

# WATER PLANNING DISCUSSION WITH SALT LAKE COUNTY COUNCIL



Gene Shawcroft, General Manager, Central Utah Water Conservancy District  
Richard Bay, General Manager, Jordan Valley Water Conservancy District

August 7, 2018

**Table I  
Utah Population by County  
2015-2065**

County	2015	2025	2035	2045	2055	2065	Absolute Change 2015-2065	Percent Change 2015-2065	Rank
Beaver	6,710	7,408	8,017	8,606	9,068	9,649	2,939	44%	26
Box Elder	52,971	60,984	67,664	74,440	80,334	86,218	33,247	63%	11
Cache	121,855	146,338	171,969	195,325	212,908	234,744	112,890	93%	7
Carbon	21,164	24,343	26,870	29,069	31,240	33,144	11,980	57%	16
Daggett	1,113	1,232	1,387	1,502	1,603	1,723	610	55%	17
Davis	336,091	385,800	428,627	474,028	510,712	544,958	208,867	62%	12
Duchesne	20,821	24,277	26,596	29,178	31,205	33,153	12,332	59%	14
Emery	10,659	11,550	12,507	13,345	14,226	15,364	4,706	44%	25
Garfield	5,164	5,845	6,405	6,697	7,083	7,509	2,345	45%	24
Grand	9,757	11,182	12,203	13,266	14,139	14,794	5,037	52%	21
Iron	49,406	59,900	67,803	74,812	81,589	89,599	40,193	81%	8
Juab	11,071	15,789	19,925	23,307	26,498	30,069	18,998	172%	4

<b>State Total</b>	<b>2,997,404</b>	<b>3,615,036</b>	<b>4,178,317</b>	<b>4,745,057</b>	<b>5,285,767</b>	<b>5,827,810</b>	<b>2,830,406</b>	<b>94%</b>	
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Piute	1,631	1,699	1,872	1,938	1,995	2,149	518	32%	29
Rich	2,353	2,535	2,773	2,992	3,158	3,380	1,027	44%	27
Salt Lake	1,094,650	1,249,961	1,361,099	1,470,574	1,594,804	1,693,513	598,863	55%	18
San Juan	15,902	17,932	19,330	20,562	21,775	23,316	7,413	47%	23
Sanpete	29,088	33,696	38,580	41,682	44,609	49,590	20,502	70%	10
Sevier	21,238	24,494	26,896	28,879	30,774	32,802	11,563	54%	20
Summit	39,278	46,404	54,706	60,644	65,624	70,750	31,472	80%	9
Tooele	63,262	83,922	102,338	115,463	125,291	134,272	71,010	112%	6
Uintah	37,396	42,077	45,978	50,609	54,523	57,766	20,370	54%	19
Utah	585,694	768,346	968,498	1,192,304	1,396,997	1,620,246	1,034,552	177%	3
Wasatch	28,613	42,027	54,218	64,526	73,042	82,018	53,406	187%	2
Washington	154,602	219,019	286,768	355,549	429,295	508,952	354,350	229%	1
Wayne	2,725	2,985	3,363	3,593	3,792	4,130	1,405	52%	22
Weber	242,737	286,593	317,344	344,025	368,635	389,334	146,597	60%	13
<b>State Total</b>	<b>2,997,404</b>	<b>3,615,036</b>	<b>4,178,317</b>	<b>4,745,057</b>	<b>5,285,767</b>	<b>5,827,810</b>	<b>2,830,406</b>	<b>94%</b>	



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Kane	7,271	8,684	9,611	10,179	10,736	11,446	4,175	57%	15
Millard	13,104	14,403	15,619	16,605	17,435	18,617	5,514	42%	28
Morgan	11,080	15,613	19,349	21,357	22,678	24,605	13,525	122%	5
Piute	1,631	1,699	1,872	1,938	1,995	2,149	518	32%	29
Rich	2,353	2,535	2,773	2,992	3,158	3,380	1,027	44%	27
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**CUWCD 1,846,611**

