


PROJECT FACT SHEET			
Project Name:	Lower Rio Grande/Rio Bravo Two-Day Salinity Level Forecasting Using Artificial Intelligence	Completion Date:	January 31, 2024
Project Location:	Lower Rio Grande	Project ID:	1292
Goal:	Developing a website tool forecasting salinity level along the Lower Rio Grande	Technical Rep.:	Carolina Valdes Bracamontes
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Pre-Project Conditions		
No salinity forecasting system along the Lower Rio Grande		
Project Objective		
The objectives of the study were 1) to predict accurate 2-Day forecasting salinity data along the LRG using AI algorithm computer modeling and 2) to provide dependable and easy access of the salinity forecast.		
Project Scope	Project Cost	
The project scope was to provide reliable and valid 2-day river salinity forecasting data of the LRG basin using an online tool powered by an Artificial Intelligence that utilizes monitored water temperature specific conductance, and total dissolved solids.	B2025 Awarded Amount:	\$63,115.55
	Total Project Cost:	\$91,874.24
	Project Length:	19 months
	Benefited Population:	1,368,723 as of 2020, which is the LRG population

The Results	
Outcomes	Outputs
The AI algorithm automated forecasting internet website system (https://lrgsf.utrgv.edu/) providing 24-hour and 48-hour predictions for surface water temperature (°C), surface specific conductance (μS/cm) and total dissolved solids (TDS, mg/L) at the seven TCEQ CWQMN stations along the Lower Rio Grande/Rio Bravo.	The product will serve as a smart decision support tool for their better management of water resources, in designing infrastructure for improving water quality. In addition, this AI tool will be beneficial to evaluate effects of climate change in the LRG ecosystems and human health due to excessive salinity resulting from higher rate of evaporation
Significant Project Contributions	
The proposed research project addresses the requirement for salinity level forecasts in the LRG (Lower Rio Grande) region, providing direct benefits to improved access to transboundary water quality data. The online salinity forecast tool aims to offer easy-access, reliable, and vital forecasting data for municipalities, utility districts, and water supply corporations located in the LRG basin.	