
**PROGRESS MEETING FOR
COAL CREEK AND ROCK CREEK (CCRC) MDP & FHAD
MEETING MINUTES**

Date: July 23, 2012
Location: City and County of Broomfield
Distributions: Agenda, Comparison of Peak Flows Table, Future and Compared Land Use Maps, Hydrograph (100-year Future Land Use), Detention Disconnect

Attendees:

NAME	ORGANIZATION
Justin Gindlesperger	Boulder County
Rebecca Baker	City of Broomfield
Peter Johnson	City of Lafayette
David Thompson	City of Louisville
David Delagarza	RESPEC
Tony Tran	RESPEC
Teresa Patterson	RESPEC
Wendi Palmer	Town of Erie
Alex Ariniello	Town of Superior
Lisa Ritchie	Town of Superior
Shea Thomas	UDFCD

I. Purpose

The purpose of this meeting was to review the data obtained from the sponsors and to discuss the hydrology methodology and preliminary results.

II. Information Gathering

Project sponsors have provided RESPEC with necessary land use and supplemental information for developing the hydrologic models. Shea commented that there were no new updates regarding the project 2 ft existing topography along the drainageway. The only outstanding information needed from the sponsors regarding the hydrology is a list of known detention facilities and their characteristics to be modeled.

III. Hydrology

RESPEC has worked over the past few weeks on developing the hydrology and have arrived at preliminary existing and future peak flows. The hydrologic modeling methodology and resulting peak flows were discussed and compared to the FEMA FIS (1976 SCS study) as well as the 2006 Coal Creek Kiowa Study. Project sponsors will have the chance to review the refined

subwatershed delineations and assigned imperviousness values during their review of the draft hydrology report sections. A quick summary of hydrologic tasks completed by RESPEC since the last progress meeting are:

- The 2006 Coal Creek hydrologic model was converted and stabilized to the latest versions of CUHP/SWMM and area rainfall correction was applied. The results closely match previously published peak flows.
- Completed engineering review of subwatershed delineations based on previous studies and provided sponsor input. RESPEC will send out the digital shape files of the completed subwatershed delineations to sponsors.
- Completed data collection/pre-processing of basin parameters including basin impervious values for existing and future land use.
- Compared future and existing land use.
 - RESPEC will reassess future land use impervious values to more accurately represent existing developed areas and provide to sponsors for feedback. Teresa explained that to be conservative, the future areas zoned as rural preservation as defined by the City of Lafayette will most likely be considered to be developed when defining future land use.
 - RESPEC will re-calculate average basin future impervious value and share with Shea.
- Ran CUHP 2005 1.3.3 for basin hydrographs.
- Routed basin hydrographs through EPA SWMM 5.0.022 to develop peak flows.

Watershed Routing

- City of Lafayette – referenced 1980 Master plan, flow paths are the same, but basin shape are different due to targeting different size basins. RESPEC will include known diversion into SWMM model.
- The clarity of the routing shown on the sub-watershed map(s) will be addressed by moving labels and/or providing “zoomed in” sections.
- Sponsors to review overall routing and provide feedback during report draft review of hydrology sections.

Comparison of Peak Flows:

- RESPEC is currently comparing the 2012 derived flows to the following studies:
 1. FEMA FIS based on 1976 Soil Conservation Service (SCS) Flood Hazard Analyses for Coal Creek and Rock Creek
 2. 2006 Coal Creek Study completed by Kiowa Engineering
- Converted 2006 Coal Creek Kiowa SWMM model was stabilized and area rainfall correction was applied. The resulting flows and are within tolerance when compared to the FIS and 2006 reported values.
- RESPEC to look into lower Rock Creek (DP 5000 to 5040) flow difference between FIS and RESPEC 2012 existing.
- RESPEC will send preliminary flows to:
 1. Felsburg Holt & Ullevig (FHU) working on SH7 with Wendi (when contacted)
 2. CDOT working with RESPEC, Superior, and Broomfield on Highway 36 design-build projects.

