CITY OF BOULDER
CITY COUNCIL AGENDA ITEM

MEETING DATE: June 2, 2009

AGENDA TITLE: Consideration of a motion to accept the April 28, 2009 Study Session Summary on Flood Management and Mitigation Program and Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan

PRESENTERS:
Jane S. Brautigam, City Manager
Stephanie A. Grainger, Deputy City Manager
Maureen Rait, Executive Director of Public Works
Ned Williams, Director of Public Works for Utilities
Bob Harberg, Utilities Projects Coordinator
Christie Coleman, Engineering Project Manager

EXECUTIVE SUMMARY:

The purpose of the April 28, 2009 City Council study session was to present information and discuss issues raised during the Nov. 10, 2008 public hearing regarding the Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan, including:

1. The intent and interpretation of current city flood policies;
2. Vulnerable populations to flooding, especially Crestview Elementary School;
3. The cost of the proposed property acquisition and flood mitigation plan; and
4. The priority of the proposed work compared to other flood hazard areas in Boulder.

STAFF RECOMMENDATION:

Staff recommends that City Council accept the April 28, 2009 City Council study session summary included with this agenda item as **Attachment A.**

Suggested Motion Language:
Staff requests council consideration of this matter and action in the form of the following motion:

Motion to accept the April 28, 2009 study session summary on Flood Management and Mitigation Program and Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan included with this agenda item as **Attachment A.**

NEXT STEPS:

As part of this study session, staff presented information regarding the issues raised by council at the Nov. 10, 2008 public hearing and will proceed with the following:

1. Prepared an agenda item to accept the Study Session summary,
2. Prepare an agenda item (third quarter 2009) to consider acceptance of the proposed Fourmile Canyon Creek and Wonderland Creek flood mitigation plan,
3. Continue the development and analysis of the preliminary, draft regulations pertaining to critical facilities and vulnerable populations located within the 100-year and 500-year floodplains, along with identifying the impacts, and initiating a public review and comment process within the next six months, and.
4. Develop a Flood Hazard Land Use Analysis to explore a range of strategies for reducing the flood risk in flood prone areas. The analysis will inform recommendations to changes in flood plain policies and regulations and will likely begin in 2010 or 2011.

Approved by:

Susan Kohl for

Jane Brautigam
City Manager

ATTACHMENTS:

Attachment A: April 28, 2009 Study Session Summary on Flood Management and Mitigation Program and Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan

ATTACHMENT A

April 28, 2009 Study Session Summary on Flood Management and Mitigation Program and Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan

PRESENT:

City Council: Mayor Matthew Appelbaum, Deputy Mayor Crystal Gray, Macon Cowles, Suzy Ageton, Lisa Morzel, Angelique Espinoza, Ken Wilson, Susan Osborne.

Staff: Jane Brautigam, City Manager; Jerry Gordon, City Attorney; Stephanie Grainger, Deputy City Manager; Maureen Rait, Executive Director of Public Works; Ned Williams, Director of Public Works for Utilities; Alisa Lewis, City Clerk; Bob Harberg, Engineering Project Management Coordinator; Annie Noble, Greenways Coordinator; Christie Coleman, Engineering Project Manager; Kurt Bauer, Engineering Project Manager; Jeff Arthur, Engineering Review Manager; Katie Knapp, Civil Engineer II.

Water Resources Advisory Board: Susan Iott

Consultants: David Love of Belt Collins West (formerly Love and Associates)

PURPOSE:

The purpose of the April 28, 2009 City Council Study Session was to present information and discuss issues raised during the Nov. 10, 2008 public hearing regarding the Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan. Specifically:

1. The intent and interpretation of current city flood policies;
2. Vulnerable populations to flooding, especially Crestview Elementary School;
3. The cost of the proposed property acquisition and flood mitigation plan; and
4. The priority of the proposed work compared to other flood hazard areas in Boulder.

PRESENTATION:

Following introductions of staff, Bob Harberg presented an overview of the topics to be discussed and identified questions to help frame City Council's discussion. Harberg then presented the following:

a) A summary of the Fourmile Canyon and Wonderland Creek previous studies and work efforts, current hydraulic conditions and recommended flood mitigation strategies.
b) A description of the current flood mitigation planning approach including an overview of structural versus non-structural mitigation approaches, flood mitigation objectives, property acquisition examples, current policies and examples of past projects.

Christie Coleman then provided a summary of the draft critical facilities regulation including:

c) An overview of the management strategies for hazardous materials, essential services and vulnerable populations.
d) A description of the critical facilities located along Fourmile Canyon Creek and Wonderland Creek.

e) A description of the existing flood conditions adjacent to Crestview Elementary School along with proposed mitigation measures and emergency response plans.

