus for one pound of point source phosphorus. All trades will be subject to this minimum trading ratio. The 2:1 ratio is intended to assure that trading assists in making rapid progress toward attainment of the chlorophyll-a standard. This subsection requires that prior to determining the final trading ratio, adjustments must be made to assure that the phosphorus reductions generated from a nonpoint source project that are to be traded for additional loadings from a point source must be comparable in terms of the soluble or particulate form of the phosphorus. Point source discharges are generally high in soluble phosphorus and nonpoint source project-related load reductions to be utilized for a trade to a point source must provide a comparable level of soluble phosphorus removal before the trading ratio would be applied. The Commission was persuaded that soluble phosphorus poses a significantly greater risk to the trophic status of the reservoir than does particulate phosphorus, in part due to the large surplus of soluble phosphorus currently in the watershed. Soluble phosphorus is a more readily available nutrient for algae in the reservoir than is particulate phosphorus.

Additionally, this subsection requires that the fate and transport characteristics of the phosphorus traded from a nonpoint source project are similar or pose a greater risk of impact upon the reservoir than the phosphorus loading to be discharged from the point source receiving the credit. One potential example of the application of the adjustment factors follows:

Total Phosphorus removed by a nonpoint source project=100 lbs.

Of the 100 lbs. 'P<sup>tot</sup> , 30% is soluble. The phosphorus discharged from the point source is virtually all in the soluble form. The amount of tradable phosphorus prior to the application of the trading ratio is 30 lbs. The point source discharge and the nonpoint source project site are similarly situated relative to the reservoir (i.e. similar fate and transport characteristics for the soluble phosphorus and no adjustment is needed). After application of the trading ratio the nonpoint source project could generate a 15 lb. credit for the point source.

Generally, when the point source discharge and the nonpoint source project site are similarly situated relative to the reservoir, or the nonpoint source project site is closer to the reservoir than the point source discharge receiving a credit, the conservative assumption is that the fate and transport characteristics for the comparable phosphorus load is similar and that no adjustment is needed. Adjustments based on the fate and transport characteristics of the phosphorus to be traded require the application of scientific professional judgement when the point source discharge is further away from the reservoir than the nonpoint source project location that is generating phosphorus credits. Adjustments must also consider the differences in time of travel and loading rates between surface water sources and groundwater sources of phosphorus. After the adjustment for the form of the phosphorus is made, the phosphorus trading ratio may be adjusted up to 3:1 if the nonpoint source project site is significantly further away from the reservoir than the point source discharge. Similarly, the trading ratio may be adjusted up to 3:1 if the time of travel to the reservoir of the phosphorus removed by the nonpoint source project is significantly longer than the time of travel of the phosphorus discharged by the point source.

Section 72.5(3)(h) has been expanded to require that prior to the Authority approving a trade, certain minimum criteria must be submitted. These criteria are used to determine that the regulatory and technical requirements of the proposal have been met, and then can be used in calculating the amount of trading credits.

The Trading Pool has been recast as Phosphorus Bank in Section 72.5(3)(i) of the revised control regulation. The Phosphorus Bank would allow entities to store pounds of phosphorus or to credit pounds of phosphorus to other entities. The value, in terms of pounds of phosphorus, of a nonpoint source project constructed by an entity other than the Authority can not be finally determined until it is evaluated in the context of a specific trade. Only in that specific context can the adjustment factors upon the trading ratio be applied properly. When the Phosphorus Bank is utilized to store pounds of phosphorus credited to an entity, the entity retains the rights to utilize the pounds or trade them to another entity. The Commission urged a measure of caution upon those who would intend to bank phosphorous credits for a long period. If necessary to attain the chlorophyll-a standard, future revisions of this control regulation



may result in a reallocation or reduction of phosphorous credits from the Phosphorous Bank, as well as from the allocations for point and nonpoint sources in the watershed.

The Commission expects that in cases where an entity has acquired phosphorus credits but no longer has a need for them, the entity will either retire the credits for the benefit of water quality in the reservoir or establish a price for the credits that bears a reasonable relationship to the cost it incurred in obtaining the credits and the value of such credits as reflected by other similar and contemporaneous trades.

Sections 72.5(3)(j) and (l) require that nonpoint source trade credits be retained only if continued performance of phosphorus removal is demonstrated. Projects that are not functioning continually can be removed as an acceptable trading basis.

## **72.6 Nonpoint Source Nutrient Controls**

Section 72.6 previously identified the choice and implementation of nonpoint source BMPs by local governments. Section 72.6 has been revised by identifying the areas of Nonpoint Source Best Management Practices, Public Information and Education, Additional Prohibitions and Precautionary Measures, and Floodplain Preservation Areas And Conservation Easements as components of nonpoint source nutrient controls. The Commission determined that the adoption of these nonpoint source controls will assist in complying with the Total Maximum Annual Load and the attainment of water quality standards for Cherry Creek Reservoir.

The revisions emphasize that Best Management Practices (BMPs) are to be chosen and implemented by entities that are responsible for activities or facilities that cause or are expected to cause nonpoint source pollution. The Authority is to submit a list of nonpoint source projects for construction during the next 3 to 6 years to the Division as a means of demonstrating that reasonable progress is being made to reduce phosphorus loading in the watershed. The projects are identified in the Authority's Cherry Creek Watershed Plan 2000 Appendix M – Stormwater Quality Drainage Plan. The regulation also identifies that responsibility for long-term operation and maintenance of nonpoint source projects by the Authority lies with project owners, with oversight by the Authority. Agricultural and silvicultural BMPs were also recognized, but are restricted based on the prerequisites in the Colorado Water Quality Control Act. The Commission recognizes that individual sewage disposal systems are a contributing source of nutrients to the watershed. Local governments and the Division are to encourage existing individual sewage disposal systems and new development to connect to central wastewater facilities.

