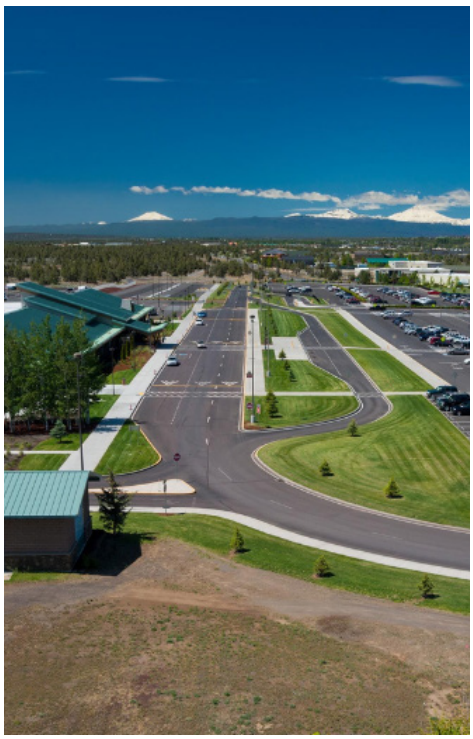
North Unit Irrigation District Hydropower

IRRIGATION COMMUNITY North Unit Irrigation District

LOCATION Redmond, OR



OVERVIEW

In the event of a catastrophic earthquake in the Cascadia Subduction Zone, the central Oregon city of Redmond is identified as the state's primary emergency response center. It is expected that such a catastrophic natural event would cause widespread loss of basic everyday services including extended periods of electrical outages. Reliable backup power is an essential component to disaster preparedness and response for the region regardless of the type of catastrophic event.

Though diesel generators typically supply backup power in emergencies, assuming abundant diesel supplies are available, those supplies often last only several days to a week. North Unit Irrigation District's (NUID) main irrigation canal, which is adjacent to Redmond Airport, offers an innovative electrical supply alternative via hydroelectric power. By piping an 8,000 ft section of the NUID main canal and constructing a power plant near the eastern edge of the airport, emergency water could be supplied to the power plant regardless of the time of year, producing backup electricity for an extended period in case of a large-scale power disruption. The pipeline would also support the district's larger irrigation modernization efforts by conserving water and improving water supplies for local farmers while also supporting broader community resilience.

PROJECTED BENEFITS

	BEFORE	AFTER
	Vulnerable electric grid stability for the state's primary earthquake response center.	**Improved disaster preparedness resulting from a secure backup power generation source that can be activated during natural disasters and prolonged electrical grid failures.**
	Lack of system pressurization. No opportunity for energy generation.	**The modernized section of the canal is projected to generate an estimated 1000-1400kW/month during operation.**
	Open canals susceptible to breaking, blockage, or flooding.	**Reduced failure risks for the 8,000-ft piped section of NUID's critical water infrastructure.**
	Reduced water supply during drought.	**Improved water supply via modernization would create water savings that benefit farmers, fish, and wildlife.**
	Reduced agricultural production and missed economic development opportunities.	**Water will support farmland served by NUID, Project will support agricultural and construction jobs annually.**