

ATTACHMENT C



CITY OF BOULDER
Department of Public Works/Utilities Division
Planning and Project Management
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WRAB January 20, 2011 Meeting Feedback or Questions with Response and Additional Research:

1. What types of public outreach have been completed and what more can be done?

As of the January 20, 2011 Water Resources Advisory Board Public Hearing outreach for the critical facilities and mobile population ordinance included:

- October 2009 meeting with the Local Emergency Planning Committee (LEPC) (The LEPC is an emergency planning organization comprised of local businesses and government emergency planning and response organizations.)
- March 2010 meeting with the Local Emergency Planning Committee
- July 2010 meeting with the Boulder Chamber of Commerce
- August 2011 A project website was developed for the proposed ordinance
- August 2010 “Protecting ‘Critical’ Buildings” front page article in the Boulder Daily Camera
- August 2010 Open House:
 1. Invitations were sent to potential critical facilities and mobile population facilities.
 2. Boulder Daily Camera article included information on time and location of open house.
 3. Boulder Chamber of Commerce included information on open house time, location and content in their monthly news letter.
 4. Information on the open house was included on the project website and city websites.
- October 2010 meeting with the Boulder Chamber of Commerce
- January 2011 Water Resources Advisory Board Public Hearing:
 1. Invitations were sent to potential critical facilities and mobile population facilities.
 2. The Boulder Chamber of Commerce was given information on Water Resources Advisory Board public hearing time, location and content.

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3. Information on the Water Resources Advisory Board Public Hearing was included on the project website and city websites.

Since the January 2011 Water Resources Advisory Board Public Hearing the following additional public outreach has been completed:

- February 2011- Public outreach
(Facility managers at 28 potential hazardous materials facilities were contacted by phone. They were told about the proposed ordinance, the hazardous materials definition and project website. Staff answered their questions and gave them contact information for additional follow up)
- February 2011 Controversy and Consensus Channel 8 TV show
(The topic of this months recurring episode was the proposed critical facilities and mobile population ordinance)
- March 2011 Water Resources Advisory Board Public Hearing:
 1. Invitations were sent to potential critical facilities and mobile population facilities.
 2. The Boulder Chamber of Commerce was given information on Water Resources Advisory Board public hearing time, location and content.
 3. Information on the Water Resources Advisory Board Public Hearing was included on the project website and city websites.
 4. Email invitations were sent to people who requested electronic notification on the proposed ordinance.

2. Can staff provide an economic analysis on the proposed ordinance?

An economic analysis of the proposed ordinance is summarized in the March 28, 2011 Water Resources Advisory Board Critical Facilities and Mobile Population Ordinance memo and the full analysis is included as an attachment.

3. Is the language of the hazardous materials ordinance causing a drag net which will result in more facilities being included?

The proposed hazardous materials definition was written to regulate facilities with large amounts (typically more than 120 gallons) of hazardous materials in the city's floodplains. The reason that the proposed definition, which is taken from the Colorado Statute, US Department of Transportation hazardous materials definition, or the Federal Emergency Management and Community Right-to-Know Act, does not distinguish between large and small businesses is that it's the chemicals that are dangerous and there is nothing about the size of the business that makes those chemicals more or less dangerous. There is no reason to believe that a quantity of hazardous material in a pile of flood debris is less dangerous to rescue workers because if it came from a small business.

4. Does the duration of flood inundation affect the cost of recovery?

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The National Flood Insurance Program's website (www.floodsmart.gov) contains a flood damage estimator that calculates flood repair costs based on the depth of flooding at a given building. For a two thousand square foot residential building subject to 3 feet of flooding, flood recovery costs will include:

- Cleaning \$4,100
- Repair of doors, windows \$2,150
- Electrical and plumbing repairs \$3,320
- Carpet and wood flooring replacement \$15,870
- Repair to interior wall finishes \$1,920
- Drywall and wall insulation or paneling replacement \$3,310
- Kitchen and Bath Cabinets \$6,100
- Appliance repair/replacement \$4,200
- Computer, TV and Electronics Replacement \$3,500
- Repairs to HVAC \$2,200
- Furniture replacement (living room, table and chairs) \$6,000

In reviewing these costs it is apparent that that depth of flooding and building materials (masonry walls vs. dry wall or concrete floors vs. carpet) will impact the cost of recovery but for the most part length of flood inundation (2 days or 2 weeks) will not. Drywall, carpet, electronics, furniture, etc that is immersed in contaminated and muddy floodwater for even 2 days will still need to be repaired, replaced, or cleaned.

5. What would be the impact of the ordinance on a daycare facility in a 500-year floodplain?

A brand new daycare facility would have to comply with the regulations by providing protection to the 500-year water surface elevation (WSEL) plus one foot of freeboard. Existing facilities will be grandfathered and can continue to operate in their existing configuration. If an existing facility proposes a modification that will be less the 50% of the value of the existing building or represent less than a 50% increase in square footage the proposed addition will need to be built with flood protection to the 500-year WSEL plus one foot of freeboard. If a larger expansion or remodel is proposed the entire facility will be protected to the 500-year WSEL plus one foot of freeboard.

6. Since the national guidance on protecting critical facilities comes from the National Flood Insurance Program's (NFIP) Community Rating System, are critical facilities regulation required for compliance with the NFIP?