**3,585,115 1,790,495**

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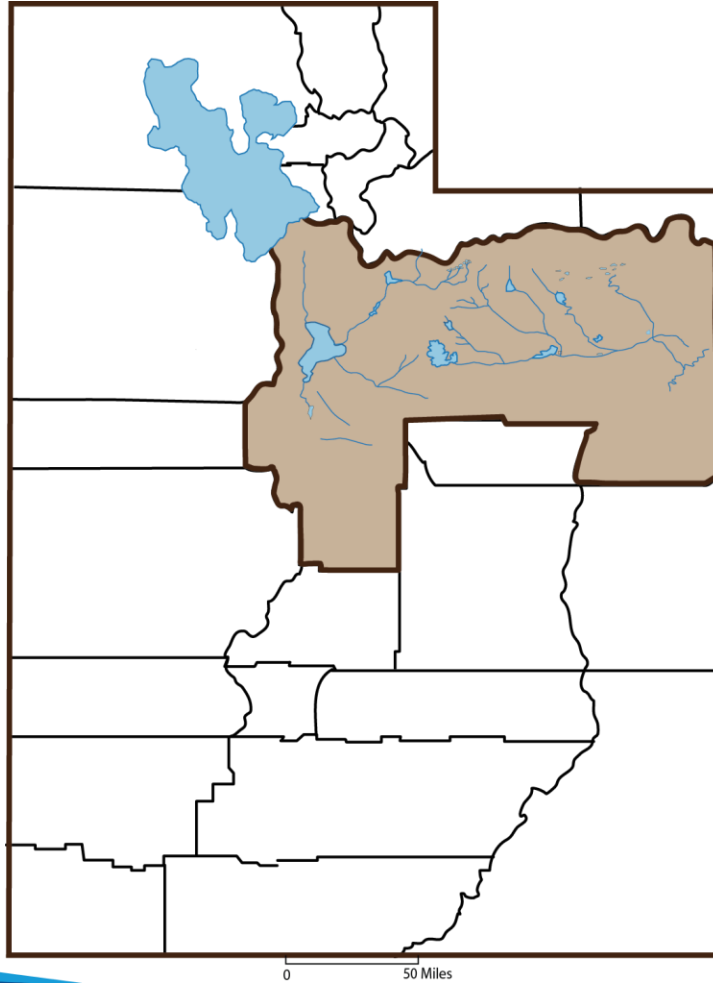
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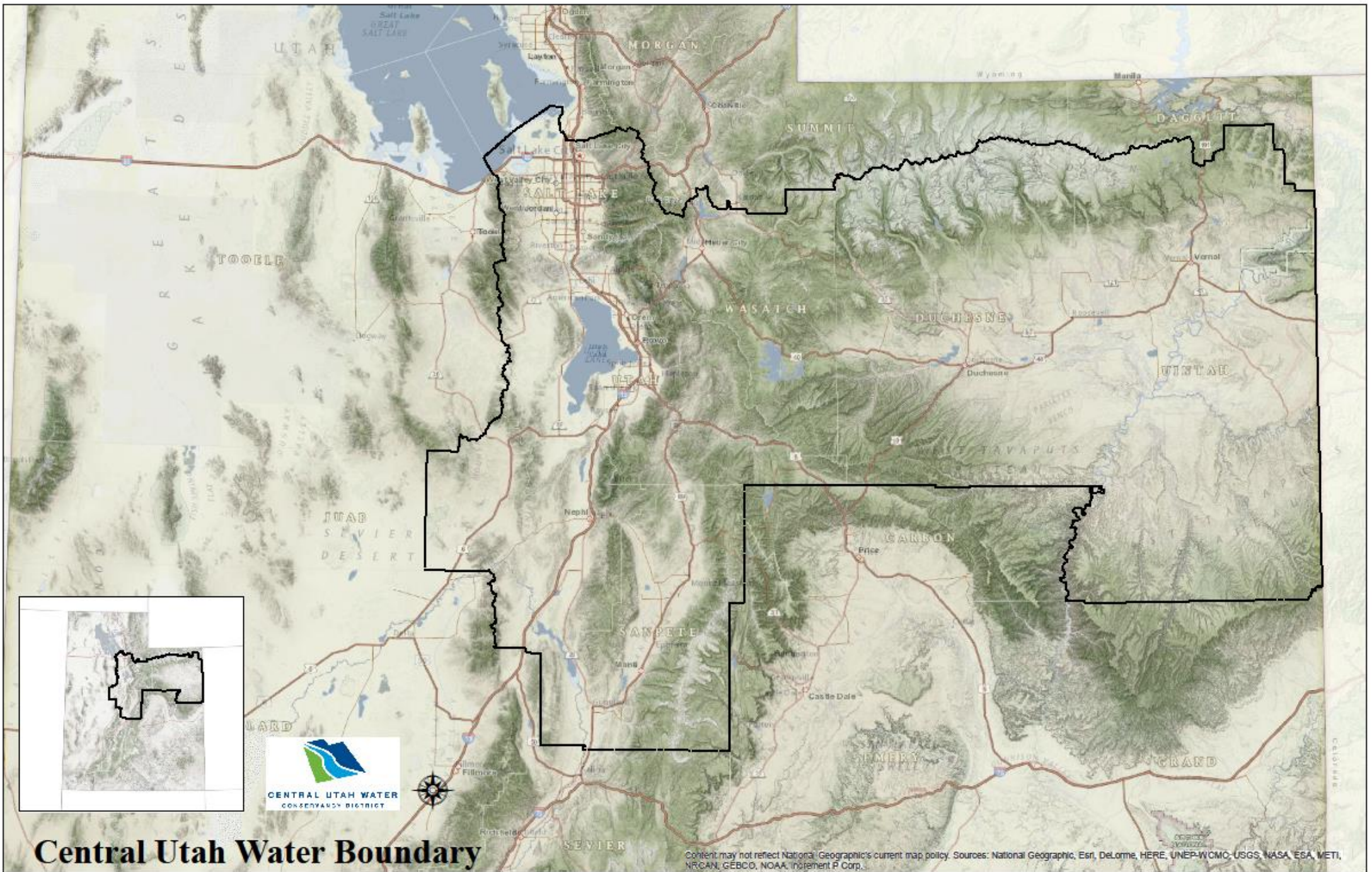
# Central Utah WCD in Utah



