**Speech for EarthX Event, April 21, 2023**

Good afternoon. My name is [redacted], and I'm the General Manager and CEO at the Brownsville Public Utilities Board, a municipally owned utility providing electric, water and wastewater services in the Rio Grande Valley. Located in Deep South Texas, BPUB is just about the last stop for water on the Rio Grande before it reaches the Gulf of Mexico. That means all other municipalities pull water from the river before it even reaches us. That combined with our extremely hot South Texas summers presents some unique challenges to us, and we as a utility are trying to meet those challenges with some unique solutions.

Back in the 1990s when South Texas was hit hard by drought, BPUB starting looking for ways to make itself more drought resistant. BPUB ended up pooling resources together with regional partners to come up with a regional solution. Taking advantage of economies of scale, BPUB joined with five other water providers to construct a facility to treat groundwater called Southmost Regional Water Authority or SRWA. The plant uses reverse osmosis membrane technology to treat brackish water, which is salty but not as salty as ocean water. This facility currently provides a third of BPUB's drinking water from a source independent from the Rio Grande, which is critical for our water supply. But that's not all that we are doing.

A quick show of hands: how many people know what resacas are? What about oxbow lakes? Brownsville's resacas are very similar to oxbow lakes. Resacas are former parts of the Rio Grande, channels that were separated over time as the flow of the river changed. Without BPUB continuing to feed water from the river into the resacas, they would be nothing more than dry river beds, long since silted, but with water still flowing through them, they provide some opportunities, and we are tapping into that through the Resaca Restoration Project.

When we officially started the Resaca Restoration Project back in 2013, some of our resacas were in rough shape. Years of urban runoff had resulted in these waterways being filled with silt, sediment and trash, with some areas having a foot of water or less. As you can imagine, the result was a decreased quality of the water in the resacas. Because of the lack of depth, it was warmer and had lower oxygen levels, which in turn decreased the quality of the habitat for our native plants and animals, many of which depend on our resacas. We knew something needed to be done, so we initiated the Resaca Restoration Project.

The project consists of using a specialized boat to dredge out the sediment, trash and silt from the water, while being careful to maintain the natural clay bottom. That material is essentially suctioned out like a vacuum and in turn sent through our dewatering equipment, where the water is separated from the mud and other materials, and then the clean water is introduced back into the resaca system. While this is being done, we are also taking other steps, like removing invasive plant species and replacing them with native plants and also making bank improvements to reduce the effects of erosion and lessen the impacts of urban runoff and erosion.

Through this project, we have already seen some major benefits and expect to see more, and the Resaca Restoration Project stands as a shining example of a project that benefits the environment while also bringing critical improvements to the utility. At the first resaca we worked on, our crews pulled more than 200 tires from those waters and increased the water depth from less than a foot to as much as 6. As you can imagine, this goes a long way toward alleviating some of the water quality issues that we discussed. This in conjunction with the planting of native vegetation greatly improves the resaca ecosystem. Ecotourism, specifically from bird watching, is huge in our area, and these improvements ultimately helps feed that ecotourism demand. But what might not be as evident is all of the space that is opened up. All of that room that had been taken up by

sediment can now go toward water. Because we can use our resacas as a drinking water source, that means we are also greatly enhancing BPUB's water storage capacity. During extreme drought, this extra bit of water could make a huge difference.

Last year's drought was a major challenge for BPUB and many other utilities. It was the first time since the construction of SRWA that we have had to initiate stage 2 of our drought plan. Knowing that the drought isn't expected to improve this year, BPUB has been encouraging customers to start conserving water now, and we are also looking for ways to continue to improve. BPUB is currently moving forward with initial plans to expand SRWA to further lessen its dependence on the Rio Grande, and the Resaca Restoration Project continues to move forward, gaining more water storage capacity for our customers.

Drought, extreme heat, a diminishing water supply … these are all huge obstacles that we are facing, and we need to remain open to out-of-the-box solutions to face them head on. Projects like the Resaca Restoration Project, which bundles environmental needs with economic ones, are the future. Enough of these small projects that provide benefits locally will ultimately lead to major changes globally. Let's start that journey together.

Thank you.