
Second Creek MDP/FHAD Progress Meeting Minutes

Date: August 30, 2017
Location: UDFCD
Distributions: Agenda, Comment Log

Attendees:

NAME	ORGANIZATION	E-MAIL
Anna Sparks	Adams County	asparks@adcogov.org
Russell Nelson	Adams County	rnelson@adcogov.org
Craig Perl	Aurora	cperl@auroragov.org
Jon Villines	Aurora	jvilline@auroragov.org
Sarah Young	Aurora	syoung@auroragov.org
Scott Olsen	Brighton	solsen@brightonco.gov
Andrew Pihaly	Commerce City	Apihaly@c3gov.com
Catherine Rafferty	DIA	catherine.rafferty@flydenver.com
Mark Throckmorton	Fulenwider	mark@fulenwider.com
Alan Leak	RESPEC	alan.leak@respec.com
David Delagarza	RESPEC	david.delagarza@respec.com
Haley Heinemann	RESPEC	Haley.heinemann@respec.com
Jennifer Winters	RESPEC	Jennifer.winters@respec.com
Shea Thomas	UDFCD	sthomas@udfcd.org
Teresa Patterson	UDFCD	tpatterson@udfcd.org

I. Purpose

The purpose of this meeting was to review and discuss the project sponsors comments for the hydrologic analysis and report for Second Creek MDP/FHAD.

II. Opening

The meeting was opened with introductions. Alan Leak informed the group that David Delagarza was leaving RESPEC (moving to New Zealand) and that Jen Winters would take over the Project Management role.

III. Draft Baseline Hydrology Report

The group reviewed the comments received by the project sponsors regarding the Draft Baseline Hydrology Report submitted by RESPEC on August 2, 2017. Editorial comments were not discussed during

the meeting and will be incorporated into the final Baseline Hydrology Report as requested. The comment log and resolutions are attached to these meeting minutes.

- **ACTION**: RESPEC will address comments in attached comment log.
- Project sponsor action items include:
 - **ACTION**: Catherine (DIA) will provide shapefile with more accurate DIA/Denver boundary.
 - **ACTION**: Catherine (DIA) will provide map of FAA noise stations for inclusion on MDP figures.
 - **ACTION**: Shea (UDFCD) will provide Brighton local Master Plan (Dropbox).
 - **ACTION**: Scott (Brighton) will provide future land use map in .shp format.
 - **ACTION**: Andrew (Commerce City) will provide Aerotropolis study and Tower Road Widening Project.
 - **ACTION**: Craig (Aurora) will provide Aurora/Highlands floodplain permit.

IV. Schedule

- **Baseline Hydrology**: The Final Baseline Hydrology Report will be submitted by RESPEC by 9/29/2017.
- **MDP Alternatives and FHAD**: The group discussed the path forward following the submittal of the final baseline hydrology. In the past, the next steps would be to begin the Alternatives Analysis phase of the MDP and to concurrently begin developing the modeling for the FHAD. Shea discussed UDFCD's new process for completing the FHAD and MDP. In recent contracts, UDFCD has changed the process to complete the floodplain modeling and mapping portions of the FHAD prior to beginning the Alternatives Analysis of the MDP. This new process ensures that the floodplain modeling/mapping are identical in both the FHAD and the MDP and that the two reports are completed on similar timelines.
 - The new process is not currently written into the Second Creek MDP/FHAD contract, but the project could still follow this new process/timeline; however, the alternatives in the upper portion of the watershed need to be addressed ASAP and should not wait until after the FHAD is completed.
 - The group discussed the need to determine a reasonable peak discharge at the DIA border. The 2006 IGA provided a max discharge of 500 cfs; however, it is not clear how that discharge was determined and there is little historic documentation to support the 500 cfs discharge. Additionally, Ballot Measure 1A (passed in November 2015) approved the Aerotropolis project which will likely alter the future imperviousness, landuses, etc. within the upper portion of the watershed. Therefore, the first priority of the MDP is to determine alternatives that will result in peak flows from the upper portion of the watershed that are reasonable and achievable for all project sponsors.
 - A hybrid project schedule will be developed for this MDP/FHAD in which the alternatives for the upstream portion of the watershed will be immediately addressed and the downstream portion (downstream of DIA) will be addressed after the FHAD is completed

and incorporated into the final Alternatives Analysis Report. Teresa suggested that prior to RESPEC developing alternatives for the upper portion of the watershed that the group reconvene for a working meeting to brainstorm alternatives.

