



Meeting Minutes

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Prepared for: Adams County, City of Federal Heights, City of Thornton, and UDFCD

Project Title: Niver Creek MDP and FHAD

Purpose of Meeting: Baseline Hydrology Review Comments
and Preliminary Alternatives

Date: March 12, 2015

Time: 10:00 am

Meeting Location: UDFCD

Agenda Prepared by: Jennifer Winters, Brown and Caldwell

Attendees:	Anna Sparks, Adams County	Beth Baumgartner, Brown and Caldwell
	Tim Williams, Federal Heights	Danny Elsner, Brown and Caldwell
	Jim Kaiser, Thornton	Jennifer Winters, Brown and Caldwell
	Terri Fead, UDFCD	Mary Powell, ERO
	Alan Pagan, UDFCD	Billy Gregg, Studio CPG
	Shea Thomas, UDFCD	

Minutes

1. Hydrology Review (1st hour)

- a. Comments received from the stakeholders were reviewed and discussed.
 - i. A total of 71 comments were received. Many comments were text related and needed no further discussion. Comments that were discussed in the meeting area identified in the attached Comment Log and are described there-in.
- b. Discussion of Concerns – the general concerns for the watershed as identified in the baseline hydrology were discussed and are summarized below.
 - i. Upper Niver Creek
 1. Main issues are channel overtopping/capacity in many locations
 2. It is anticipated that there is minimal structural flooding along Upper Niver Creek
 3. Existing Detention:
 - a. Niver Dam – working great; there is available additional volume in the dam but the discharge is already so small that no benefit would come from detaining more
 - b. Horizon Center Detention – working great; although it discharges into the Niver Dam, therefore not functioning to add significant reduction in flow downstream.
 - c. Zuni Detention – no reduction in Q_{100} therefore, there is no reduction in downstream flooding due to the detention area.
 4. Overall the existing Niver Dam can contain the 100-year storm event from Upper Niver Creek and Trib M. Therefore, additional storage along Upper Niver Creek would only reduce flows along Upper Niver Creek and not result in a reduction in flow to Lower Niver

Creek below the dam. The Niver Dam is acting to split the entire Niver Creek watershed into two main portions (Upper Niver Creek/Trib M and Lower Niver Creek/Trib L).

ii. Trib M

1. It is anticipated that many structures are in the existing floodplain due to both the amount of flow and the limited conveyance of the channel in certain areas.
2. Existing Detention:
 - a. Niver Dam - working great
 - b. Elm Court - working great
3. Overall the existing Niver Dam can contain the 100-year storm event from Upper Niver Creek and Trib M. Therefore, additional storage along Trib M would only reduce flows along Trib M and would not result in a reduction in flow to Lower Niver Creek below the dam.

iii. Trib L

1. Main issues are channel overtopping/capacity in many locations
2. It is anticipated that there is minimal structural flooding along Trib L
3. Detention
 - a. Trib L Detention - no reduction in Q_{100} , therefore no reduction in flooding due to the detention area.

iv. Lower Niver Creek

1. The hydrograph timing of the entire watershed is causing large increases in flow, notably as the flow goes farther downstream towards the outlet of the basin at the South Platte. The hydrograph of Lower Niver Creek is largely related to the short time of concentration for the Trib L subbasin. The peak discharges for the contributing areas to Lower Niver Creek are hitting the hydrograph very close in time to the Trib L peak reaching Lower Niver Creek. Therefore, basin routing for Trib L and Lower Niver Creek is the main concern that will be addressed by the alternatives, so as to lower the peak flow in Lower Niver Creek.
2. Increase in flow just downstream of Niver Dam near the I-25 corridor. This small drainage area is contributing a significant amount of flow into the creek just downstream of the Dam outlet.
3. Culvert at Grant St. is undersized causing flooding issues in the North Valley Tech Center (84th and Washington)
4. Channel overtopping/capacity in many locations along Lower Niver Creek
5. Detention:
 - a. American Furniture Warehouse - no reduction in Q in any storm event therefore no reduction in flooding due to the detention area. This is because the outlet pipe is large enough to contain small storm events and during large events there is very little storage between the top of the outlet pipe and the overtopping elevation of the road (Grant Street). The previous, 1996 MDP appears to include more storage at the AFW pond in the model due to a higher roadway elevation.
6. There is a small basin in Lower Niver Creek that discharges downstream of the Niver Dam outlet. An alternative will be to look at redirecting these flows to Niver Dam.

c. Schedule

- i. BC to revise hydrology model and report per revised imperviousness (80%) for portions of Thornton and Adams County - See comment log numbers 56 and 61-63.

1. Anna to verify 80% in Adams County prior to BC changes
2. BC to track additional time it takes to revise model/report per impervious changes requested in comments
- ii. BC to submit final model and report within 3 weeks of receiving Adams County verification (~ April 3rd). Post report to Niver Creek website.

