

The Case for a U.S. Department of Water

To: Our (Future) U.S. Secretary of Water,

Our dependence on naturally available water, both surface water and groundwater, is being tested and it is for this reason we must act to establish a U.S. Department of Water (DOW). Water is not limited in the United States, but the totality of our water supply is confined to easily accessible freshwater sources. Using [Desalination](#), broadly defined as the generation of potable water from a presently unusable or salty source, we can develop nearly infinite alternative water resources. In 1952, congress authorized the Department of the Interior, by way of the Saline Water Conversion Act, to establish the [Saline Water Conversion Program](#) - this was the first (and last) effort to focus the federal government on the deployment of advanced desalination technology.

The time has come to raise our national effort towards permanently securing freshwater by mobilizing a new federal mission; to enable the conversion of abundant salt water reserves into a strategic source of freshwater. We are suffering from aging water infrastructure and limited river flows in the U.S. and more notably, our imagination has failed to keep pace with the dynamism that has always powered the American economy. From World War II through the 1960's we completely re-molded the western United States by building thousands of dams to control the flow of water through a vast network of interconnected waterways. Today, we no longer have the capacity to sustain this critical infrastructure as the Colorado River dwindles and states are being paid to forgo water deliveries. I am calling for a nationalized effort to usher in a new generation of water technologies that will unlock vast swaths of untapped water sources through advanced treatment and desalination.

Today, the management of water infrastructure, water quality and water innovation in the U.S. is divvied up under the [Bureau of Reclamation](#) (USBR), [Environmental Protection Agency](#) (EPA) and [Department of Energy](#) (DOE), respectively. Consolidating these water programs into a single department and increasing the annual budget would marry basic scientific research happening in the DOE's [Desalination Hub](#) and USBR's [Desalination Program](#), with the build out of new water supply infrastructure for the next century. For example, a network of distributed desalination plants treating [brackish groundwater](#) would reduce reliance on the Colorado River Basin and supplement natural water supplies with decentralized desalination. This requires unified resources.

In May of this year the western states of California, Arizona and Nevada reached a historic water agreement to give up three million acre-feet (3M AF) of water from the Colorado River (an acre-foot is 325,851 gallons). In return, the federal government is providing compensation for 2.3M AF of that

with a \$1.2B payment over three years, or \$521 per AF of water. Most view this as a positive step to conserve water in our most fruitful watershed and reduce strain on critical infrastructure like the Hoover Dam. However, this water conservation [proposal](#) is yet another indication that we have fallen short of the brand of American ingenuity that produced the Hoover Dam. When the U.S. Department of Energy was created by President Carter, it had the specific goal of promoting energy conservation *and* developing alternative sources of energy. A unified Department of Water would fulfill this same bifurcated mandate by empowering the Secretary of Water to both protect existing water infrastructure *and* build the technical capability to yield more usable water to grow our productivity.

In this country, we have seventeen national labs dedicated to securing domestic energy generation but not a single standalone laboratory facility dedicated to advancing water. Technology, such as advanced desalination has the ability to produce fresh water from the ocean and from vast brackish groundwater reserves. This will only be attainable through a national effort to improve the overall efficiency of desalination, reduce cost to achieve economic parity with the water grid and eliminate the environmental impacts of brine discharge. Water infrastructure is also a key input for other domestic efforts. For example, if we intend to expand domestic food production, manufacturing, or rare earth metal extraction, our water demands will be even greater. The modern day equivalent of a Hoover Dam project might be a network of water generating plants that convert unusable saltwater into freshwater at a scale that definitively eliminates our dependence on the Colorado River Basin.

We need centralized leadership at the federal level to think long term about the efforts required to create more water for Americans. If the total Colorado River water withdrawals (currently 6M AF) needed to be permanently reduced by 30% at a cost of \$521/AF, that would require nearly \$1B in annual payments - \$27B by mid century. Directing that money towards the consolidation of federal water resources with a nationalized plan to expand the domestic supply of water would be money better spent. Ignoring any technology improvements, the same \$27B allocated towards advancing desalination plants would produce more than four (4) million acre-feet of additional water - enough to make California a net exporter of water, in effect pumping water back into the Colorado River Basin.

An Advanced Desalination Commission (ADC) is being formed to encourage an open dialogue on this topic and to move us closer to the establishment of a national water strategy. My hope is this motivates members of the innovation community and our water agencies to seriously consider the need for a central water department. A water abundant future is achievable but only if we have the will to go and build it. In the historical words of John F. Kennedy, "if we could produce freshwater from saltwater at a low cost, that would indeed be a great service to humanity, and would dwarf any other scientific accomplishment." In light of all the incredible advancements being made to improve humanity, let's not forget about the one thing that made intelligent life on this planet possible.

Sincerely,

Aaron Mandell, CEO, Wacommet Water Co., Acting Chair, ADC