- Important design points (DP) to project sponsors:
 - DP 1240 Coal Creek at CO 7 is important to Lafayette.
 - Naming of DP 1600, 1610, 1620 for Louisville. Generally the structure name would be preferred to reference design points.
 - RESPEC to add DP at Empire St. in Boulder County if one doesn't exist as requested by David Thompson.

Hydrograph (100-year Future Land Use):

- Teresa discussed the peak and timing of the shown hydrographs for Coal Creek and Rock Creek. The following can be inferred from the hydrograph:
 1. The peak flow on Coal Creek and Rock Creek upstream of the confluence occur at virtually the same time.
 2. The peak flow on Coal Creek downstream of the confluence is translated through Coal Creek, without significant increase, to the outfall at Boulder Creek. This is expected due to the linear shape of the watershed.
 3. During the alternatives phase, focus should be directed at implementing improvements upstream of confluence to decrease flows downstream of the confluence.

Detention:

- Teresa and Shea explained that as part of the baseline hydrology, detention is recognized to help reduce peak flows if the detention facility meets the following two requirements:
 1. Publically maintained
 2. Tributary area greater than 100 AC
- Teresa ran a “detention disconnect” scenario in SWMM for 2 locations, where the contributing basins that had known detention were completely disconnected from the main drainageway to see what affect it would have on the major drainageway peak flows. The detailed results can be found on the detention disconnect scenario handout. From the two models ran (one in the lower part of the watershed and one in the upper) disconnecting the contributing basins did not have a major affect on the peak flows along the major drainageway of Coal Creek. RESPEC requested existing detention stage-storage information to model in SWMM. Below is a list of known detention facilities mentioned by the project sponsors:
 1. Anthem (Broomfield)
 2. Sierra Reservoir (Broomfield)
 3. Ponds near CC10 (Erie)
 4. North end area detention ponds OSP May 2011 (Lafayette/Louisville)
 5. 88th St. Detention (Superior)
 6. David Thompson, City of Louisville to provide excerpts from an OSP for detention in Louisville for RESPEC to run the disconnect scenario for the contributing basin to determine if modeling will be beneficial.

IV. Other

- Alex would like to present alternatives that have been developed by CH2M Hill at the public meeting to gain public input.

V. Schedule and Action Items

RESPEC to submit Draft Baseline Hydrology report sections to Shea at the end of next week (8/3) and she will distribute the report to all of the sponsors. The next progress meeting will be held on August 27th at 1:00 PM in Lafayette (Location TBD).

Future Progress Meetings:

- Sept 24th: Boulder County, Goodview House on Rock Creek Farm (just north of Broomfield)
- Oct 22nd: Town of Erie, Location TBD

Action items:

Project Sponsors

- Review existing and future land use impervious values that have been assigned and provide feedback.
- Review watershed routing and provide feedback.
- List of known detention to potentially be modeled (Tributary area >100 AC and publically owned and maintained).

RESPEC

- Send digital shape files of sub-watershed delineations to project sponsors.
- Verify imperviousness values designated for future land use and send out for sponsor feedback.
- Re-calculate average future impervious value and share with Shea.
- Investigate difference in Lower Rock Creek flows between FIS and RESPEC 2012 Existing Land Use.
- RESPEC will send preliminary Flows send to
 - Felsburg Holt & Ullevig (FHU) working on SH7 with Wendi
 - CDOT working with RESPEC and Rebecca on Highway 36
- Implement SWMM model changes based on sponsor feedback (detention/ diversion/ known routing paths).
- Submit draft of Study Report baseline hydrology sections.

These minutes are true and accurate to the best of my knowledge based on notes and recollection. Should any attending party have additions or corrections to these minutes, please forward them to Teresa Patterson of RESPEC Consulting within one week of the date of receipt. The absence of a response will be considered concurrence to the previous information and these minutes will be considered matter of fact.