Harberg then continued by presenting the following:

f) An example of the Fourmile Canyon Creek flood hazard land use analysis.
g) A summary breakdown of the costs associated with the Fourmile Canyon Creek and Wonderland Creek proposed mitigation measures.
h) A summary of overall program capital expenditures from 1990 to 2008.
i) A description of flood hazard areas in Boulder in relationship to those identified along Fourmile Canyon Creek and Wonderland Creek.
j) The importance of protection of high hazard area along with a summary of structures located in the high hazard zone.
k) A brief overview of the emergency response program.
l) A summary of flood hazard conditions along Fourmile Canyon Creek and Wonderland Creek

Harberg concluded the presentation with the following recommendation for next steps:

m) Preparation of an agenda item to accept the study session summary,
n) Preparation of an agenda item to accept the Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan,
o) Continue the development and analysis of critical facilities regulation, and
p) Develop a flood hazard land use analysis.

Following the presentation, council was presented with the following questions:

1. Does council agree with staff's approach to flood mitigation planning and the role it plays in Capital Improvement Program (CIP) project prioritization?
2. Does council have questions about current flood policies and how they are being applied in the proposed Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan?
3. What feedback does council have regarding the development and analysis of preliminary, draft regulations pertaining to critical facilities and vulnerable populations located within the 100-year and 500-year floodplains?
4. What feedback does council have regarding the proposed Fourmile Canyon Creek and Wonderland Creek flood mitigation plan regarding costs, benefits and priorities?
5. Does council have questions regarding the proposed next steps for either the Fourmile Canyon Creek and Wonderland Creek flood mitigation plan or the draft regulations pertaining to critical facilities and vulnerable populations?

CITY COUNCIL DISCUSSION:

Prior to addressing the specific study session questions, council asked clarifying questions and provided comments. In general, the following clarifications and comments were provided:

Clarifications

a) Floods in Boulder will typically recede within 12 to 24 hours.
b) Flood studies include mapping of ditch flooding if hydraulically connected to the drainageways.

c) The differential cost associated with containing the 100-year flood flow vs. containing the high hazard flood flows, according to current staff flood mitigation recommendations, is approximately $4-6 million.
d) Staff provided a summary of current flood education and outreach methods.
e) Staff explained its recommendation that commercial developers pay for proposed mitigation measures along the northwest portion of Fourmile Canyon Creek due to the benefits that will be derived from redevelopment of the site.
f) Staff explained why mitigation measures are needed and recommended in the Boulder County enclave areas.
g) Staff explained that proposed mitigation measures cannot cause increased flood hazards.
h) Staff explained the process used to rank greenways objectives along drainageway reaches. In the Greenways Master Plan, Boulder Creek and each of the tributaries has been divided into reaches. Each of the greenways objectives was ranked high, medium or low for each reach based on specified goals for each objective. The aquatic and vegetative habitat for each reach was evaluated as part of a riparian habitat and aquatic habitat assessment. This information was used to identify areas of habitat preservation or restoration. Trail connections were ranked based on such criteria as population density served and connectivity to major destinations.
i) Owners of properties located in high hazard zones have been contacted in the past but not recently.
j) Staff explained that the critical facility structures presented in the Attachment E tables are listed according to their most restrictive category, although it may be located in multiple flood hazard areas (floodplain, conveyance zone or high hazard zone). For example, if a structure is located in the high hazard zone, it is not again listed as being in the 100-year or 500-year floodplains.
k) This study session packet and presentation has not been given to the school district.
l) The criteria used to develop and rank flood mitigation measures have not changed from those used in the past.
m) The location, quantity, and type of hazardous and toxic materials have not been identified by staff.
n) The gas station located at the intersection of Arapahoe and Folsom is located in the 100-year floodplain, but the location of the storage tanks in relationship to the floodplain is unknown.
o) Unlike Boulder Creek and South Boulder Creek, the establishment of stream gages along the remaining drainageways is not considered useful because the small tributary areas will create rapid streamflow increases before monitoring gages can accurately detect and assess the event.
p) Boulder County does not typically implement major flood mitigation capital improvements or acquire properties in high hazard zones because of funding limitations and other priorities.
q) Construction of pedestrian underpasses typically cost between $1 million and 2 million each.
r) Development in the 100-year floodplain frequently does not conflict with the wetlands ordinance because wetlands do not usually extend far beyond the stream banks.
s) The city likely would have governmental immunity from a lawsuit relating to damages claimed from flooding.

