


MEMORANDUM

CITY/BOROUGH OF JUNEAU
155 South Seward Street, Juneau, Alaska 99801

DATE: May 10, 2013

TO: Planning Commission

FROM: Eric Feldt, Planner, CFM 
Community Development Department

FILE NO.: AME2010 0009

PROPOSAL: New Draft FEMA Flood Map Issues

The Community Development Department staff presented seven problems and recommended solutions for the new draft flood maps to the Planning Commission during a special meeting on April 23, 2013. Staff indicated to the Commission that they would follow up to see which solutions were acceptable/ not acceptable to FEMA as ways to make the maps more accurate. The seven items discussed during the special meeting are listed below.

List of problem issues and recommended corrections for the new draft flood maps (Not in order of importance)

- 1) **Velocity Flood Zones:** Velocity flood zones appear to be mapped too far inland and place more buildings within flood zone.

Fix: Hire coastal hydrologist to study hydrologic and hydraulic water conditions to determine appropriate base flood elevation or reach of flood zone line to better represent storm conditions.

- 2) **Auke Bay:** There are unusually high base flood elevations in Auke Bay area. Effects of new Statter Harbor breakwater to waves in the Auke Bay area do not seem to match with the new velocity flood zone in area.

Fix: Hire a coastal hydrologist to re-study the area and examine effects of the breakwater to determine appropriate base flood elevation and flood reach along coastline in Auke Bay. Research CBJ Docks & Harbors elevation data to find flood elevation and use 2012 Light Detection and Ranging (LiDAR) and future 2013 LiDAR topographic lines. Also, this flood elevation line may be argued as being too high.

- 3) **Auke Lake:** No defined base flood elevation in Auke Lake. Increased flood zone area on map puts more homes in high risk flood zone without stating a flood elevation.

Fix: Hire a hydrologist to study area to determine appropriate base flood elevation.

- 4) **Iso Static Rebound:** Flood levels change when land is rising (iso static rebound). How can this be recognized by FEMA and reflected on flood elevations.

Fix: Contact local surveyors and other professionals who are responsible for monitoring local tidal gages. Assess how to incorporate changes of tidal gage rise into the new flood maps. According to NOAA's Tides & Current webpage, <http://tidesandcurrents.noaa.gov/sltrends/sltrends.shtml>, the sea level in Juneau, Alaska is lowering by 12.95 mm/year (1/2 inch/year).

- 5) **Gold Creek:** No defined base flood elevation in Gold Creek. Increased flood zone area on map puts more homes in high risk flood zone without stating a flood elevation.

Fix: Hire a hydrologist to study hydrologic and hydraulic water conditions to determine appropriate location and base flood elevation in Gold Creek.

- 6) **Concrete Way:** Flood elevation of flood zone overlaying Concrete Way in Lemon Creek seems too high.

Fix: Find where flood elevation should be in the area by researching the documented subdivision elevations, and use 2012 LiDAR topographic lines. Work with FEMA in implementing 2012 and 2013 LiDAR. If flood elevation and real elevations match up, hire a hydrologist to study hydrologic and hydraulic water conditions to determine appropriate base flood elevation.

Staff notes that a question came up during the April 23, 2013 COW Planning Commission meeting of whether or not the flood study of Lemon Creek took place prior to the removal of the old bridge near the end of Concrete Way. This bridge was not shown in the cross sections of the Flood Insurance Study along Lemon Creek. Therefore, staff concludes that the study was done after the bridge was removed.

- 7) **Inaccurate Elevations:** Due to inaccuracies in the base map, many properties/buildings that are naturally elevated above the flood elevation (i.e. bluff) may be inadvertently placed in a A or V Flood Zone

Fix: Use 2012 and 2013 LiDAR to help refine flood locations and look at CBJ's records to find elevation data. This could lead to FEMA map amendments/ revisions to remove building/property from mapped flood zone.

According to FEMA, having a professional engineer perform hydraulic and hydrologic analyses consistent with FEMA-approved methodology to make changes to the maps are acceptable. Also, using LiDAR technology to delineate contour lines is acceptable for future changes. Staff notes that FEMA and CBJ have already agreed to use recent LiDAR to improve the flood maps. According to CDD staff, new 2013 LiDAR is expected to be available near the end of this calendar year. Lastly, CDD staff is continuing to learn about how glacial rebound (iso static lift) affects local tidal gages and how often these gages are reviewed.

In addition to adopting new Flood Insurance Rate Maps and the Flood Insurance Study, the CBJ is also required to bring all flood regulations up to current FEMA-minimum standards. Staff is aware that the CBJ will need to add more flood regulations. FEMA's contractors will send the additional flood regulations to staff to incorporate into the Land Use Code.