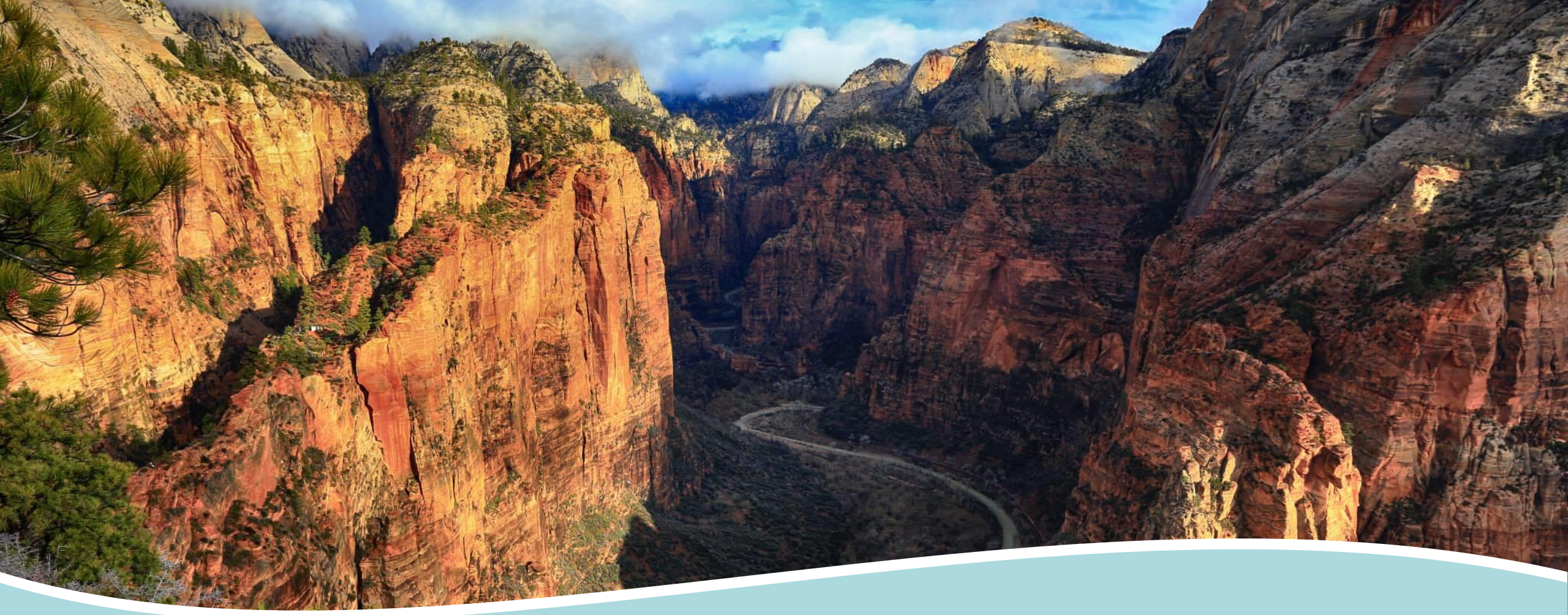


THE ONGOING EVOLUTION OF WATER DEVELOPMENT IN WASHINGTON COUNTY

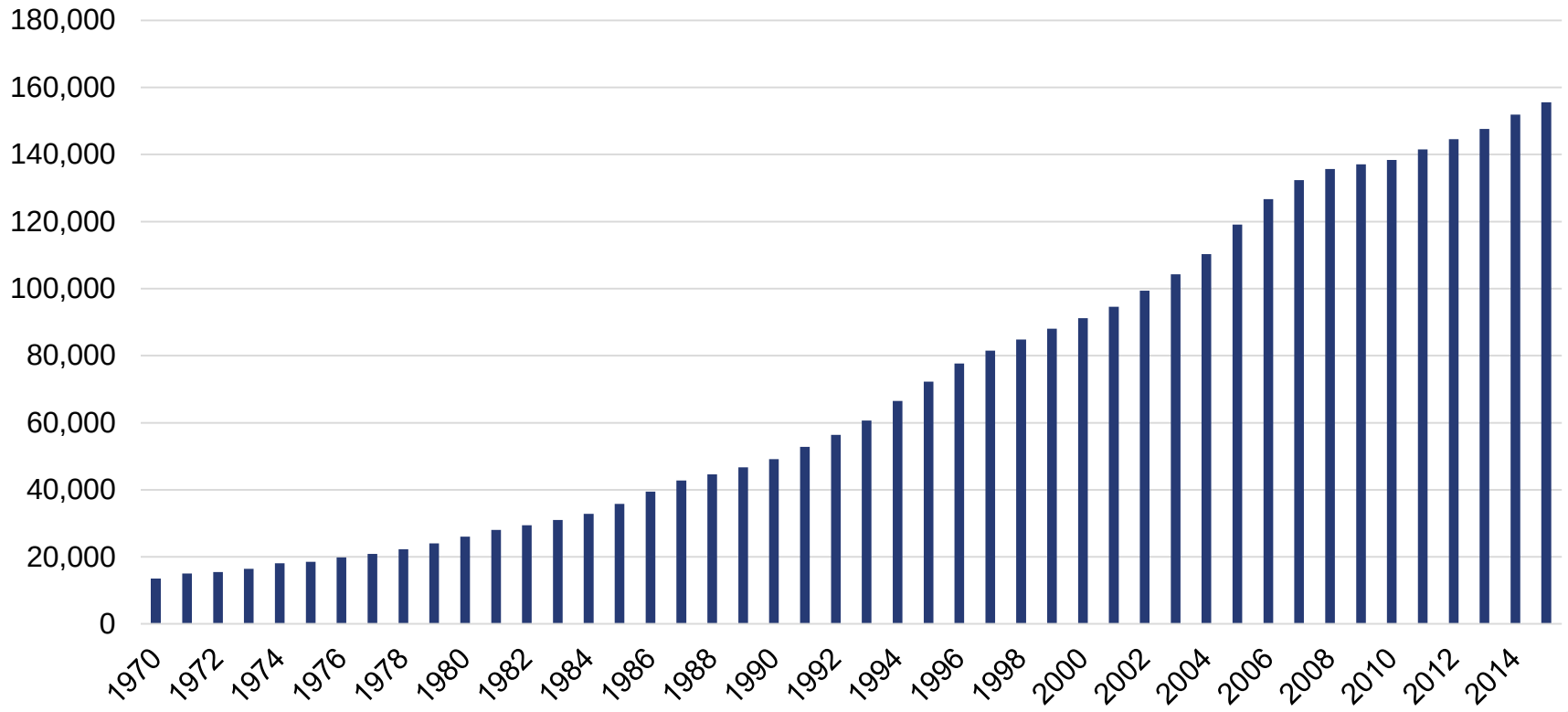
Economic Summit 2018 | Karry Rathje | Washington County Water Conservancy District

Water District & Municipal Roles

	DISTRICT	**MUNICIPALITY**
CUSTOMERS	Primarily a wholesale water provider; sells water to municipalities	Primarily a retail water provider; sells water directly to water users
CONSERVATION	Requires municipalities have a conservation plan, landscape ordinances and time of day watering restrictions	Implements and enforces conservation plan and all accompanying ordinances and restrictions
GROWTH	Provides water to municipalities based on growth scenarios adopted by elected officials	Determines growth scenarios