- **ACTION:** RESPEC will schedule a workshop in early October to discuss alternatives within the upper portion of the watershed.
- **ACTION:** RESPEC will prepare a draft schedule for the remaining portion of the project to discuss at the workshop.

V. Action Items

- RESPEC will address project sponsor comments in attached comment log.
- DIA will provide shapefile with more accurate DIA/Denver boundary.
- DIA will provide map of FAA noise stations to for inclusion on MDP figures.
- UDFCD will provide the Brighton local Master Plan.
- Brighton will provide a future land use shapefile.
- Commerce City will provide the Aerotropolis study and Tower Road Widening Project documents.
- Aurora will provide the Aurora/Highlands floodplain permit.
- RESPEC will submit the Final Baseline Hydrology Report by 9/29/2017.
- RESPEC will schedule a workshop in early October to discuss alternatives within the upper portion of the watershed.
- RESPEC will prepare a draft schedule for the remaining portion of the project to discuss at October workshop.

	Comments:	Responses:
1.	Author: Andrew Pihaly Page: 2 General Comment: "Commerce City" is referenced. Please change to "City of Commerce City."	Will be revised as requested.
2.	Author: Andrew Pihaly Page: 2 General Comment: When Second Creek is referenced as "the creek," Creek should be capitalized.	Will be revised as requested.
3.	Author: Andrew Pihaly Page: 2 General Comment: Please review and include information from the Aerotropolis Study in the final report.	Will review and include appropriate references.
4.	Author: Andrew Pihaly Page: 2 General Comment: Please review and include information from the drainage reports for the Tower Road Widening project and the Tower Road-Pena Blvd. Ramp & Widening project	Discussed during meeting. Will review and include appropriate changes to modeling if needed.
5.	Author: Andrew Pihaly Page: 2 General Comment: Please confirm that analysis is evaluating the inclusion of a regional pond in the northeast quadrant of Buckley Road and 88th Avenue in lieu of the pond shown south of 88th Avenue	Discussed during meeting. Regional pond is not currently existing. Therefore, will not be included in baseline hydrology, but will be reviewed during the alternatives phase.
6.	Author: Andrew Pihaly Page: 2 General Comment: Please include analysis of the Second Creek diversion from the Third Creek basin to the Second Creek basin via Gramma Gulch per the Commerce City's T-88 regional drainage project as more fully described in the drainage report completed on behalf of the City	Diversion from the Third Creek basin has been incorporated into the baseline hydrology as basins 308-312. Proposed T-88 detention will be reviewed during the alternatives phase.
7.	Author: Andrew Pihaly Page: 2 General Comment: Please confirm that analysis is evaluating the possible elimination of the regional pond north and east of the intersection of 104th Avenue & Chambers Road	Discussed during meeting. Regional pond is not currently existing. Therefore, will not be included in baseline hydrology, but will be reviewed during the alternatives phase.
8.	Author: Jon Villines Page: 12 Can these changes be detailed/described for the upper basin? Maybe a future conditions land-use comparison map?	Changes to the middle and upper basins hydrology and SWMM models will be described in further detail. Additional figures will be added if necessary.
9.	Author: Teresa Patterson Page: 12 Please review the latest version of the USDCM Rainfall Chapter on area correction. There are updated processes for applying area correction.	Discussed during meeting. Area correction will be updated to follow the latest USDCM Rainfall Chapter guidelines.
10.	Author: Shea Thomas Page: 12 Describe where that 10 sq mi tributary area cutoff point occurs on the stream.	Description of where the 15 sq mi tributary area cutoff point occurs will be added, per latest USDCM Rainfall Chapter guidelines.
11.	Author: Shea Thomas Page: 12 Do we know how the rating curves for these ponds were developed? If so, please include	Rating curves for ponds M4018 and M6108 were developed in the DIA Master Plan. Additional documentation will be added to the report.
12.	Author: Teresa Patterson Page: 12 Expand the discussion of these two basins: Name, location, storage volume, etc.	Additional documentation will be added to the report.

