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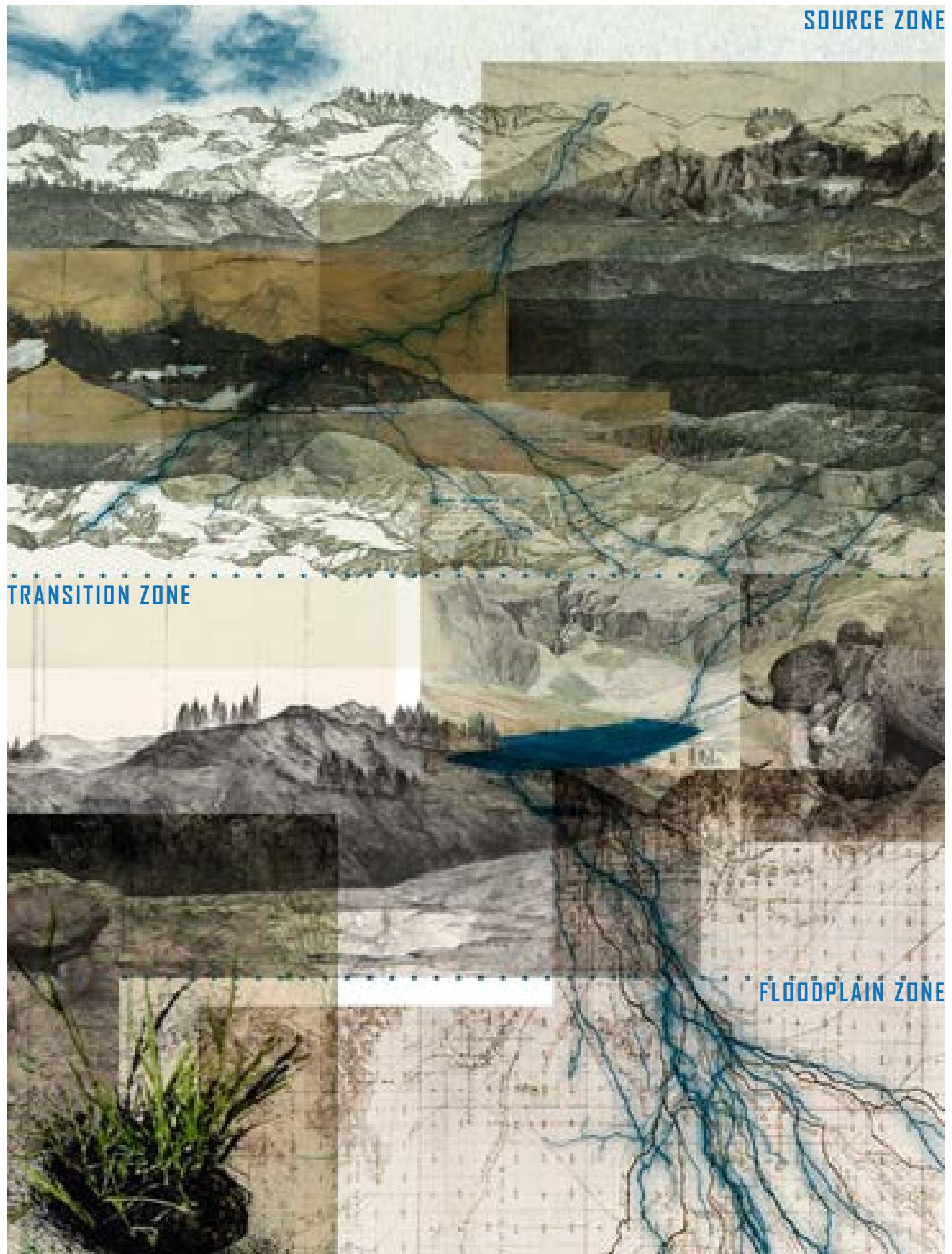
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AD1



WE ARE RUNNING OUT OF WATER

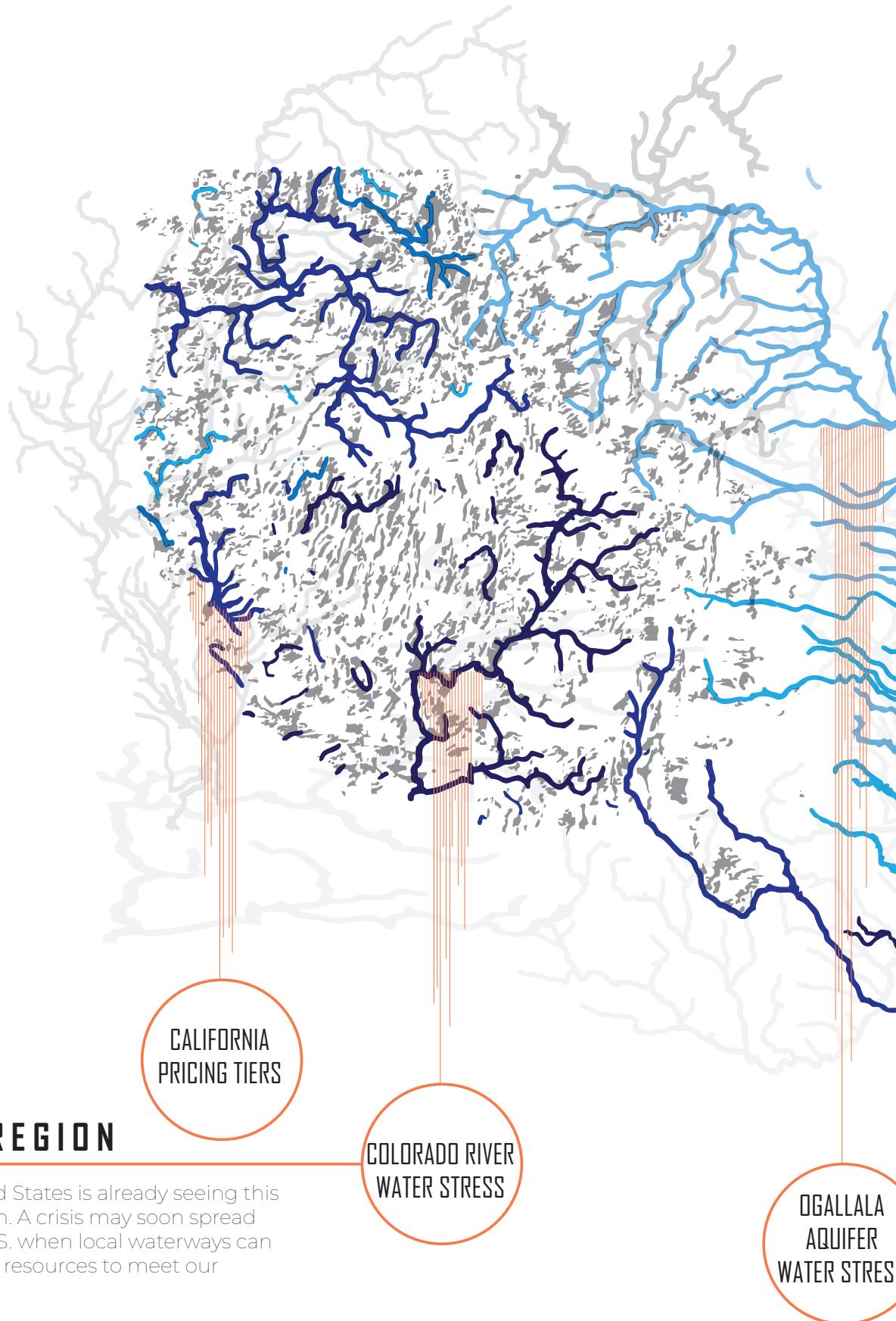
Water is the center piece of life itself. It is tended to and crafted by nature with such precision to help life thrive and meet the needs of nature. Without it life would not exist. Despite our human ignorance, water scarcity is a global concern, meaning in your own backyard. While it may be difficult to place yourself in the life of an African child struggling to find fresh water, it's imperative that we comprehend this issue affects everyone, even here in the United States.

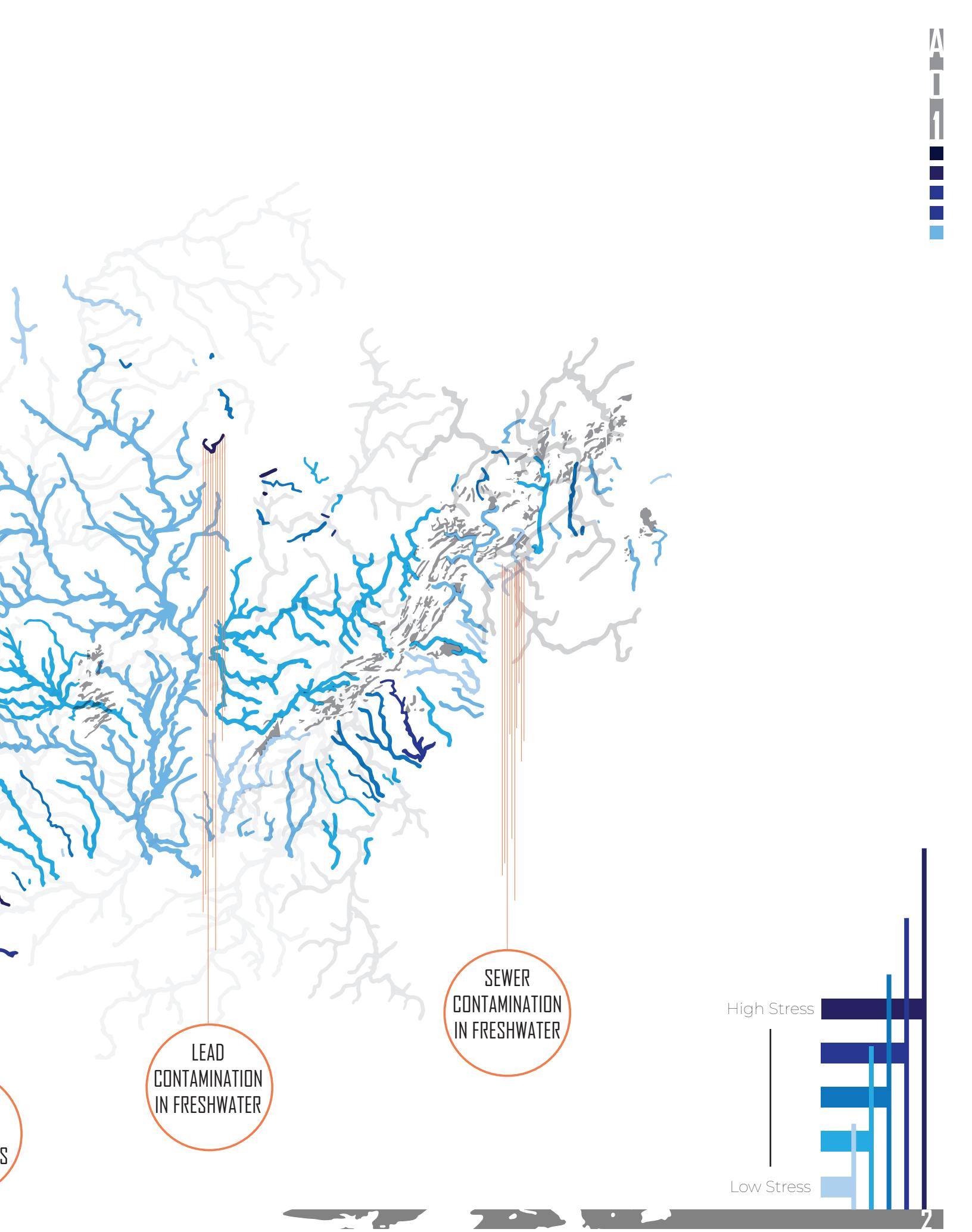


"BIRTH OF A LIFE FORCE"