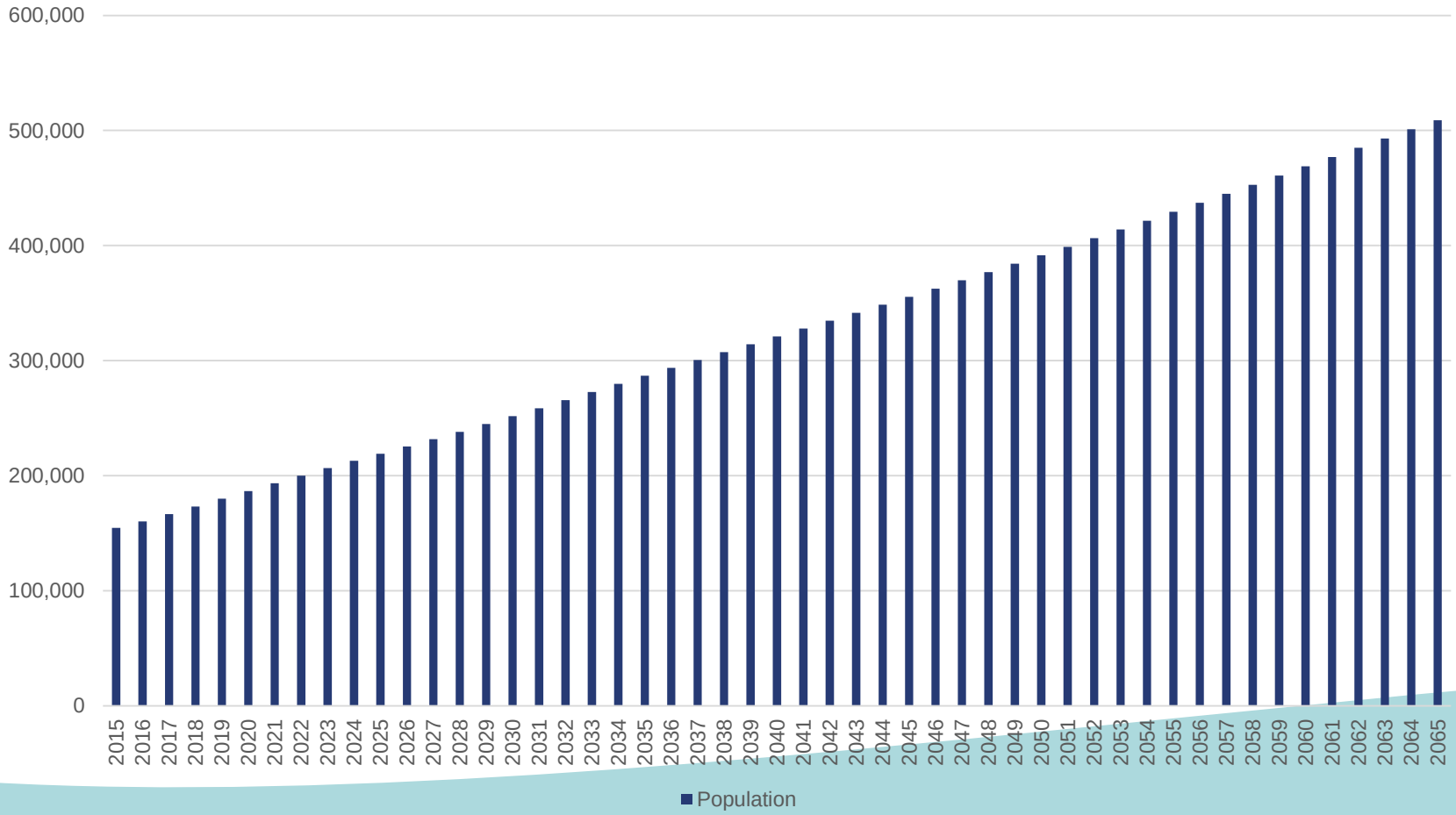
Historic Population Growth

Washington County's population increased by 141,933 residents between 1970 and 2015 – a nearly 6% annual growth rate.



Projected Population Growth

Washington County's population is projected to more than triple between 2015-2065 – an increase of 229%. Highest increase in Utah.



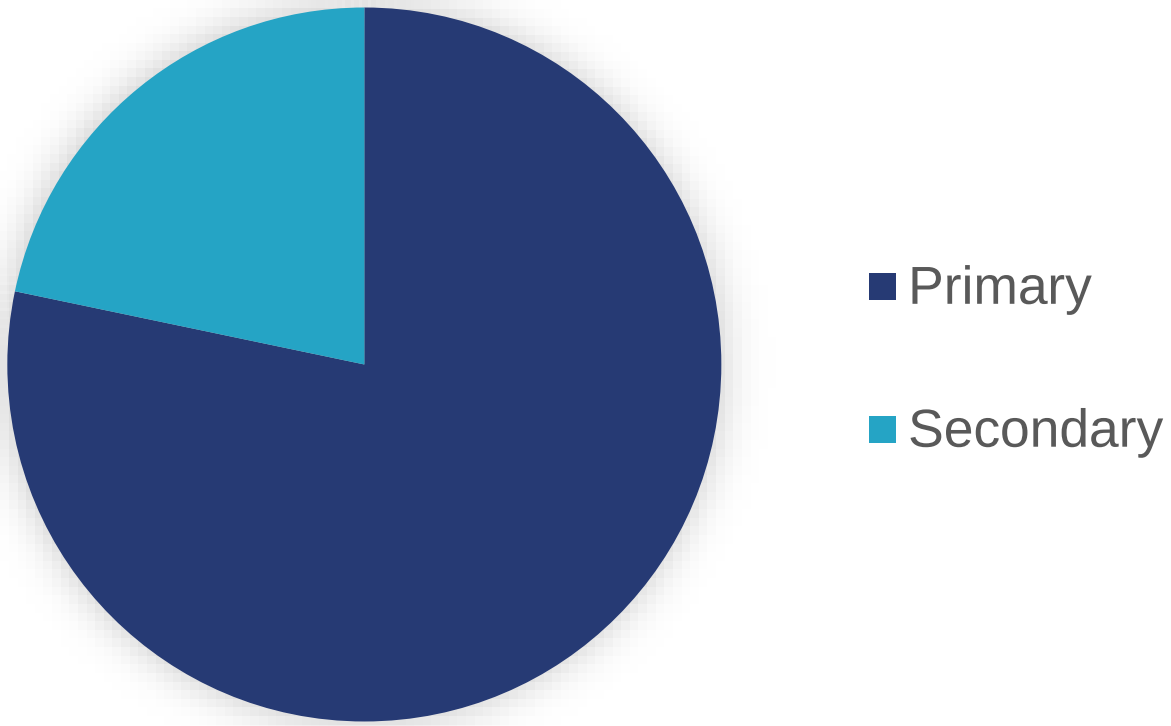
Current Economic Indicators

		Percent increase vs. one year ago		
		Washington County	*Utah*	*United States*
• GDP	$5.13 billion	10.1%	4.9%	2.3%
• Employment	70,321 jobs	5.3%	3.1%	1.5%
• Personal income	$5.3 billion	7.4%	6.3%	2.9%
• Taxable retail sales	$279 million	12.8%	9.1%	
• Transient room tax	$6.8 million	20.5%	10.4%	

All economic indicators signal strong, continued growth in Washington County.

Households

Approximately 22% percent of homes in Washington County are second homes.



