



# District of the Future

Modernizing irrigation infrastructure is the single greatest opportunity in the western United States to improve agricultural security and production, enable environmental conservation and restoration, accelerate the development of renewable energy, and provide for rural community resilience.

## THE NUMBERS

Irrigated agriculture uses 80% of water in the west. This water runs through a series of pipes and canals that are up to 125 years old, transporting water from a river or lake to a farm. With a million diversions and thousands of miles of canals, these networks of canals act as a corridor across the West.

## AGRICULTURE

Modernizing irrigation infrastructure can improve water supply reliability (and therefore food production), keep contaminants out of agricultural water supplies, prevent fish from being trapped in canals, and reduce the energy required to pump water across the landscape.

## ENVIRONMENT

These same infrastructure changes also allow for more and cleaner water in streams and rivers, help fish access high-quality habitat, foster the creation of pollinator corridors along newly-buried pipelines, reduce the carbon emitted from energy use, and generate fish-friendly, in-conduit hydropower with water already being diverted for farms and ranches.

## RENEWABLE ENERGY

While irrigation modernization provides for significant agricultural and environmental benefits, with the modernization of this infrastructure, due to its size and scale, a platform is established to accelerate and increase the value of renewable energy projects.

Because the costs of these projects are developed at the same time as the investment into agricultural infrastructure, the cost and timeline of these renewable energy systems can be dramatically reduced. When modernizing, by including additions such as fiber optic, transmission, batteries, controllers, and charging stations, entirely new opportunities develop for community scale renewable energy.

While these systems were historically supported by traditional energy-related revenue such as Power Purchase Agreements and net metering projects, these systems also allow for additional sources of earned revenue, the ability to reduce energy consumption, and the ability to power critical services at times of grid failure or loss of power.

## CRITICAL SERVICES

Once the foundation of this irrigation and renewable energy infrastructure is established, numerous benefits can be realized: the ability to charge vehicles in remote locations, municipal fleets reducing cost by charging their vehicles using energy they are producing, broadband access to rural areas without cellphone or internet service, earthquake sensors, and many other innovative benefits.

## IMPLEMENTATION

And most importantly, this modern irrigation infrastructure creates a pathway for farmers, irrigators, and municipalities to earn revenue to pay for future infrastructure maintenance and upgrades. Whether through creative local power purchase agreements, leasing fiber optic space for communications, improvements in agricultural production, or savings through reduced operational expenses, this earned and saved revenue makes communities more resilient.

Fortunately, this vision of modernization is a reality that can be implemented today. It has been done before. The practices and technologies already exist. Pipelines are already being installed, optimizing water flow to farmers and at the same time improving water quantity and quality for fish in streams. Big cities are already co-locating fiber optic and transmission along infrastructure projects. Renewable energy projects are part of the framework of rural communities across the nation.

Yet, it is the very act of integration, of co-location, the systems thinking and implementation, that allows for the acceleration, cost savings, and new revenue sources that will make this vision of the District of the Future—one of resilient rural communities—a present day reality.

