

## East Boulder Subcommunity – Working Group #10 - Meeting Notes

Part 1: Wednesday, April 15 from 11 a.m. to 12 p.m.

Part 2: Friday, April 17 from 11 a.m. to 12:30 p.m.

Video and Phone Conference Meetings Online

Working Group Members		City Staff	Community
<b>In attendance:</b> Matt Appelbaum Peter Aweida Erin Bagnall Lori Call Ana Karina Casas Aaron Cook Julia Dullien Leticia Garcia (only on Wed) John Gerstle Aaron Johnson Laura Kaplan Adam Kroll	Ken MacClune Kirsten Millar Ben Molk Judith Renfroe Patti Smith Dawn Williams  <b>Unavailable:</b> Lucy Conklin Tim O’Shea Jeff Wingert  <b>Translator:</b> Angela Ortiz Roa	<b>In attendance:</b> Krista Flynt Jean Gatza Ryan Hanschen Sarah Huntley Kathleen King Holly Opansky Jim Robertson Jean Sanson Christin Shepherd Dana Sparks	Michael Caplan Gordon McCurry Joanne Simenson

***The purpose of this meeting was to discuss the floodplain topic with Christin Shepherd and working group members.***

***Wednesday, April 15***

***Agenda***

- 11:00 a.m. - Meeting start & welcome*
- 11:10 a.m. - Question and Answer with Christin Shepherd, P.E. CFM*
- 11:30 a.m. - Group Exercise – envision the future of the floodplain*
  - 1. Discuss question #1 Resilience*
- 12:00 p.m. – Meeting Conclusion*

***Friday, April 17***

***Agenda***

- 11:00 a.m. - Meeting start & welcome*
- 11:05 a.m. – Public Comment*
- 11:20 a.m. - Group Exercise – envision the future of the floodplain*
  - 2. Discuss question #2 Climate Justice*
  - 3. Discuss question #3 Ecosystems*
- 12:00 p.m. – Meeting Conclusion*

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## *Summary and Key Themes from this Group Discussions on April 15 and 17*

- Support for **smart (re)development** in and near the floodplain: balancing safety, nature, and beauty with multi-use areas, and thoughtful structures. This might include encouraging creative flood control measures that are also amenities for public spaces and emphasizing natural-looking green spaces. This might also include focusing residential or increased density / focused redevelopment in the 500-year floodplain (or no floodplain) instead of 100-year floodplain. Consideration of high groundwater.
- Interest in considering opportunities in and near **Flatirons Business Park**. The area is located near the confluence of Boulder and South Boulder Creeks, yet the business park did not experience significant damage during the 2013 flood. Working group members envision potential reuse of existing parking lots and structures to meet goals.
- Support for **increasing residential housing options** and 15-minute neighborhoods, especially along Arapahoe Avenue ensuring flood mitigation and safe design is addressed.
- General consensus that the 100-year floodplain regulations should not be extended to the 500-year floodplain, but that redevelopment in the 500-year floodplain should be well-tailored to the site and prioritize safety and protection of property.

### ***How will this input be used?***

There are many areas in East Boulder that are in or near floodplains. The group's discussion about redevelopment in and near the floodplain will inform the locations and type of uses proposed in forthcoming draft scenarios. Feedback around creative and functional flood mitigation design, infrastructure, public spaces, natural areas, and other considerations may inform policy or design recommendations in the future plan. The working group, community, and staff will continue to refine and develop these ideas as the project moves forward.

## *Questions and Answers of the Flood Mitigation presentation*

- Ken asked how is floodproofing being defined and wanted clarification on when there is flooding in non-residential or mixed use and it needs to be 2 ft above BFE or flood proof? Christin answered that floodproofing is only for non-residential structures, i.e. there are floodproof doors, and the materials on the outside are impenetrable (extra layers, made with brick, etc.) that prevent water from rushing in, yet allow a very small amount of water in.
- Ken asked, how are things like streambed maintenance paid for? Christin answered that in residential areas, property owners maintain it themselves.
- Ken asked about the City's flood maps and if climate change was taken into account? Christin answered that the maps were last mapped in 2009, and there are conversations of updating the model into a program that's more useable in the next couple years.
- Ken asked about the hundred year no rise and landfill issue (and how its maintained and paid for)? Christin answered, by putting in landfill, you'd have to make the channel deeper and the maintenance get paid for if the value of the land goes to the landowner- is it public cost? Christin answered that

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typically the cost is incurred by the city, but that the developer must ensure there is access for the city to maintain it. Ken asked if the City ever thought of maintenance charge? Christin answered that that was a great idea.