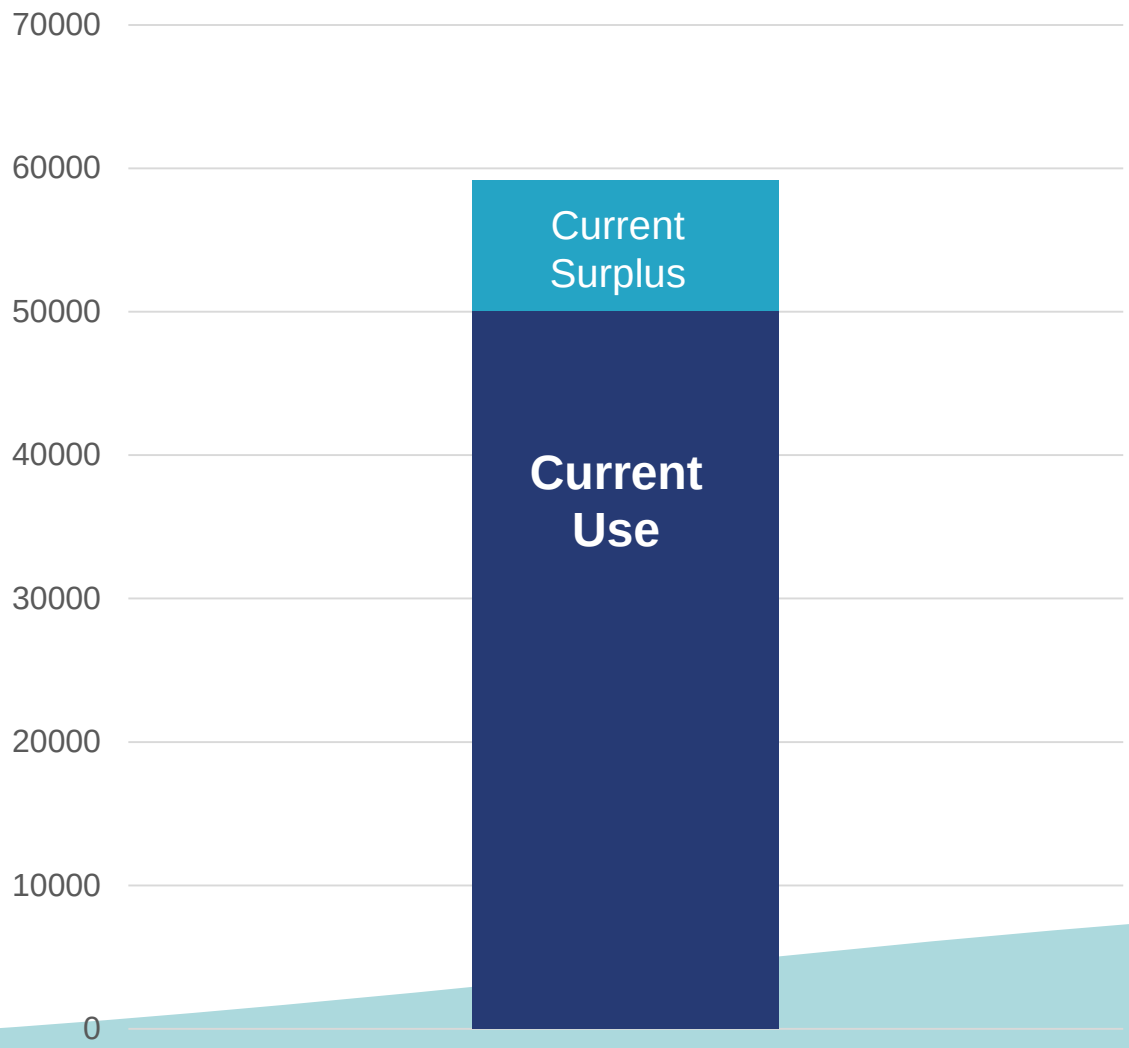
Tourism

6

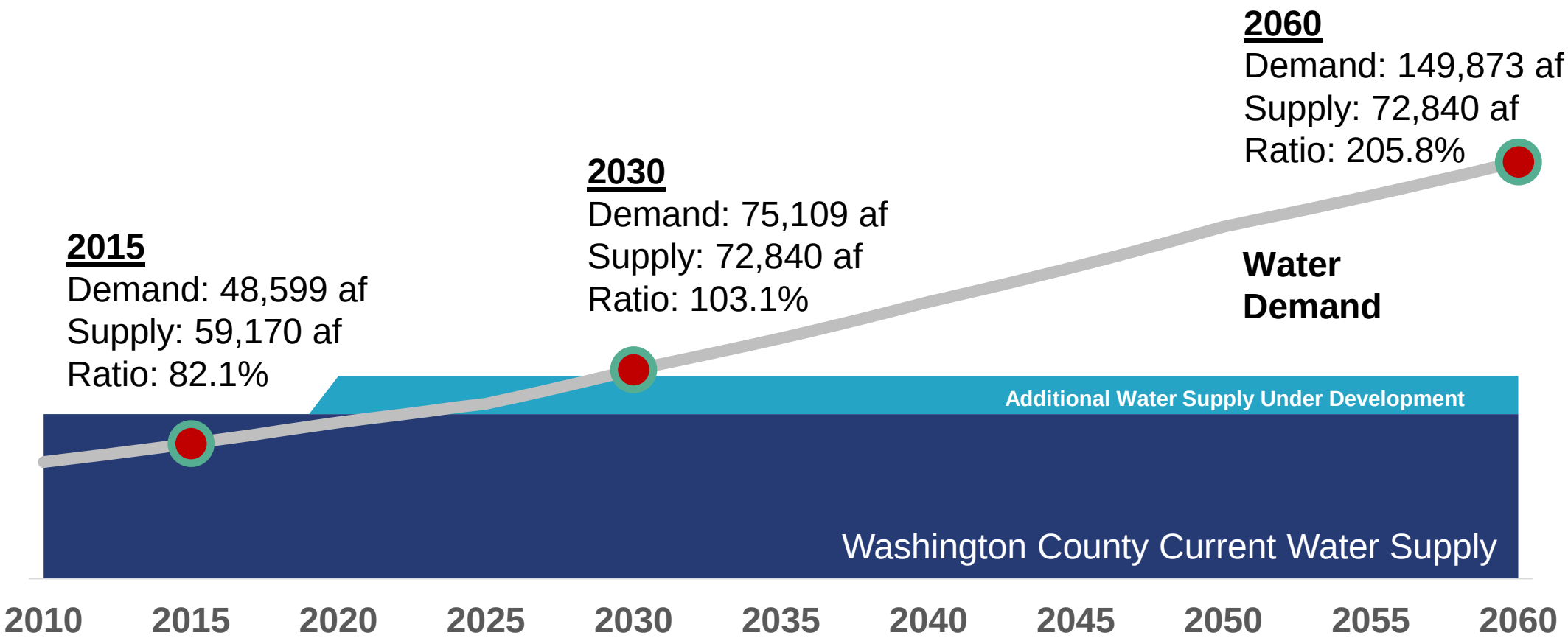
million visitors a year

Current Potable Water Supply

Washington County is using approximately 85% of its current potable water supply.