CRUCIAL WATER OUTLETS ARE UNDER STRESS

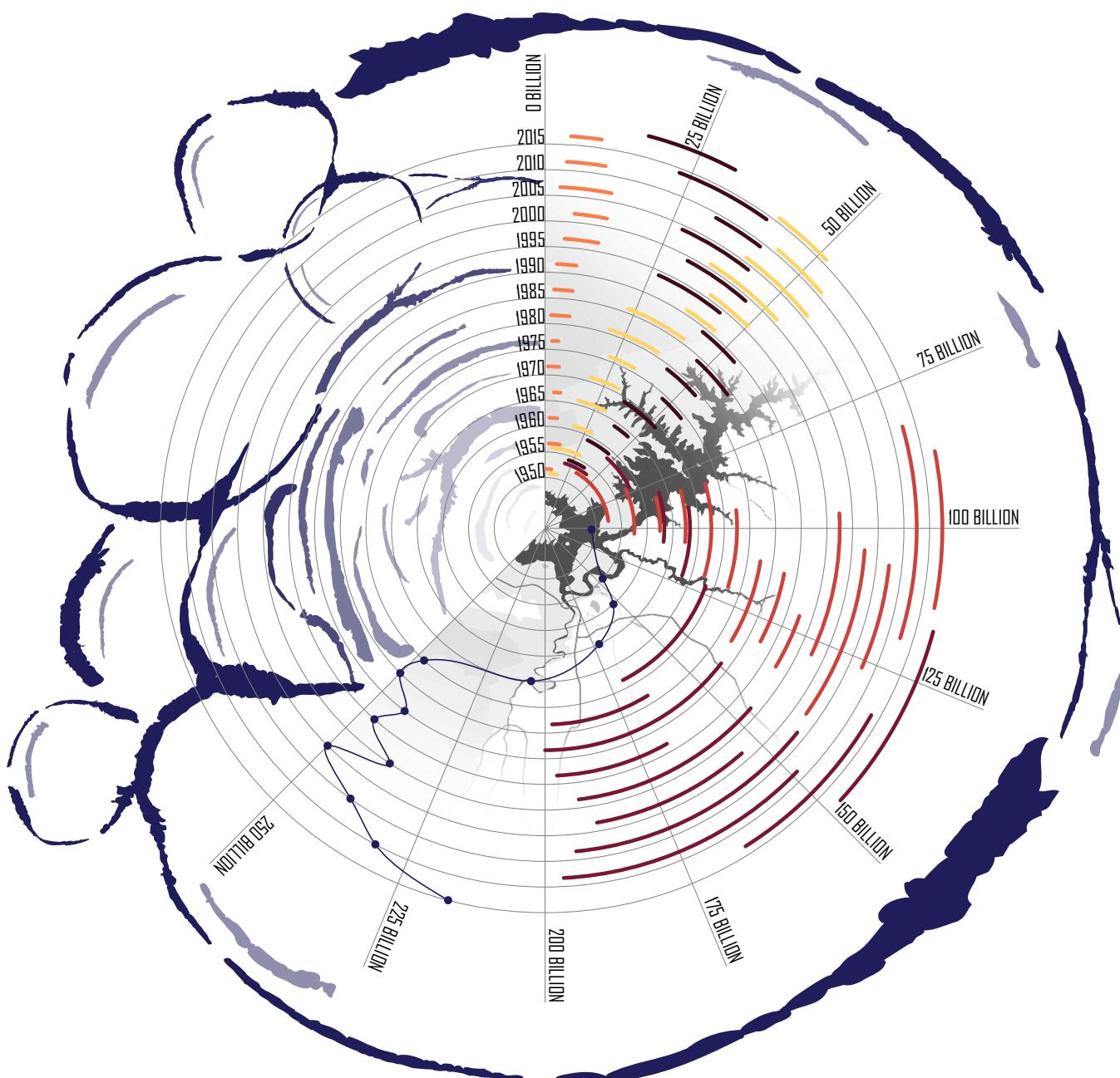
Throughout the country, we have already seen increasing water stress in various areas due to several factors. Although some of these controversies are isolated and some are symptoms of overarching issues, they are all signs of things to come if we continue to neglect this major struggle.





UNITED STATE'S ABUSE AND OVERUSE

Over time, the water demand for certain industries has increased causing us, as a society, to rely more heavily on water.



Other Industries

Thermoelectric Power

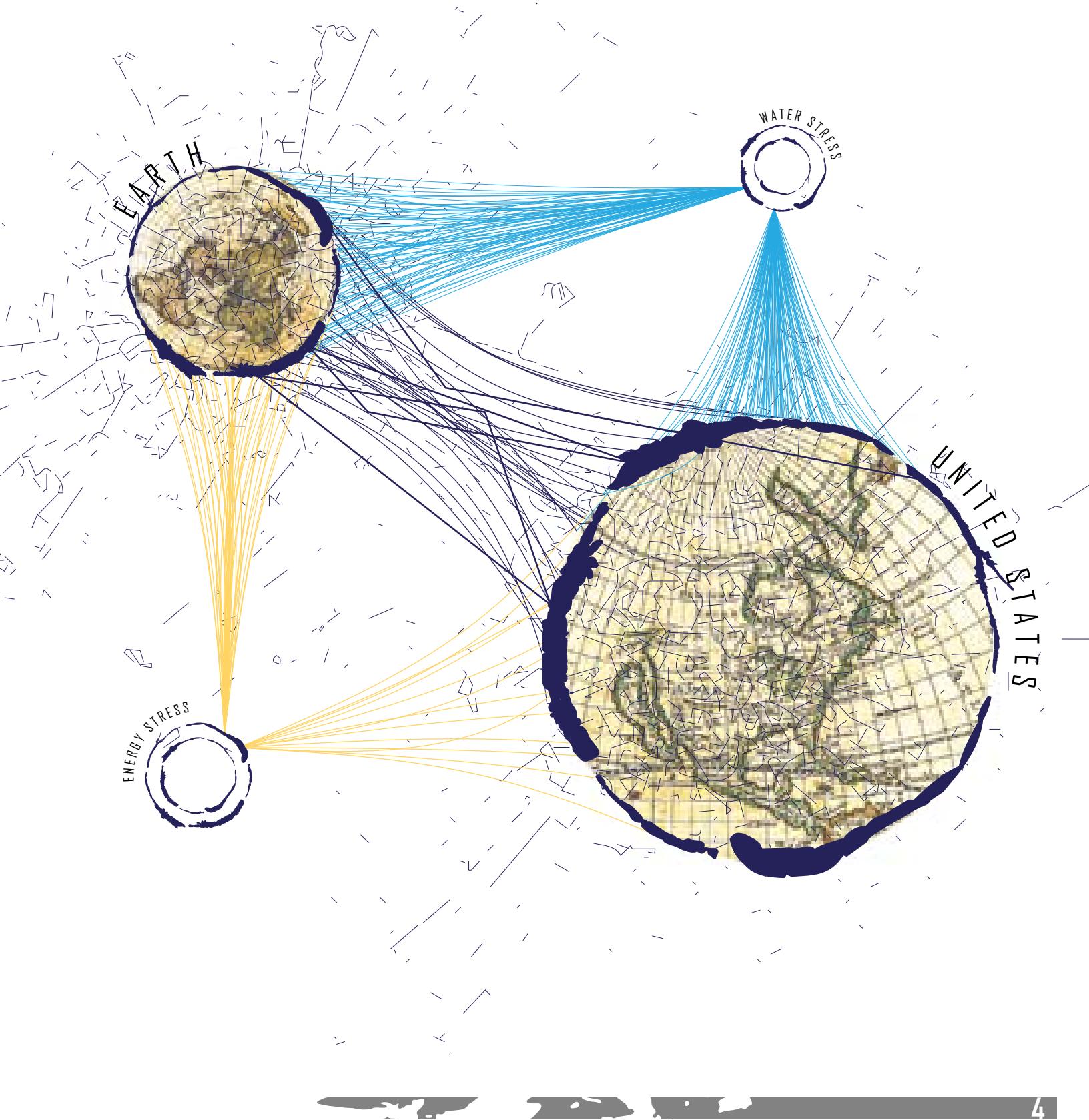
Irrigation

Domestic & Livestock

Public Supply

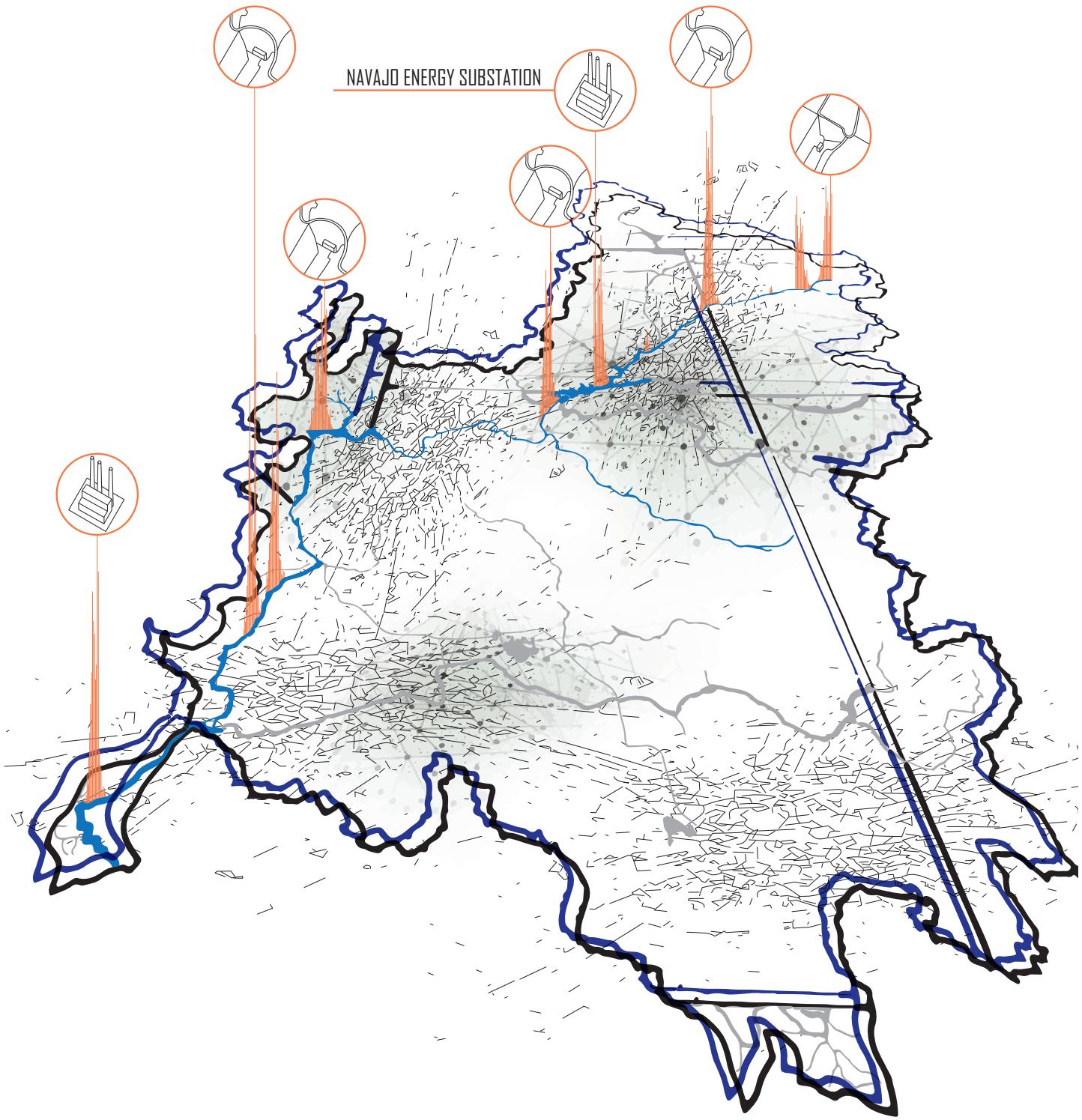
WATER STRESS IS WIDE SPREAD

This problem stretches far out from United States' reach into the world we live in. Many areas suffer far worse than we do. The United States just happens to be a large piece of this puzzle.



