VOICE OF SAN DIEGO

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The Solution to San Diego's Water Crisis

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The world is undergoing a water crisis, and San Diego has certainly felt its effects. We import 90 percent of our water, most from the Colorado River and also from the Sacramento Delta, and both resources are strained and run the risk of drying up. The environment and the future generations of San Diego are demanding a solution to this water crisis -- a solution which can be found in the "indirect potable reuse" of wastewater. Many San Diegans, however, have expressed disgust at the very idea; the concept of drinking our own waste does seem unthinkable at first. Opponents have even dubbed the plan "toilet to tap." But the facts are clear. Purified wastewater is completely safe for drinking and has the potential to alleviate environmental strains and aid in reversing San Diego's water crisis. Our city must take the initiative to preserve our natural environment as well as ensure that future generations are provided with ample supplies of drinking water.

The largest barrier to accepting the idea of treated wastewater is fear. People dislike the idea of drinking water that was once contaminated with fecal matter and fear possible consequences that may arise should bacteria, toxins, or other dangerous matter not be adequately removed from the treated wastewater. Their opinions are understandable but opposed by the plain facts surrounding wastewater purification.

The purification process begins with the water filtering through thousands of fibers with tiny holes by which suspended solids and bacteria are removed. The water then undergoes reverse osmosis, in which the water is forced through tubes filled with plastic membranes; this process treats the nonwater molecules, including viruses and pharmaceuticals. Bryan Walsh of Time magazine calls this step "particularly important" because "an Associated Press investigation earlier this year found trace amounts of prescription drugs in the drinking water of more than 40 million Americans." Anything else that may remain in the water is taken care of when the water is finally treated with the disinfectant hydrogen peroxide and ultraviolet light. The finished

product is clean, safe drinking water; Walsh and The New York Times writer Elizabeth Royte both testify to the treated water's pure taste and quality.

In fact, according to James Crook, an environmental engineer on a scientific panel advising San Diego's study of wastewater purification, the purified wastewater is "superior to your existing water supply" from the Colorado River and Sacramento Delta. People should remember that our current sources of drinking water are not completely uncontaminated to begin with either; discharge from sewage plants and farms upstream in areas such as Las Vegas find their way into the water.

Shane Snyder, a drinking water scientist of the Southern Nevada Water Authority estimates that 10 percent of the Colorado River is treated sewage water and that 3 percent of the river is treated wastewater from Las Vegas. Snyder reminds us, "The people of San Diego are going to drink reused water one way or the other. Whether they control it or take it from current sources, it's going to be there. I have no doubt that the systems that San Diego is considering and that Orange County uses are safe from a scientific perspective."

The Orange County Groundwater Replenishment System that Snyder mentions is the largest and most high-tech wastewater purification system in the world. It was created in Orange County, California in 2008 and processes 70 million gallons a day -- enough water for 500,000 people per year.

Orange County's milestone in water treatment is not the only system to provide citizens with drinking water recycled from wastewater. Residents of Singapore drink water that is made up of 1 percent treated wastewater; those of Windhoek, Namibia drink 100 percent treated wastewater; those provided water by Virginia's Upper Occoquan Sewage Authority drink recycled wastewater mixed with fresh water from a reservoir. Numerous places around the world have been operating safely and successfully in providing treated wastewater for drinking, and San Diego can certainly do the same.

Some people who support the idea of indirect potable reuse may balk at implementing it because of the cost; after all, the Orange County Groundwater Replenishment System took $480 million to build and costs $29 million a year to operate. The price, however, is worth the clean water provided for our citizens and the benefits promised for the environment.

Also, alternatives to treating wastewater for drinking are actually more expensive. Purifying sewage is cheaper than desalination, which is purifying seawater, because removing salt from seawater takes more energy. For example, it costs Orange County $800 to $850 to produce purified sewage for two families of four for one year, but would cost $1,200 to $1,800 to produce the same amount of desalinated water. Purifying sewage for drinking is cheaper than purifying sewage for irrigation because to use the water for irrigation, the city would need to install a new series of pipes for its reclamation plants to be utilized. In the end, when considering our choices, indirect potable reuse is actually one of the cheapest ideas.

In a time when the environmental and societal consequences of human development and technology are more realized and serious than ever before, it is necessary for us to take the initiative to correct the problems we created. Purifying wastewater is a clean and efficient method of providing drinkable water for the citizens of San Diego and of alleviating environmental stress on our current water supplies. The water crisis was created by man and therefore must be reversed by man. Hopefully, San Diegans will set aside their inhibitions and realize the potential of indirect potable reuse, and the city of San Diego can take a step forward with into a future free of a water crisis.