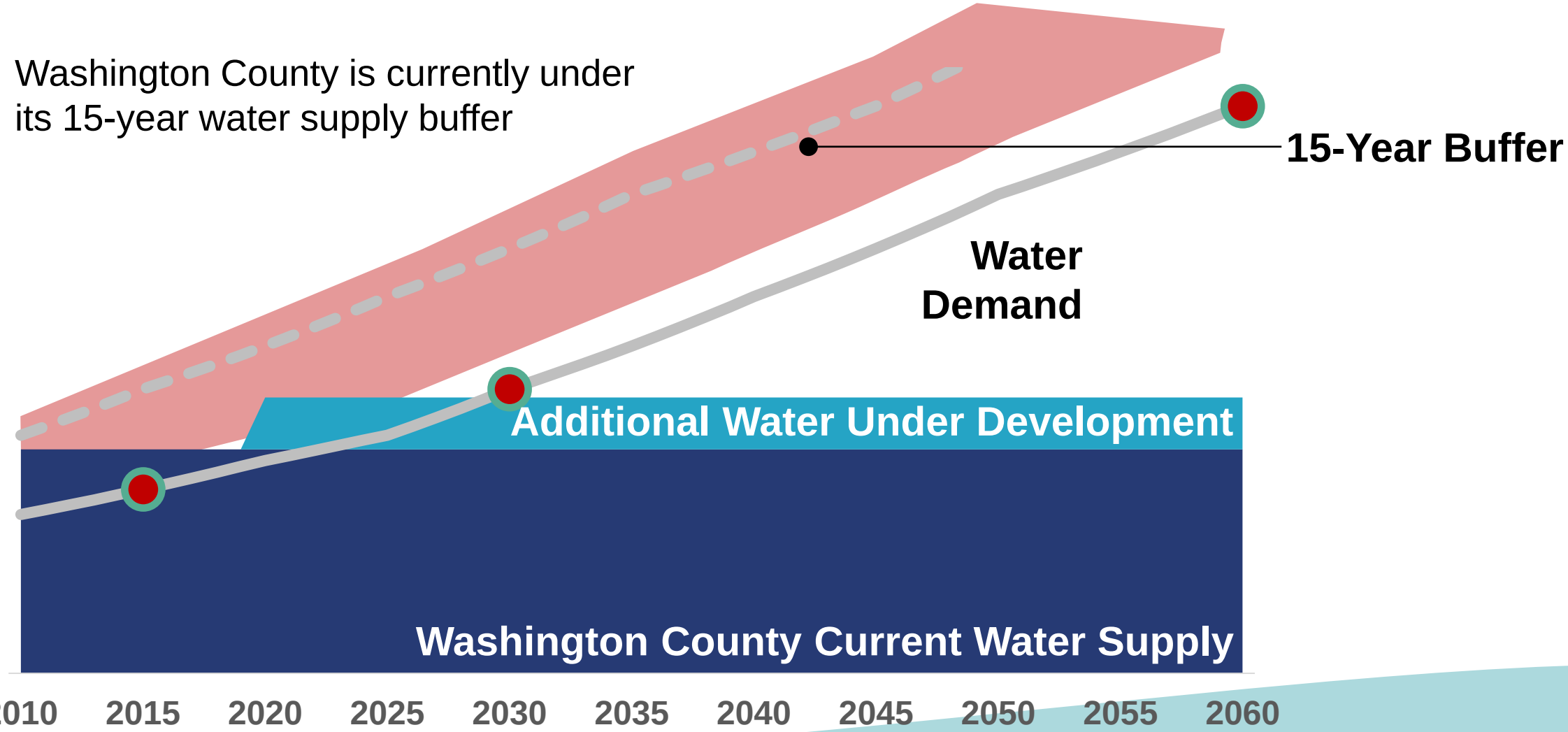


Potable Water Supply & Anticipated Demand



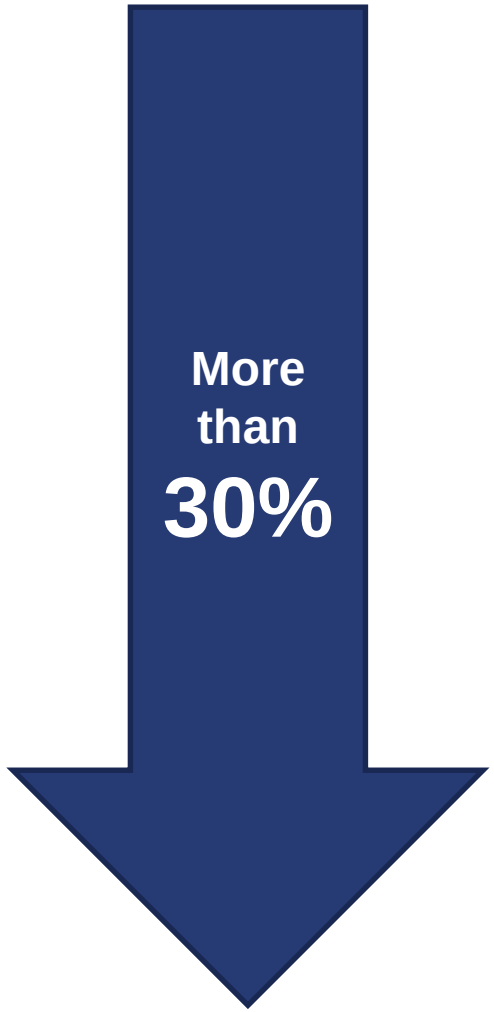
Water buffer

Washington County is currently under its 15-year water supply buffer



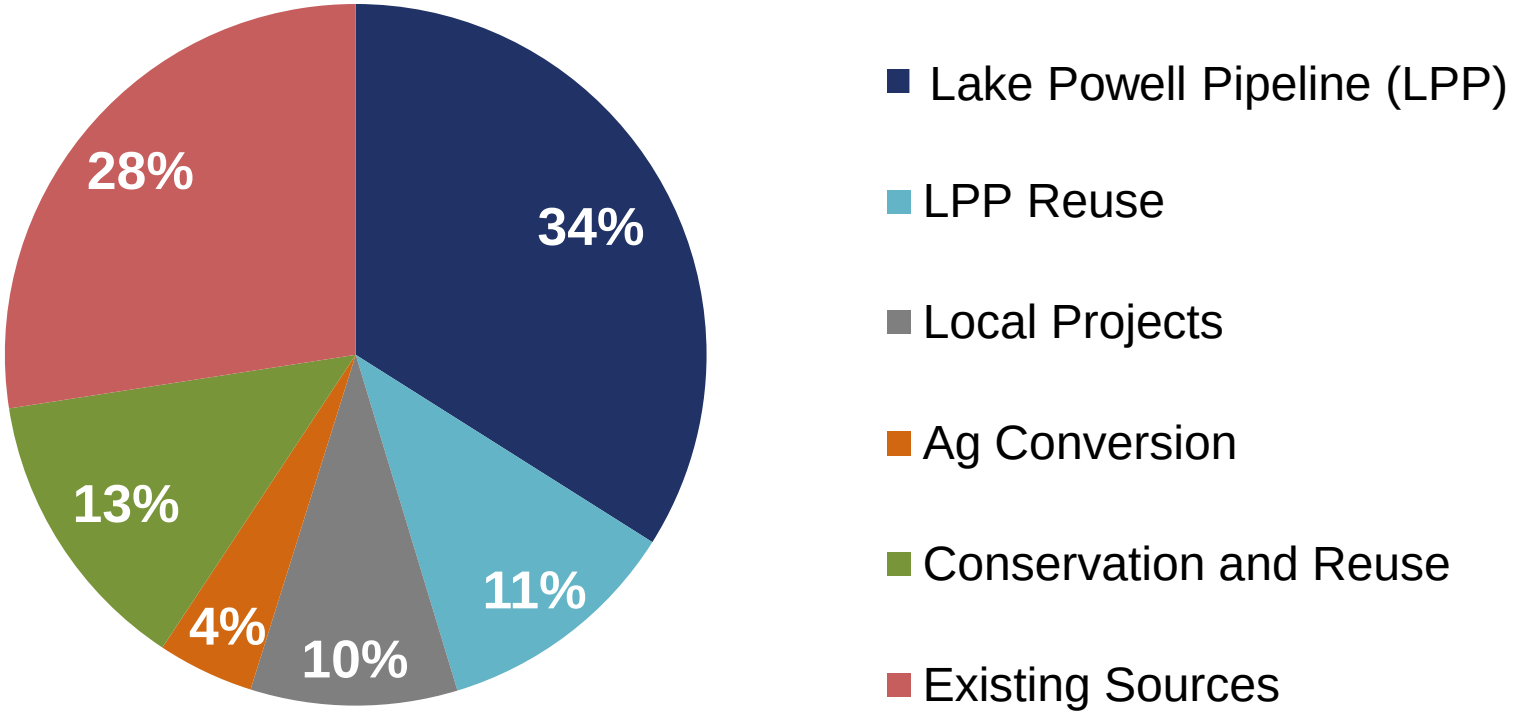
Water Use

- First county to meet Governor Herbert's statewide water conservation goal
- More than $60 million invested in recent conservation efforts by the district and its municipal partners
- Water use in Washington County has decreased more than 30 percent from 2000 to 2015
- Increased conservation efforts part of comprehensive water plan



Washington County Landscapes

Comprehensive Water Supply Plan Through 2060



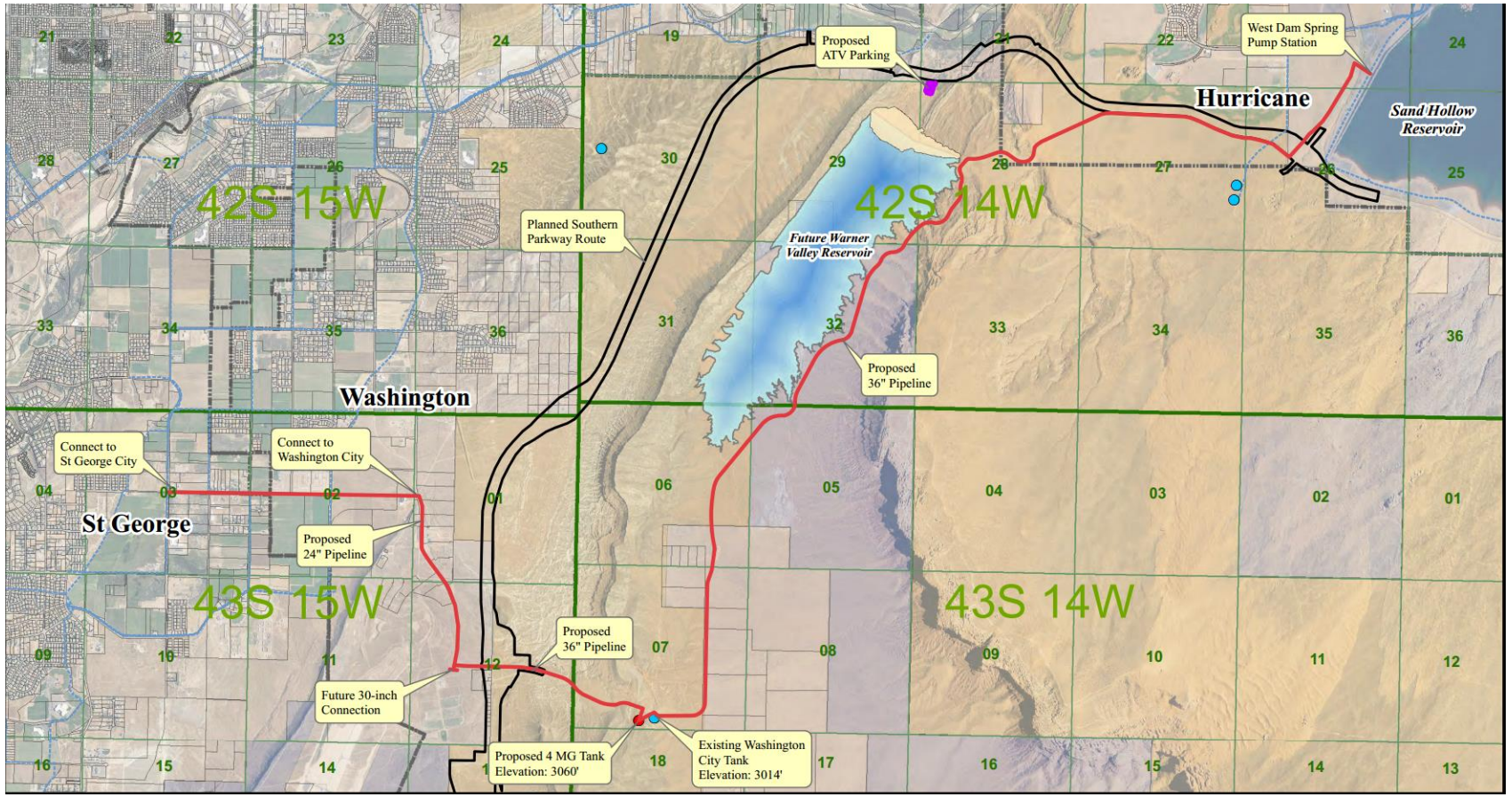
Current Projects & Estimated Costs

Project	Estimated Cost
Ash Creek Project*	$41,705,000
Well Development	$19,357,000
Lake Powell Pipeline	$1,377,609,000
Quail Creek Ozone Addition*	$29,600,000
Quail Creek Water Treatment Plant Expansion*	$46,001,000
Sand Hollow Arsenic Water Treatment Plant	$6,798,000
Sand Hollow Regional Pipeline*	$18,047,000
Sand Hollow Water Treatment Plant*	$56,428,000
Water Rights	$5,000,000
TOTAL	**$1,600,515,000**

*Includes anticipated bond financing expenses.