- Matt asked for help understanding what a flood would actually look, mentioning that some floods tend to spread out and have shallow flooding, other floods are short in duration and have a different impact meaning what does a normal flood event versus a 100-year or 500-year event look like? Christin answered that typically in a 100-year flood there would be a lot of ponding and sitting water that has no room to spread out, in particular because of the flatter topography and confluence of a number of creeks, and this is where sediment and debris will collect.
- Before Flatirons Business Park was developed, Ben Molk mentioned that it was an old gravel mine and then backfilled with dirt to build up base on a consultant's assessment of the flood risk. Now the Park has both natural and channeled floodways and in 2013 the flood had minimal impact on the property and structures.
- Laura noted that there is so little residential development in East Boulder Subcommunity and enquired if this was due to the flood maps? Jean Gatzka answered that it may be because of the land use and zoning that has been established for a long time. And Kathleen added that the area was annexed over time more so than the rest of the City, meaning that there wasn't an overall strategy and it was parcel or groups of parcels.

### *Wednesday, April 15 – Discussion question and group responses*

***Resilience: Think about how to balance land development potential and natural landscapes for flood water, how might we prioritize or balance these objectives? E.g. maximize development potential? maximize open channel? define something in between?***

**Group One:** Peter Aweida, Lori Call, Julia Dullien, Ben Molk and Dawn William  
with staff Jim Robertson and Holly Opansky

- **Lori:** Viewed balancing the two topics as nuanced and not necessarily a tradeoff or zero-sum game. Highlighting that "Smart" development allows both development and natural landscapes to be achieved, i.e. in a 15-minute neighborhood. (This may relate to Julia's comment about supporting multi-functional landscapes.)
- **Julia:** Supported the use of multi-functional landscapes, in that flood control measures could also service as amenities, i.e. a flood retention pond could also be a destination or attraction or benefit (either of beauty or recreation?). On another note, she noted that currently permeable surfaces are not preferred in conveyance zones, and less effective than non-permeable surfaces (i.e. concrete?) at conveyance; however, she posed if permeable surfaces (because greater support for natural features?) could be considered in the 100-year floodplain(?)
- **Ben:** Expressed interest in the ability to develop in conveyance and high hazard zones. The current 3-D mapping model(s) used by the city, make it highly probable to impact others upstream (and highly improbable to develop). He mentioned that development in the 100 and 500-year zones are achievable within the code.
- **Dawn:** Expressed concern about the process regarding who decides whether someone upstream or downstream is affected, reinforcing the comments Gordon McCurry made in his email to the group this

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week. After a proposed design is reviewed and the modeling indicates issues to address, who decides if the revised proposal has met the criteria? Jim answered that the model is indiscriminatory; and Ben follow up that in some cases an applicant can contact impacted parcel owners to get permission, but that this is unattainable because there typically would be too many owners to get permission from.

- **Peter:** Valued development that mitigated flood issues and redirected water, and expressed interest learning more about how much of the city’s model is “customized” compared to federal models i.e. The Army Core of Engineers’ standards? I.e., does the city’s model impose restrictions greater than would be required to meet federal requirements?

**Group Two:** Leticia Garcia, John Gerstle, and Ken MacClune with Jean Gatzka, Ryan Hanschen, and Angela Maria Ortiz Roa

- Ken offered: Yay Resilience!
- Ken described his view that resilience in this case could mean both the land and the development (buildings) could bounce back after stress or change. However, they thought it was an important consideration for resilience in this context (a proactive approach) to prevent flooding, rather than (a defensive or reactive strategy) design the ability to bounce back.
- John suggested considering criteria in the scenarios for a greater level of flood protection i.e. 100-year – 500-year floodplain, as has been considered in other parts of the community (example was CU-South, CC provided direction last year to consider 500-year flood levels).
- Several members described valuing the natural environment by emphasizing ways flood mitigation and flood waters, landforms, and potential for “green” infrastructure was a supported concept. (e.g. no one wants to see things like the fully engineered concrete channel in the presentation).
- Leticia wondered if water could be stored and repurposed (in a flood event). Christin answered that ponding water that could be used for recreation, but water after flood has a lot of particulates in it and not beneficial for repurposing.

