

Civic Area Floodplain Information

History of Floodplain Activities in the Civic Area

1983 –Boulder Creek Floodplain studies prepared by Muller Engineering Company and used for the floodplain mapping for the Main Library South Wing project.

1986 - Citizen petition and election for a Library bond for new facilities; the ballot item prohibited expenditure of funds within the floodway.

1989 - A special election was held in December and it specified that the majority of the bond proceeds were to be expended in the area between Broadway and 9th and Boulder Creek and Arapahoe and re-affirming that the flood prohibition still applied to the use of the funds.

1990 – January a Floodplain Development Permit was issued for the new south wing of the library. The permit, associated study work and floodplain mapping at the time showed that the new facility was not located within the Boulder Creek floodplain (nor the high hazard zone). Gregory Creek floodplain also did not impact the site for the library. A condition of this permit required floodproofing be provided for the existing north wing of the library.

1992 – Library addition completed and Certificate of Occupancy Issued

2009 – November updated Gregory Canyon Creek Floodplain Mapping adopted by City (FEMA accepted October 2010)

2012 – September updated [Boulder Creek Floodplain Mapping](#) adopted by the City (FEMA acceptance expected in fall 2016). The Main Library North and Center Wings, New Brittan and Park Central remain in the HHZ, the Main Library South Wing is added to the HHZ, and the Muni Building and the Atrium are removed from the HHZ.

2013 – [Technical Analysis for Floodplain, Wetlands/Riparian Corridor and Water Quality Issues](#) completed by Wright Water Engineers

2013 – September floods impacted both the West Senior Center and the Main Library. Boulder Creek experiences a 25 year event and Gregory Creek experiences a 25-50 year event in the Civic Area.

Flood Regulatory Considerations

The [Boulder Civic Area Guiding Principles](#) states “The Boulder Civic Area is located within the 100-year floodplain, and much of the land lies within the High Hazard Zone (HHZ). The city will meet or exceed existing flood standards, including avoiding placing new structures and parking in the HHA and will be proactive about planning for and educating about floods.” The city’s existing flood regulations include:

- No new buildings intended for human occupancy can be built within the High Hazard Zone (HHZ).
- A building that is touched by the HHZ is regulated as if the entire structure is in the HHZ.
- An existing building in the HHZ cannot have additional space intended for occupancy built nor can the footprint be increased.

- An existing building cannot be improved by more than 50% of the value of the building. Any improvements that are within the conveyance zone require evaluation and certification of no impact.

Flood Policy Consideration

Public safety must be considered for flood potential, but does not prohibit activation of areas in the floodplain or HHZ. A hierarchy of activation and uses related to safety should be considered. Uses that are outdoors and that do not confine the ability of people to evacuate from the area are safer than occupied buildings. For buildings, those occupied by the same people on a daily basis (such as office space) and who are aware of their situation and trained on how to respond is less of a risk than the circumstance of buildings used for assembly space (such as performance and theater) where occupants are not routinely in the building, may not have situational awareness nor training on how to respond during a flood event (or flash flooding).

Site Opportunities and Flood Constraints:

Difference in Risk – While all of the sites in the Civic Area are impacted by floodplain and/or high hazard zone determinations there are differences in the risks associated with potential flooding for each of the sites. Future uses of these sites have been considered in response to these different conditions.

West end of Civic Area

Floodplain issues have been a concern in this area and discussed over many years and included in different studies. Specific regulatory and policy issues are:

Main Library North Wing

This building is impacted by the Boulder Creek 100-year floodplain, conveyance zone and HHZ designations. The current “island” in the HHZ is created by the blockage of flood flows created by the location of the building, and the entire location would be HHZ without the building. For these reasons the site should be managed as a HHZ location.

The flood designations at this site create regulatory constraints that prohibit the expansion of either the footprint and/or increase in square footage of the building, and also limit the level of improvements that can be made to the building.

Appropriate uses of the current building should consider the acceptable level of risk with that use. For example, a regularly used performance/assembly center creates a higher risk to life safety and is not a use that would be appropriate for this location. More informal uses such as seating space for the café and small community groups have a lower risk potential. Any use of this building should include the implementation of an Emergency Management Plan and associated education and public information necessary to support the activation of the area in case of flood risk.

The lifespan of this building should be assessed along with its longer term use.

Main Library South Wing

This building is impacted by the Boulder Creek HHZ as it touches a portion of this building; however the site is not surrounded by the HHZ. This designation does subject the entire building to city’s high hazard floodplain regulations. It may be possible that mitigation measures for

Boulder Creek could change the HHZ mapping and remove this building from the designation. Addition analysis would be required to make a determination on this issue.

West Senior Center

The west edge of this building may be impacted by Gregory Canyon Creek HHZ; however the rest of the site is not within the 100 year floodplain. Access to this site is impacted by the Gregory Canyon Creek HHZ that extends east along Arapahoe. While this site is not mapped in the 100-year floodplain, this facility was impacted during the September 2013 floods and therefore flooding is a concern separate from the regulatory maps. It is possible that mitigation work for Gregory Creek could impact this site, and would also lower the flood risk to a portion of this site and Arapahoe Road. To accomplish this, it is likely that the current building would need to be removed. Examples of acceptable uses of this site with flood mitigation could be above ground parking garage or office space.

Muni Building

The 2012 updated Boulder Creek Floodplain mapping removed this building from the HHZ but the building remains in the 100-year floodplain and the conveyance zone. Additional floodproofing measures were recommended for this building in a 2013 structural and flood assessment. It is possible to exit this building without immediately placing people within the HHZ, which lowers flood risks.

East End Civic Area

Floodplain issues on the east end are different from those found on the west end of the civic area. While this area is covered by the 100-Year Floodplain of Boulder Creek, the HHZ and conveyance zone designations are more confined in this area and have decreased in size with the recent mapping update. The HHZ are along Boulder Creek and also follow Canyon, 13th and 14th where flood waters are returning to the creek area.

Atrium Building

The recent floodplain mapping has reduced the HHZ for this property including removing the building from the HHZ. This building is also not in the conveyance zone, but is within the 100-year floodplain. Previous floodproofing recommendations include building a flood wall and adding flood gates around the building, which could impact access and future uses.

13th/14th Block - The developable area in this block is impacted by 100-Year floodplain for Boulder Creek, but most of the property is neither within the HHZ nor the Conveyance Zone so fewer regulatory constraints related to flood impact the ability to build new or improve existing buildings. The street corridors are HHZ in the new mapping, which impacts access during a flood event; however it is possible to design the sites so that people exiting the buildings are not placed in the HHZ.

Parking Opportunities

Below grade parking structures are not recommended in the Boulder Creek area due to flood risk and ground water challenges. Below grade structures are at greater risk for flood damage to both the structure and the contents and are also a risk for people that may try to leave the area during a flood. Mitigation for groundwater will also likely increase the cost for both construction and long term operations of any below grade structure.