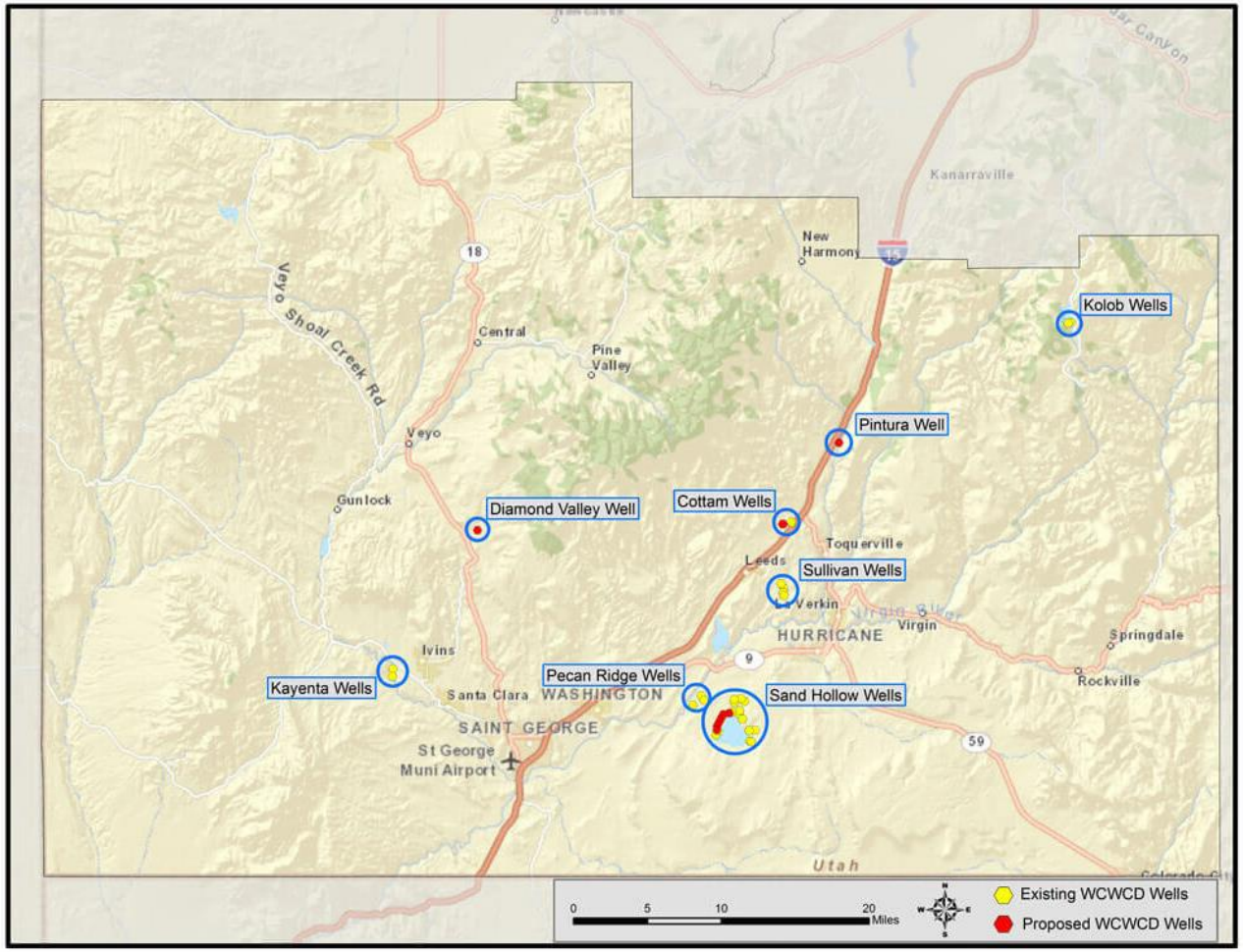
Sand Hollow Regional Pipeline

- Estimated $18 million
- 11.5-mile pipeline



Well Development

- Estimated $ 19 million
- 12 new wells

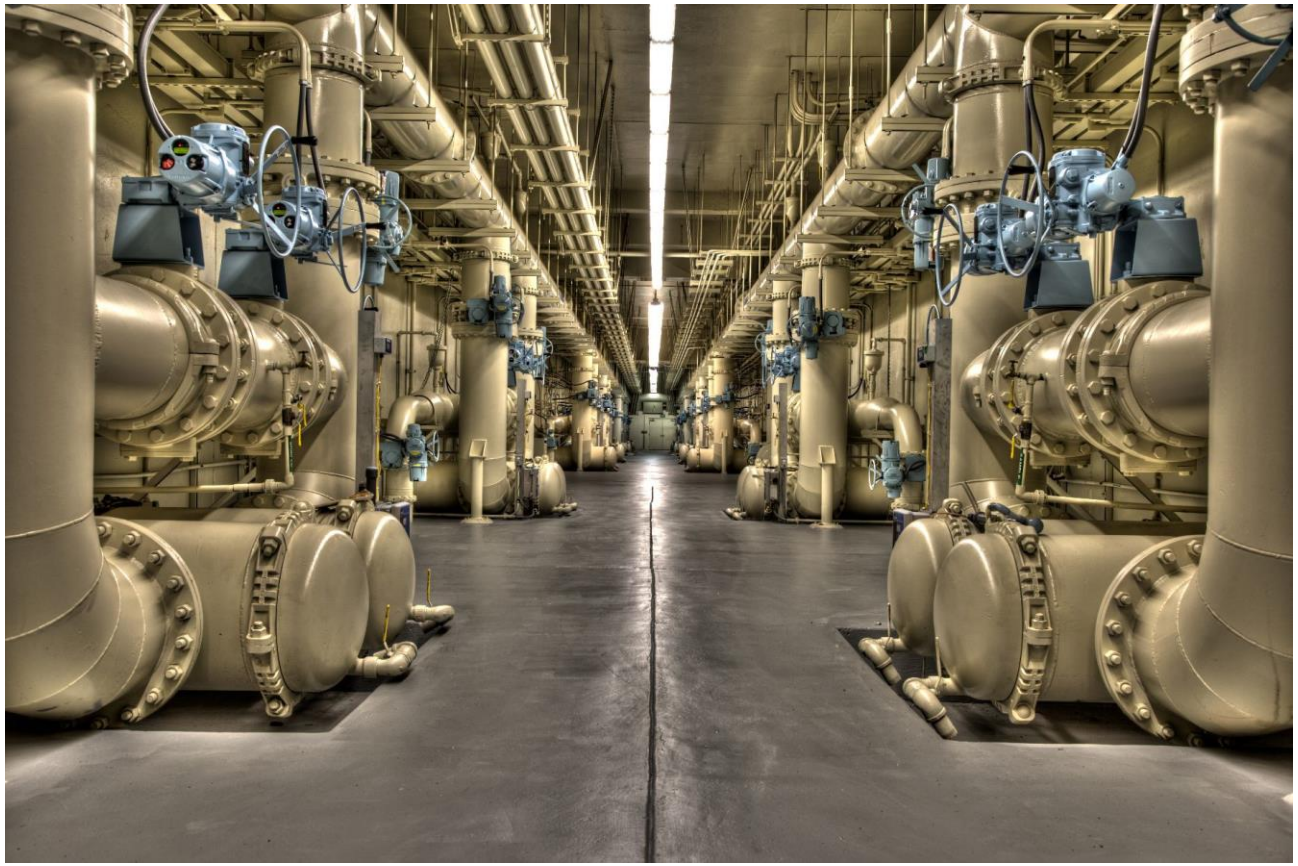


Ash Creek Pipeline & Toquer Reservoir

- Estimated $42 million
- 17-mile pipeline and a 3,640-acre-foot reservoir

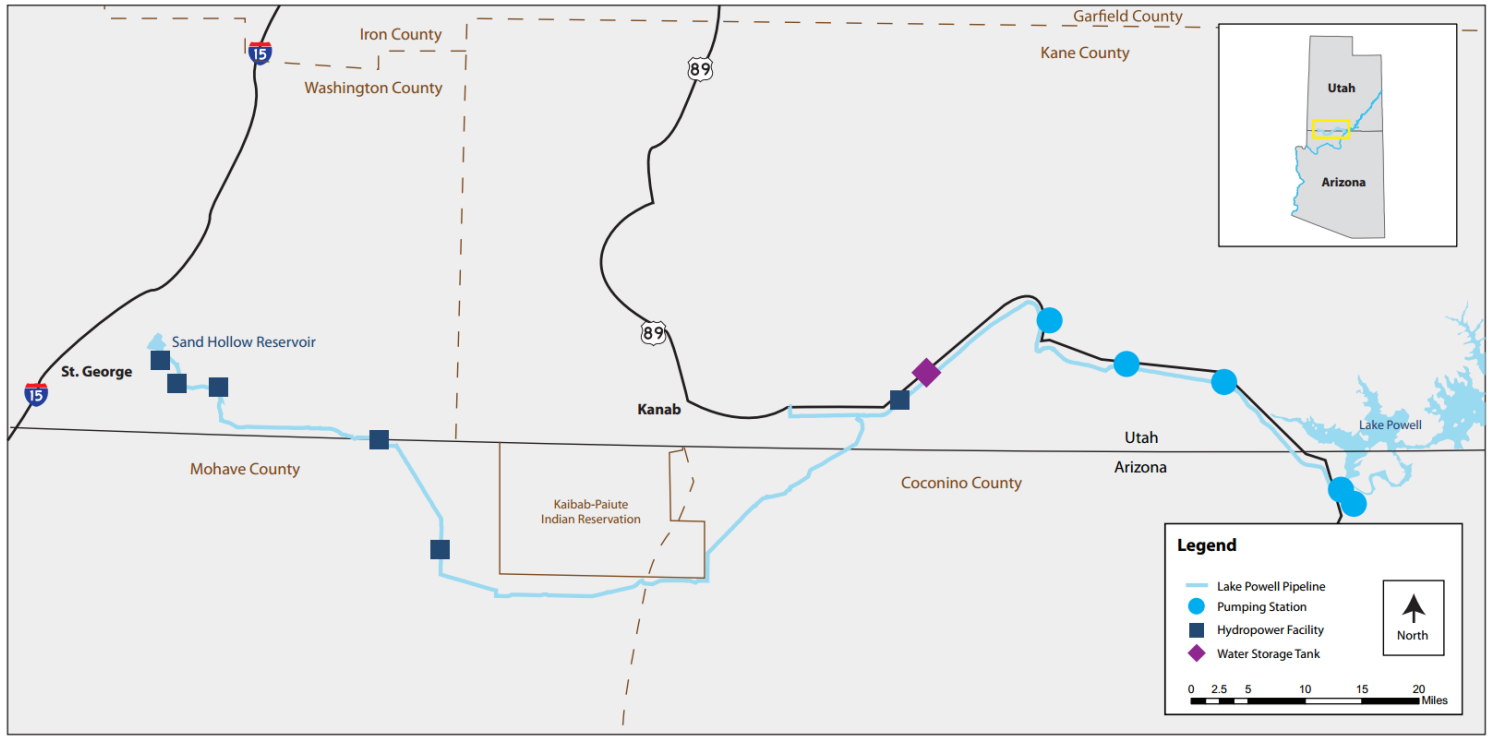
Water Treatment Plant

- Estimated $46 million
- Expanding from a 60 to an 80 million gallon per day plant



The Lake Powell Pipeline (LPP)

- State project
- Delivers 86,249 AF of water
- Approximately 140 miles buried pipeline
- 5 pump stations
- 6 hydropower stations