**Group Three:** Matt Applebaum, Aaron Cook, Aaron Johnson, Kirsten Millar, and Judy Renfroe with Kathleen King and Dana Sparks

- Aaron Johnson asked if the railroad track east of Flatiron Business Park served as a levy. And Christin answered that the railroad tracks are not a certified levy but serve more as a berm and would back up water from a modeling standpoint. He also encouraged the flood mitigation efforts to address issues east of the Flatirons Golf Course and be wary of density.
- It was pointed out by Aaron Cook that there is an example of successful flood mitigation at the bridge on Broadway (the underpass near College Avenue?). He was more interested in finding out what the group’s thoughts were about development density (and possibly supported greater density on behalf of Naropa).
- Judy supported residential with a “little neighborhood – a real residential neighborhood” in the floodplain, but that is not mixed use. She also encouraged investigating if this would this be safe? Could water get through and not back up? Could small (residential) units work?
- Matt supported considering redevelopment in Flatiron Business Park and wondered if the floodplain really had any impact on decision-making.

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- Regarding the Arapahoe Corridor this group responded to what they thought the community would be interested/comfortable with changes in land use in that area.

Group Four: Erin Bagnall, Ana Karina Casas, Aaron Cook, Laura Kaplan, Adam Kroll, and Patti Smith  
With Krista Flynt and Jean Sanson

- The group wanted to know when were these maps last updated and if they included the increased risk of flooding caused by climate change? Answer from Christin, 2009. Climate change is too hard to model
- The residential buildings South of Arapahoe weren't built for floods. Group members think the flood damage there was due to basements, crawl spaces, and below grade construction that were allowed to be built because the flood maps didn't indicate they were in danger. Also possibly attributed to high water table.
- When areas aren't labeled in the flood zone, people can build in riskier ways that lead to flood damage. Because most of East Boulder is already labeled at risk for floods, it will be mandatory that we will preemptively build to eliminate flood risk anyways.
- Residential vs commercial zoning and construction are allowed in different flood plain types. This kind of creates obvious answers about what goes where in East Boulder. Because we can't change these rules or the flood plain maps, we are subject to them. If you're going to look for great areas for residential, look at 500-year rather than 100-year or high hazard
- Any redevelopment in most of the East Boulder area would require building out of the floodplain and would therefore reduce the risk
- What type of habitat is better to reduce flooding for people downstream? Add this to scenarios. Explain what the tradeoffs are. What tools can we use? Ask consultant to model impacts
- Creeks should be natural. Encourage wildlife. Not look like concrete river in LA.
- One person's statement: It's curious to me to develop when there is so much water in the neighborhood. Are you fighting the inevitable? How do you work with water instead of against it? How do we use it and not try to avoid? All the water could make development, beautiful and natural. Manage water in a way that doesn't necessarily require pumping water out of the ground but is done with a more holistic approach, like the Dutch model.
- Multiple statements supporting balance amongst the various priorities and values. Balance land development with natural settings.

*Friday, April 17 – Discussion questions and group responses (kindly keep in mind that the initial questions posed to the group were shifted between the Wednesday and Friday meetings, base on the groups' input that the questions needed refreshing)*

***Question: Is this group interested in studying potential redevelopment (as the area is already developed) in the 100-year floodplain in East Boulder? If YES, What do you want us to test? For example, should we look at the flood impacts of a maximum density residential scenario? Should we see how redevelopment of a medium density mixed use scenario would impact the floodplain? Do***

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***you want to know how new structures might impact existing wildlife habitats? If NO, How do you envision this land being used in the future, if it is not redeveloped?***