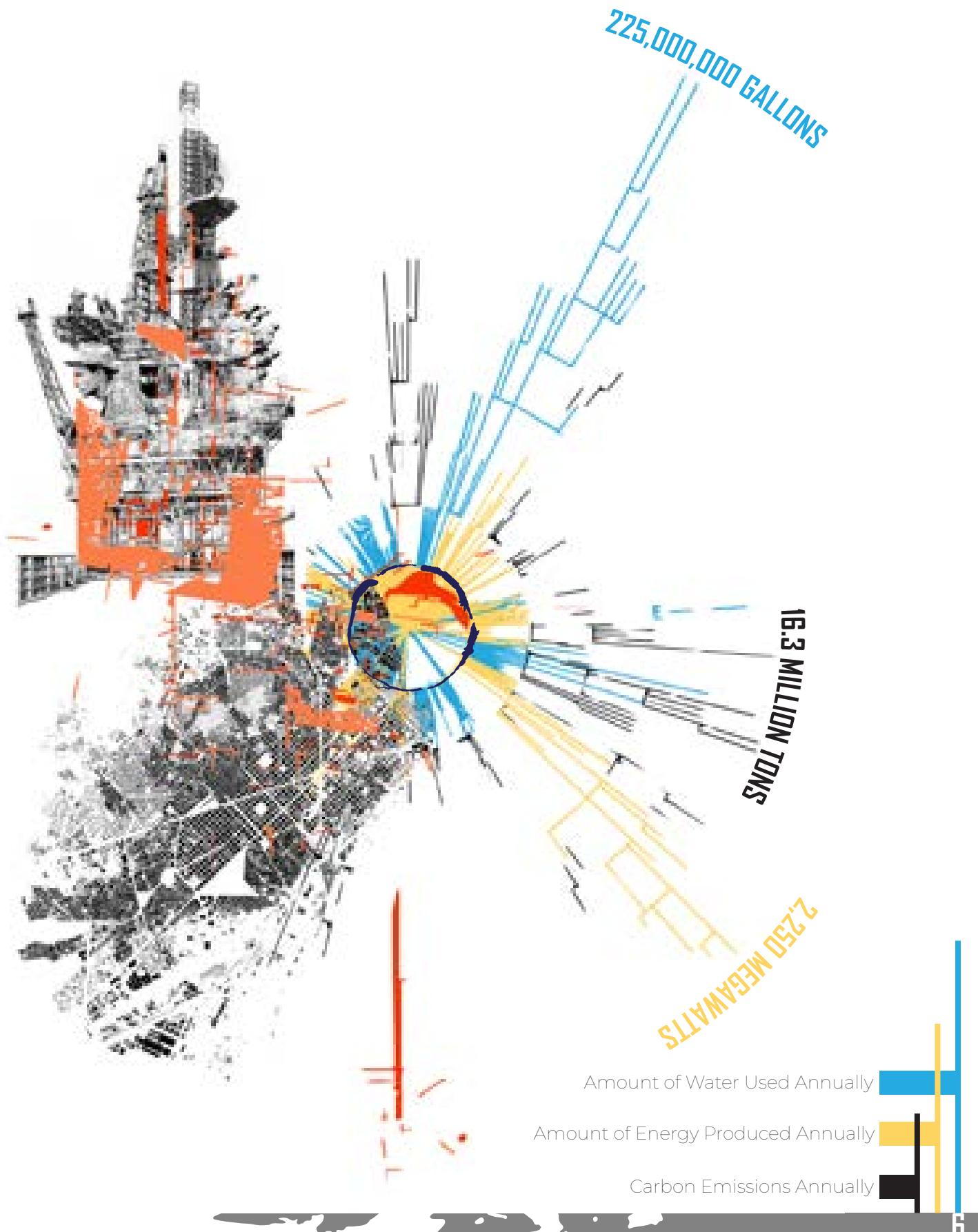
COLORADO RIVER IS BEING EXPLOITED

The Colorado River is the main supplier of freshwater to the Southwest region of the United States. However, thermoelectric power stations and other various industries' freshwater needs are putting intense pressure on cities that depend on this source for residential life.



NAVAJO ENERGY SUBSTATION

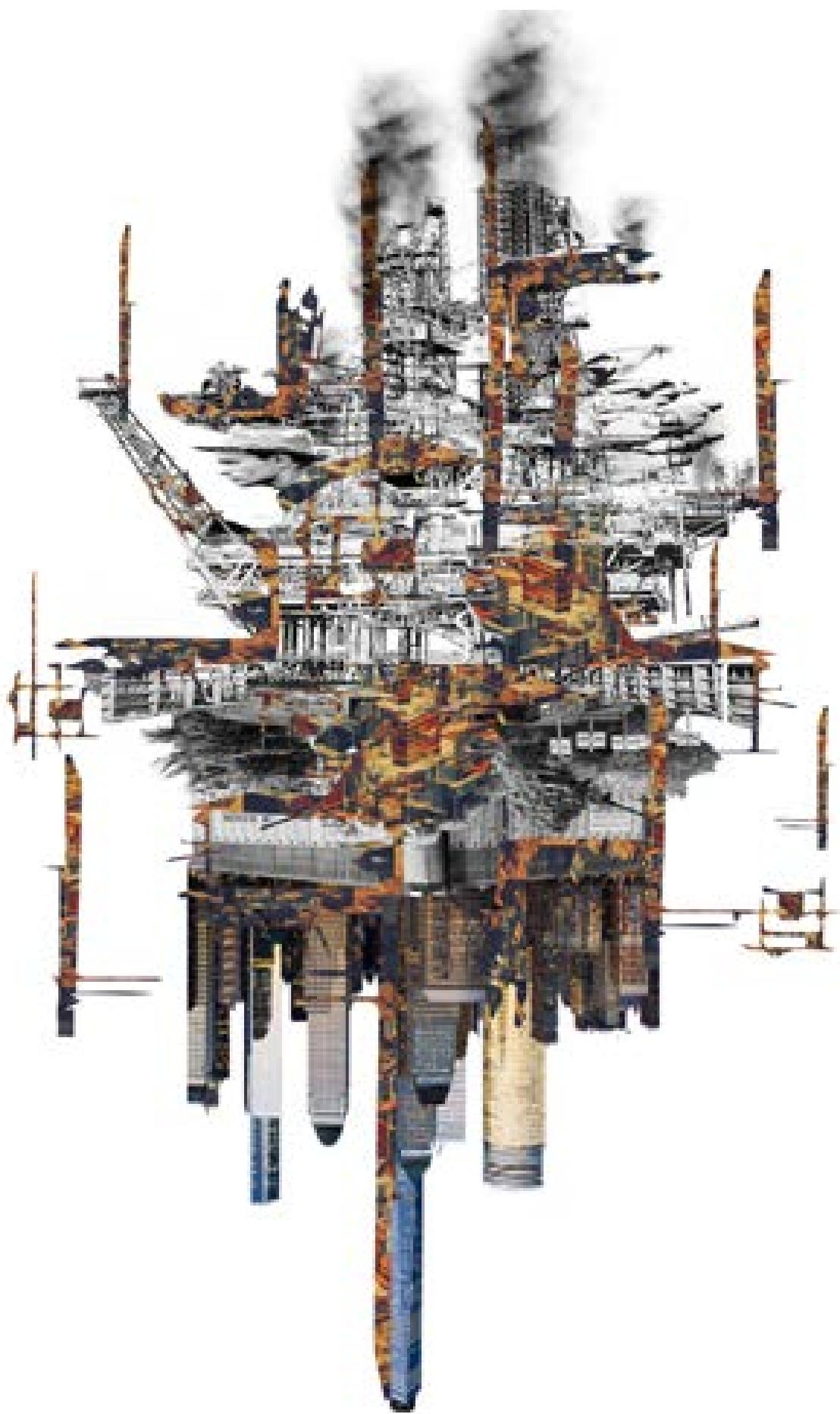
Burning through 22,000 tons of coal each day, The Navajo Energy Substation is just one of many along the Colorado River trek. Located off of Lake Powell, this station contaminates a large amount of water along the river to be used to make unclean energy.





THE NEXUS IS THE STRESS

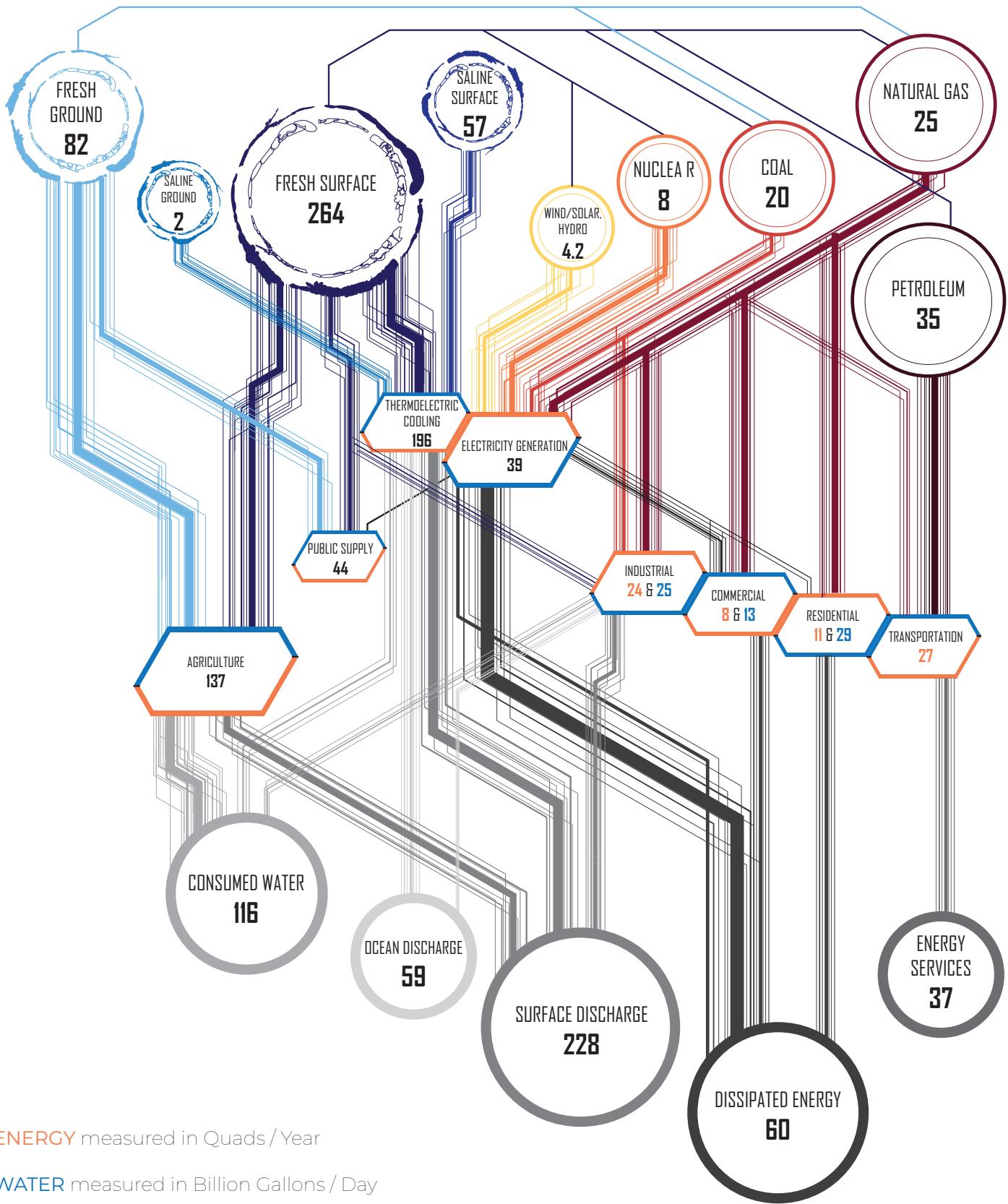
Although the Water-Energy Nexus has no formal definition, it is often presented as a concept that references a symbiotic relationship between water and energy. The Nexus typically focuses on electricity and sources of fuel such as oil and natural gas ultimately to highlight the water's heating and cooling responsibility at the energy plant and the waste that follows.



"INDUSTRIAL EVAPORATION"

OUR WATER IS STRETCHED THIN

Every aspect of our nation's water reserves are being touched in regards to thermoelectricity. It is an entangled web of water abuse that puts into perspective how much of our energy relies on water.