Includes all or part of 8  
Counties

1.7 Million People in the  
District (62% of Utah's  
Population)





# Central Utah Water Boundary

Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iNaturalist, P Corp.

# Central Utah Water Board of Trustees

<b><u>County</u></b>	<b><u>No. Trustees</u></b>
<b>Salt Lake</b>	<b>5</b>
<b>Utah</b>	<b>3</b>
<b>Wasatch/Summit</b>	<b>2</b>
<b>Duchesne</b>	<b>3</b>
<b>Juab</b>	<b>1</b>
<b>Sanpete</b>	<b>1</b>
<b>Uintah</b>	<b><u>3</u></b>
<b>TOTAL</b>	<b>18</b>

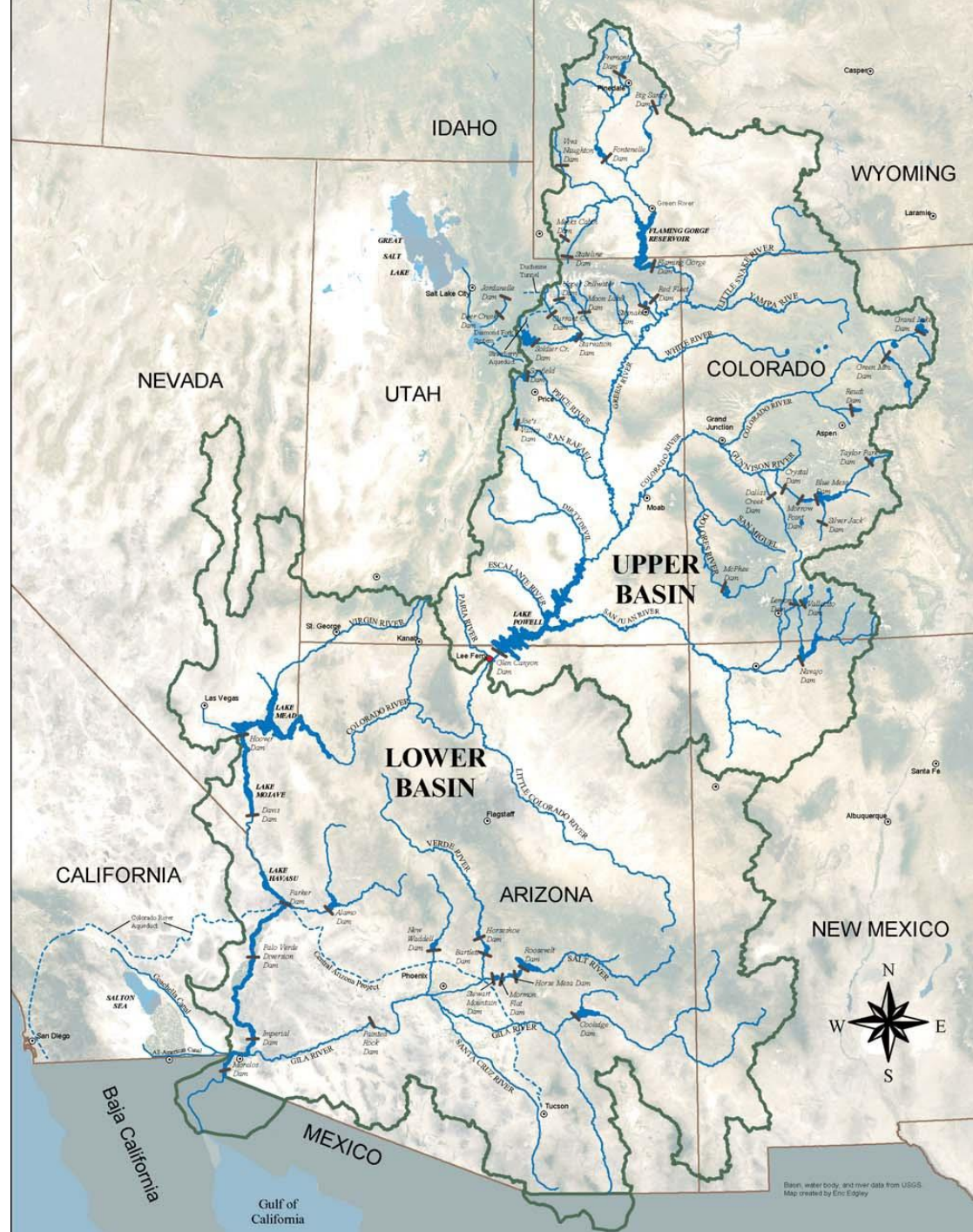




