

South Boulder Creek Flood Mitigation Project

Public Meeting #1 - March 3, 2010

The public meeting began at 5:30 PM and was finished at 7:45 PM. A 30-minute presentation by the project team that outlined the project, past studies and goals of the flood mitigation project started the meeting. At the conclusion of the presentation, general questions were entertained from the public and then the attendees gathered around four stations to ask questions and discuss potential problems and mitigation solutions related to specific project reaches

General Questions and Answers

- Q1. How will the changes from the mitigation project be incorporated into FEMA Floodplain Mapping?
- A1. The City of Boulder, after completing a mitigation project, will revise the FEMA floodplain maps through a Letter of Map Revision (LOMR). This process is currently occurring on the Elmer's 2-Mile project.
- Q2. How will the construction portion of the flood mitigation project be funded?
- A2. The City of Boulder has earmarked \$4 Million Dollars in 2012 for potential construction of the mitigation project. Other Sources for funding could come through the Federal Emergency Management Agency (FEMA) Grant Programs, the United States Army Corps of Engineers (USACE), and cost sharing projects with the Urban Drainage and Flood Control District (UDFCD).
- Q3. How will current construction and development projects be incorporated into the flood mitigation study?
- A3. As the flood mitigation project proceeds, current construction and development in the floodplain will be reviewed to ensure the mitigation solution incorporates these changes to the floodplain.
- Q4. How was the initial South Boulder Creek Flood Mitigation Project Public Meeting publicized?
- A4. The public meeting was advertised on the City's web site, 2,200 postcards were sent out to properties impacted by the South Boulder Creek 100-year floodplain, notices were sent to the newspaper, and an E-newsletter was sent. The project website address is www.southbouldercreek.com
- Q5. What is the existing warning system that is in place if flooding occurred on South Boulder Creek?
- A5. The City of Boulder has collaborated with UDFCD to implement a flood warning system in Boulder. This flood warning system consists of a network of rain gages, stream gages and radar systems to track rainfall, stream flow and storm events. If it

appears that South Boulder Creek would flood, flood sirens along South Boulder Creek would be sounded to evacuate residents and reverse 911 calls and text messages can be sent to warn residents.

Q6. How often are sirens tested?

A6. During April - October (flood season in Boulder) they are tested the first Monday of every month at 10:00 AM.

Q7. Have you looked at what other communities are doing to address flooding?

A7. The City is a member of UDFCD has hired a consultant and individual team members have professional project experience so the project team is aware of what is working and being adopted in other municipalities.

Q8. Have you looked at potential development and taken into consideration future development for the flood mapping and flood mitigation study?

A8. The flood mapping study was completed using future land use conditions. Boulder is almost completely built out and does not have large areas of land that can be developed. Development and redevelopment can occur in the watershed however; the hydrology for the flood mapping study took into account development and will move forward, unaltered, for the flood mitigation study. While the new floodplain has not yet been adopted, the City is already regulating to the revised 100-year floodplain. In fact, City Council has directed City Development Services to regulate to the most conservative flood elevation from either the effective FEMA study or the revised floodplain study.

Q9. Does this plan take into account Denver Water's Plan to increase the size of Gross Reservoir?

A9. The flood mapping study did consider this. However, during the hydrology study the most severe flood threat was the result of a storm centered below Gross Reservoir, so the reservoir had limited impact on the flooding on South Boulder Creek.

Q10. Are the public meeting exhibits available for the public to review?

A10. The maps and matrices are available on the project website at www.southbouldercreek.com. The presentations and other comment forms will be posted on the website shortly after the meeting.

Q11. How much cash is available for implementing the study?

A11. The City's Utility Capital Improvement Budgets has identified \$4 million in 2012 to account for the study, land acquisition and design. \$3 million of that total will be secured through bonds, the repayment of which is factored into the existing rate structure. Currently \$1 million dollars in cash is available.

Q12. How will the selected plan construction be phased?

A12. It will depend on the selected alternative project and what makes sense physically and hydraulically.

Q13. The 100-year flood does not mean much to folks was the 1969 flood a 100-year flood?

A13. The 1969 flood was estimated to be smaller, about a 25-year flood. The 100-year flood is the flood that has a 1% chance of occurring in any given year. However, the 100-year storm can occur back to back.

Q14. What is the definition of the 100-year flood and how much rainfall that is?

A14. The 100-year storm was a six-hour storm with a peak rainfall of 3.89". (During the meeting the depth of this storm was mistakenly reported as around 5 inches)

Q15. What causes the flooding?

A15. Rainfall across the basin overwhelms the stream system. Four major causes.

1. Rain over West Valley causes initial West Valley flooding before South Boulder Creek Floods
2. As the flood peak approaches US-36, South Boulder Creek does not have capacity to contain the flow so flood waters flow out onto the shallow floodplain
3. As the South Boulder Creek Flood peak reaches US-36, the roadway is overtopped causing significant flooding of the West Valley
4. Culverts downstream of US-36 are undersize and contribute flows to the west valley

Q16. What is the depth of the flooding?