2. Preliminary Alternatives (2nd hour)

Because the Niver Dam is a hydrologic control point, it is essentially acting to split the entire Niver Creek watershed into two portions – Upper Niver Creek/Trib M and Lower Niver Creek/Trib L. Preliminary alternatives were discussed for the watershed and described below.

a. Recommendations on Upper/Trib M

i. Upper Niver Creek

1. Potential Alternatives – Focus on minimal alternatives to get residential structures out of the floodplain
 - a. Capacity checks on crossings and channels
 - b. Alternative sizing of crossing when necessary
 - c. Bank stabilization of erosional sites
 - d. Zuni Detention/Ruston Park improvements
 - i. Flooding in RV storage area
 - ii. Include existing Federal Heights/UDFCD master plan in alternatives

ii. Trib M

1. Many residential structures located in floodplain; Concern that some people will remain in the floodplain no matter what alternatives are chosen.
2. Potential Alternatives:
 - a. Either buy property to contain the 100-year or add more detention along Trib M while buying property along the reduced 100-year floodplain
 - i. Tim agreed that it may be a good alternative to buy property
 - ii. Each manufactured housing community is considered one parcel; therefore, property purchase will be potentially contained to 2 parcels.
 - b. Additional alternative could potentially be to purchase less property and look at conveying a smaller event like the 50-year flood.
3. 92nd/Pecos: Nominal existing storm sewer from the west and south of the intersection. July 2011 storm, significant street flows created localized flooding issues. Flows were close to overtopping the berm and fence northeast of the intersection.
 - a. Thornton requested having BC look at the trunk size in 92nd Avenue; Shea will add to scope and budget accordingly.
4. Trail system:
 - a. Both Jim and Tim were interested in adding a trail system through Trib M area, especially tying into the nearby schools
5. Water Quality:
 - a. Will look at implementing water quality improvements during the alternatives. One possible example is reducing potential water quality (E.Coli) issues at the dog walking area at Niver Dam, but other possible water quality improvements will also be ex-

plored with the alternatives. There are no know water quality issues at this time, but it will be examined during alternatives.

b. More effort on Trib L/Lower with routing/detention solutions

i. Trib L

1. Best section of stream to implement alternatives that will have an impact in reducing downstream flooding. More time/energy anticipated to be spent analyzing alternatives on Trib L than Trib M or Niver Creek. The main concept is to delay flows in Trib L prior to discharging into Lower Niver Creek – hydrograph timing of Trib L and Lower Niver Creek is the key to the alternatives for the basin.
2. Potential Alternatives:
 - a. Add detention areas
 - i. Potential area near Water World
 - ii. Potential to use existing irrigation ponds as storage
 - iii. Potential location at Thornton/Federal Heights boundary
 - iv. Potential location west of I-25 in open space
 - b. There is also the possibility to implement local delay of hydrographs in the Trib L/Lower Niver Creek subcatchments. This could be done through local detention or LID to delay the timing that the subcatchment peak flows reach Trib L and Lower Niver Creek.
3. 84th Avenue (west of I-25): No existing storm sewer and creating localized flooding issues
 - a. Thornton requested having BC look at the trunk size in 84th Avenue; Shea will add to scope and budget accordingly.

ii. Lower Niver Creek

1. Potential Alternatives:
 - a. Detention for local drainage area just downstream of Niver Dam near I-25 corridor
 - b. Grant Street to Washington – Culvert vs. Open Channel
 - i. Upstream detention and delay of flows along Trib L and the upper portion of Lower Niver Creek will influence the choice of potential alternatives
 - ii. Increasing the culvert size may be costly; open channel may be less expensive.
 - iii. Detention in this area may not be a good option given its location and the redevelopment potential
 - iv. Potential to add trail in the area if use an open channel
 - v. The existing building here is old and may have potential for redevelopment of the site. Jim mentioned that he will have to run the alternative past Thornton's development department.
 - c. Existing Concrete Channel – look into opening up for water quality purposes. May not be possible due to hydraulic conditions, but will look into and include as an alternative.
 - d. Also will look at the possibility of re-routing portions of the Lower Niver subbasin into the Niver Dam. Two Subcatchments (NL15 and NL16) that run along 88th Avenue, south of the Niver Dam, currently flow into Lower Niver Creek and could be re-routed to the Dam.

3. Next Steps...

- a. Danny leaving BC to CH2M Hill effective today (3/12/2015)
 - i. CH will sub to BC on this project; Project team to remain unchanged.
- b. Updated Project Schedule
 - i. Submit final hydrology model/report in approximately 3 weeks (~April 3rd)
 - ii. Continue to work on FHAD
 - iii. Next meeting end of April