The revisions require that a public information and education program be developed and implemented by the Authority. The Commission recognized that public information and education is recognized as an effective means to address nonpoint source pollution impacts associated with rapidly urbanizing areas. This feature will coincide with the information and education features required in the stormwater permitting requirements section.

The revisions identify that the Commission may consider the adoption of future prohibitions or precautionary measures if voluntary controls on nonpoint sources are not effective in reducing phosphorus loads and attaining water quality standards. Several potential nutrient sources in the watershed are identified for possible consideration of additional control in the future.

The revisions identify that floodplain preservation areas and conservation easements be included as a nonpoint source control mechanism. The Commission recognizes that the protection of riparian areas along Cherry Creek and its tributaries will assist in preventing future nutrient loading to the reservoir, and provide greatly needed recreational and aesthetic value to the watershed. The Commission also recognizes the difficulty in quantifying the amount of phosphorus loading reduction from these actions. The results of these nonpoint source control actions should be included as part of the TMAL Margin of Safety factor to facilitate progress towards attaining water quality standards in the reservoir.

## **72.7 Stormwater Permit Requirements**

### **Non-Point Sources**

The revised control regulation includes changes to the section on non-point sources. The original definition of non-point sources included all stormwater runoff. Since the time it was originally promulgated, some stormwater sources are now regulated as point sources. These include most manufacturing, construction sites, and discharges from municipal separate storm sewer systems (MS4s). The definitions have been changed to reflect this distinction, including a definition for 'regulated stormwater'. However, due to lack of data, it was not feasible to separate out the regulated stormwater portion of the waste load allocation that was initially allocated to all non-point sources. This allocation is now designated for the combination of non-point sources and regulated stormwater discharges in the watershed.

### **Phase II Stormwater Regulations**

The stormwater provisions of the regulation are based on several sources. First, the Phase II stormwater regulation as part of Regulation 61 was recently adopted by the Commission. It lists six minimum control measures that the regulated MS4s must implement once they are required to apply for a permit. These requirements are cross-referenced in this control regulation, and include Public Education, Public Involvement and Participation, Illicit Discharge Detection and Elimination, Construction Site Stormwater Runoff Control, Post-Construction Stormwater Management in New Development and Redevelopment, and Pollution Prevention/Good Housekeeping for Municipal Operations. The municipalities with MS4s that drain into the basin will be required to have permit coverage for those discharges that will include developing programs to cover these six measures.

In addition to the basic measures, this control regulation incorporates more detailed requirements under the Public Education, Construction, and Post-Construction Minimum Measures. The provisions of Regulation 61 concerning the six minimum control measures still apply to permittees covered by this Control Regulation. This includes the standard for permit compliance that stormwater management programs reduce the discharge of pollutants to the maximum extent practicable (MEP).

The Public Education additions require a focus on significant sources of nutrients. The additional requirements for Construction and Post-Construction are based on recommended procedures outlined in the Authority's Cherry Creek Reservoir Watershed – Stormwater Quality Model Stormwater Ordinance, Revised Version April 19, 2001. In the control regulation, the procedures are mandatory rather than recommended.

The Model Ordinance contains extensive detail when describing the BMPs and other requirements. The control regulation includes the major elements, but not the extensive details. The Division will include many of these detailed requirements in the general permit.

The Model Ordinance was reviewed by the Division and compared to the control regulation stormwater requirements. With the exception of specific issues addressed below, it was determined that a MS4 stormwater permittee required to comply with Section 72.7 that adopts the Model Ordinance as an enforceable program will be in compliance with the requirement in Regulation 61 to develop construction (Section 61.8(11)(a)(ii)(D)) and post construction ((Section 61.8(11)(a)(ii)(E)) programs, as well as the Sections (72.7.2(b) and 72.7.2(c)). The Commission's acceptance of this version of the Model Ordinance is in no way intended to relieve MS4s that adopt the Model Ordinance from the additional requirements in Regulation 61 to implement and enforce their programs. To the extent required in Regulation 61 and this control regulation, this includes, but is not limited to, developing procedures and regulatory mechanisms for:

- 1) requirements for construction site operators to control wastes (61.8(11)(a)(ii)(D)(II)(c));
- 2) site plan reviews (61.8(11)(a)(ii)(D)(II)(d);

- 3) receipt and consideration of information submitted by the public (61.8(11)(a)(ii)(D)(II)(e));
- 4) inspections of construction sites and enforcement of control measures (61.8(11)(a)(ii)(D)(II)(f));
- 5) a program to designate industrial and commercial facilities for additional post construction BMPs (72.7.2(c)(7)(i));
- 6) procedures to ensure long-term operation and maintenance of post-construction BMPs (61.8(11)(a)(ii)(E)(II)(c)); and
- 7) enforcement (61.8(11)(a)(ii)(D)(I) and 61.8(11)(a)(ii)(E)(I)).