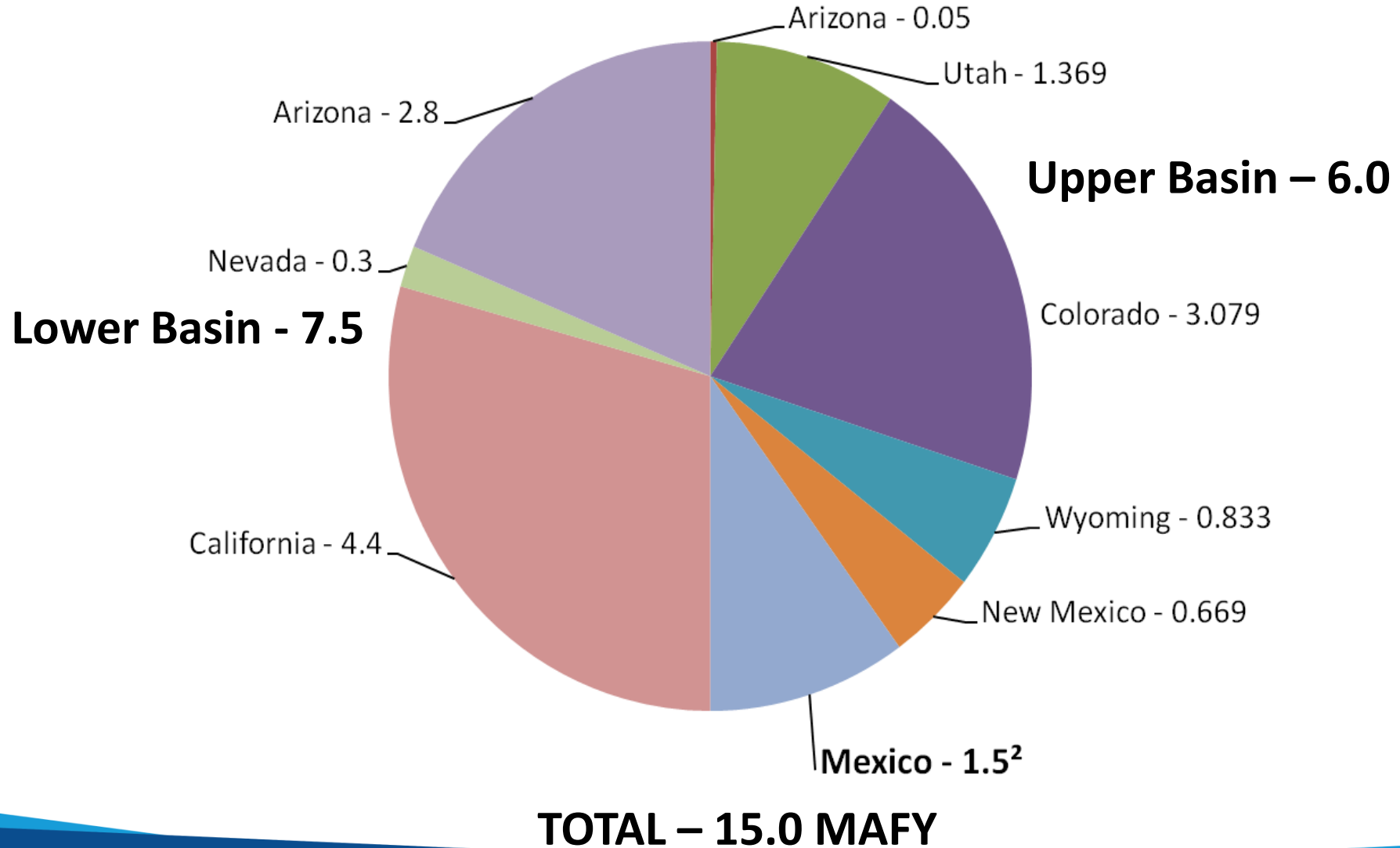
# How Is

**Central Utah Project Water from the  
Colorado River Basin  
Delivered to the Wasatch Front?**





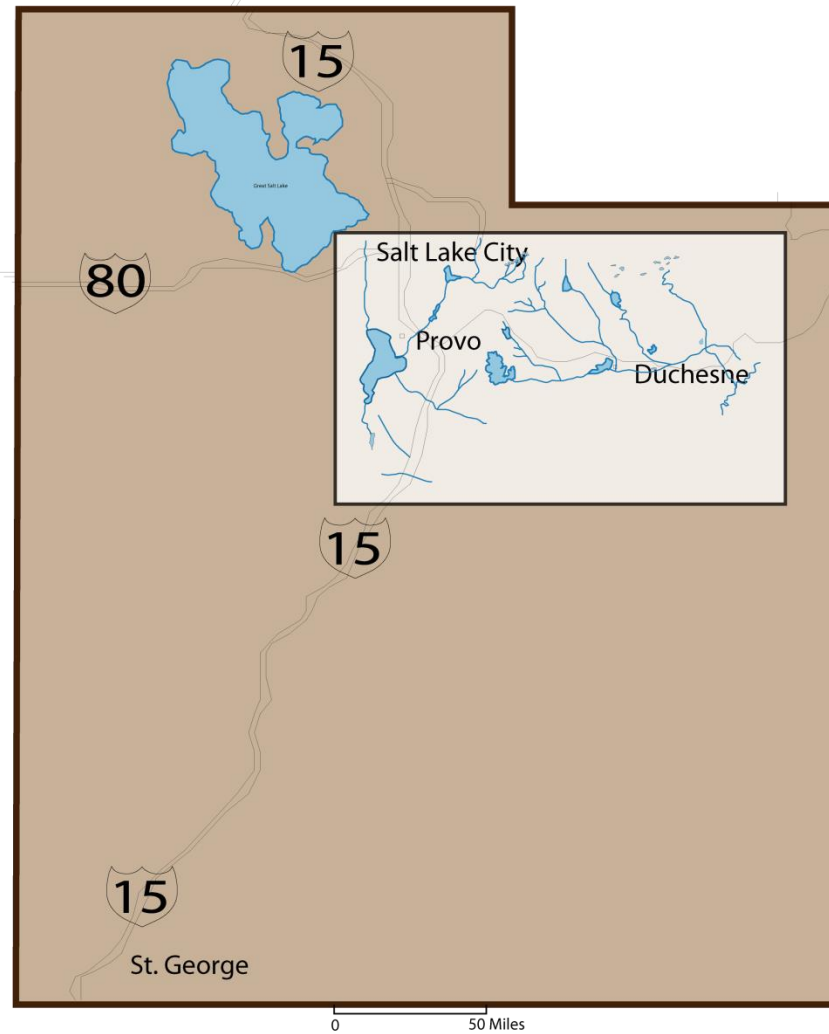
# Compact and Treaty Apportionment Based on Current Hydrology *(in million acre feet per year (MAFY))*