Why Utah Needs LPP

PROJECT SERVES 13 SOUTHERN UTAH COMMUNITIES

SYSTEM RELIABILITY

DROUGHT PROTECTION

ECONOMIC VITALITY/ GROWING COMMUNITIES

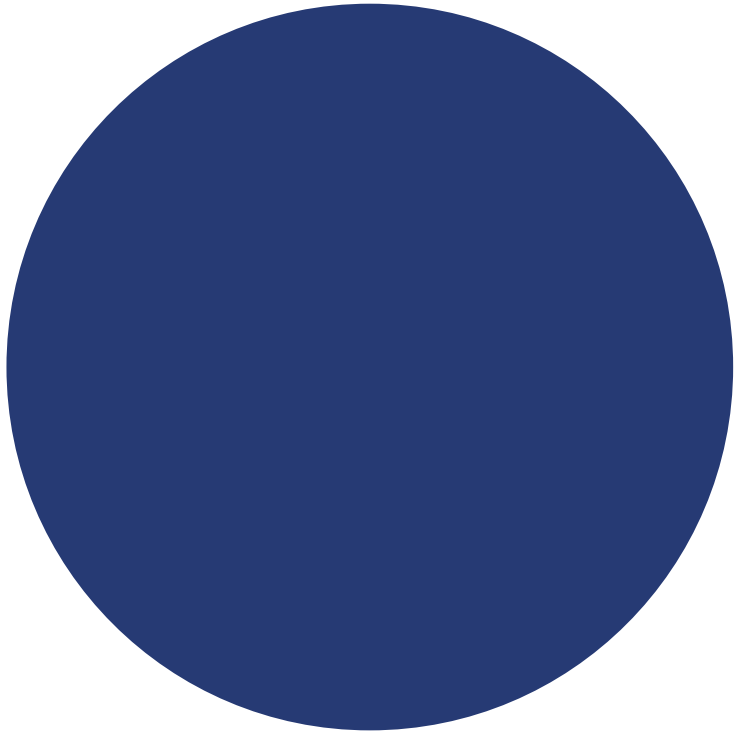
Provides the Region Another Water Source

THE VIRGIN RIVER BASIN

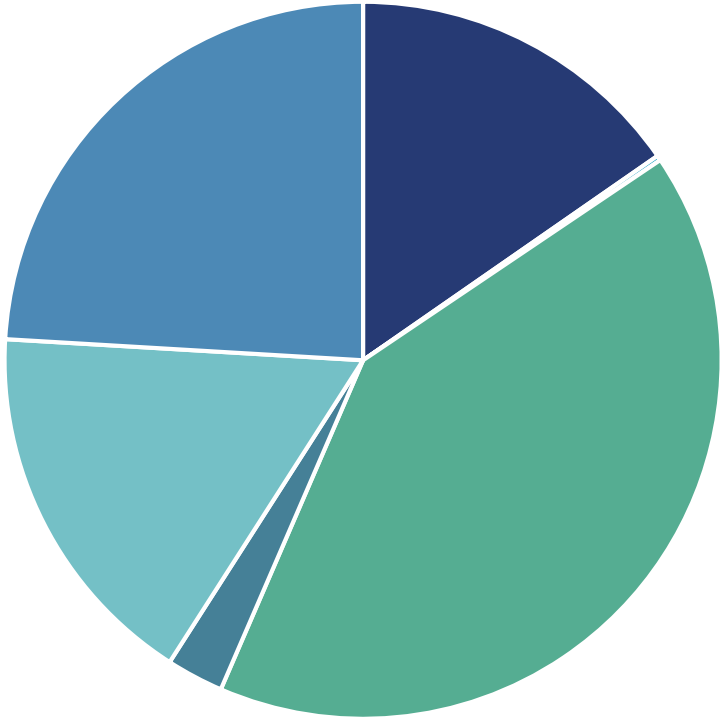
LAKE POWELL/ COLORADO RIVER WATER

Source Diversity

Washington County



Salt Lake City



Provides Drought Protection

- Drought experienced 12 out of the 20 past years
- Climate variability
- Stores water closer to local communities

Water for Economic Vitality

	Washington County (2016)	Per Acre-Foot	Lake Powell Pipeline (82,249 Acre-Feet)
Population[1]	160,359	3.433	282,391
Households[1]	58,062	1.243	102,247
Total Employment[2]	60,188	1.289	105,991
Private Businesses[2]	5,203	0.111	9,162
Total Personal Income[3]	$5,275,962,000	$112,961	$9,290,928,846
Total Wages and Salaries[2]	$2,051,516,000	$43,924	$3,612,704,030
Gross Metropolitan Product[3,4]	$5,129,000,000	$109,814	$9,032,129,884

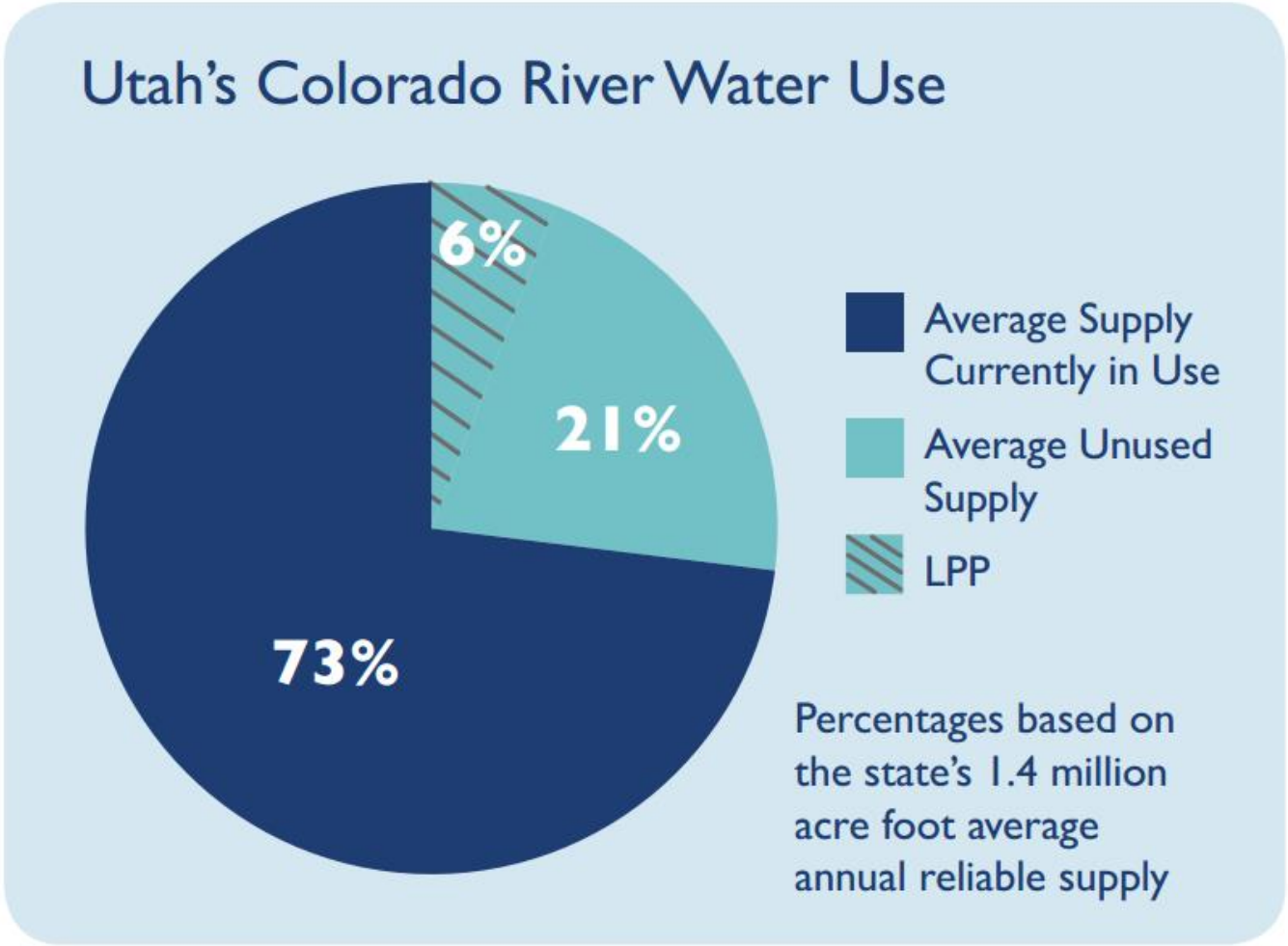
[1] Kem C. Gardner Policy Institute

[2] U.S. Bureau of Labor Statistics

[3] U.S. Bureau of Economic Analysis

[4] St. George Metropolitan Statistical Area, coterminous to Washington County, UT