Specific requirements of the control regulation that still must be addressed outside of the requirements in the Model Ordinance include the following:

- 1) The Model Ordinance does not include requirements found in 72.7.2(b)(5)(ii)(B) to require temporary seeding year round when practicable and permanent seeding when areas will remain disturbed for an indeterminate time. The MS4 may adopt these requirements subject to the allowable variances in 72.7.2(b)(5)(ii)(B)(III).
- 2) The Model Ordinance does not include a requirement for the MS4 to require construction sites to be inspected at least every 14 days (72.7.2(b)(5)(iii)(A)(I)).
- 3) The Model Ordinance does not address the need for BMPs to prevent pollution, contamination, or degradation of all state waters, therefore requiring at least a certain level of stormwater BMPs prior to discharge into state waters.
- 4) The Model Ordinance includes language indicating that use of specific BMPs listed in section 72.7.2(c)(6)(ii) and 72.7.2(c)(8)(i) is optional. These BMPs are required by this Control Regulation unless an alternative BMP is approved as allowed for in the same sections.

These modifications could occur when the Model Ordinance is adopted by the MS4, or at least by the permit deadline in the first term of the MS4's municipal stormwater permit, in order to comply with Regulation 61 and this control regulation.

In addition, the Division maintains the right to require additional measures from MS4 permittees if needed to comply with the requirements of Regulation 61, this control regulation, or other State requirements.

The regulation does not include a reference to any standard manuals for specifications on BMPs. However, it is expected that all BMPs used for permit compliance will adhere to established engineering standards, such as are used in the Urban Drainage and Flood Control District's Volume 3.

The Commission promulgated these stricter requirements due to the issue of phosphorus loading in the basin. The more detailed requirements are for BMPs that, in most cases, directly or indirectly impact the amount of phosphorus entering state waters.

The procedures under Construction and Post-Construction in the Model Ordinance were incorporated into the control regulation with some changes. The most significant ones are as follows:

- the organizational structure was changed to increase flexibility on the part of the MS4;
- the MS4 was given the option of allowing additional exclusions from the program requirements, although some additional exclusions may require Division approval;
- the list of required BMPs was included, but the MS4s were given the option of limiting the list;

-the MS4s were also given the option of including additional and/or alternative BMPs if they have been shown to have similar nutrient removal capacities;

-the section on Post-Construction requirements at industries was changed to clarify that the MS4 has the ability to designate commercial or industrial sectors with a high pollution potential as requiring compliance with Post-Construction measures; and

-for the requirements of the post-construction minimum measure, BMPs must be required prior to discharge to state waters in compliance with Regulation 61 to protect the water quality of all state waters, including those between the site of development/redevelopment and Cherry Creek Reservoir. However, the additional requirements for control of phosphorus in Cherry Creek Reservoir, which go beyond those in Regulation 61, may be addressed through regional facilities located after the stormwater has discharged into state waters, but prior to discharge into Cherry Creek Reservoir.

As in the development of the Post-Construction measure in Regulation 61, concerns have been raised regarding the word 'ensure' in this section under the control regulation. The standard for permit compliance for MS4 stormwater permits is that municipalities ensure maintenance and operation of BMPs to the maximum extent practicable (MEP). In determining if an MS4 has complied to the MEP, the Division may consider such factors as the adequacy of the MS4's post-construction program, its ability to require that the necessary actions be performed by the responsible parties, how the MS4 has carried out the post-construction program, and, if necessary, the MS4's ability to provide appropriate mechanisms to ensure such maintenance and operation. The specific issue has been raised dealing with the extent of the legal ability of certain public entities, such as special districts, to adopt or implement certain requirements of this regulation and Regulation 61 due to their lack of land use approval authority. The Commission does not believe it would be prudent to create an express exemption from all regulatory requirements for such entities. The Commission intends that the Division will make such determinations on a case-by-case basis under the "MEP" standard as part of the application review process, or when drafting the MS4 permit, taking into consideration the legal authority of the applicant in light of each relevant program requirement. If handled within the permit, liability for portions of the minimum control measures may be removed from some MS4s that do not have legal authority for implementation if another MS4 is covering those portions with a qualifying program.

It is expected that the MS4 will put into place procedures, ordinances or other regulatory mechanisms that will require, to the extent allowed by State and local law, that BMPs be appropriately designed and planned, and provide for enforceable operation and maintenance by the owner/operator. Factors such as the extent of the inspection/verification system, and the procedures in place and implemented for instances when BMPs are not operated and/or maintained, can be evaluated by the State to determine if the MS4's program meets the MEP standard. Facilities such as special districts that may operate regional stormwater facilities under Intergovernmental Agreements with their respective municipal or county governments are expected to include provisions in those agreements for county municipality assistance in abiding by any regulatory and permit requirements that may be beyond their own statutory authority.

#### Area of Stormwater Permit Coverage

Many of the MS4s affected by the control regulation have discharges both into and outside of the watershed (i.e., into other drainages). The more detailed requirements in the control regulation will only apply to the discharges into the watershed. MS4s have the option of applying them jurisdiction-wide, but this will not be a requirement.

#### Basin Authority's Permit Status

The question was raised as to whether or not the Authority itself would require permit coverage under the Phase II stormwater regulation. As per the federal regulation, the Authority does meet the definition of a municipality. The question then becomes, does the Authority have a storm sewer system, as defined in Regulation 61. The Division has determined that at this time, the Authority does not own or operate an

MS4. However, if circumstances change, the Division reserves the right to require the Authority to apply for permit coverage.

**72.8 Nutrient Monitoring**

The control regulation previously included a section for monitoring of phosphorus from both point sources and nonpoint sources in the Cherry Creek Basin (Section 72.7). The purpose of the monitoring program was to determine phosphorus loadings from point sources, and phosphorus removal efficiencies of nonpoint source controls.