DRAFT Hydrology Report Review Comments

SECOND CREEK
MAJOR DRAINAGEWAY PLAN

	Comments:	Responses:
13.	<p>Author: Teresa Patterson Page: 12</p> <p>Emails from Aurora (George Slovensky) indicated that GG1 is partially built and considered "interim" and that GG2 would be partially built in late 2016. I responded that we would not be including GG1 and GG2 in the baseline hydrology. It appears that they were not included in the hydrology models. However, there are references in the report still that they were. Please confirm that they were not included in the modeling and remove any reference to them from the report and we'll revisit what to include in the alternatives.</p>	<p>References to ponds GG1 and GG2 in the Draft Hydrology Report were an error. These ponds are not included in the baseline hydrology modeling. All references will be removed from the final report.</p>
14.	<p>Author: Teresa Patterson Page: 12</p> <p>Discuss the source of the 500-year</p>	<p>All rainfall depths, including the 500-year, were obtained from NOAA Atlas 14.</p>
15.	<p>Author: Shea Thomas Page: 13</p> <p>State which subbasins are associated with the Gramma Gulch project and explain that some of that area (state acreage) was previously shown as going to Third Creek but now goes to Second Creek.</p>	<p>Additional documentation will be added to the report.</p>
16.	<p>Author: Jon Villines Page: 13</p> <p>The Porteos planning documents should be used for the most accurate future imperviousness values.</p>	<p>Discussed during meeting. The 2012 Porteos Master Plan has been incorporated in to the Second Creek baseline hydrology. The September 2013 Porteos Master Plan Amendment will be reviewed and revisions to the baseline hydrology future imperviousness values will be made as needed.</p>
17.	<p>Author: Teresa Patterson Page: 13</p> <p>Update? [Retail/Roadways area in acres]</p>	<p>Will be revised as necessary.</p>
18.	<p>Author: Jon Villines Page: 13</p> <p>COA Planimetrics? (Granted there is hardly any existing impervious surface in Second Creek basin in COA.)</p>	<p>City of Aurora planning and zoning information was used to evaluate imperviousness values.</p>
19.	<p>Author: Shea Thomas Page: 13</p> <p>and permanent water surfaces were changed to 100%.</p>	<p>Will be revised as requested.</p>
20.	<p>Author: Teresa Patterson Page: 14</p> <p>Section 3.4 Detention is missing and should be added. Refer to the checklist in the Agreement.</p>	<p>Will be revised as requested.</p>
21.	<p>Author: Shea Thomas Page: 14</p> <p>I'm not sure what this means or why it is needed.</p>	<p>Text will be reworded to clarify.</p>
22.	<p>Author: Teresa Patterson Page: 14</p> <p>SWMM Schematic not included in report</p>	<p>SWMM schematic will be included with the final report.</p>
23.	<p>Author: Teresa Patterson Page: 14</p> <p>Describe why this was developed. [Natural Conditions hydrology model]</p>	<p>Will be added as requested.</p>
24.	<p>Author: Teresa Patterson Page: 14</p> <p>Section 3.6 Previous Studies is missing and should be added. Refer to the checklist in the Agreement.</p>	<p>Will be added as requested.</p>

