Indian Institute of Technology Kanpur
Chandrakanta Kesavan Lecture Series

FEB 10, 2023 (Friday) | **05:00-6:00PM** | **DJ-306** Diamond Jubilee

Speaker : Mr. Rajendra Bhattarai

Austin's 100-Year Water Plan: Resilient, Reliable, and Sustainable to Address the Effects of Climate Change

About the Talk

Austin, the capital of Texas, and the 10th largest city in the U.S., experienced a record drought from 2008 to 2016. During the drought, the lake that supplies Austin's drinking water fell to historically low levels of only 30% of its full capacity. In 2011, Austin had:

- Record 90 days above 100 degree F (compared to average 15 days of ≥ 100 degree F temperature/year)
- Driest 12-months leading to the worst wildfire in Texas history
- Record low inflow to the lake system that is Austin's sole water source

While Austin successfully weathered the drought with strict water conservation, there was widespread concern that the lake might dry up in the near future. The drought highlighted the need to make Austin's water supply more resilient, reliable, and diverse.

To address the effects of even worse droughts in the future due to climate change and to provide water for a growing Austin, Austin Water embarked on the most ambitious project in its 115-year history. It was called Water Forward, and it addresses the complex issues of climate change-induced extreme events such as droughts on Austin's future water demand from a growing population that is expected to quadruple in 100-years.

Water Forward addresses these issues by modeling potential climate change effects on Austin's water supplies and evaluating multiple future scenarios to plan for droughts worse than what Austin experienced in the past. Markov Chain Monte Carlo method was used to generate 10,000 years of hydrologic data from 77 years of available data. Results from the effects of climate change modeling were superimposed on future water availability scenarios developed using Markov Chain Monte Carlo. The recommended plan is the culmination of a robust effort that involved the Austin community, the Water Forward Task Force, a consulting team, and City staff, and considers future conditions affected by climate change.

About the Speaker

Mr. Rajendra Bhattarai received his B.Tech. in Civil Engineering from IIT Kanpur and his M.S. in Environmental Health Engineering from the University of Texas at Austin. He has more than 42 years of public and private sector experience in water, nearly 35 years of which were at Austin Water. He is currently the President of Clean Water Strategies in Austin, Texas. A fellow of the Water Environment Federation, Mr. Bhattarai is the recipient of numerous awards including the 2022 Distinguished Alumnus Award from IIT Kanpur.

Organised By

Chandrakanta Kesavan Center for Energy Policy and Climate Solutions

Department of Sustainable Energy Engineering