Section 72.8 has now been revised to encompass monitoring of nutrients, rather than only phosphorus. In the past, the main emphasis of watershed studies related to nutrient transport has been on the development of monitoring programs that provide information on total annual transport of phosphorus at various points along the main stem of Cherry Creek, and monitoring of trophic-state variables for Cherry Creek Reservoir. This section also has been expanded to identify the roles of the Authority, the Division, and other agencies in developing monitoring plans. The Commission decided that the monitoring program should continue as expanded, and include an emphasis on nitrogen as well as phosphorus.

Section 72.8 now includes the development and implementation of special studies, in addition to routine monitoring. Monitoring by itself is insufficient as the sole basis for a long-term program whose objectives are to document the validity of mass transport and reservoir trophic state modeling, and to identify environmental mechanisms that have an effect on water quality. The Commission agreed that routine monitoring will be combined with special studies having one or more specific objectives involving information that cannot be obtained from routine monitoring.

**72.9 Reporting**

This section previously required reporting on control of nonpoint sources and monitoring of phosphorus to the Commission under three separate sections. The revisions have combined all reporting requirements into Section 72.9. The revisions require an annual report with specific information on point and nonpoint source controls, wasteload allocations, trading program, and other activities related to complying with the TMAL and attaining water quality standards. The Division and Commission will use this information in assessing the progress of the Authority.

**72.10 Commission Review**

This section previously required an annual report to demonstrate progress towards control of nonpoint sources. The revisions require a report at each triennial review on the progress of point and nonpoint source controls and effects on the reservoir. Recommendations can be made to the Commission at this time, and the Commission can adjust the TMAL load allocations, the Trading Program, and other requirements to assure that progress is being maintained.

**PARTIES TO THE RULEMAKING**

1. The Cherry Creek Basin Water Quality Authority
2. The City of Greenwood Village
3. Roxborough Park Metropolitan District
4. Plum Creek Wastewater Authority
5. Colorado Division of Wildlife
6. Arapahoe County Water & Wastewater Authority
7. The City of Thornton
8. Denver Regional Council of Governments
9. Clean Water Action
10. United Citizens of Arapahoe Neighborhoods
11. Chatfield Watershed Authority

12. U.S. Environmental Protection Agency, Region VIII
13. The City of Westminster
15. Sierra Club
16. Warm Water Coalition
17. Cherry Creek State Park
18. Colorado Trout Unlimited

## **72.26 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE (September 2004)**

The provisions of 25-8-202(1)(c), and (2) and 25-8-205, C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted, in compliance with 24-4-103(4) C.R.S., the following statement of basis and purpose.

### **BASIS AND PURPOSE**

#### **72.2 Definitions**

“Individual sewage disposal system” has been amended to include wastewater, not just sewage. Commercial or industrial systems or facilities producing less than two thousand gallons per day would be included under this definition. Systems or facilities producing two thousand gallons or more per day are considered wastewater facilities and required to have a Colorado Discharge Permit System permit.

“Industrial process wastewater sources” previously described construction dewatering as an industrial process wastewater source, and later in the paragraph it was specifically excluded as an industrial process wastewater source. It was the Commission’s intent under this definition that construction dewatering be regulated as an industrial process wastewater source.

“Land disposal” was refined to make it more clear that no treatment is intended for pollutant-containing waters that are applied to land for disposal.

“Phosphorus Bank.” The language was amended to reflect that trade credits could be voluntarily assigned to the Phosphorus Bank. Also, it clarifies that the project proponent retains control over the transfer or use of their credits held in that Phosphorus Bank.

“Reserve Pool” now specifically defines that this “pool” consists of those phosphorus pounds available from historic Authority nonpoint source projects.

#### **72.3 PHASE 1 TOTAL MAXIMUM ANNUAL PHOSPHORUS LOAD ALLOCATIONS**

The 2000 version of this regulation included an allocation of 216 pounds of phosphorus in the Phosphorus Bank that was accounted for in the “Wastewater Facility Sources” allocation. That 216 pounds was intended to be available as credits in the Trading Program described at 72.5(3).

Since the last rulemaking hearing, the Authority proposed that the 216 pounds allocated in the Phosphorus Bank for trading limited the success of the Trading Program and that the Trading Program should not be limited to this allocation. The primary goal of the Trading Program is to encourage construction of phosphorus reduction projects. The incentive to the creators of the projects is the receipt of trade credits to use, transfer to an allocatee, or retire. Therefore, the 216 pound cap on the Trading Program trade credits accounted for in the Phosphorus Bank severely limited the efficacy of the Trading Program. EPA’s Trading Policy (2003) does not suggest that the amount of trades should be so limited. Because trading reduces total loading within the Cherry Creek Watershed, trading should not be restricted. Because trading will always be within, and actually result in loads less than the TMAL of 14,270, no modifications to the TMAL are necessary.

All parties agreed with this concept, and the Commission revised the provisions in the Phosphorus Bank to eliminate this limit. The 216 pounds of phosphorus are now accounted for in the Nonpoint and Regulated Stormwater Sources allocation.

Language here, and in subsequent sections, has been changed to make it clear that the Trading Program as described in 72.5(3), and Temporary Transfers as described in 72.4(3) are processes to authorize awards of phosphorus pounds and that the Reserve Pool and the Phosphorus Bank are places where phosphorus pounds do, or could reside.

Language has been added that describes how phosphorus pounds are accounted for in the various allocations as transfers of these pounds occur. For example, as trading credits are awarded for projects reducing nonpoint source pounds, the point sources that purchase or trade for those credits will receive increased wasteload allocations, an amount dependent on the approved trade ratio. The minimum trade ratio for a nonpoint source/point source trade is 2:1. Therefore, for every two pound decrease in the nonpoint source / stormwater loads, a maximum of a one pound of increase in a phosphorus wasteload allocation can be made.