DRAFT Hydrology Report Review Comments

	Comments:	Responses:
25.	<p>Author: Shea Thomas Page: 15</p> <p>FIS/FHAD flows were based on future land use. We should be comparing future conditions to the FHAD flows, not existing. We can compare to the existing conditions flows from the previous MPs.</p>	<p>Will be revised as needed.</p>
26.	<p>Author: Teresa Patterson Page: 15</p> <p>Please add:</p> <ul style="list-style-type: none"> - Point Rainfall table - Rainfall Area Correction Factors (can go in Appendix B if you prefer) - For area correction factors, more frequent return periods (2-, 5-, and 10-year) there are smaller basin correction factors starting as low as 2 sq.mi. Less frequent (25-, 50-, 100-, and 500-year) does start at 15 sq.mi. Refer to Tables 5-3 and 5-4 in the USDCM Ch. 5 Rainfall. This is relatively new. 	<p>Will be added as needed.</p>
27.	<p>Author: Shea Thomas Page: 15</p> <p>Is that the only reason they increased? Or is it also for the reason described in the paragraph above?</p>	<p>Text will be reworded to clarify.</p>
28.	<p>Author: Shea Thomas Page: 15</p> <p>Include a placeholder paragraph that discusses the flows leaving the Second Creek watershed and heading to Third Creek at the railroad. We can fill in the numbers after developing the hydraulic model and finding out what the exact spill flow values.</p>	<p>Will be added as requested.</p>
29.	<p>Author: Teresa Patterson Page: 16</p> <p>What about comparisons to other studies' future flows?</p>	<p>Will be added as requested.</p>
30.	<p>Author: Shea Thomas Page: 16</p> <p>It's kind of shocking to me how low the future conditions flows are for a basin this size. Let's discuss.</p>	<p>Discussed during meeting. Future condition flows are reasonable for a basin of this shape, slope, and size in the Denver metro area. For example, the future condition flows are comparable to the flows in the Third Creek master plan.</p>
31.	<p>Author: Shea Thomas Page: 35/36</p> <p>This is kind of amazing. Let's discuss. [Flow attenuation]</p>	<p>Discussed during meeting. Flow attenuation is reasonable for a basin of this shape, slope, and size in the Denver metro area.</p>
32.	<p>Author: Jon Villines Page: 39</p> <p>Porteos Master Plan?</p>	<p>Discussed during meeting. The 2012 Porteos Master Plan has already been incorporated in to the Second Creek baseline hydrology. The September 2013 Porteos Master Plan Amendment will be reviewed and revisions to the baseline hydrology future imperviousness values will be made as needed.</p>
33.	<p>Author: Shea Thomas Page: 44</p> <p>Shouldn't decrease [existing vs. future imperviousness]</p>	<p>Discussed during meeting. Future imperviousness will be revised to match existing imperviousness.</p>
34.	<p>Author: Shea Thomas Page: 49</p> <p>This looks wrong. [100% existing and future imperviousness]</p>	<p>Discussed during meeting. This basin is located entirely on impervious asphalt of Pena Boulevard. No changes will be made.</p>
35.	<p>Author: Teresa Patterson Page: 86/87</p> <p>0 cfs even during 500-year run [M6161, U745, U749, U752, U765]</p>	<p>Discussed during meeting. Will troubleshoot and make necessary edits.</p>
36.	<p>Author: Teresa Patterson Page: 105</p> <p>Needs an overflow. Appears to be a box culvert that is reaching full flow. Is there an overflow? [U249]</p>	<p>Discussed during meeting. Will troubleshoot and make necessary edits.</p>

