

ASFPM comments on Bulletin 17C submitted to USGS April 2016

The Association of State Floodplain Managers commends the USGS for facilitating the efforts of the Hydrologic Frequency Analysis Work Group, under the Subcommittee on Hydrology, of the Advisory Committee on Water Information to move forward these long overdue updates. The resulting Bulletin 17C presents a new approach for dealing with historic data, interrupted data sets, regional skew, treatment of low outliers and zero flows, and defining confidence limits. We believe this new approach to be a significant improvement over the existing Bulletin 17B.

ASFPM solicited comments on the draft Bulletin 17C from its membership and below is an annotated summary of comments received:

- It was suggested that Bulletin 17C have a section on “Limitations of Frequency Curve Extrapolation.” This proposed section would caution users and provide clear guidance to users of Bulletin 17C on limitations and applicability in determining less recurrent annual chance events. The 0.2% (or 500 year) event was specifically mentioned because of its reference in the new the Federal Flood Risk Management Standard.
- There were multiple references in the draft that suggested a minimum of 10 years of data is needed to do frequency analysis of annual series. What is the basis for this guidance? Was there a sensitivity analysis conducted that suggested the 10 year of annual maximum series data is sufficient for a peak frequency analysis?
- It was acknowledged that PeakFQ and HECSSP have been modified to reflect the method outlined in Bulletin 17C. It was requested that examples be provided that clearly demonstrate the incremental steps in the statistical process.
- Similarly, there were requests for examples in computing regional skew and it was suggested that current regional skew studies be published and maintained by the USGS.
- While this update addressed some needs outlined in Bulletin 17B, we concur with Bulletin 17C that there is a significant need for further development of technical guidance for: ungaged sites, regulated flow frequency, and urbanization and watershed change. These three topic areas have far reaching impact now and into the future. We encourage the Hydrologic Frequency Analysis Work Group to begin work on addressing these deficiencies in the current guidance.

In addition to the comments, there were questions on the impact of these update on past work.

- Are there plans to re-evaluate the Regional Regression equations developed for most states, as these Regional Regression equations were based on their correlation to Bulletin 17B flood frequency estimates?
- Are there plans to re-test data of various gages to see if another distribution instead of Log Pearson III could better fit streamflow data? As an example, Purdue University recently completed a study on several stream gages in Indiana and concluded that the L-moments method had a better fit to data than Log Pearson III.

In addition to these comments or questions, reviewers submitted the following typographical error in the text.

1. P6, ln 6: replace ">" with "≤"
2. P18, ln 70: remove "be" from "be be"
3. P20, ln 51: replace "though" with "through"
4. P23, ln 59: replace "paleflood" with "paleoflood"
5. P30, ln 68: replace "potentially" with "potential"
6. In Appendix 5, there are typos in Equations (5.2) and (5.3). The lower limits of the sums read $j = i + 1$ and should read $j = k + 1$.

Again, on behalf of ASFPM, we commend the USGS for facilitating the efforts of the HFAWG, under the SOH of the ACWI to update Bulletin 17B. This is an important document for water resource planning and flood risk identification and we look forward to Bulletin 17C being finalized.

Respectfully Submitted,

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