The list of activities to provide reasonable progress in attaining water quality standards and support revisions to the TMAL identified in the 2000 version of this regulation has been amended to eliminate the association of an activity with a particular year. The list is now comprised of activities that are complete, are in progress, and that are future activities. Language has been added that requires the Authority to submit an updated list of activities and their priorities annually in their annual report to the Division. These changes allow more flexibility in planning and conducting activities according to new information that is gathered in understanding the needs of meeting water quality standards for the reservoir.

#### **72.4 WASTEWATER FACILITY WASTELOAD ALLOCATIONS AND EFFLUENT LIMITATIONS**

The table in this section describing point source allocations has had the allocation for Phosphorus Bank removed as described above.

The table also reflects the transfer of phosphorus pounds from the Semi-urban Areas allocation to Plum Creek Wastewater Authority and the City of Aurora pursuant to 72.4(3).

The 2000 version of this regulation limited the ways that dischargers in the basin could determine return flow factors for land application sites. The Commission revised this section such that the regulation is more flexible in how return flow factors are determined. In order to ensure consistency with water rights, this version has been amended to require return flow factors to be determined from a decreed augmentation plan where one exists. For sites with no approved augmentation plan, return flows may be determined from an available study of return flow factors, upon approval of the Division. As a third option, the discharger may use lysimeters to determine a monthly volume discharged at each land application site using a formula described in section 72.4.5(c).

Under the first two options, the phosphorus concentration limitation would be calculated by dividing the 0.05 mg/l limit that applies to surface water discharges by the return flow factor. For example, if an augmentation plan was based on returning 20% of the land applied flow to the ground water system, the concentration limitation for phosphorus for that land application system would be  $0.05 \text{ mg/l} / 0.20 = 0.25 \text{ mg/l}$ . Where a return flow factor is used, the limitation is applied at a point prior to the effluent being land applied. This point could be at any location after the final treatment unit at the wastewater treatment facility and up to the sprinkler head at the land application site. Measurements of the amount of return flow from lysimeters would not be used by the Division to develop a return flow factor unless it is at the request of the permittee pursuant to an approvable study as required in 72.4.5(b).

Where lysimeters are used to determine the amount of applied flow returned to the ground water, the Commission determined that a limitation of 1 mg/l, to be applied prior to land application, is appropriate. This represents a phosphorus concentration that can be reliably achieved by a treatment facility

employing biological nutrient removal. This is seen as a reasonable level of treatment given that it is generally commensurate a minimum concentration that permittees would have to meet in order to remain within their wasteload allocation. In some cases, a higher level of treatment may be required depending upon how much phosphorus is projected to be removed by the plants and the underlying soils at the land application site.

In most cases, removal is more a function of application at agronomic rates than soil conditions and phosphorus that is not driven below the root zone by heavy precipitation or over application should be taken up by the plants. The Commission assumes that an agronomic uptake analysis would be completed as part of the design of a land application system and that it would include representative characterization of the soils at each site to accurately estimate removal in the soil matrix and/or appropriate adjustments to the period/method of application where sandy soils are present.

## **72.5 POINT SOURCE WASTELOAD ALLOCATION MODIFICATIONS**

The previous version of this regulation at 72.5(3)(j) discussed the sale of phosphorus pounds out of the Phosphorus Bank and revenue received by the Authority from such sale. The Authority is only authorized to sell pounds out of the Reserve Pool, and this language has been moved to 75.5(2)(e) which is the section that discusses the Reserve Pool.

The regulation has been amended to eliminate the ceiling on the trading ratio of 3:1 that was in place previously. This was done to provide for more flexibility when approving trading requests. This could allow a trade to be approved at a higher trade ratio, that may not been acceptable with a maximum trade ratio of 3:1 in place.

## **72.6 NONPOINT SOURCE AND INDIVIDUAL SEWAGE DISPOSAL NUTRIENT CONTROLS**

The title of this section has been modified to include Individual Sewage Disposal because of the paragraph now included discussing limitation on construction of new individual sewage disposal systems, which are considered to be point source discharges.

At the 2003 Triennial Review hearing, the Commission raised concerns about the installation of new individual sewage disposal systems especially in proximity to Cherry Creek and alluvial groundwaters.

A study of ISDS showed that seepage from ISDS within the flood plain/alluvial zone was not attenuated and readily reached Cherry Creek waters.

In order to address this concern, and in order to protect water quality and public health, the Authority and the Division proposed language to prohibit construction of new individual sewage disposal systems within the 100 year flood plain of Cherry Creek watershed in Arapahoe and Douglas counties as designated by Urban Drainage and Flood Control District (UDFCD), or the Federal Emergency Management Agency if no UDFCD designation exists. Arapahoe and Douglas Counties testified that each had zoning regulations which prohibited construction, including ISDSs, within the floodplain. Therefore, this restriction will establish a consistent watershed-wide policy. It is not the intent of the Commission to restrict owners of existing ISDSs within the Cherry Creek flood plain from making improvements to the operation of, or replacing the existing, ISDSs.

A meeting of stakeholders in the Cherry Creek Basin was held on August 3, 2004 specifically to discuss this restriction on ISDSs. A primary concern that was raised at the meeting was that the regulations on construction of ISDS within the floodplain should be consistent among all agencies. This language creates that consistency.