**Group A: Aaron Cook, John Gerstle, Ken MacClune, and Dawn Williams and others with staff Holly, Jim, and Jean Sanson**

- This group favored exploring smart development to get the most out of land for flood mitigation, habitat, and residential and commercial uses and having the consultant look at how to balance these things.
- They group supported solutions that are sustainable and green as well as integrating development, instead of a binary stance of non-development vs. development.
- They emphasized that flood mitigation needs to be a priority because if housing development was added, especially not everyone can afford flood insurance.
- Highlighting the opportunity to improve flood impacts by bringing new development up to standards.
- Aaron Cook mentioned that Naropa supported rigid and appropriate flood mitigation and standards, but would also like to see increased density, especially at 63<sup>rd</sup> Street which is out of the floodplain. Continuing, he shared that there was support for increased density that meets city's standards, like affordable housing, sustainable development that doesn't negatively impact Arapahoe traffic. He emphasized that flood mitigation shouldn't be a detriment to this.
- They supported some types of lower cost housing and making it suitable for families with open areas that would mitigate flood impacts.
- They supported an integrated, fail-safe systems, so lives and high value properties are not lost, and avoiding a system of landfill and downstream dams.
- John Gerstle encouraged the ideas and solutions to focus on 2050 rather than constraining the conversation to development needs in next 5+ years. Highlighting that increased restrictions and financial impacts to developers were less important than where these recommendations point to in the future.
- They suggested reduction of human engineering as much as possible to work with natural systems.
- They agreed that flood mitigation is important, particularly for new development, but that redevelopment may be treated differently. Referenced 2013 flood impacts, and important to consider potential impacts.
- It was pointed out that, a lot of residential areas to the northwest and south of the East Boulder subcommunity, are not necessarily in a floodplain, but were impacted by 2013 floods. They encouraged considering the highwater table (underground water) and flood issues even to these areas that are not officially designated in a flood plain. They supported working with the (underground) water via methods like multifunctional landscape, as well as surface and subsurface flows.
- Noting that the 2013 flood was an unusual storm and may be indicative of future storms, they also pointed out that this may not be the only type of future flooding scenarios.
- Dawn Williams encouraged seeking examples of good flood mitigation that also add community benefits like, Scottsdale Arizona's model with green space, bikeways, etc. where only the green space is impacted during floods.
- They supported wide corridors and greenways for water to move. However, it was mentioned that the City already has development in the 100-year floodplain, and wondered if the city going to purchase

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property? Concluding that if residential cannot be built on first floor in floodplain, mixed use would be the option with retail on the ground floor. (It was suggested that exercising eminent domain could be used, but not sure group is advocating for this.)

- There was a suggestion for more and larger, significant bike paths that could carry water from Arapahoe Avenue north, then move the water out of the city and open up land for development along Arapahoe Avenue.
- Question if railroad will be removed. No.

### Group B: Peter Aweida, Lori Call, and Julia Dullien with staff Kathleen

Q1: *Is this group interested in studying potential redevelopment (as the area is already developed) in the 100-year floodplain in East Boulder?*

- **Julia:** Yes. Consider how redevelopment will impact issues of social and environmental justice. There are some in the community who use flood as a way to limit growth – disagrees with this. Want to allow smart redevelopment so that building is data-driven.
- **Peter:** Yes, building anywhere in Boulder will have flood implications. Do changes in USE have different impacts? Redevelopment of a property could actually help/improve the conditions for floodplain management. Would like to see phasing in a flood plan for the whole area.
- **Lori:** Natural evolution of redevelopment in the area.

*What do you want tested?*

- **Julia:** Residential towards Arapahoe, Middle zone – more entertainment closer to main roads and enhance what exists
- **Peter:** Impacts of a master plan – larger scale to address a whole system, Impervious with more conveyance, Changes in flood impact, Test for example a change in land use from industrial to multifamily
- **Lori:** 15-minute neighborhood uses, Opportunities for denser housing and mixed use, and address how do we create a community? Include retail, shopping to generate walkability and reduce reliance on cars?

### Group C: Matt Applebaum, Ben Molk and others with staff Krista

- 3/6 people support maintaining the natural look of the creeks as an important value
- **Re:** Flood impacts downstream. Downstream is mostly open space. Can't impact people upstream. Wanting to improve downstream flood impacts would add burden to developer. Would make development more difficult, discourage redevelopment. Current buildings don't meet the current code. Requiring meeting the higher code would discourage redevelopment. Ben Looking into downstream flood impacts is good to consider it. But not to do huge expense modeling it.
- 100 v 500 flood standards. Stricter requirements would hinder development. Would be more harm than good. We should encourage, but not require stricter building standards for flood resiliency. It's good to take the long view in terms of what we want from flood plain management. Good to consider if we want to revise or change flood plain regulations. Now is the time to do it. If done, flood plain regulation editing should be done citywide. Not just in one area. Raising flood development standards too high

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would stop development in boulder. Flood plain management should not be used as a proxy barrier to development.