Beneficially Uses Utah's Water



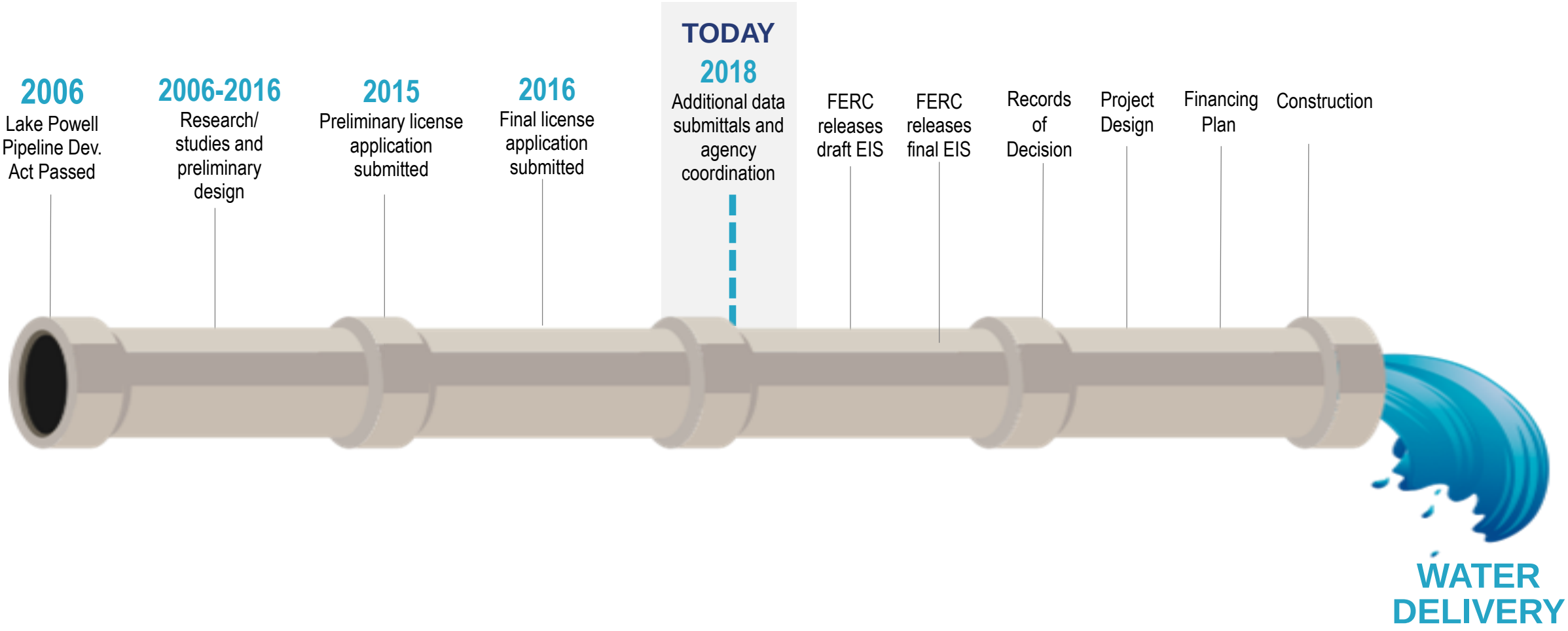
Costs and Financing

- 2006 Lake Powell Pipeline Development Act addresses cost repayment
- Water users will repay costs
- Preliminary cost estimate $1.1-1.8 billion

Southern Utah Without LPP

- Loss of outdoor landscapes
- Agricultural dry up
- More expensive and environmentally damaging options