## **72.7 STORMWATER PERMIT REQUIREMENTS**



Land Disturbance activities were restricted to the exposure of 40 acres or more of disturbed land for 30 consecutive days. Under the revision, the MS4 Permittee will now be allowed to authorize an exemption from the 40-acre limit when that limit is demonstrated to be physically or financially impracticable, upon a showing by the Owner that sufficient erosion control BMPs will be incorporated. The Owner must provide detailed plans on earth moving activities, phasing plans, and erosion and sediment control plans, above and beyond what would normally be required, thus providing the kind of protection usually achieved by the phased construction restrictions. This exemption will be utilized for developments where the design and grading requirements make the 40 acre/30 day disturbed land limitation unfeasible, such as master planned golf course communities and public works projects. The waiver from this requirement may not be applied for the sole purpose of conserving resources (e.g., limiting mobilization days for graders).

The requirement in section 72.7.2(c)(5)(ii) for the submission of inspection and maintenance information for BMPs has been modified to harmonize with the processes of reviewing and accepting land development proposals. The new requirement is that the applicant MUST submit procedures for BMP maintenance and dedication of easements. It is common for land disturbing activities to commence some time between the county's acceptance of an erosion control plan and the final acceptance of the full development proposal. Likewise, easements cannot be properly recorded in accordance with the final site design until the final site improvement plans are completed. The revised language in this section clarifies that the applicant must plan for BMP maintenance and easement dedication early in the development process, but may begin certain preliminary construction activities before the finalization of these plans.

The language in section 72.7.2(c)(6)(ii)(B) has been changed to allow flexibility in the implementation of porous pavement detention and porous landscape detention in combination with a grass swale, instead of requiring the grass swale to precede the other BMPs.

#### PARTIES TO THE RULEMAKING

1. The Cherry Creek Basin Water Quality Authority
2. Plum Creek Wastewater Authority
3. Tri-County Health Department

#### **72.27 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: MARCH 10, 2009 RULEMAKING; FINAL ACTION AUGUST 10, 2009; EFFECTIVE DATE JANUARY 1, 2010**

The provisions of 25-8-202(1)(c), and (2) and 25-8-205, C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted, in compliance with 24-4-103(4) C.R.S., the following statement of basis and purpose.

At the same time that these changes were adopted in Regulation #72, the Commission adopted consistent changes in Regulation #38, Classifications for Numeric Standards, for South Platte River Basin, Laramie River Basin, Republic River Basin, Smoky Hill River Basin (5 CCR 1002-38).

#### **BASIS AND PURPOSE**

As a result of the data and analyses brought forward as part of the March 2009 Rulemaking Hearing, the Commission revised the Reservoir Control Regulation, adopting with relatively minor changes revisions proposed by the Cherry Creek Basin Water Quality Authority. The Commission rejected revisions proposed by the Parker Water and Sanitation District. This statement provides an analysis of the basis and purpose for changes to each of the major sections of the control regulation. The major substantive revisions include removal of all TMAL related components from the regulation, establishment of a concentration-based watershed management approach for phosphorus control, establishment of a discharge effluent limit of 0.20 mg/l for drinking water treatment facilities in the Basin, and establishment of a three-tiered stormwater system for development and redevelopment.

## **Background and Overview**

Based on the 2000-2001 rulemaking hearings, the Commission established and maintained a phased phosphorus TMAL of 14,270 pounds for the Cherry Creek Reservoir, with allocations of the TMAL divided among nonpoint point sources, background sources, wastewater facility sources, industrial process wastewater sources, and individual sewage disposal systems.

Under the 2001 revisions, the Commission directed the Cherry Creek Basin Water Quality Authority (Authority) to proceed expeditiously in implementing both technology and information based controls necessary to meet the new water quality standards and protect the designated uses. The Commission further noted that additional investigations would be necessary to support the calculation of a new TMAL, understanding that additional point source and nonpoint source control efforts would be necessary in the future. To this end, the Authority and its member agencies completed fourteen special studies, collected monitoring data, constructed and maintained Pollutant Reduction Facilities (PRFs), improved water quality facilities in Cherry Creek State Park and surrounding sub-watersheds, and worked closely with interested parties in the watershed to control phosphorus in the Cherry Creek Basin (Basin).

At the same rulemaking hearing, the Commission also retained a Total Maximum Annual Load (TMAL) of 14,270 pounds of total phosphorus to the Reservoir provided in Regulation #72, with a consideration that this be a "phased TMAL" while the Authority completed the requested studies. An inflake phosphorus goal of 40 ug/L (July through September seasonal average) would result in the attainment of the chlorophyll a standard.

The Authority has provided data to the Commission and Water Quality Control Division (Division) from studies conducted since 2000 indicating that the concentration of phosphorus in Reservoir inflows has a more direct correlation to chlorophyll a levels in the Reservoir than does the phosphorus load. As a result, by controlling total phosphorus through a management strategy approach at the inflow to the Reservoir, it is expected that water quality will continue to improve in the Reservoir.

## **Definitions**

The following changes or additions were made to terms of general applicability. The definitions "Concentration," and "Concentration Based Control of Phosphorus," "Enhanced BMP," "Flow Weighted Concentration," and "Pollutant Reduction Facility" were included to explain the use of those terms in Section 72.3 concerning the Authority's approach to control phosphorus in the watershed and ultimately in Cherry Creek Reservoir. The definitions of "Phosphorus Bank," "Reserve Pool," "Trading Ratio," "Trading Program," and "Wasteload Allocation" were stricken from the regulation, since a concentration-based approach to phosphorus control is not based on mass of phosphorus removed. Additionally, definitions and terminology have been modified to consistently reflect the move from a load-based to a concentration-based approach to phosphorus control.

