

MINUTES

First Creek Tributaries

Master Drainage Plan - Alternatives

Progress Meeting, Thursday, October 24th, 2019, 2:00 pm – at Merrick

Attendees:

Name	Organization	Phone	Email
Teresa Patterson	MHFD	303-455-6277	tpatterson@udfcd.org
Sam Miller	City of Aurora	303-739-7368	samiller@auroragov.org
Craig Perl	City of Aurora	303-739-7532	cperl@auroragov.org
Sue Liu	Arapahoe County	720-874-6500	sliu@arapahoegov.com
Stacey Thompson	SEMSWA	303-858-8844	sthompson@semswa.org
Jeanne Boyle	Merrick	303-800-9036	jboyle@merrick.com
Clare Steninger	Merrick	303-800-9074	clare.steninger@merrick.com
Jennifer Goldman	Merrick	303-353-3712	jennifer.goldman@merrick.com

Meeting Objective : To discuss and clarify comments made on the draft Alternatives Analysis report.

1. Alternative Review Comment Discussion

a. Naturalized Channels

- i. The text of the report stated that the maximum average velocity must be 7 ft/s or less but a recommendation of 5 ft/s or less is preferred since there is erosive soils in this area.
- ii. However, the natural channel designs focused on getting the shear stress to be below 1.2 psf which is the more restrictive criteria. Any armoring needed for higher velocities will be determined by developers with future designs. Therefore, the natural channel designs do not need to be altered for the velocity criteria.
- iii. The reference to the velocity criteria will be removed from the text.

b. Water Quality in large watersheds

- i. A comment was made that water quality should not be included in regional ponds with tributary areas greater than 1 square mile.



- ii. Merrick will not change the stage-storage-discharge curves but will remove reference in the text and on the plans about water quality for these ponds. Merrick will add a note to the plans that they are flood-control ponds only and water quality must be provided offline.
- c. Detention Release Rates
- i. Merrick designed proposed ponds to release at 90% of historic flows. However, the criteria to release at 90% of this historic rate is for offline detention ponds, not for ones on the main stem. Releasing at 90% from offline ponds typically models the historic flows on the main stem.
 - ii. For this study, the detention ponds should release at historic flows. Merrick will change the release rates from all proposed detention ponds.
- d. Sky Ranch Reports
- i. Merrick used the *Sky Ranch Filing 2 Phase I Drainage Report* (May, 2019) by CVL Consultants to inform the alternative designs for the Monaghan and 1st Avenue Tributaries. There has since been an updated report entitled *Sky Ranch Neighborhoods A, C, D, E, & F Phase I Drainage Report*.
 - ii. Merrick recognizes that there is a newer report, but for the Alternatives phase, we will proceed with the information that was provided at the outset of this phase (i.e. use the May 2019 report).
 - iii. The new report may be considered during the conceptual design phase.
- e. Sky Ranch Ponds
- i. Pond C – the stage-storage and stage-discharge curves that accompanied the May 2019 report was used in the proposed alternative design.
 - ii. Pond H – the May 2019 report showed two ponds east of proposed road F Street: Pond J and Pond H.
 - 1. Per previous project sponsor discussions, Ponds H and J were combined for this MDP into a single representative pond east of F Street. Merrick did not use the stage-storage-discharge curves from the May 2019 report. Rather new curves were developed to account for all tributary area east of F Street.
 - 2. From sponsor knowledge, Sky Ranch has changed its plans and will also have a single pond east of F Street.
 - 3. To avoid confusion, Merrick will not reference Sky Ranch pond names on the Alternatives Maps. The ponds designed for this MDP will be renamed to match the naming convention in the other tributaries.
 - 4. Merrick will increase the area of subwatershed 812 to be similar to the tributary area assumed for Sky Ranch.
- f. Harvest Tributary Alternatives
- i. Alternatives 1A and 1B include recognizing ponds with tributary area less than 130 acres.
 - 1. Aurora criteria may not allow these ponds to be eligible for City assistance/ maintenance due to tributary size being less than 130 acres.
 - 2. The Eastern Hills pond may be easier to adopt since it has not been built yet.



3. With only recognizing the Eastern Hills pond, there would be some street flow in the 100-year event, but it would be within the allowable street capacity.
 4. The sponsors asked Merrick to compare Alt 1A versus 1B to determine if adopting the Adonea pond provides more benefit other than reducing street flow and cost. The recommended plan may be changed to Alternative 1A depending on these findings.
- ii. Alternative 2 involves upsizing the pipe system in the Traditions development
 1. Currently, the alternative assumes remove and replace existing pipe. This alternative is not desired since sponsors would prefer to use acceptable existing infrastructure in the right-of-way.
 2. The project sponsors agreed that the pipe alternative should be changed to show an additional parallel pipe and new structures instead of remove/ replace existing.
- g. Unit Costs
- i. Naturalized Stream Corridor
 1. A comment was made that the unit cost for the naturalized stream corridor seemed low. It was suggested to use the high-range excavation as the basis for unit cost instead of mid-range.
 2. The higher unit cost for the excavation would likely offset the cost of rock armoring. Merrick will not include additional cost for rock.
 3. Teresa will send examples of some naturalized channel cost from other fee-in-lieu projects for Merrick to compare unit costs.
 4. Merrick will add a 12-foot maintenance trail to the stream corridors for maintenance access. This will be reflected in the text, on the maps, and in the costs.
 - ii. Recognizing non-regional ponds
 1. The unit cost for formalizing non-regional ponds in an alternative was unclear.
 2. No cost for land acquisition will be applied to the Eastern Hills ponds because they will be required to put detention onsite anyway.
 3. The potential conversion of the Adonea pond from private to public may be more costly. Aurora may already have an agreement about this pond since it discharges to City pipes. Unless there is an existing drainage easement and maintenance agreement with the metro district, the \$500/acre to convert private to public pond will be maintained for the Alternatives. However, this cost may be adjusted for conceptual design if this alternative is selected.

2. Recommended Plan

- a. For the majority of the tributaries, there is a single alternative, so these will be the recommended alternatives.
- b. The benefits of the different alternatives for the Harvest tributary will be reevaluated before finalizing the recommended plan.



3. Public Meeting

- a. With the holidays coming up, project sponsors agreed to hold the public meeting in January 2020 to hopefully get more attendance.
- b. Sam will investigate locations to hold the public meeting somewhat near the study location.
- c. Teresa will organize the mailing list to send notice postcards. Merrick will post information on the project website

4. Schedule

- a. Alternatives Report – Merrick will finalize the alternatives report as soon as possible.
- b. Selected Plan – project sponsors will select a plan after the public meeting is held. This will be presented in the Conceptual Design Report.
- c. Conceptual Design – a kickoff meeting with all sponsors was deemed unnecessary. Teresa will work with Merrick about what deliverables are expected for this phase.

5. Other/ Action Items

- a. Merrick will add a newer aerial image to the alternatives maps. The aerial for the baseline hydrology will remain unchanged.
- b. Sue will send latest Sky Ranch report to Merrick.
- c. Teresa will send unit costs for naturalized channel construction to Merrick.
- d. Teresa will organize the mailing list for the public meeting.
- e. Sam will investigate potential locations for the public meeting

