Stakeholder Interview Summary

1. **TVA: Miles Yaw, P.E.**

Miles Yaw was chosen to be interviewed due to working at the TVA on various flood prediction related projects. When asked about the TVA’s use of historical reconstructions he said “Yes. All our operational flood guides, guide curves, and balancing guides are based on historical streamflow “records.” A lot of the earliest data (c. 1940 and earlier) are sparse and are statistical derivations on drainage area. More recent records are more comprehensive. All our dam safety risk decisions are based on historical rainfall records, resampled into synthetic hydrology and calibrated to historical streamflow frequencies and bias corrected to monthly and seasonal streamflow records, determined both from observational data and from dendro reconstruction.” When asked about the use of AI/ML for historical reconstruction, he said that he saw the value for areas and basins with a short or no gaged record at all. This would help them to have a better understanding of hydrologic variability.

1. **InSite Engineering: Rick Deerman, P.E., CFM**

Rick Deerman was chosen to be interviewed due to his current practice with hydrological modeling and water resource management, at InSite Engineering, a local civil and environmental engineering firm. Rick has worked as a professional engineer in consulting for over 25 years, with a specialized focus on hydrologic modeling in the civil engineering field. His current practice consists predominantly of evaluating spatial differences in 10, 50, and 100-year storms for establishing stormwater solutions for site development as well as determining minimum and peak flows for a variety of applications. Rick explained that his current practice utilizes streamflow / creekflow data to establish baseline minimum flows to meet regulatory requirements for wastewater discharges. He mentioned that there is often a lack of reliable streamflow and creekflow data, especially in West Alabama, where a majority of the municipal work at InSite is focused. He explained the importance of reconstructed streamflow as it would give insight into low flow periods for better estimating baseline minimum flows, which subsequently reduces risk to the water body receiving wastewater discharges. The methods of paleo streamflow reconstruction have been utilized in other locations including parts of the southeastern US and central Europe, and with the proper resources like PDSI datasets and unimpaired streamflow data, it could be done for creeks and streams for wastewater discharge modeling and regulatory purposes in west Alabama and across the southeast United States.

1. **NOAA,** [**Colorado Basin River Forecast Center**](https://www.cbrfc.noaa.gov/)**: William Paul Miller**

Paul Miller, from the Colorado Basin River Forecast Center, emphasizes the importance of enhancing hydrologic forecasting by incorporating various datasets and methods. He mentions that they are actively working on improving the skill and lead time of their forecasts, particularly focusing on snow coverage and snow water equivalent data. In this context, dendrochronology plays a significant role, as it is actively used by the Bureau of Reclamation to identify vulnerabilities in long-term reservoir operations. He says while we may not directly use dendrochronology information in their forecasting at their timescales, it's crucial to be aware of its potential benefits. He mentions collaborations with experts in dendrochronology and other fields, such as social scientists, meteorologists, and climatologists, can provide valuable insights and contribute to better communication and decision-making in hydrologic forecasting, ultimately improving their forecasts and benefiting the field.