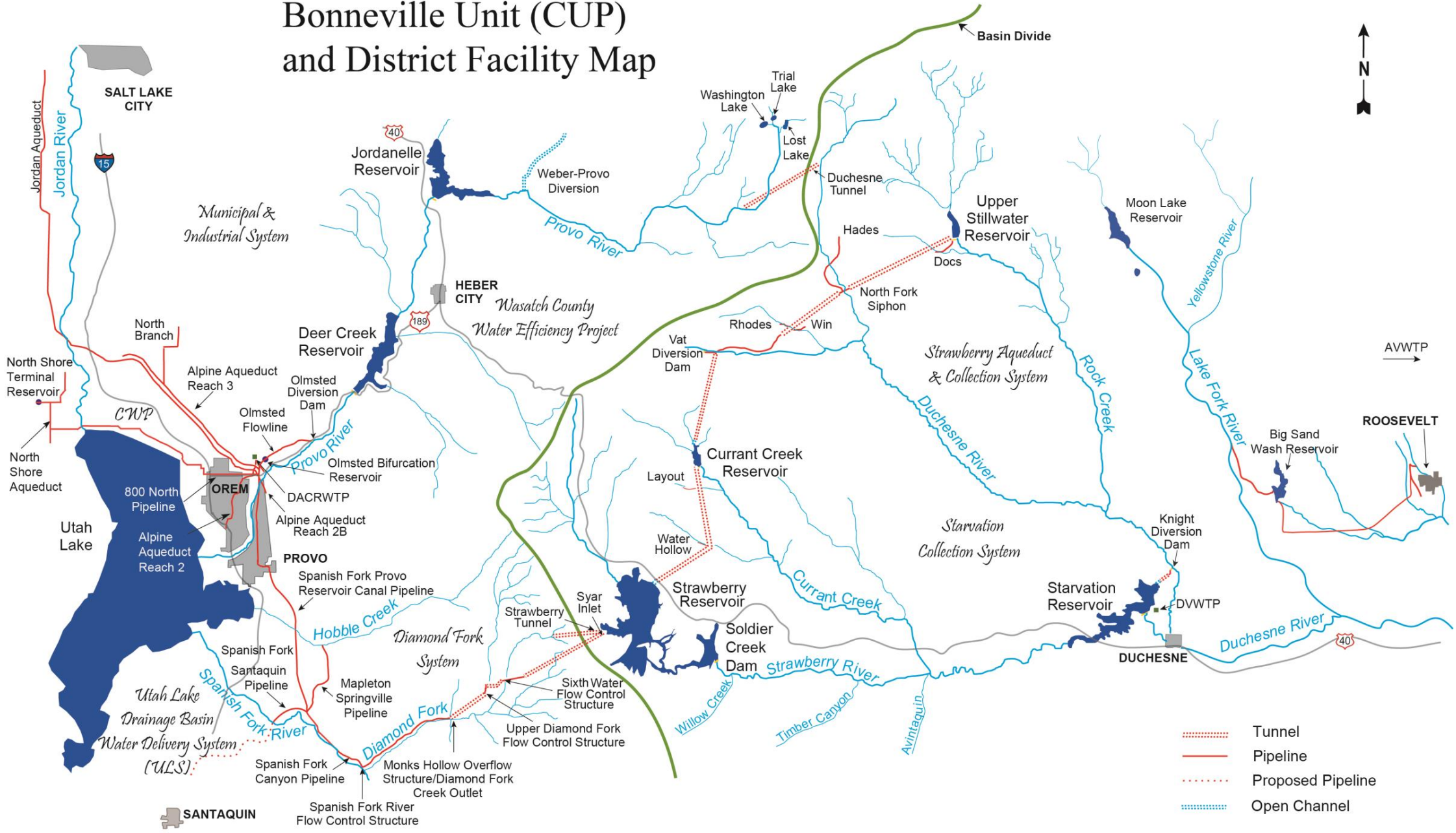




# Bonneville Unit Area



# Bonneville Unit (CUP) and District Facility Map

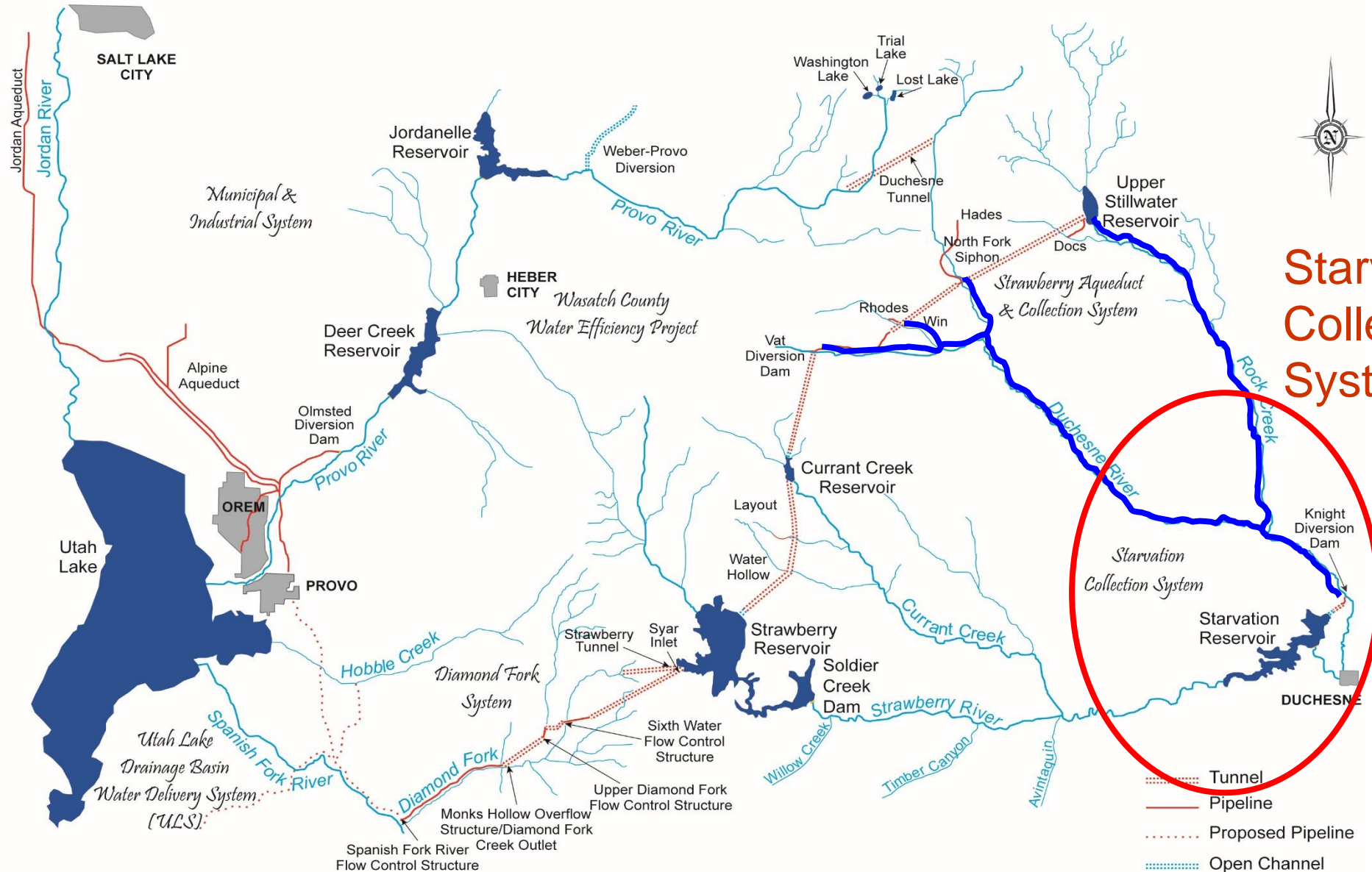