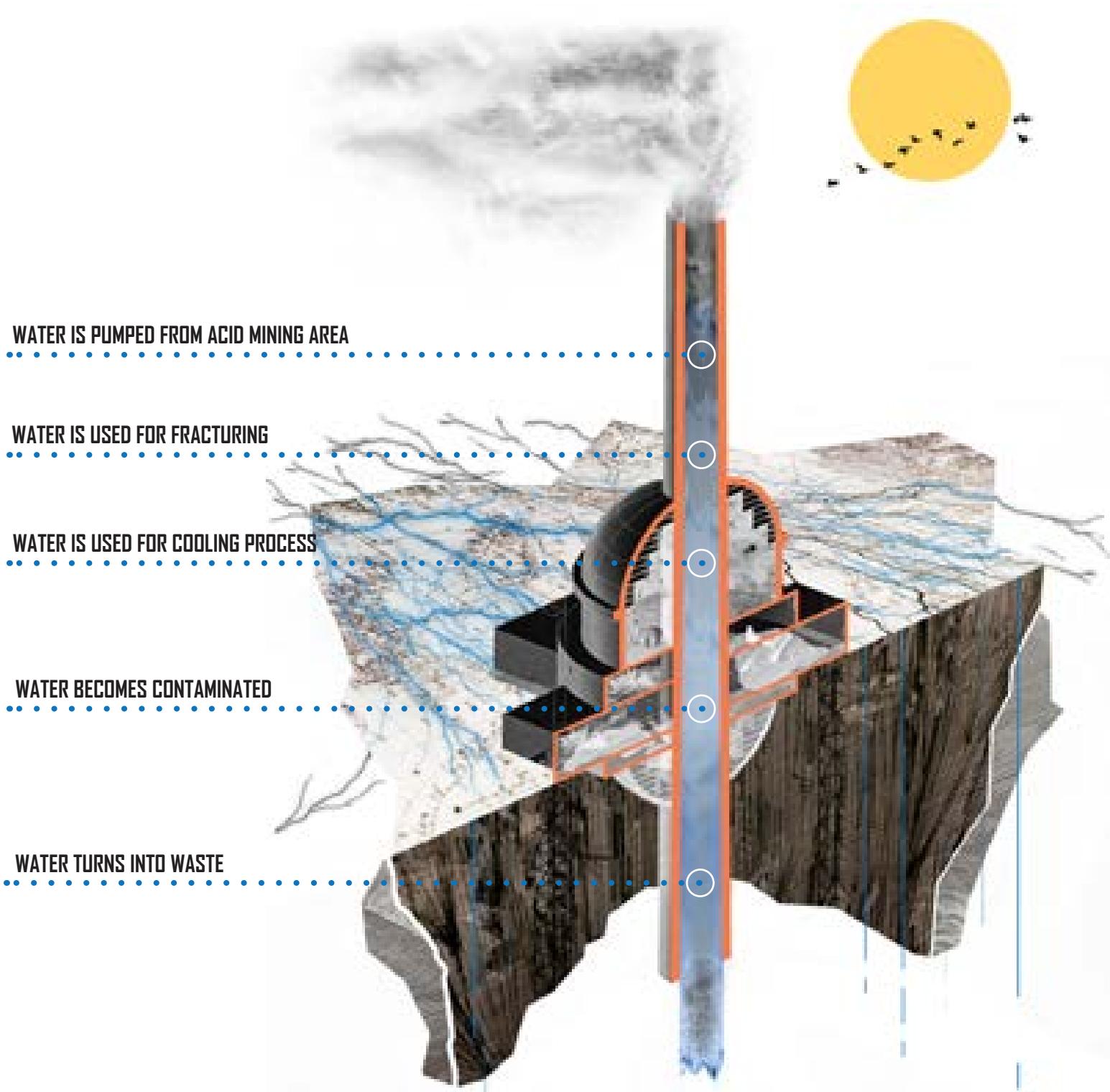


ENERGY measured in Quads / Year

WATER measured in Billion Gallons / Day

THERMOELECTRIC WATER CYCLE

This is an intense and rigorous process that exposes the once fresh water to countless particles and chemicals turning it into waste water. This waste is often dumped in the same body of water it was found in: thus bringing the contamination further down stream to more urban or residential areas.



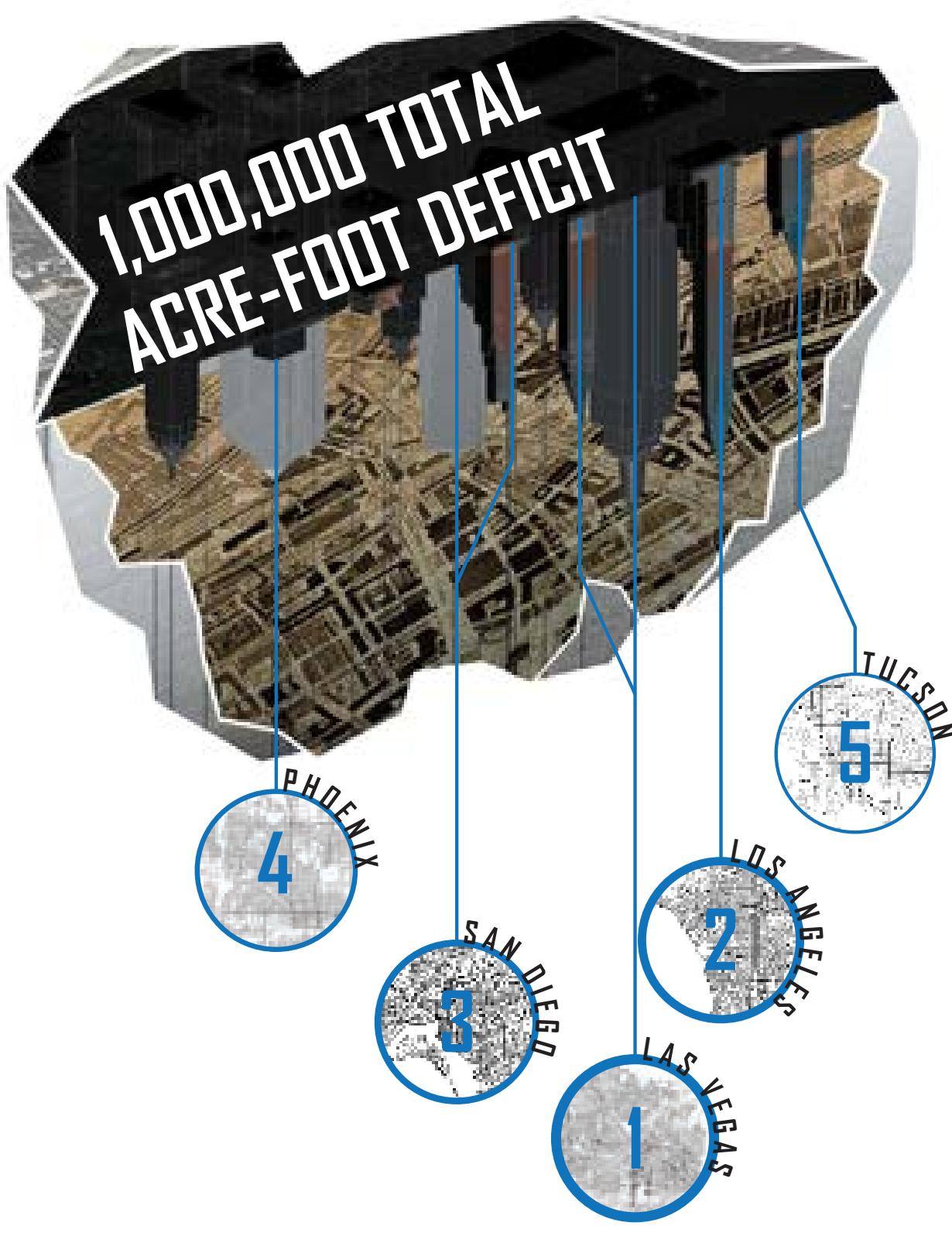
FRESHWATER HAS TRACES OF TOXICITY

Wastewater from energy plants can come from a variety of procedures or byproducts and can include dense alloys such as arsenic, lead and mercury. This waste is released back into the natural water flow and can often seep back into groundwater underneath the plant.



LARGE URBAN AREAS SUFFER GREATLY

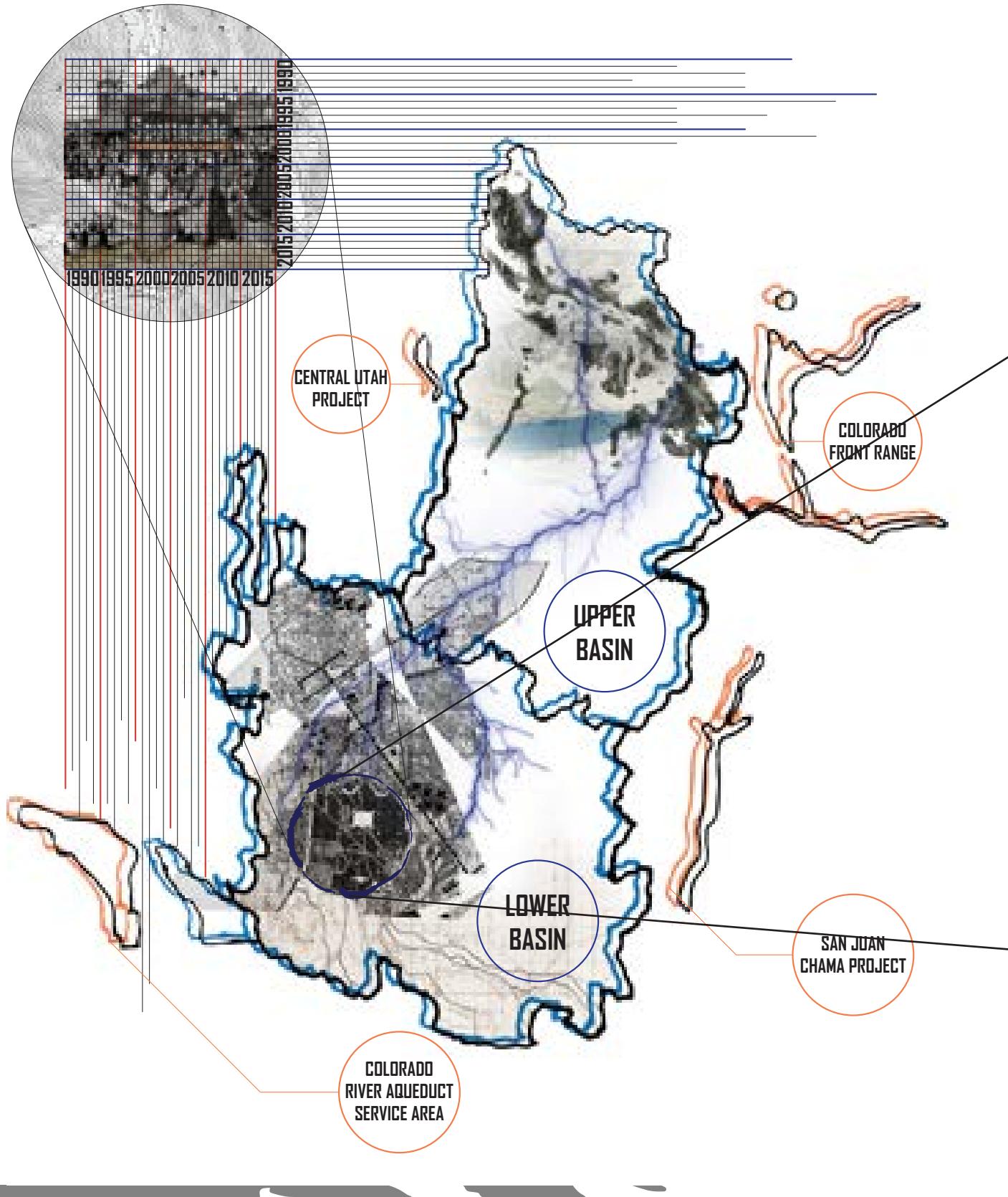
Due to energy processes and other factors, residential and urban life is taking a massive hit in terms of available water. Larger cities in particular already have a greater demand for water and now these southwest metropolises are plummeting.



