

## **Lessons Learned on Hydraulic Asphalt Mix Design in the US**

**Wonnie Kim, Stantec**

**Don Montgomery, Stantec**

The final design for the Chimney Hollow Reservoir Project near Loveland, Colorado was completed in the summer of 2019 and construction is planned to start in 2020. Chimney Hollow is designed as an asphalt concrete core rockfill dam (ACRD) with a jurisdictional height of approximately 332 feet and a maximum embankment height of about 355 feet. Although the use of hydraulic asphalt concrete (HAC) for the primary water retaining feature of embankment dams has been used successfully for over fifty years globally, the technology has been used to construct only one other dam in the United States. This paper includes an updated overview of the design and shares challenges encountered by the design team as they applied HAC technology in the US market. Though the use of asphalt for pavements is well established in the US, the approach in HAC technology is different enough that several challenges were encountered in the development of the mix design and construction specifications for the HAC. The information presented includes highlights of activities required to translate international HAC testing, as well as HAC specifications and placement requirements, to Colorado through the development of a trial mix program and final design specification. Additionally, developments in the understanding of the geologic setting that drove design decisions as the project advanced are shared.