## **Removal of TMAL Requirements**

The Commission recognizes that the appropriate designated projects conducted to support Phase I of the TMAL program have been completed and therefore struck those requirements from the regulation. Additionally, based on comments received from EPA and the Division, the Commission struck all Total Maximum Annual Load (TMAL) language from Regulation #72 (Control Regulation). As necessary, the Commission will direct the Division and the Authority to work with EPA in developing a separate TMAL document for the Reservoir.

## **Concentration-based Management Strategy for Phosphorus Control in the Basin**

The Commission revised this section to recognize the Authority's ongoing phosphorus control measures in the Cherry Creek watershed. Watershed and reservoir modeling results have shown that, although population growth and surface flows have increased in the Basin, the total phosphorus concentration in

the inflow to the Reservoir has remained relatively constant. These results provide a basis for the Commission to conclude that point and nonpoint source controls for total phosphorus (point source treatment facilities, PRFs, 208 agency processes, and permitted MS4 activities) are successfully reducing total phosphorus concentrations in stormwater and surface water flows to the Reservoir.

This Section also includes additional language to clarify that concentration-based source control projects address both nonpoint source projects and regulated stormwater projects. This Section further deletes TMAL related language. Finally, definitions and terminology have been modified to consistently reflect the move from a load-based to a concentration-based approach to phosphorus control.

### **Point Source Effluent Limit Modifications**

Based on the evidence provided during this hearing process, the Commission has revised this section to be consistent with the current Reclaimed Water Control Regulation, Regulation #84. It has also concluded that it was appropriate to set a phosphorus concentration limit for any effluent discharged in connection with drinking water treatment equal to that of the source water. Therefore, this section was revised to include a phosphorus concentration limit of 0.20 mg/l for any effluent discharged in connection with drinking water treatment.

In light of the slight phosphorus concentration variability observed in the Cherry Creek alluvium, the Commission has revised this section to authorize the Division, at the request of permittees, to allow up to a 90-day averaging period for this limit in individual CDPS permits. This provides flexibility to those dischargers that wish to request a longer averaging period and is consistent with the approach used to translate other water quality standards into effluent limits.

In this section 72.4, the Commission revised this section to recognize that wasteload allocations are not an appropriate approach to phosphorus control in the Cherry Creek watershed for the control of chlorophyll *a* in the Reservoir. Language in this section, and throughout Regulation #72, has been changed to clarify the Authority's approach to phosphorus control and to remove TMAL related language. References to the phased TMAL, the Trading Program, and mass-based control of phosphorus have been stricken and replaced with the Authority's approach to phosphorus control, to be consistent with revised Section 72.3. Additionally, definitions and terminology have been modified to consistently reflect the move from a load-based approach to a management strategy approach to phosphorus control.

Because section 72.5 now implements a concentration-based phosphorus control management strategy in the Cherry Creek watershed, the Commission finds that the current trading program is no longer applicable as written. Accordingly, the Commission has stricken the language in this section, but leaves the section as a placeholder for future consideration.

### **Stormwater Permit Requirements**

The Commission's 2001 revisions to the stormwater permitting requirements in section 72.7.2(c)(6)(i) required installation and operation of Best Management Practices (BMPs) that provide water quality capture volume (WQCV) for "all areas of land disturbance." The Commission acknowledges that over the past eight years, the practical outcome of this revision required that detention ponds, normally designed to reduce developed runoff peak flows to pre-developed levels, also include additional volume and outlet controls that would capture and detain normal runoff for up to 40 hours to reduce sediment and nutrient load discharges from the detention ponds.

Several new definitions were included to correspond with the recent revisions to Regulation #61 (5 CCR 1002-61). These definitions are intended to clarify the distinction in the application of PRFs and BMPs for various categories of sources. References to load were replaced with concentration. Titles have been added to several subsections in the regulation for references to other subsections for clarification. In some cases, the Commission finds that modifications and subsection reformatting efforts were warranted to provide further clarification. These efforts do not result in any substantive change to the subsections.

The remaining substantive revisions to the stormwater permit requirements revolve around the post-construction development and redevelopment requirements outlined in Regulation #61 (5 CCR 1002-61) and stream preservation area considerations. For post-construction development and redevelopment, the Commission adopts a three-tiered approach to stormwater management BMPs to coincide with the requirements found in Regulation #61 (5 CCR 1002-61), while specifically addressing concerns within the Basin. In this vein, the Commission also replaces the previous reference to permanent BMPs found in section 72.7.2(b) with post-construction BMPs and replaces the reference to construction BMPs with erosion and sediment controls. The Commission also excluded certain limited activities identified as insignificant contributors to water quality degradation from regulation under this section.

With regard to stream preservation areas, the Authority finds that the 100-year floodplain is a reasonable and more easily administrable substitution for alluvium, since a floodplain is more precisely defined. Accordingly, the Commission incorporated language to clarify the Cherry Creek alluvium as being defined by the identified 100-year floodplain of Cherry Creek.

Over the last eight years, the Authority and permittees determined that there were certain types of land disturbances that would not result in water quality degradation and that greater flexibility in BMP selection or requirements was needed to preserve the integrity of the stream preservation area. Thus, the Commission identified specific activities where a land disturbance in a stream preservation area would not be detrimental to water quality, such as construction of a BMP in accordance with this regulation.