COLORADO RIVER TERRITORY IS NEGLECTED

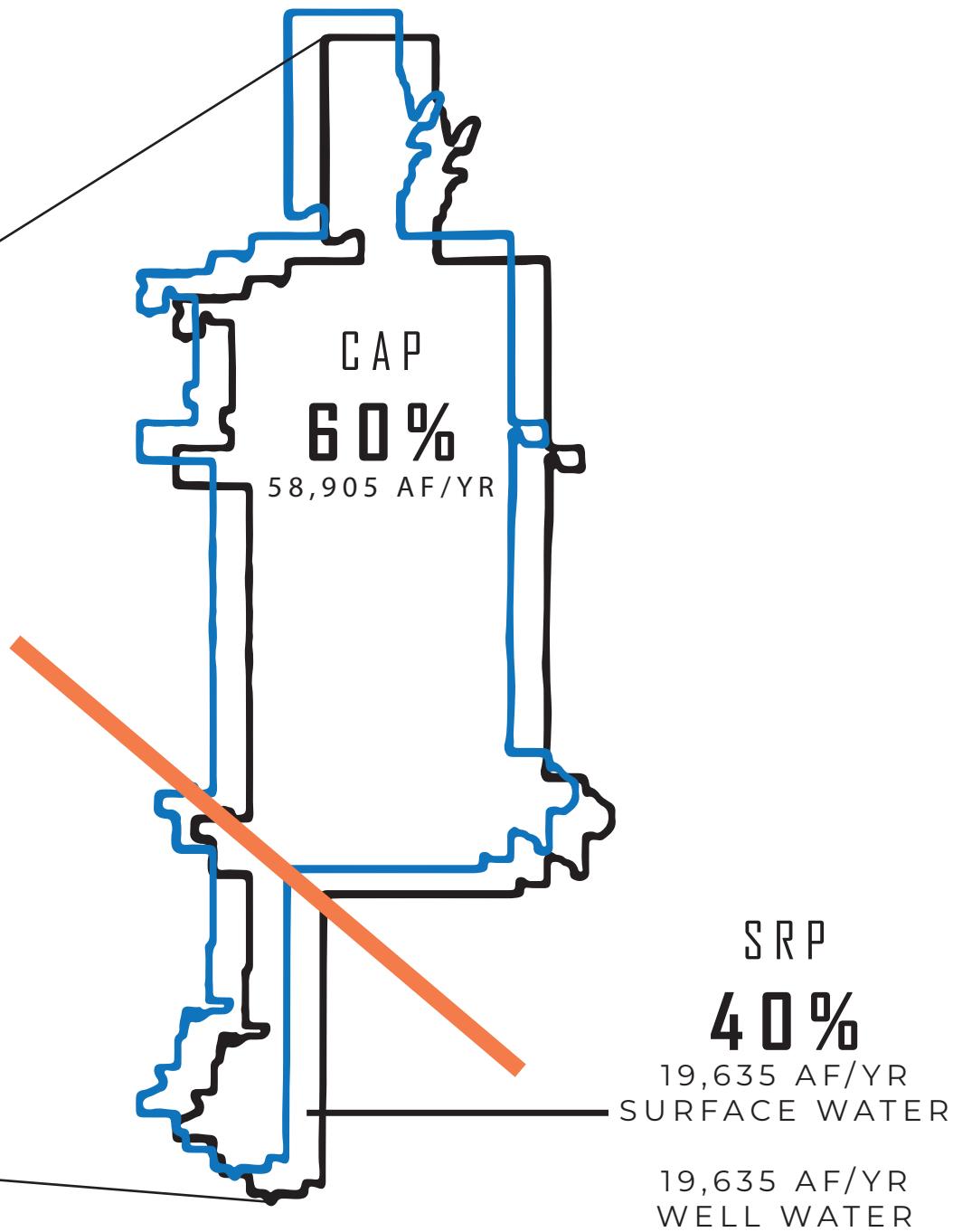
WATER
WATER
WATER

The most diligent river in the Western side of America is as unique as it is diverse. The Colorado river's trek passes through over 11 different national parks and monuments, not to mention 7 states and 2 countries. As one can see, it is crucial to life out west. Following decades of wasteful water management policies and practices, demand on the river's water now exceeds its supply. Storage levels at Lake Powell and Lake Mead are critically low, affecting large and small urban areas alike..



THE PERFECT CASE STUDY

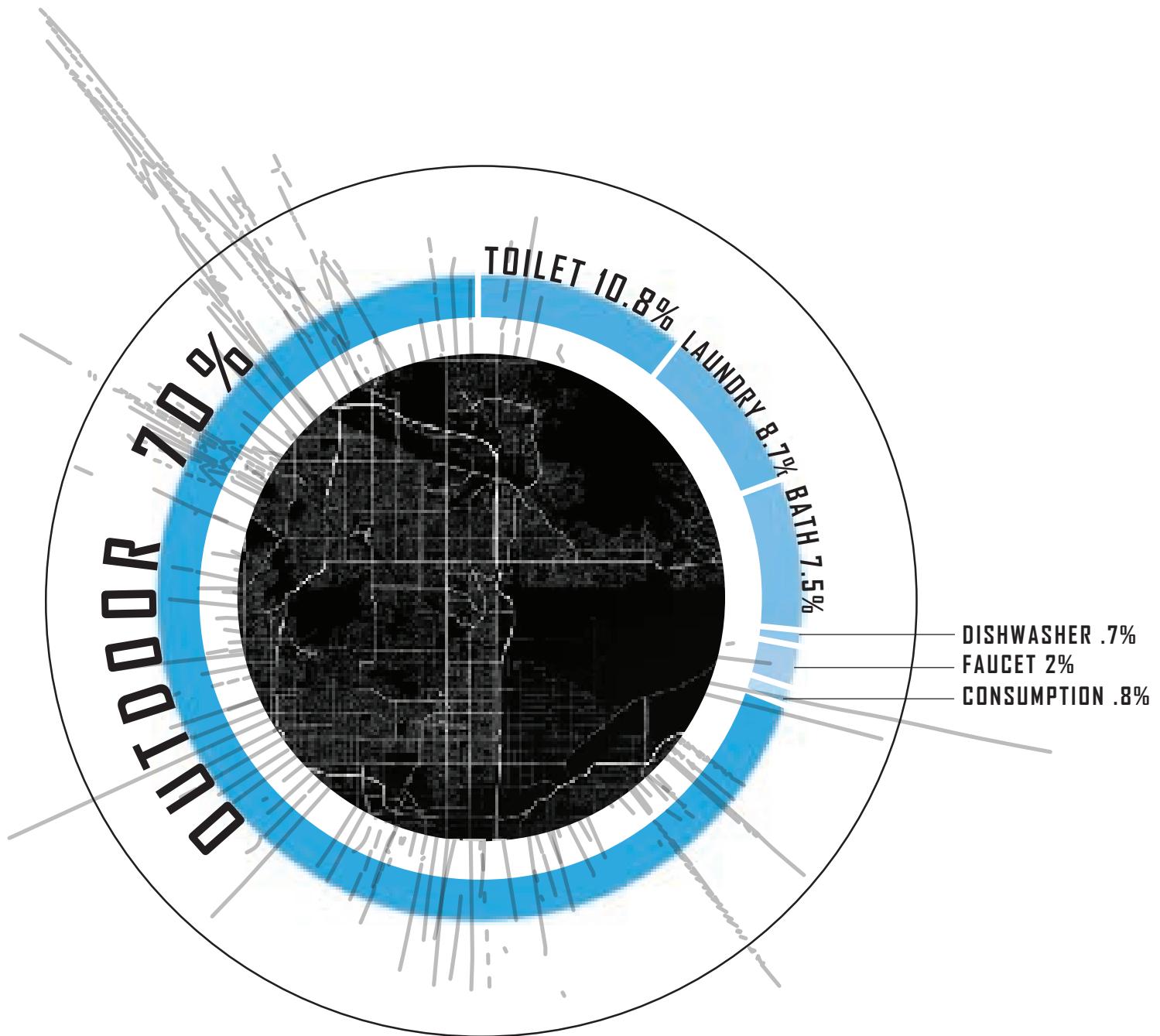
The urban area of Scottsdale, Arizona is an archetype of American growth in the Western world. This city consists of post war-infrastructure of transportation, industrial agriculture, energy plants, and a series of vast water projects to help the city thrive. Their water system in particular is on the verge of collapse due to the immense water crisis occurring and in need of reformation.



AVERAGE HOUSEHOLD WATER USE

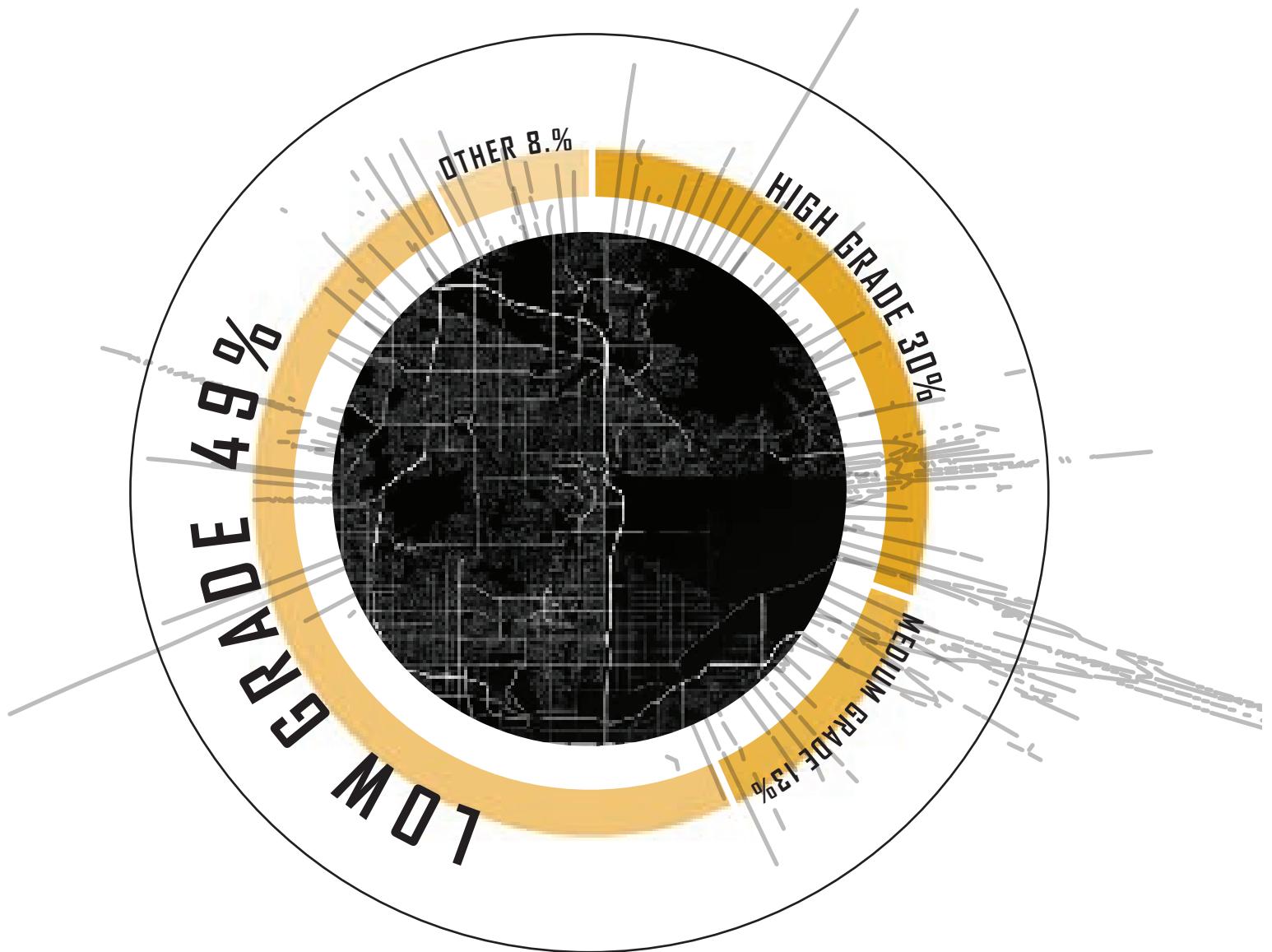
From the development of Arizona as a whole, suburb and rural areas of family living became very common. Analyzing Scottsdale's demographics, a change in the household environment is good step in the right direction for conservation.