	Comments:	Responses:
37.	<p>Author: Teresa Patterson Page: 117</p> <p>Need to add area correction factors and how they are applied (area groupings, values to each grouping, and some way of indicating which area correction is applied to which design points)</p>	<p>Will be revised as requested.</p>
38.	<p>Author: Shea Thomas Page: Hydrology Map</p> <p>Some consultants provide a Difference Between Existing and Future map, which is really helpful in watersheds with a lot of change anticipated.</p>	<p>Difference map will be added to Interactive Hydrology Map.</p>
39.	<p>Author: Shea Thomas Page: Hydrology Map</p> <p>Let's discuss how to take advantage of this. [Type A and B soils]</p>	<p>Discussed during meeting. The Second Creek watershed contains a lot of soils that are conducive to infiltration. Will be considered during the alternatives phase.</p>
40.	<p>Author: Shea Thomas Page: Hydrology Map</p> <p>Couldn't they bring in the shapefiles from the previous studies? At least in the DIA portion, since we don't have that study available.</p>	<p>All data except for the 2011 MDP/FHAD soil data was collected and added to the map. 2011 MDP/FHAD soil shapefiles were unavailable. Relevant soils map from the 2011 MDP/FHAD will be added to Appendix B.</p>
41.	<p>Author: Shea Thomas Page: Hydrology Map</p> <p>I would have really preferred they use NLCD for existing for the whole basin. Using existing from other studies doesn't give you a good idea of the true condition at the time of this study.</p>	<p>Discussed during meeting. The current NLCD dataset was collected in 2011. Existing land use from the other studies is more recent, therefore was used in the Second Creek baseline hydrology along with updates to reflect development that has occurred in the years since the other studies.</p>
42.	<p>Author: Teresa Patterson Page: Hydrology Map</p> <p>Even though not showing soils, should the soils from the other reports be included in the appendix?</p>	<p>All data except for the 2011 MDP/FHAD soil data was collected and added to the map. 2011 MDP/FHAD soil shapefiles were unavailable. Relevant soils map from the 2011 MDP/FHAD will be added to Appendix B.</p>
43.	<p>Author: Scott Olsen (Received Separately)</p> <p>There are some zoning documents and some future land use documents in the appendices. For Brighton, it doesn't appear they used the future land use map for future conditions. The land use map has much more developable area in the watershed.</p>	<p>Discussed during meeting. Future land use will be revised to include the Brighton future land use information provided by Scott.</p>
44.	<p>Author: Scott Olsen (Received Separately)</p> <p>There are some parcels in Brighton that are not shown to drain to Second Creek, but have no other option and are very close to the watershed. There is not a planned outfall for these areas and as you know Brighton is extremely flat. Can they be included in the study?</p>	<p>Discussed during meeting. Parcels are not currently tributary to Second Creek, therefore were not included in the Second Creek baseline hydrology. These parcels will be considered during the alternatives phase.</p>
45.	<p>Author: Craig Perl (Received Separately)</p> <p>Some information to consider regarding Porteos and Ponds GG1 and GG2.</p> <p>Pond GG1 was partially built under CoA Plan# 214020. This was supposed to be a temporary pond until S-219 was constructed. It was sized to provide 100-year detention and WQCV to the portions of Filing 1 that are tributary to it. Future developments within GG1's catchment will require expansion of the pond, so if the hydrology models the full detention from the Master, this isn't accurate to existing conditions.</p> <p>Pond GG2 is in for approval with Porteos Filing No. 2. It will be owned and maintained by a metro district, and will not be maintenance eligible.</p>	<p>References to ponds GG1 and GG2 in the Draft Hydrology Report were an error. These ponds are not included in the baseline hydrology modeling. All references will be removed from the final report and these notes will be considered during the alternatives phase.</p>
46.	<p>Author: Craig Perl (Received Separately)</p> <p>Include copy of IGA with report.</p>	<p>Will be added as requested.</p>
47.	<p>Author: Craig Perl (Received Separately)</p> <p>This area is now part of "The Aurora Highlands", a large proposed development with mixed uses, primarily single family residential. Future imperviousness in the 50-60% range would be appropriate.</p>	<p>Will be revised accordingly.</p>

	Comments:	Responses:
48.	Author: Craig Perl (Received Separately) Label roads on section line for reference.	Will be added as requested.
49.	Author: Craig Perl (Received Separately) SWMM schematic text is illegible at print scale.	SWMM schematic will be made as user-friendly as possible.
50.	Author: Catherine Rafferty (Received Separately) DIA boundary shown on Figure B-1 is incorrect.	DIA boundary will be updated.
51.	Author: Catherine Rafferty (Received Separately) FAA noise stations exist along Second Creek.	FAA noise stations will be included on MDP figures as necessary.

Note: Minor editorial comments are not included in the table, but will be addressed in the final hydrology report.

Second Creek Master Planning Study Attendance List

Date: March 6, 2017

Location: UDFCD

Name	Organization	Email	Initials
Anna Sparks	Adams County	asparks@adcogov.org	
Russell Nelson	Adams County	rnelson@adcogov.org	AS RNelson
Bill McCormick	Aurora	bmccormi@auroragov.org	
Craig Perl	Aurora	cperl@auroragov.org	COP
Jon Villines	Aurora	jvilline@auroragov.org	JAV
Sarah Young	Aurora	syoung@auroragov.org	DY
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