At this point in time the NFIP's Community Rating Systems recommends protection of critical facilities to a 500-year flood level. Adherence to this recommendation is not required to be in compliance with the NFIP. However, the federal government is in the process of

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evaluating updates to the NFIP and its regulations and requiring protection of critical facilities to a 500-year level is currently being evaluated as part of that process.

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August 27, 2010

Ref: Critical Facilities and Mobile Population Ordinance Open House Minutes

Date Held: August 24, 2010

Location: Municipal Services Center (City Yards) Conference Room

Purpose: Start to Project Public Process

Present: Christie Coleman – City of Boulder
Bob Harberg – City of Boulder
Annie Noble – City of Boulder
Katie Knapp – City of Boulder
Kon Damas – Pro and Kon
Jeanine Foster - AMEC
Timothy Gablehouse – Gablehouse Calkins & Granberg, LLC.

Open House (4:00 to 4:15 pm)

Guests welcomed and directed to sign in sheet and informational handouts. Displays of locations of proposed critical facilities (at-risk populations, hazardous materials and essential services) and mobile population facilities were located around the perimeter of the room. We generally had enough representatives to answer the public's questions individually.

Representative Questions and Concerns:

Q: What is the definition of a “substantial improvement”?

A: A fifty percent square footage increase or a fifty percent of value increase. These are based on FEMA guidelines.

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Q: Do downstream effects need to be considered when doing fill?

A: Only in the conveyance zone.

Q: How long does it take for the remapping to occur?

A: Several months given working with FEMA.

Q: Is there coordination of the City map and FEMA's?

A: This is in progress.

Q: Does single room occupancy standard (above 50) apply to retail?

A: Yes, it tracks with the fire department regulations.

Q: Are there emergency sirens in place?

A: Yes. They can be included as part of evacuation plans.

Presentation and General Q&A (4:15-5:50)

Kon provided opening remarks to Christie's presentation. There were between 20 and 30 people present for the presentation including City staff.

Presentation Points:

- City Council has asked staff to draft a critical facilities ordinance, the city's Comprehensive Flood and Stormwater Master Plan and Multi-hazards Mitigation Plan call for protection of critical facilities to a 500-year standard.
- The National Flood Insurance Program Community Rating Systems Coordinators Manual recommends protection of critical facilities to a 500-year standard and promotes two main management strategies for protection critical facilities. These management strategies were presented as options A and B. A third option (Option C) that combines various components of the two CRS management strategies was also presented.
- Options A, B, and C and the definitions of critical facilities, at-risk populations, essential services, hazardous materials, and mobile populations were presented.
- Requirements for emergency management plans including evacuation or shelter-in-place plans for mobile populations were discussed.
- Three example critical facilities were presented with discussion on what options A, B and C meant for each facility.

General Questions and Answer Session:

Q: What would trigger the ordinance for a facility with hazardous materials or a gas station?

A: Only if there is an improvement/expansion (the 50% rules) or, in Option B, a new expansion. Otherwise all are grandfathered in.

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Q: Has a cost analysis been done of the economic impact of doing this kind of mitigation for a 500 year flood? This could be very costly.

A: The Critical Facilities Ordinance allows protection of key components of the City that allow for faster recovery economically. A cost analysis will be done on the selected option.

Q: Can mitigation be done upstream in Boulder Canyon? Changes to Barker Reservoir?

A: The focus for the City is the floodplain in city limits. A blue ribbon panel looked at alternatives to do upstream mitigation on Boulder Creek. Currently the decision is not to. A lot would need to be done well below Barker Reservoir to make a difference.

Q: Are there considerations of doing quick deployment of measures to protect buildings (e.g., sand bagging)?

A: Floods here would happen too quickly. Although automatic flood gates are a possibility.

Option A Example Questions and Comments:

Q: Would a wall be needed for Yards in Option A?

A: Yes; or fill or channelization.

Q: Does raising the floor apply to the original building as well?

A: Yes under Option A, if it is an addition rather than a new separate building.

Comments:

--There needs to be distinction made between flash floods and areas such as the Mississippi where water stands longer.

--Regulating the 500 year floodplain calls for expensive mitigation even if the water may stand here only a brief time and possibly do less damage.

Option B Example Questions and Comments

--Define floodproofing.

Q: It is possible that the floor elevation of a building would be above the flood level (except of course if there is a basement involved).

A: Maps of the floodplains do not go to that level of detail, with additional survey information it could be demonstrated that a building is indeed already out of the floodplain.

--Option B needs better clarification.

Option C Example Comments and Questions

Q: Are there specific guidelines or do hazardous material facilities get determined through individual discussions?

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A: There is individual site certification by a consultant (not the City of Boulder).
Each business explains its strategy.

--It would be helpful to have guidelines of what are protective measures to avoid problems with certification in the future (e.g., if there are staff changes).

--When would recertification be necessary?

Q: For non habitable buildings do rules apply?

A: The focus would be on the ability to respond to flood for those facilities.

--Is there a change in requirements if mitigation is done to lower the flood level impact?

Q: What if multiple buildings have different addresses?

A: Regulation is tied to what will be done in each building and if there is addition or expansion to that building.

Open House (5:15-6:00)

After all questions associated with the overall project were answered the floodplain exhibits were re-opened and staff and consultants worked with the public one on one to answer property specific questions. Questions from this time frame were similar to the representative questions listed above in the first open house period.