SCOTTSDALE



AVERAGE HOUSEHOLD ENERGY USE

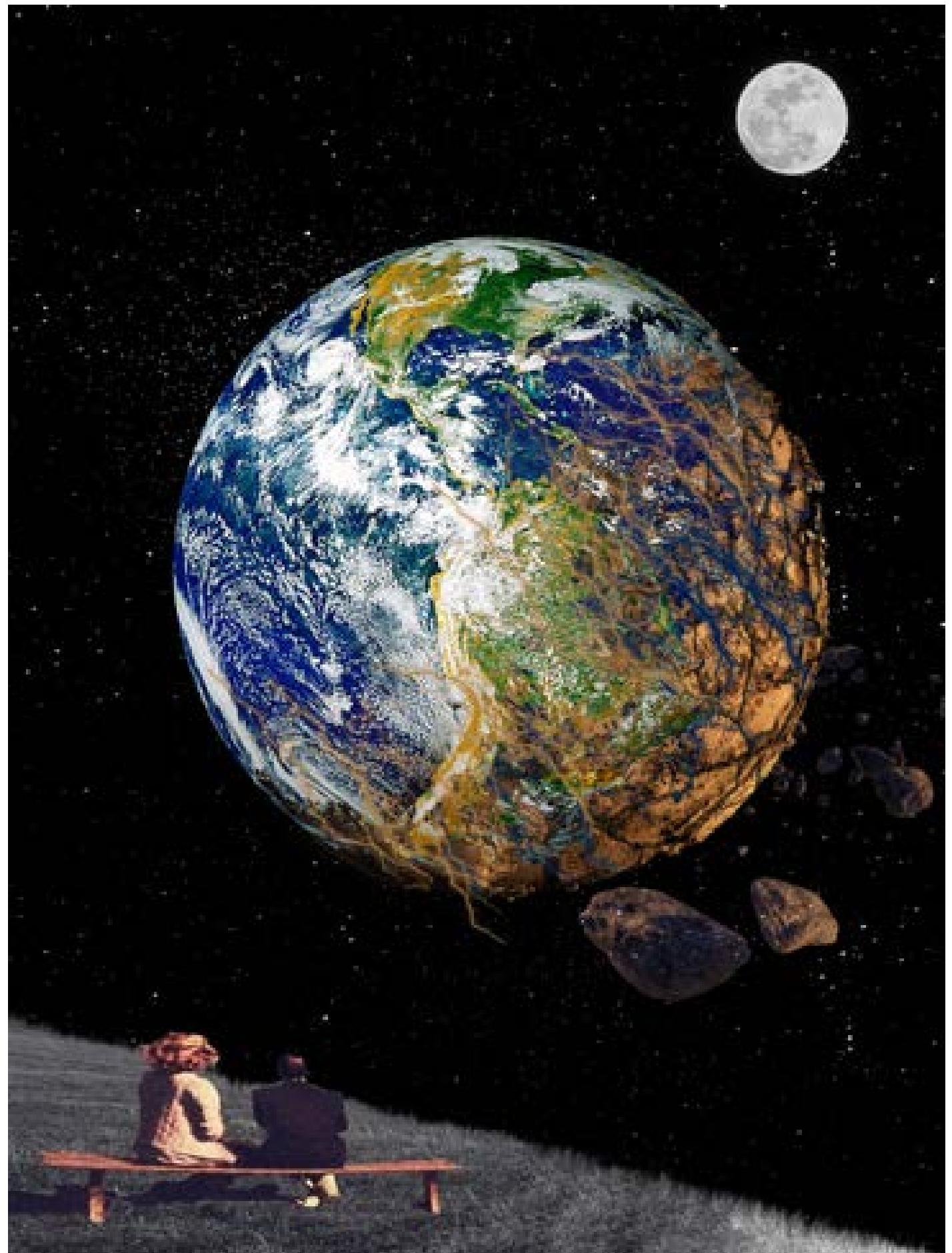
Scottsdale's large amount of power plants in the city and scattered out of town play a large role in the city's water consumption. Although it provides electricity for the residents, it raises the question: at what cost? With its energy industry booming and the availability of water declining Scottsdale's citizens are rendered oblivious emerging crisis.





A HOPEFUL FUTURE

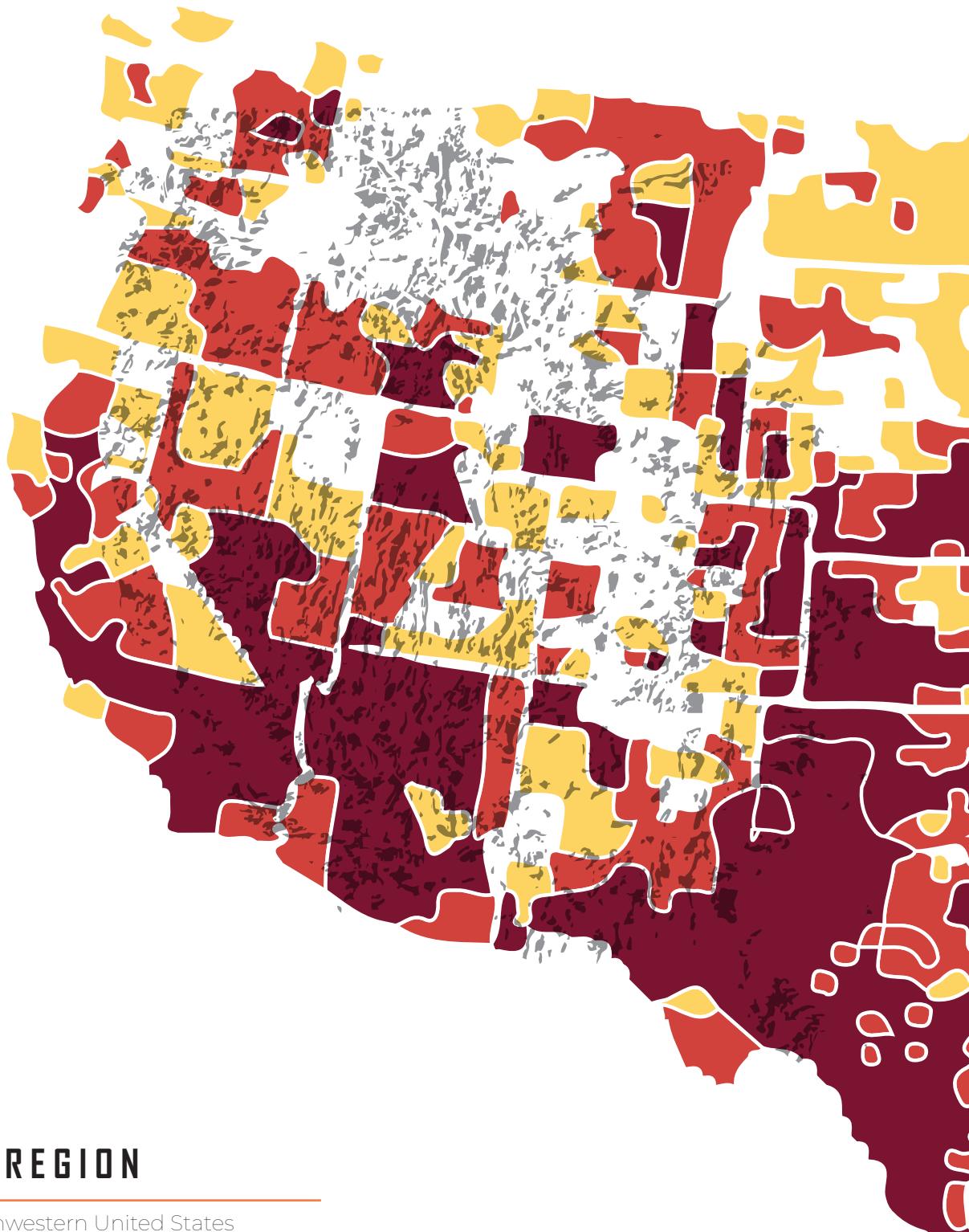
With the continued rate of water stress we currently live in, we must consider a future without proper water if we do not act as a society. We have the potential to change and heal our Earth.



"YOUR ACTIONS, YOUR CONSEQUENCES"

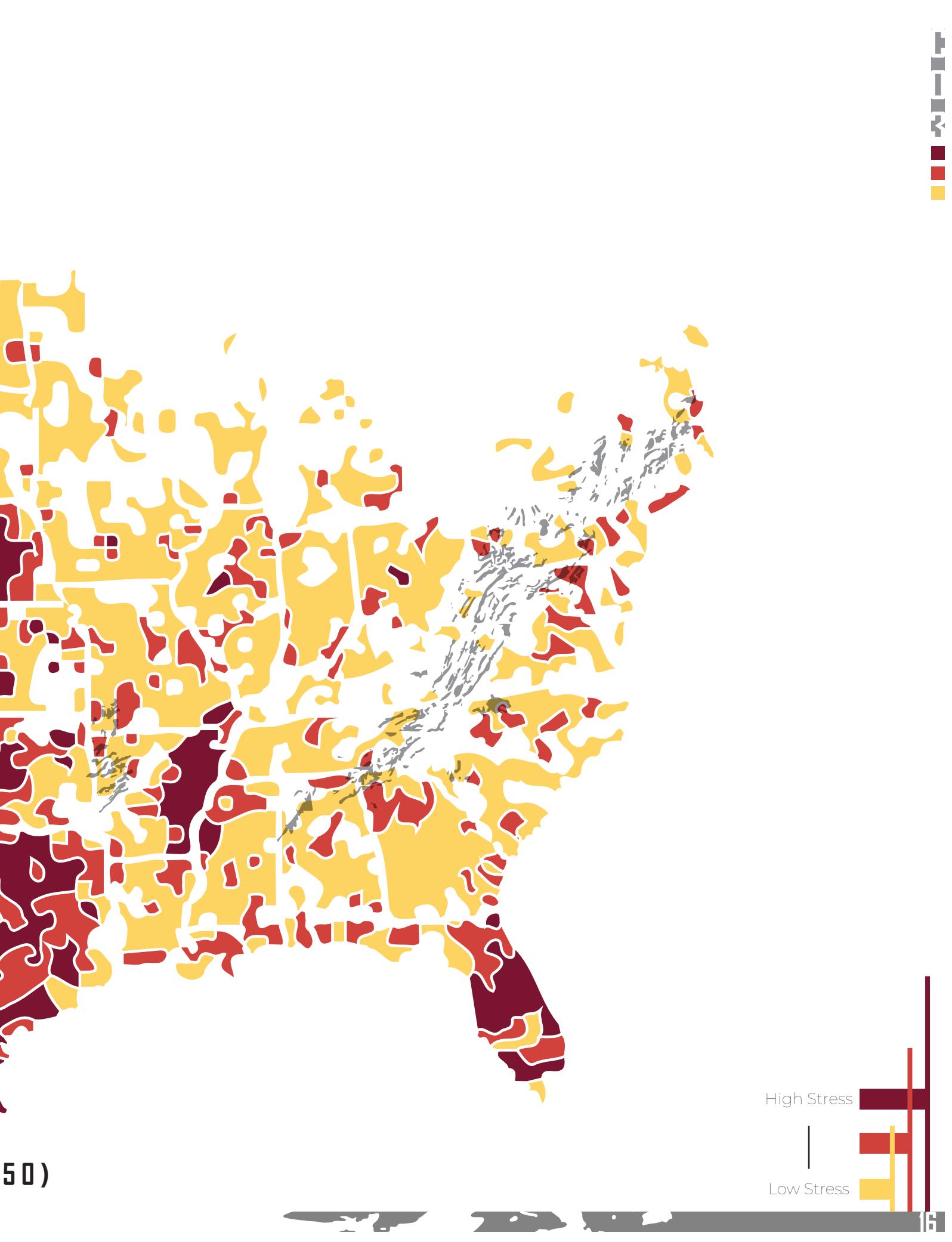
A UNITED STATES WATERLESS FUTURE

As a society, if we continue down this path of water stress we will have a long waterless future ahead of us. By 2050 nearly 50% of the U.S. will be in dangerous water stress leaving us with little time for ample change.