A16. Flooding depth varies across the floodplain from 6" deep to more than 8 feet deep depending on location. Floodplain maps can be found on www.southbouldercreek.com.

Q17. What is the duration of the flooding?

A17. The storm duration is six hours and the flood will subside substantially within 12 - 24 hours.

Q18. What are the worst types of damage?

A18. The risk assessment describes in detail the damage and risk from flooding and can be found on the website at www.southbouldercreek.com.

Q19. Will the sewer systems function during a flood?

A19. It is anticipated that the sewer system will be overwhelmed during a flood.

Comments Received on the Boards and Flip Charts

South of US-36

1. Consider proper natural channelization of South Boulder Creek to prevent floodwaters from leaving the channel.

US-36 to Baseline Road

1. Hogan/Pancost - City has built up and is building soccer fields above natural grade in the area. Previous development raised the natural grade as well. This raised grade is causing groundwater to rise and is flooding basements south of Manhattan Middle School.
2. Groundwater is about 1' below ground between US-36 and Baseline Road and needs to be taken into consideration.
3. Dry Creek No. 2 Ditch should be piped from South Boulder Road to the existing pipeline at Tenino Avenue to prevent flooding along the ditch.

Baseline Road to Arapahoe Avenue

1. The Wellman Ditch has not been maintained in several years and should be maintained.
2. The Wellman Ditch should be placed in a storm sewer pipe.
3. Stormsewer should be added to Merritt Drive diverting flood flows north to Arapahoe Avenue.

North of Arapahoe Avenue

1. South Boulder Creek should be channelized along its entire length similar to Boulder Creek to prevent flood flows from leaving the main channel, particularly at roadways.

Comments Received on Comment Sheets and Email

Additional Problem Areas

1. Manhattan Drive - Runoff from South Boulder Road flows out, down Manhattan Drive, and along the ditch easement. Flow overwhelms gutters along Manhattan Drive and inundates lawns and driveways. Water freezes in the wintertime with ice 4 - 6" deep in the gutter.
2. The Intersection of Kewanee Dr. and Cimarron Way floods with minor rainstorms. In the winter, melted snow does not drain away leading to a skating rink.
3. Dry Creek No. 2 Ditch should be piped from South Boulder Road to the existing pipeline at Tenino Avenue to prevent flooding along the ditch.
4. City soccer fields west of East Community Center were raised 4' in 1979 (?) and are again being raised by the City's recreation department. Website does not contain any information on new soccer fields. Soccer fields are currently creating a dam by being raised.

5. Dry Creek No. 2 Ditch functions as a storm drain for Cimarron Street, Kewanee Street and part of Manhattan.
6. Iroquois and Manhattan floods and has inadequate storm drainage to handle minor storms
7. Keep high groundwater in mind when evaluating solutions
8. Look at the impact of raising soccer fields 4 – 5 feet.
9. There is an overflow identified along the berm west of Foothills Parkway. This berm is high above the ground and seems unlikely to be overtopped. This area should be reviewed.
10. How will the changes to the soccer fields including artificial turf west of the EBRC effect flood drainage to neighborhoods west of the fields. Will flood mitigation be included in the soccer fields? Is the Land going to be raised at the soccer fields?
11. How will the development of the Hogan-Pancost parcel affect storm and flood drainage due to the increased imperviousness. How will this affect the neighborhood west of the parcel?

Additional Solutions to Carry Forward

1. Provide containment for South Boulder Road overflow entering Manhattan Drive.
2. Pipe Dry Creek Ditch No. 2 behind homes on Oneida Street to the existing culvert on Tenino Avenue.
3. Improve drainage from Kewanee Drive and Cimarron Way to drain water to Dry Creek Ditch No. 2.
4. Do not allow development of Hogan/Pancost parcel and use it as a drainage easement to drain floodwaters to the east and open space. (Between US-36 and Baseline Road)
5. Re-grade soccer fields to 1970 grades west of East Community Center to prevent ponding and water flow to Kewanee Area
6. Enlarge Dry Creek No. 2 Ditch to prevent flooding in the Kewanee area.
7. Detention south of US-36 appears to provide the biggest benefit.

Additional Comments

1. Maps do not show names. Great Meeting
2. Good meeting but should be held in a larger hall. You are wrong in saying the newspaper was used to publicize the meeting. Do a better job of publicizing meetings because many people are interested.
3. Good Informative Meeting
4. Do not talk so fast in the presentations.

Email Comments

1. Pipe Dry Creek Ditch No. 2 behind homes on Oneida Street to the existing culvert on Tenino Avenue.
2. Provide a direct link to the flooding animation on the South Boulder Creek Web Site
3. Most logical and cost effective alternative would be a directional levee to direct the flood back to and through the bridge under US Highway 36, together with enough flood storage above the highway to knock down the flood peak to a manageable level.