#### **Nutrient Controls and Monitoring, Reporting, and Commission Review**

Because this Control Regulation is no longer the source of TMAL requirements, references to the Trading Program and mass-based control of phosphorus have been stricken. Finally, definitions and terminology have been modified to consistently reflect the removal of TMAL requirements and the implementation of a concentration-based management strategy for phosphorus control.

The Commission finds it necessary for the Authority to continue to monitor and maintain all nonpoint source runoff PRFs for total phosphorus concentration controls, as well as identify opportunities to control phosphorus in the watershed to reduce total phosphorus concentrations in the Reservoir inflow. Individual monitoring of BMPs need not occur because PRF monitoring upstream and downstream of the project effectively measure the accumulative benefits of BMP implementation in the upstream watershed.

#### **Rejection of Proposal from Parker Water and Sanitation District**

Parker Water and Sanitation District proposed to modify Regulation # 72 by doubling the effluent phosphorus limits that apply to three categories of wastewater discharge – direct dischargers, land application with return flow factor, and land application with lysimeters. Parker asserted that the change would result in no “meaningful increase in the total phosphorus concentration in the Cherry Creek inflows” and “no significant difference in Reservoir chlorophyll levels.” Based on evidence submitted in this rulemaking, the Commission has decided not to adopt the Parker proposal.

The Commission decided not to adopt the proposal because the revised water quality standards depend on the conclusion that all feasible measures have been employed to control release of phosphorus from the watershed. Since the effluent phosphorus limits in the CCBWQA proposal are the same limits that have been in place for almost a decade, it is clear that dischargers have been able to meet those limits. Thus the existing limits are clearly feasible. Relaxing treatment requirements would be inconsistent with the basis for revising the standards, which is the conclusion that strict adherence to current water quality protection efforts will result in improved water quality in the long term.

#### **PARTIES TO THE RULEMAKING**

1. Cherry Creek Basin Water Quality Authority
2. Parker Water and Sanitation District

3. Colorado Division of Wildlife
4. Arapahoe County Water and Wastewater Authority
5. Meridian Metropolitan District
6. City of Greenwood Village
7. U. S. Environmental Protection Agency (EPA), Region 8
8. City of Aurora Water Department
9. Denver Water

**72.28 STATEMENT OF BASIS SPECIFIC STATUTORY AUTHORITY AND PURPOSE: OCTOBER 9, 2012 RULEMAKING; EFFECTIVE NOVEMBER 30, 2012**

The provisions of 25-8-202(1)(c), and (2) and 25-8-205, C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted, in compliance with 24-4-103(4) C.R.S., the following statement of basis and purpose.

**BASIS AND PURPOSE**

In this rulemaking, changes were made to Section 72.7 Stormwater Permit Requirements only. These changes were recommended by the Cherry Creek Basin Water Quality Authority to incorporate revised water quality control strategies based on recent studies, information and conditions. The Authority has express statutory authority to develop and revise such strategies under C.R.S. 25-8.5-111(1)(a).

The adopted changes clarify specific areas that are covered by stormwater requirements and provide consistency between State and Federal stormwater requirements. The changes are based on experience the Authority has gained in recent years, will improve the effectiveness of its Regulation 72 stormwater program, and address limited situations where the Commission believes certain BMPs are not practicable. Regulation 72 was modified to clarify that post-construction stormwater controls for new development and redevelopment can include structural and/or non-structural controls, as may be appropriate for the local situation. Use of non-structural BMPs in some cases may provide for a more effective and efficient solution to meet the overall goal of controlling pollutants and is consistent with the requirements in Regulation 61. Specifically, a new non-structural BMP, "Runoff Reduction Practices," was added to Regulation 72.7.2(c)(6), and the Large Lot Single Family Development provision that incorporates this BMP is now automatically excluded from additional post-construction BMP requirements under Regulation 72. The Commission finds that the implementation of Runoff Reduction Practices to Large Lot Single Family Development will result in infiltration of the Water Quality Capture Volume and thus not require other Regulation 72 structural post-construction BMPs and associated administrative requirements.

Similarly, the Commission has determined that it is also appropriate to exclude a limited subset of roadway projects, as defined at 72.7.1(d), from Regulation #72 post-construction requirements that it finds are not practicable for these projects. This is not intended to exclude roadway de-icing operations and drainage improvements associated with roadway maintenance. These activities would not be expected to cause increased stormwater quality impacts, as compared to pre-project conditions, as the original footprint for Excluded Roadway Projects would not be changed, and there would be no additional runoff due to the limitation on no increase in impervious area.

The Commission has also added language to Section 72.7(2)(b)(5)(ii) that authorizes MS4 permittees to modify schedules for stabilization and revegetation to allow for physical considerations adverse to stabilization or revegetation goals. This flexibility has been provided to address situations where physical constraints exist that would result in making the stabilization and revegetation schedules in Regulation 72 impracticable.

Typographical errors and cross- references were also corrected. Clarifications were made to several definitions, and language was added to ensure that Regulation 72 is consistent with the language of Regulation 61.

These changes are not intended to define “new development and redevelopment” as used in Regulation 61, nor to modify MS4 permit construction program requirements or permit requirements defined in Regulation 61. The Commission supports the ongoing efforts between the Division and the MS4 community to define “new development and redevelopment” in accordance with Regulation 61.

PARTIES TO THE RULEMAKING

1. Cherry Creek Basin Water Quality Authority
2. Colorado Stormwater Council
3. Southeast Metro Stormwater Authority
4. Douglas County
5. Parker Water and Sanitation District
6. City of Lone Tree
7. City of Greenwood Village
8. City of Aurora
9. Town of Castle Rock