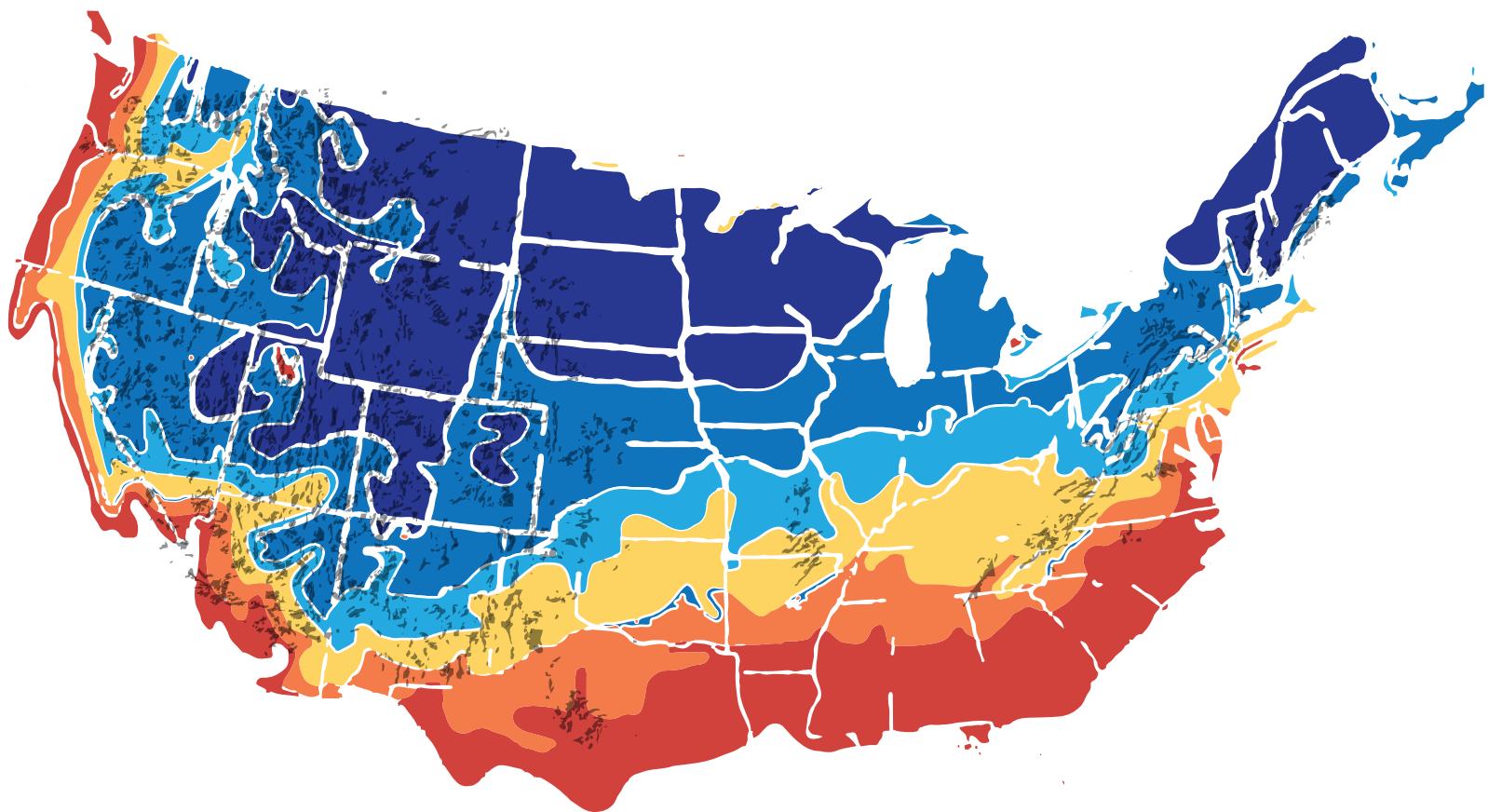
SOUTHWEST REGION

In this future, the Southwestern United States region will experience even more severe cases of stress ultimately defeating human kind's ignorance of water scarcity forcing them to wake up to the reality of the issue.



STRATEGIC XERISCAPING

Heat studies across the United States help determine a multitude of subjects regarding water stress. This one in particular examines heat for xeriscaping to determine the zone set for each particular gradient on the map. With the proper zoning arrangement, xeriscaping can act as an effective ally for water conservation.

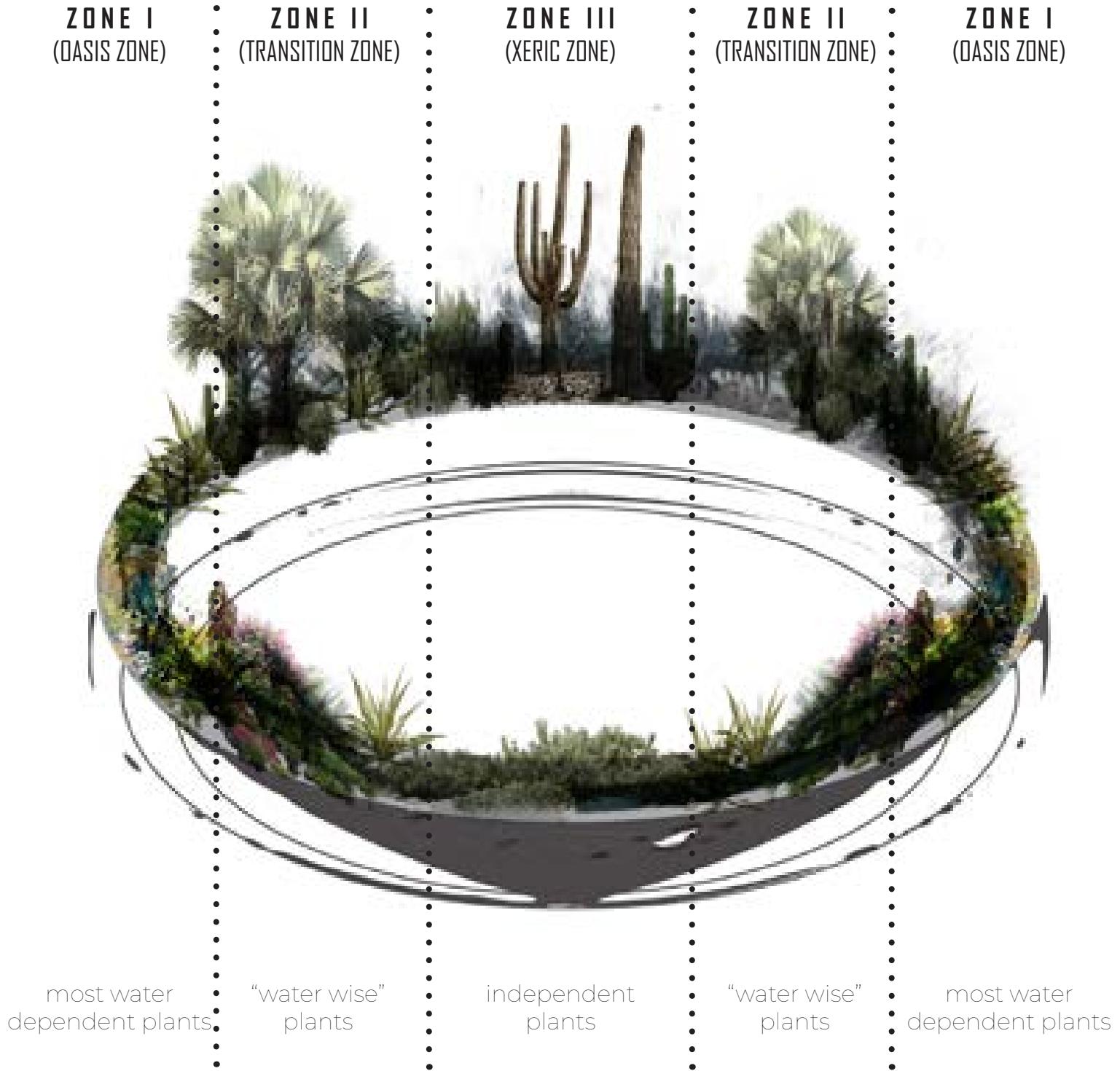


Low Heat

High Heat

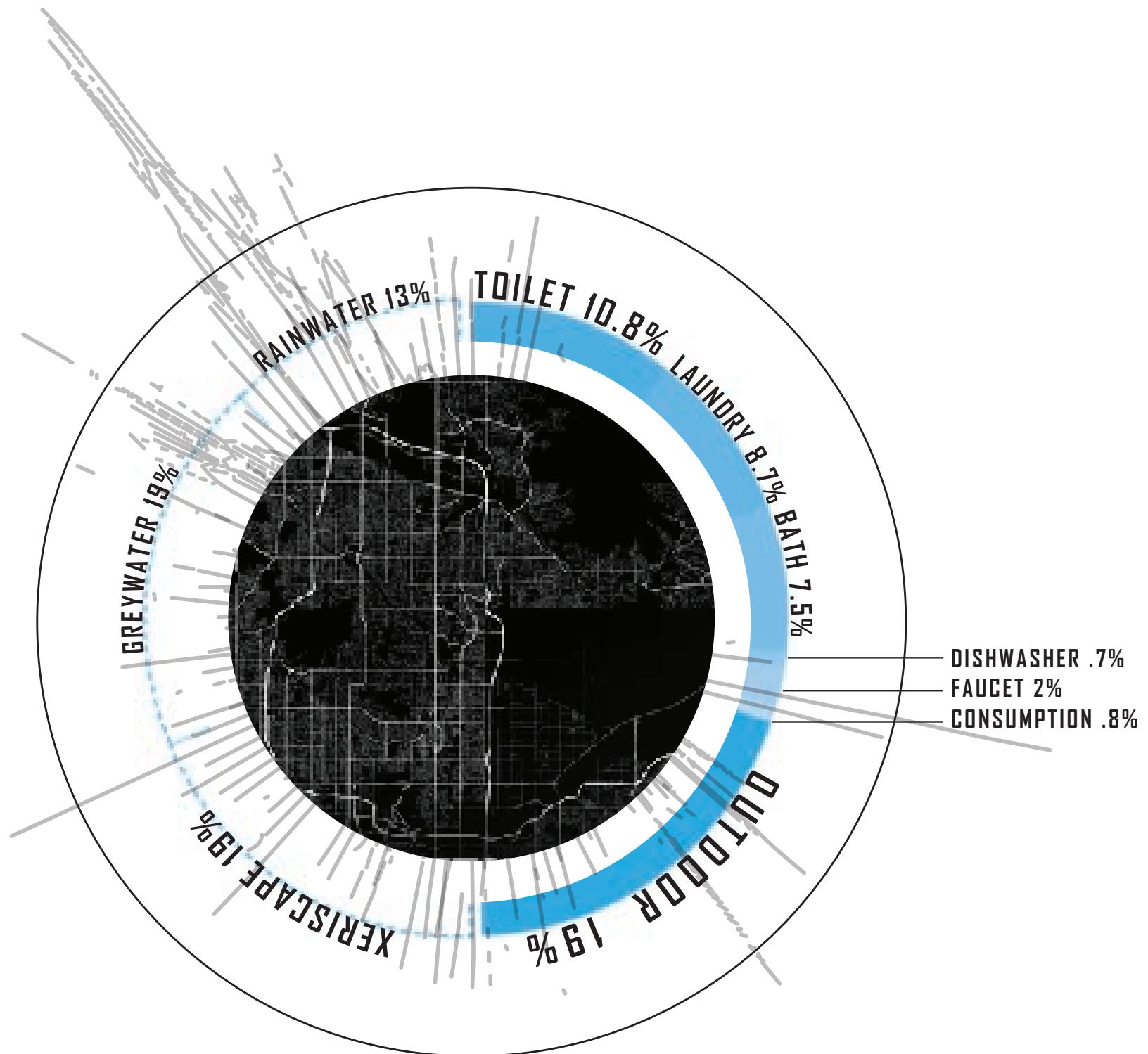
XERISCAPE ZONING HELPS CONSERVE

Proper zoning allows for not only water conservation, but also allows for a landscape to thrive under harsh water stress.