- The Intensity of floods is important to consider. What are the real impacts. 6 inches of water flowing down the street for 4 hours wont damage anything. That level of flood intensity shouldn't prevent development.
- Impact of climate change on flood maps. How old are flood maps. Will consultant modeling be based on old flood maps? How much value will we extract from that modeling if it is? Christin's response that modeling is quite expensive.
- Any redevelopment will improve amount of permeable land by coming up to the newer code. Emphasized by Aaron.
- Less parking will help flood impacts. Matt – How much difference does it even make to have more or less developed area. Due to existing confluence and a high water table? Ben – can use permeable paver. The amount of parking isn't the only function of permeable to impermeable ratio. Changing the aspects of the parking lot or landscaping can do that. Permeable pavement doesn't solve all problems. Maintenance issues with plowing. Wouldn't want to impose one solution that creates another.
- What do you want to see. Interested in trails. Very popular in this area. Used a lot by employees. They are a good access point to great cycling on roads. Not a great a way to get there. Need bypass to Belmont. Ben. We tried on one of our properties to make a connection to the bike trail but couldn't due to software modeling. Because its in high hazard zone. But that stuff should be able to be placed in the flood plain. And there should be a way to do it.

***Question: We have heard from community members who would like to extend 100-year floodplain regulations to the 500-year floodplain. The 500-year floodplain includes significant neighborhoods in East Boulder, such as major portions of Flatiron Business Park. Do you think the 500-year floodplain should be more regulated by the city? What types of criteria for smart development do you think might be key to regulation in this area? Ex/first floor restrictions, parking restrictions, pervious surface requirements, etc.***

**Group A:** Aaron Cook, John Gerstle, Ken MacClune, and Dawn Williams and others with staff Holly, Jim, and Jean Sanson

- The group inquired if the city would expand the 100-yr floodplain regulations into 500-year floodplain in just one subcommunity, or would it need to be a city-wide change? And Christin Shepherd answered that the city regulation would most likely need to shift to a city-wide regulation instead of solely a subcommunity regulation.

**Group B:** Peter Aweida, Lori Call, and Julia Dullien with staff Kathleen

- General consensus: Not support regulating to 500-year over the 100-year floodplain.
- All of Boulder is impacted by flood and it should be considered everywhere but not necessarily regulated; Design community should offer creativity – something that is engineered, functional and has social features; Example: Confluence Park in Denver – uniquely tailored to the site

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- Function and Form are both important in planning and design in this area
- If you regulate the 500-year flood, require flood insurance, etc. it will be very expensive
- Should try to make amenities out of floodways – make the space usable when it's not flooded
- Would rather put the money and resources towards good design and amenities than paying for more restrictive development
- There is some wetlands reclamation and wilder habitats that already exist in EB – continue to maintain and protect those spaces
- Enhancing the drainages – make it nicer for people; increase access and add public art
- There's a lot of open space that is just flood infrastructure right now – not attractive or accessible.
- Lots of parking lots – would like to study the parking lots and see how changes to these sites may be able to improve mitigation, infill on parking lots
- Would like to get a better sense of what's public versus private property – can we start with the public lands (right-of-ways for example). Overlay this map with high risk flood areas

### *Public comments:*

Joanne Simenson

- Consider dedicating more land space to flood prevention and management
  - Identify where soil infill is needed
  - More drainageways
  - No rise criteria
  - Require wider channels
  - Need larger pipes than current infrastructure provides
- City has no money dedicated to flood mitigation in this area
  - At least designate and reserve land for flood mitigation
- Flood mitigation plans need to be documented and included in the EBSP

Gordon McCurry

- East Boulder at the confluence of major drainageways
  - There is no specific plan for mitigation in this area (East Boulder)
- Climate change effects on Boulder and South Boulder Creeks will include future storms that are more intense and more likely
  - The 2013 flood was not even a 100-year event
- Consider limited development in the 500-year floodplain