Anticipated Timeline



Review of Water Infrastructure Development by Decade


KOLOB RESERVOIR
ASH CREEK RESERVOIR
GUNLOCK RESERVOIR
IVINS RESERVOIR
1980
POPULATION GROWTH
≤25%
≤50%
≤75%
>75%
NEVADA
UTAH
UTAH
ARIZONA
UTAH
ARIZONA
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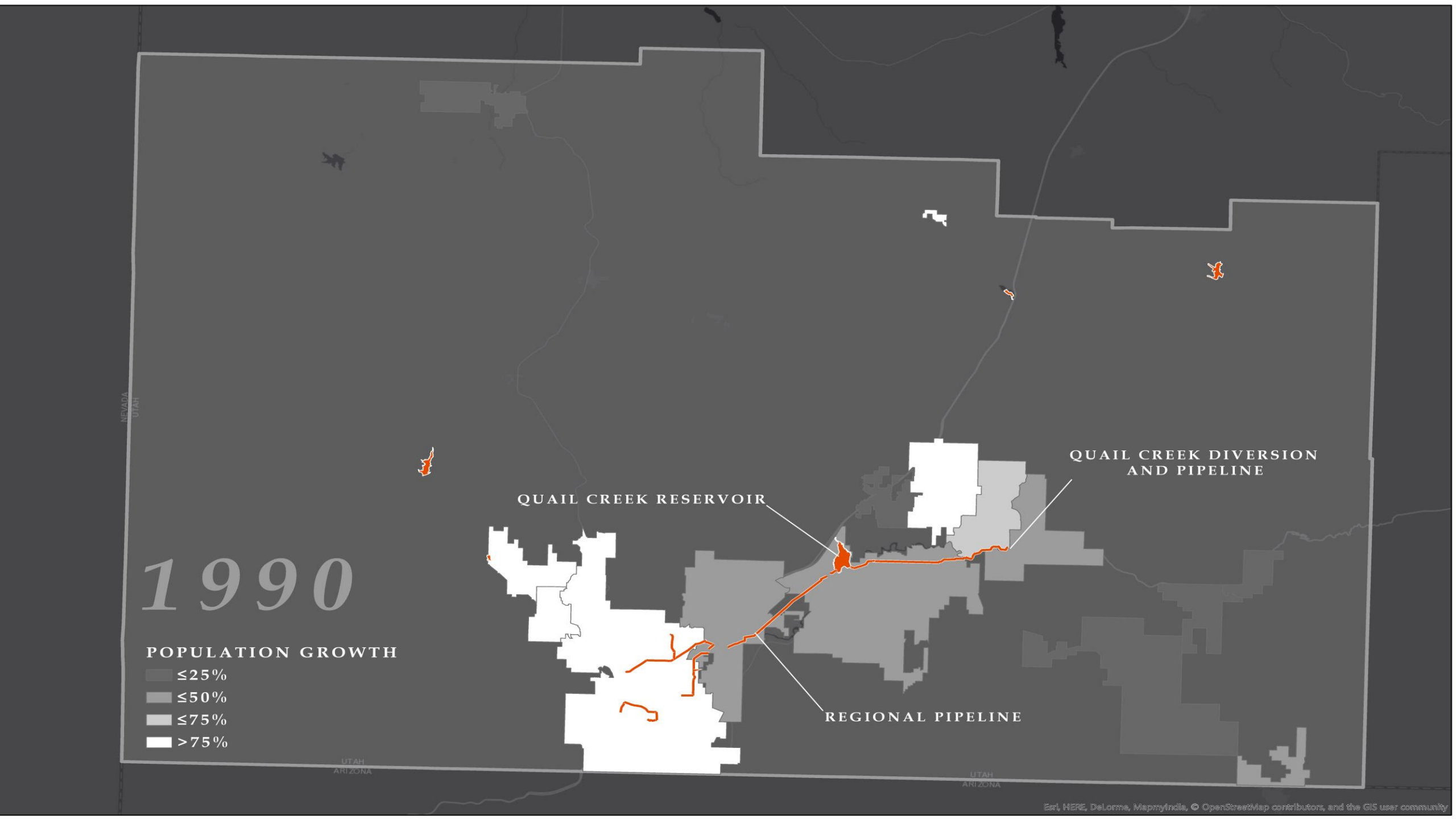
QUAIL CREEK DIVERSION AND PIPELINE
QUAIL CREEK RESERVOIR
REGIONAL PIPELINE
1990
POPULATION GROWTH
≤25%
≤50%
≤75%
>75%
NEVADA
UTAH
UTAH
ARIZONA
UTAH
ARIZONA
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KOLOB CULINARY
TOQUERVILLE SECONDARY WATER SYSTEM PHASE 1
COTTAM WELLS TO VIRGIN PIPELINE
2000
POPULATION GROWTH
≤25%
≤50%
≤75%
>75%
NEVADA
UTAH
UTAH
ARIZONA
UTAH
ARIZONA
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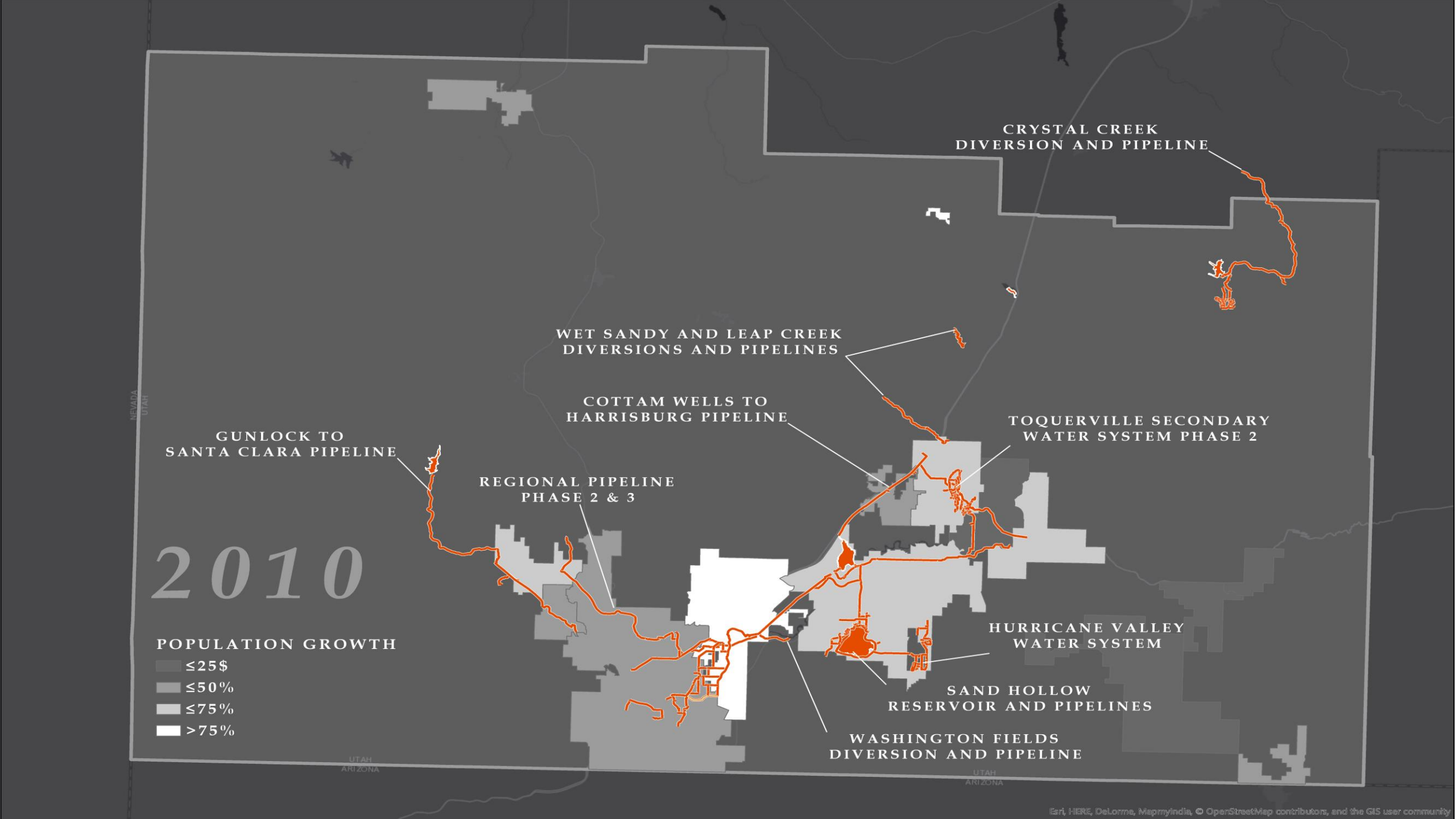
CRYSTAL CREEK
DIVERSION AND PIPELINE
WET SANDY AND LEAP CREEK
DIVERSIONS AND PIPELINES
COTTAM WELLS TO
HARRISBURG PIPELINE
TOQUERVILLE SECONDARY
WATER SYSTEM PHASE 2
GUNLOCK TO
SANTA CLARA PIPELINE
REGIONAL PIPELINE
PHASE 2 & 3
2010
POPULATION GROWTH
≤25$
≤50%
≤75%
>75%
HURRICANE VALLEY
WATER SYSTEM
SAND HOLLOW
RESERVOIR AND PIPELINES
WASHINGTON FIELDS
DIVERSION AND PIPELINE
NEVADA
UTAH
UTAH
ARIZONA
UTAH
ARIZONA
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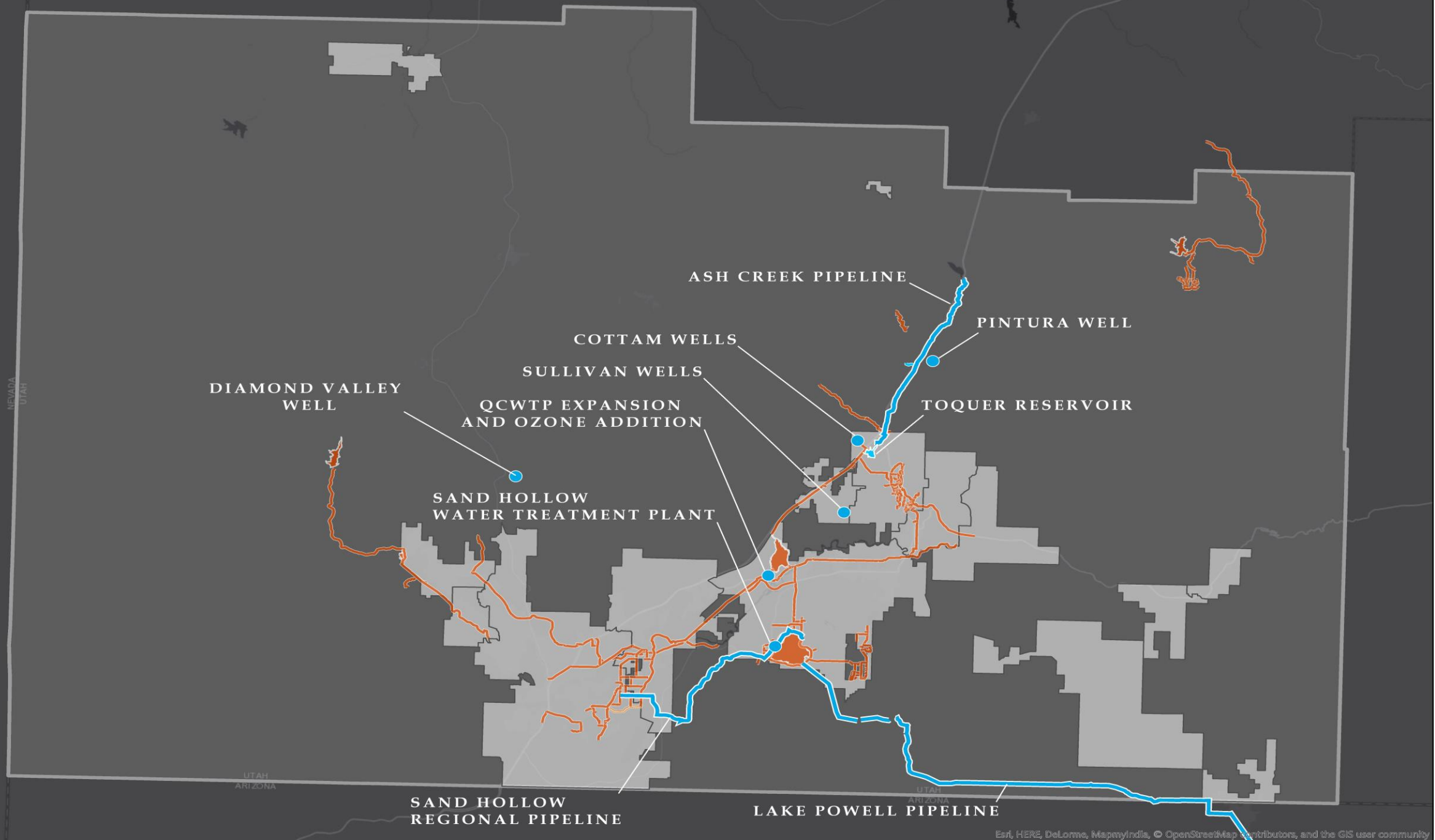
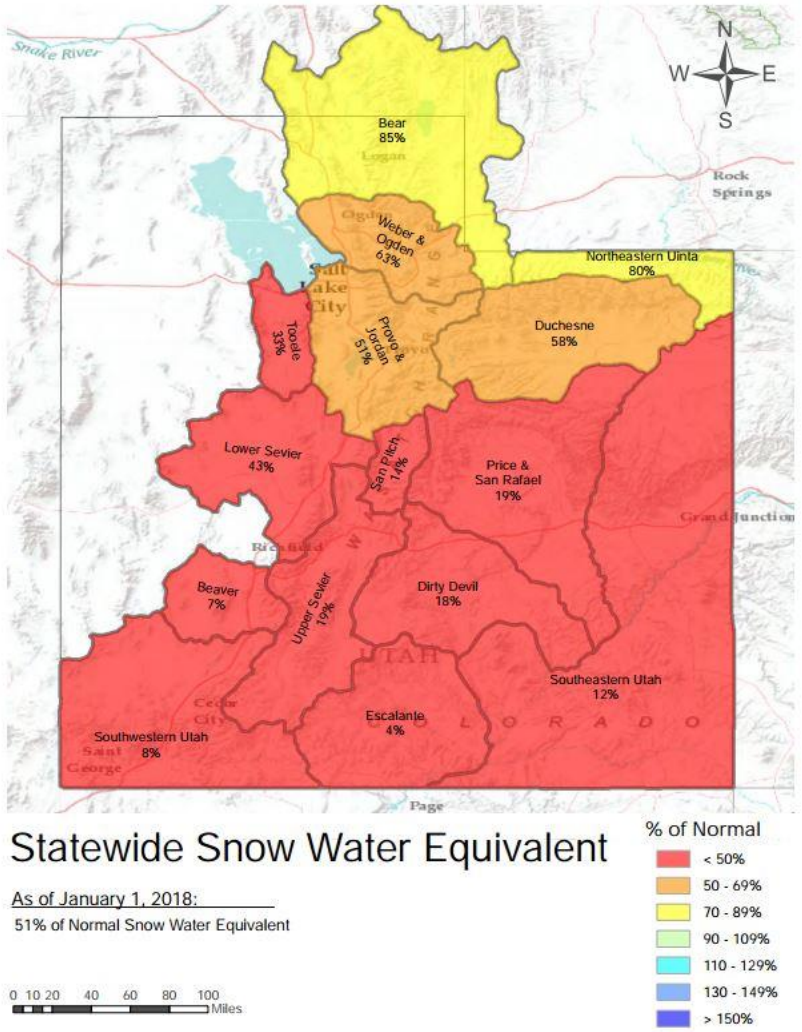
PLANNED DEVELOPMENT THROUGH 2026



Why is Water Infrastructure so Important?

Current Water Conditions

- “Below abysmal”
- Snowpack in southwestern Utah 8% of normal
- Seasonal precipitation (October to December) 14% of average



“Water users in Washington County will likely live off reservoir storage in 2018.”

-Randy Julander, Snow Survey Supervisor for the Natural Resources Conservation Service

“When Quail Creek and Sand Hollow reservoirs were initially proposed, there were some who said we’d never use a drop of water from them. I’m grateful that we, as a community, knew better… We’d be in dire circumstances if we listened to the naysayers.”

-Ron Thompson, General Manager, Washington County Water Conservancy District

Q&A

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