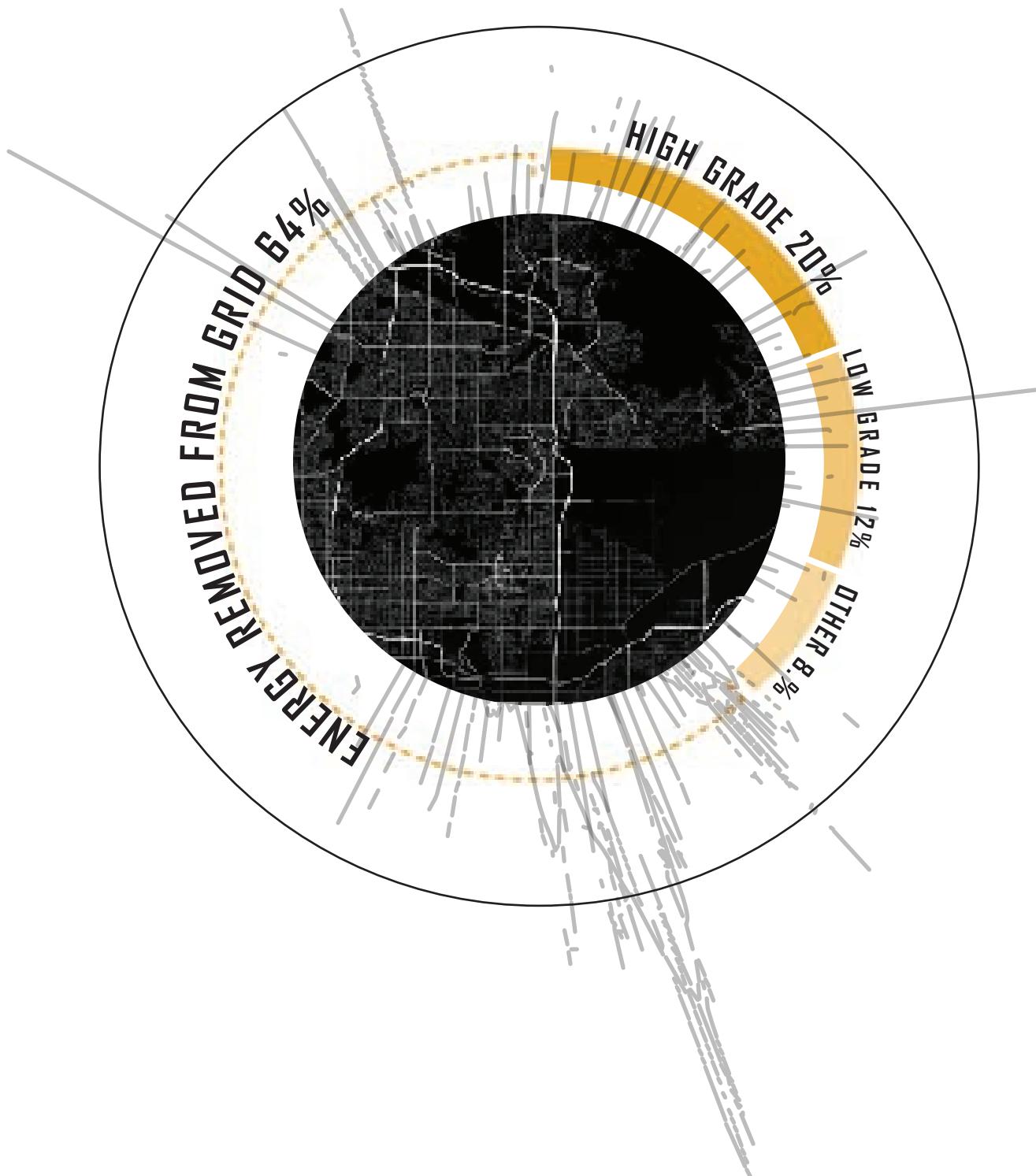
XERISCAPING IS THE MAIN SOLUTION

According to the data, Scottsdale's residents use most of their water outdoors. The most logical thing to do would be to implement xeriscaping. This method, along with other conservation techniques, has the ability to turn Scottsdale as well as other cities around.



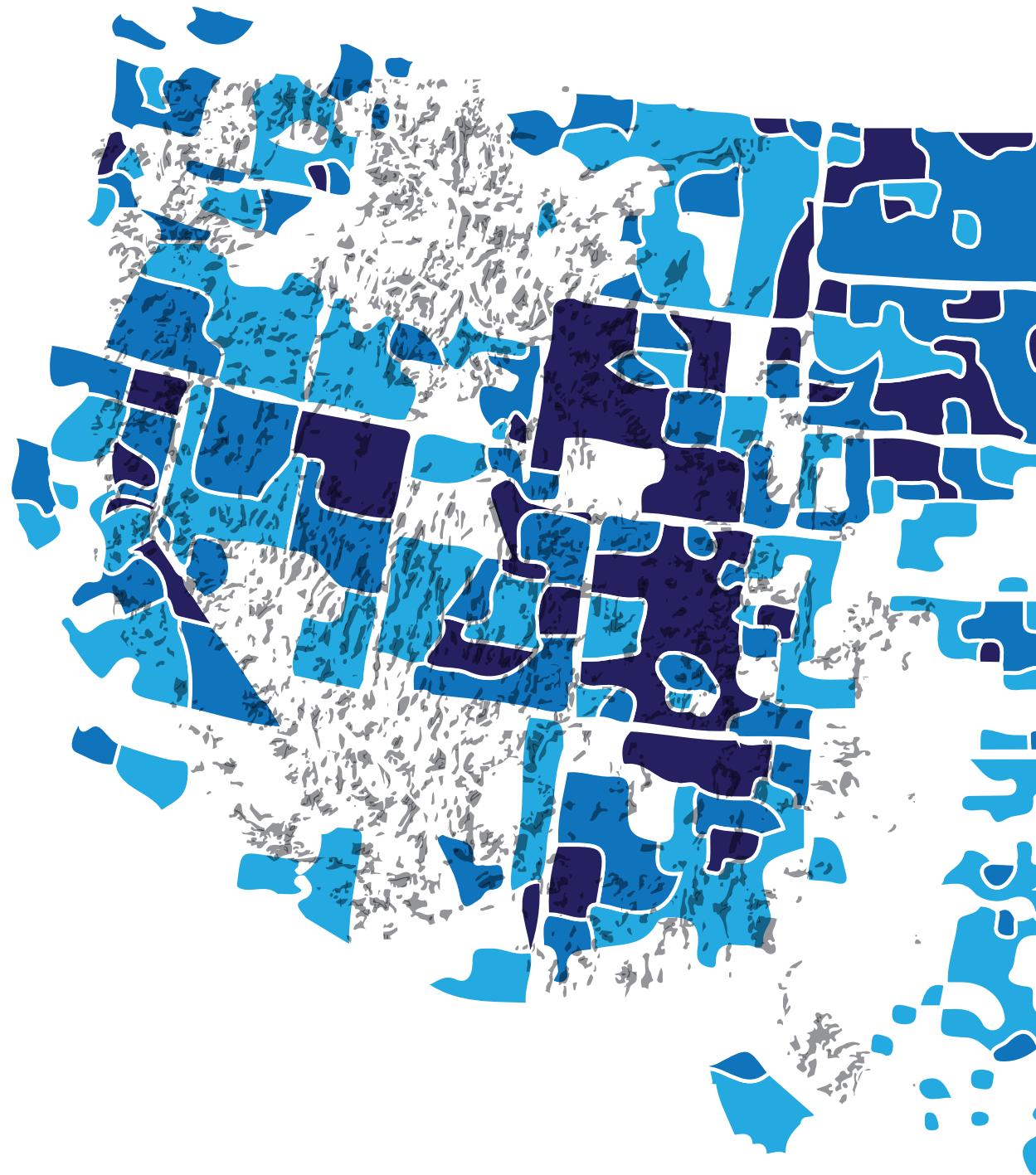
LARGE URBAN AREAS SUFFER GREATLY

Enforcing these water conservation methods while investing in energy conservation methods such as: EnergyStar products, space heating, etc. can help the city cut back on water use.



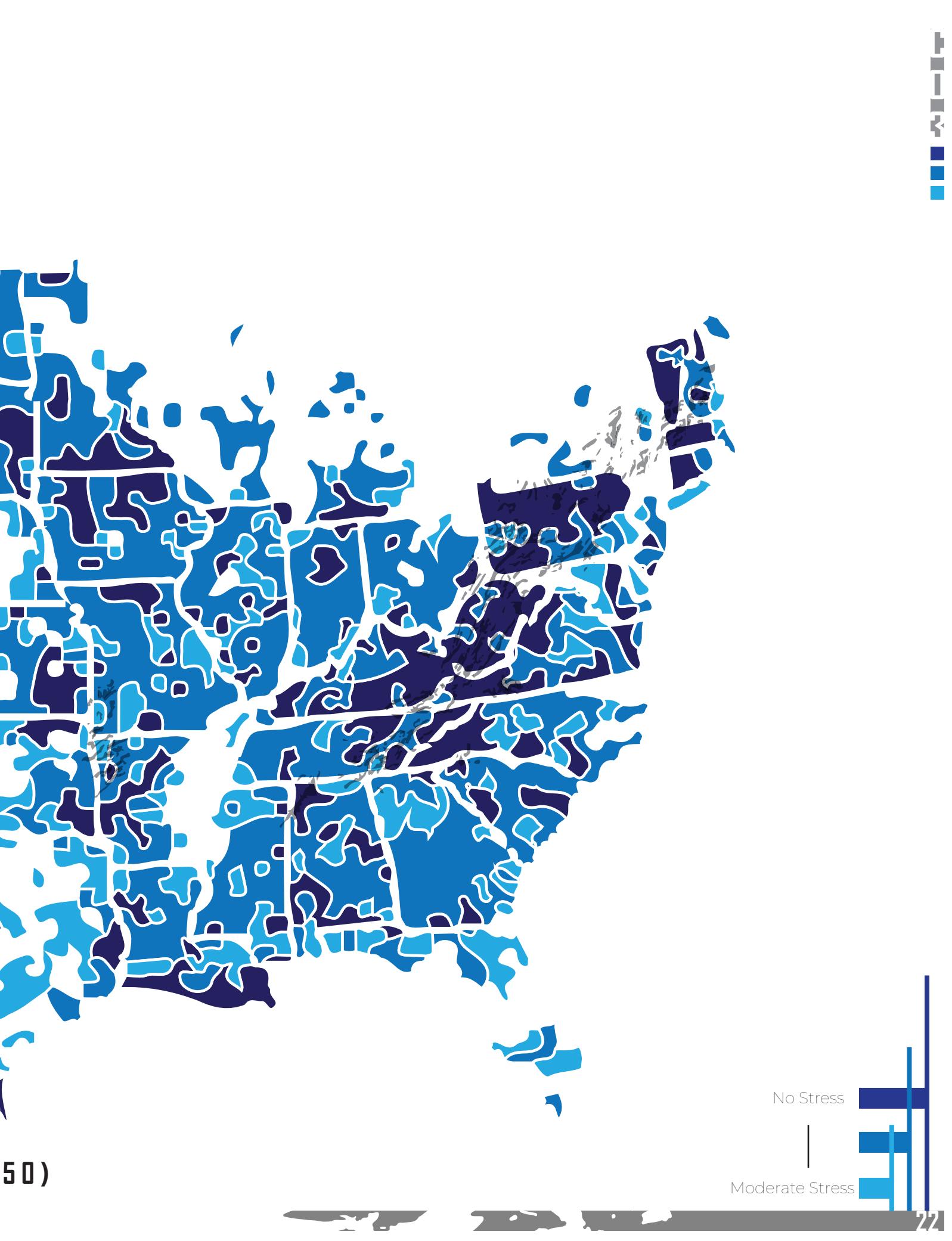
A UNITED STATES ABUNDANT WATER FUTURE

As a society, if we can address water stress concerns and implement changes that support water conservation then America has a hopeful future ahead.



SOUTHWEST REGION

In this future, the Southwestern United States region's stress begins to dwindle with the implementation of xeriscaping and other conservation methods.



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