



Memorandum

To **Bill Ruzzo** File no 721000012
Chuck Reid
From **Dr. F. Robert McGregor, P.E.** cc
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Date **December 12, 2007**

Subject AMEC 2007 Phosphorus Facilitator Report

Background

The AMEC support activities for the 2007 P Facilitator Program were limited to:

1. coordination of enhanced water quality management plans for the Anthology Development (formerly known as Stroh Ranch) in Parker,
2. coordination of enhanced water quality management plans for the Cornerstar Development in Aurora,
3. review of the Ridgeway Development in Lone Tree to determine the extent of their current practices that go beyond minimum Best Management Practices (BMPs), and
4. reporting to the Technical Advisory Committee on these activities.

The costs for these services were not to exceed \$10,000.

Summary of Activities

Anthology Development. AMEC worked primarily with the developer's landscape architects (DPGA Design and Nezzar Kopaz) and civil engineer (RGC Consultants) to identify a series of water quality management opportunities that could be included in the development plans.

These opportunities included:

1. construction of wetland channels in the major drainageways on the property,
2. grading of infiltration zones near the southeast corner of the property, and
3. miscellaneous retention facilities in the rights of way of Stroh and Chambers Roads consistent with earlier special roadway design guidelines developed by AMEC for the Cherry Creek Basin Water Quality Management Authority.

Due to regional economic conditions in the housing industry, the progress on submission of development applications by the owner has slowed significantly. The designs for Phase I were submitted to the Town of Parker on December 3, 2007.

The Phase 1 application included a 2,500 foot wetland channel design for Stroh Gulch that goes substantially beyond the minimum requirement of the Basin Authority. This gulch will be stabilized using 18 grouted sloping boulder (GSB) drop structures that will create a channel slope of approximately 0.5% between drop structures. The base flow channel will be planted with wetland-type vegetation, providing water quality management that goes beyond the Basin Authority's design requirements.

The bulk of the improvements to Lemon and Oak Gulches, the two largest drainageways within the property, will be included in future phases. Phase 1 included only very limited improvements in the immediate vicinity of the Stroh Road crossing of the gulch.

Wetland channel concepts similar to those included in Phase 1 for Stroh Gulch, however, were developed for Lemon Gulch and Oak Gulches. The detailed designs for these improvements are expected to occur in late 2008 and further consideration will be given to these water quality improvements at that time.

The design for Chambers Road south of Stroh Road will be included in future phases. This segment has been previously identified as the most suitable for the addition of special water quality management features that are based on the design guidelines developed for the Basin Authority by AMEC as a part of the 2006 Phosphorus Facilitator Program. This segment is more amenable to the inclusion of these special design features since it includes fewer intersections and wider corridor and buffer areas.

Cornerstar Development. This is an approximately 180 acre commercial and multi family housing development in the City of Aurora on the southwest corner of the intersection of Parker and Arapahoe roads. AMEC worked closely with Alberta Development, its design consultant (Vision Land Consultants), the Corps of Engineers, the City of Aurora staff, and Bill Ruzzo to identify opportunities for enhanced water quality management designs.

This effort resulted in the inclusion of multiple design features not ordinarily included in commercial developments:

1. careful grading of a 1,800 foot length of the riparian corridor of Cherry Creek that:
 - ✓ maintains the flood conveyance capacity of the Creek
 - ✓ retains wetland areas within the low flow channel, and
 - ✓ provides the opportunity for the natural evolution of additional wetlands along the 200 to 300 foot wide eastern shoulder of the low flow channel
2. 2 wetland detention ponds that will include a total of 2 acres of wetlands
3. a 1 acre constructed wetland equipped with flow spreaders to provide additional water quality treatment of discharges from one of the wetland detention ponds
4. 400 foot wetland channel to accept flows from Arapahoe road and the Arapahoe/Parker road interchange

Each of these design features will enhance the water quality of the stormwater discharges from the development and will meet the Basin Authority's requirements for going beyond Best Management Practices in the riparian corridor of Cherry Creek.

This development is currently under construction and the benefits of the Phosphorus Facilitator program will be visible in the near future.

Ridgegate Development. This is a large mixed use development along the I-25 corridor in Lone Tree that includes several thousand homes in the upper Cottonwood Creek and Happy Canyon watersheds, tributaries to Cherry Creek Reservoir.

Preliminary contacts have been made with TST Consultants, the contract civil engineers for Lone Tree to identify:

1. BMPs that have been required for development,
2. opportunities for practices that go beyond the Authority's BMP requirements, and
3. options for modifications to plans with representatives for the developer.

This is an ongoing effort that will probably not be completed until the end of January 2008.

Recommendations for 2008 Program

Southeast Metro Stormwater Authority. The Southeast Metro Stormwater Authority (SEMSWA) is in the process of reviewing its capital improvements program, remedial maintenance program, development fee structure, and rate credit structure. The SEMSWA service area includes significant urbanized and urbanizing areas that are in the Cherry Creek basin and close to the reservoir. Water quality considerations will be an important factor in the reviews of these programs and SEMSWA may develop and enforce new design standards that reflect the special water quality challenges in the Cherry Creek Basin.

These ongoing efforts at SEMSWA present a unique opportunity for the Basin Authority to participate with an important local agency in establishing the design practices to be followed in the Cherry Creek basin. This could be done via direct financial support and/or in kind consulting services via the Phosphorus Facilitator program. If the effort includes the development of specific design guidelines, a total budget in the range of about \$50,000 would appear to be appropriate. A 40% participation by the Basin Authority would require a budget allocation of \$20,000 by the Basin Authority via the Phosphorus Facilitator Program.

Continuation of Developer Facilitation. The ongoing activities at Anthology will likely require ongoing facilitation to assure that the initial concepts developed in earlier phases will continue to be effectively pursued during 2008. A recommended budget for this effort in 2008 is \$5,000.

The 2007 program did not include the recruitment of additional developers to participate in the program. In spite of the economic slowdown, significant development continues to occur within the watershed. The success of the Phosphorus Facilitator Program has depended heavily on early participation in the development process to successfully influence on the outcome. A preliminary budget for seeking out one new development and providing preliminary follow up via the Phosphorus Facilitator Program is estimated to be \$10,000.

Summary of Budget Recommendations for 2008. AMEC makes the following recommendations for the 2008 Basin Authority Phosphorus Facilitator budget:

Support for SEMSWA Special Water Quality Guidelines for Cherry Creek Basin	\$20,000
Continuation of Developer Facilitation	
- Ongoing support for Anthology	\$5,000
- Recruit one new developer and preliminary facilitation	\$10,000
Complete Initial Ridge Gate Review (included in 2007 budget)	\$0
Total	\$35,000

This recommended budget does not include additional activities with the Ridge Gate development in 2008. Recommendations for this potential program element will be made following the completion of the 2007 preliminary review.

Also, AMEC did not participate in other portions of the 2007 program, including land use Agency training and the Cherry Creek partners BMP workshop. Budgets for these and other activities, may be recommended by others.

Sincerely,
AMEC Earth & Environmental, Inc.



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