



PINEY CREEK MAJOR DRAINAGEWAY PLAN

Progress Meeting Minutes

November 10, 2011

Attendees:

- Shea Thomas, UDFCD
- Monica Bortolini, SEMSWA
- Bill McCormick, City of Aurora
- Hoanh Tran, City of Aurora
- Clint Weisz, City of Aurora Water Department
- Curtis Bish, Aurora Parks, Recreation and Open Space Department
- Brad Robenstein, Douglas County
- Stacey Thompson, Arapahoe County
- Lynn Cornell, Arapahoe Park and Recreation District
- Bill Ruzzo, Cherry Creek Basin Water Quality Authority
- Alan Leak, WRC Engineering, Inc.
- Nate Torrey, WRC Engineering, Inc.

A sign-in sheet and meeting agenda were distributed to attendees prior to the start of the meeting.

Selected Plan

The Selected Plan was received on October 17, 2011 and is the Notice to Proceed with the Conceptual Design phase of the project.

The Selected Plan essentially follows the recommendations made in the Alternatives Analysis report, dated August 2011, with a few exceptions and clarifications, including the following:

- Completely eliminate split flow in Reach 6 with embankment fill

Response – Acknowledged

- Revisit number and type of grade control structures in Reach 15, Antelope Creek

Response – Forty 3' grade control structures are required to achieve the design slope. The existing slope is 1.8% and the design slope is 0.64%. Recent design work on McMurdo Gulch in the upper Cherry Creek watershed implemented a reclamation plan to protect the gulch before the onset of development and severe erosion. At the meeting it was agreed that the Piney Creek Conceptual Plan will show the typical check structures along the reach and a separate discussion will be included in the text regarding the option to provide a proactive approach that may result in the need for less grade control structures.

- Include detail for water quality retrofits to existing facilities

Response - This will be included.

CONSULTING ENGINEERS

- Explain why a high-range and mid-range price was used for excavation in Table 7-7

Response - The Excavation, High Range value was used for excavation associated with the low flow channel improvements. This involves excavating, mixing soil with riprap, and replacing and is more labor intensive. The Excavation, Mid Range value was used for excavation of excessive sediment in the reach and is consistent with a typical bulk excavation and haul cost.

Review of Recommended Plan

A review of the recommended plan with specific details at certain reaches, including the following:

- Reach 2 – Parker Road Bridge, channel improvements, new drop structure upstream of bridge. The channel improvements will result in the bridge being able to pass the 100-year event. The proposed channel section beneath the bridge will drop the channel invert less than 1-ft. A proposed trail alignment will be shown with the new drop structure location. The Arapahoe Park and Recreation District has expressed interest in incorporating the trail crossing with the new drop structure.

SEMSWA and Arapahoe Park and Recreation District expressed the interest to allow bioengineered materials in place of typical bank stabilization measures.

- Reach 5 – The Farm development, restore previous channel improvements, completed in 1999, that have been buried by sediment. This includes two drop structures, a trail crossing, and soil riprap toe protection. As-built construction drawings exist for the improvements that show the extent of the work. New channel improvements are proposed upstream and downstream of the previous improvements.

UDFCD is currently pursuing a U.S. Corps Nationwide 404 permit for a sediment removal project to reclaim the original channel improvements. The goal is to present the project as a maintenance project. Any improvements upstream or downstream of the previous work will likely require an individual 404 permit.

A sedimentation pond is proposed at the upstream end of Reach 5, upstream of Tower Road and the baseball fields, property owned by SEMSWA. The sedimentation pond will have adjustable control crests at the inlet and outlet. At the inlet, all low flows and small storm events will enter the sedimentation pond. The flows will be slowed and directed through the pond by baffle structures or similar, allowing the sediment to settle in the pond. Larger storm events will bypass the pond along the current creek alignment.

UDFCD and SEMSWA have had discussions on phasing of the improvements. The desire is to get the sedimentation pond in place as soon as possible, with the channel improvements to follow. Construction scheduled to begin next year.

- Reach 6 – Piney Creek Ranches, discussion of recent channel improvements near Caley Drive and whether to continue the same type downstream. The recently constructed boulder wall at Caley Drive was necessary due to site constraints, the desire is to not have boulder walls along the creek where possible. The residents have expressed the wish to access the creek, sometimes with horses, and walls would make this difficult.

