More Clean Water, Less Energy Use

Kevin Lansey is remodeling Tucson's municipal water supply for Sustainability.

Professor Kevin Lansey

Professor Kevin Lansey, head of the Department of Civil Engineering and Engineering Mechanics, and four UA colleagues have been awarded $2 million by the National Science Foundation to research water reuse and supply systems.

The NSF's Office of Emerging Frontiers in Research and Innovation is funding the research project - *Optimization of Dual Conjunctive Water Supply and Reuse Systems with Distributed Treatment for High-growth Water-scarce Regions* – which will ultimately produce a computer model for water managers who are grappling with the problem of using less energy while meeting increased demand for water.

Lansey defines the research project as having three goals, or three costs, what he describes as a "triple bottom line." They are, he said, "economic cost, environmental cost – which includes energy consumption and greenhouse gas production- and social costs, or social acceptability." The research group will work with the City of Tucson, Pima County and Global Water, a private water provider.

Lansey's model proposes decentralized, distributed water treatment plants to ameliorate the prodigious amount of energy required, and greenhouse gases emitted, to move the vast volumes of water around the city between consumers and treatment plants.

Lansey's group will look at where to locate these decentralized plants, and investigate how to make such systems reliable, and how to ensure that the water being served is of the appropriate quality. "We're going to show what's cost effective at what scale," Lansey said.