Comments from City Council

a) Council would like further discussion on emergency preparedness at another time.
b) The proposed critical facility regulation may need to include more restrictive regulations, such as not allowing certain land uses in high hazard areas.
c) Residents along Fourmile Canyon Creek and Wonderland Creek should have been invited to this study session.
d) A tape of this study session and a copy of the study session's PowerPoint presentation should be made available to residents along Fourmile Canyon Creek and Wonderland Creek.
e) Crestview Elementary School is not listed as being in the 100-year floodplain according to the list of critical facilities in Attachment E.
f) Staff should coordinate with development of the University of Colorado's 2030 plan.

Summary of City Council's responses to the study session questions

1. Does council agree with staff's approach to flood mitigation planning and the role it plays in Capital Improvement Program (CIP) project prioritization,
   and
2. Does council have questions about current flood policies and how they are being applied in the proposed Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan?

Council members generally expressed support for the approach to flood mitigation planning and that existing policies were appropriate, with the following comments:

a) The current approach to flood mitigation should continue and is mostly in the right direction.
b) Consider doing the least amount of work necessary with the structural improvement approach to mitigate flood hazards.
c) Investigate whether Boulder County government/residents, especially in the enclaves, should contribute funds for flood mitigation and property acquisition, especially those receiving city sewer and water.
d) Flood mitigation work proposed along Fourmile Canyon Creek east of 28th should be reconsidered and possibly scaled back.
e) Alternatives that leave drainageways in their natural state should be a priority.
f) Mitigation measures should be kept as "green" as possible, i.e. minimize use of asphalt and concrete.
g) The need to disturb natural areas for the benefit of a few homes was questioned.
h) Removal of structures from the 100-year floodplain was questioned if the removal/mitigation was only to reduce property damage. Focus removal efforts on structures in the high hazard and conveyance zone.
i) The property acquisition and hazard identification aspects of the program are good.
j) Outreach and education, particularly with the Boulder Valley School District, is very important.
k) Prioritization criteria for CIP projects are appropriate.

l) Develop an inventory to characterize hazardous and toxic materials in relationship to flood hazards – important to understand the location and quantify of these materials in the floodplain, including underground storage tanks.

3. <u>What feedback does council have regarding the development and analysis of preliminary, draft regulations pertaining to critical facilities and vulnerable populations located within the 100-year and 500-year floodplains</u>?

Council members generally expressed support with the approach being taken to draft regulations pertaining to critical facilities and some council members questioned if the regulations would go far enough to safeguard residents and users of these facilities. The following additional comments were made:

a) Schools, both public and private, need to be fully educated on the flood risks associated with each particular school site.
b) Regulation of private schools and care centers should move forward.
c) A strategy to coordinate with the Boulder Valley School District (BVSD) and its administration, faculty, students and parents should be developed.
d) The BVSD should develop flood emergency plans based on the city's flood modes.
e) Flood emergency planning will be raised at the next joint meeting of the City Council and BVSD Board of Education.
f) Flood outreach and education should emphasize the likely short duration of flood inundation in Boulder.
g) City staff should work with the Boulder Office of Emergency Management and the University of Colorado regarding flood emergency management issues.
h) The city should consider requiring the retrofitting of structures located in the high hazard zone, instead of waiting for redevelopment or remodeling, in order to achieve a shorter compliance timeframe
i) Consider placement of flood hazard placards on rental properties as a check-off item during rental inspections.
j) Critical facilities should be required to develop an emergency plan and provide annual reporting.
k) The city should develop an inventory of hazardous and toxic materials that could be impacted by flooding. The Fire Department may have an inventory of hazardous materials.
l) The hotel / motel industry would be receptive to a discussion on flood hazards and should be engaged.
m) Flood education and outreach to tourists and visitors should be considered.
n) Consider facilitating the creation of a neighborhood culture to identify local emergency needs and associated assistance for residents living in flood hazard areas that have special needs.
o) Although the Boulder Valley School District, as a state agency, may not be required to submit for city development reviews and permits, the city should find a way to work with the schools to notify, disclose and achieve a better level of flood protection.

4. What feedback does council have regarding the proposed Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan regarding costs, benefits and priorities?

   City council members requested that proposed mitigation costs be presented to distinguish the cost of containing high hazard flood flows vs. containing all 100-year flood flows.

5. Does council have questions regarding the proposed next steps for either the Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan or the draft regulations pertaining to critical facilities and vulnerable populations?

   Council members generally expressed support to consider the Fourmile Canyon Creek and Wonderland Creek Flood Mitigation Plan as an agenda item in third quarter 2009 and that development and analysis of preliminary draft regulations pertaining to critical facilities and vulnerable populations located within the 100-year and 500-year floodplains should continue to move forward within the next six months.