The desire is to raise the channel invert where it has been lowered due to degradation and to reclaim property lost due to erosion. The proposed improvements will need to be designed to minimize increases in the 100-year floodplain and impacts to properties. No additional structures should be shown in the floodplain as a result of the improvements.

As a result of the channel invert degradation through this reach, the residents have been experiencing fewer septic problems.

Similar channel improvements are required in Reach 7, owned by Liverpool Metropolitan District.

- Reach 8 – Aurora, Saddle Rock Golf Course. An apartment complex is inundated by shallow 100-year flooding that spills from the right bank of Piney Creek. The recommended plan is to fill the area where the spill occurs, removing the physical flooding from the development. Discussion continued regarding portions of the development being located below the 100-year WSEL and the embankment that separates the development from the 100-year floodplain. Shea stated she would speak with Bill DeGroot and Terri Fead, UDFCD, regarding this issue.

A sediment removal project is proposed along Piney Creek through this reach, extending from Gartrell Road to a point 4,000' downstream. U.S. Corps 404 permitting has been difficult. Bill McCormick stated he would obtain the model runs used for this project for incorporation into the Piney Creek Master Plan HEC-RAS model.

- Reach 9 – Red-tailed Hawk Park located adjacent to the creek. A school is also proposed for the area. There is one sheet pile drop structure located in Reach 9 that has been buried by sediment. Sheet pile drop structures have also been implemented upstream and downstream of this reach in Aurora. It was agreed that the Conceptual Design will show any proposed grade control structures as grouted sloping boulder drops for cost estimating purposes.
- Reach 15 – Antelope Creek, currently undeveloped, planned for Kings Points Development. Forty 3' grade control structures required to achieve design slope. Existing slope = 1.8%, Design slope = 0.64%.

Discussion included the recent design and construction of channel improvements along McMurdo Gulch in the upper Cherry Creek watershed. Antelope Creek and McMurdo Gulch share similar characteristics including channel slope, existing conditions imperviousness, and proposed development.

The McMurdo Gulch reclamation plan was intended to protect the gulch before the onset of development and severe erosion. The reclamation plan also required EURV for new detention ponds and EURV retrofits of existing detention ponds. The analysis and design for McMurdo Gulch anticipates that reclaiming the gulch before significant urbanization occurs may be more cost effective than stabilizing the gulch after more significant erosion occurs due to urbanization. This approach is both pre-emptive and surgical in nature. One part of the reclamation plan was to install "boulder cascades", a type of grade control, in areas currently experiencing channel degradation. Bill Ruzzo will provide the report developed for McMurdo Gulch analysis and design.

Reach 15 along Antelope Creek is currently privately owned, so a detailed site investigation was not possible. Therefore, for the purposes of this Conceptual Design Report, it is not possible to locate specific areas of channel degradation to implement site specific improvements.

It was agreed that the Piney Creek Conceptual Plan will show typical check structures along the reach and a separate discussion will be included in the text regarding the option to provide a proactive approach that may result in the need for less grade control structures. The discussion will be included in a report section entitled "Management Plan", or similar.

Discussion regarding who is responsible for construction of channel improvements, developer or City of Aurora. Bill McCormick stated that in Aurora, if the drainageway has a contributing area of more than 160 acres, the City is responsible for construction of the grade control structures.

The developer would be responsible for earthwork, erosion protection, and revegetation. Often times the City will enter into an agreement with the developer to share the cost of the improvements.

Bill also stated that the City will require EURV when the development takes place, even though the approved Final Drainage Reports did not include it (different criteria at the time).

Planned Regional Detention Ponds – Discussion on what to show from the planned regional detention ponds on the Conceptual Design Maps. Four planned regional detention ponds are included in the master plan. All are part of proposed developments and are shown in the Final and Master Drainage Reports for those developments. It was agreed that for the purposes of this Conceptual Design Report, it is not necessary to show a detailed design for these ponds, since they are part of other developments. It was agreed that the Conceptual Design Map should show the location of the ponds, Qin/Qout, and storage volume.

Schedule

Draft Conceptual Design Report to be completed in 8 weeks from notice to proceed, December 12, 2011

The FHAD was resubmitted on October 24, 2011 and is close to complete.

WRC would like to schedule another progress meeting to discuss development of the Conceptual Design Report prior to submitting the draft report. WRC will prepare dates and times for the next meeting and distribute to the project sponsors.

Meeting was adjourned at 4:30 P.M.

Minutes Developed By:


Nathan R. Torrey