- ⋯⋯⋯ Tunnel
- Pipeline
- ⋯⋯⋯ Proposed Pipeline
- ⋯⋯⋯ Open Channel

**SANTAQUIN**

AWWTP →

# Bonneville Unit Area Map



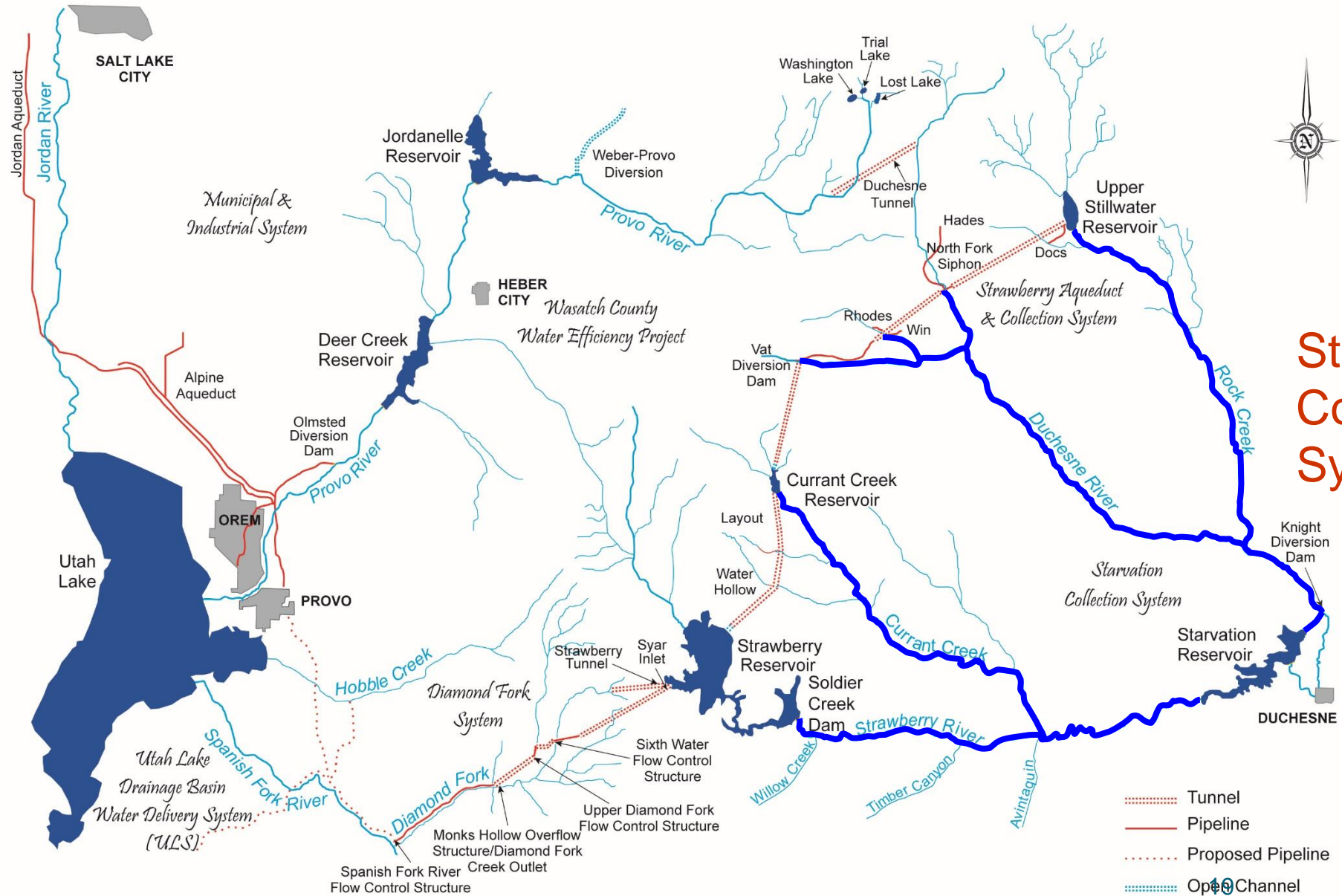
Starvation  
Collection  
System



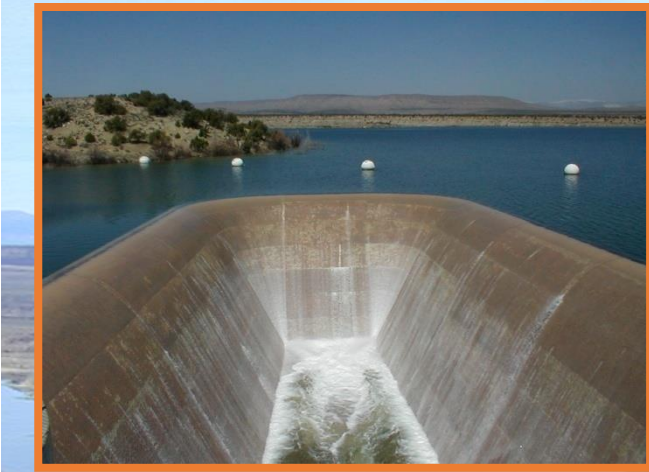


**Knight Diversion Dam**

# Bonneville Unit Area Map



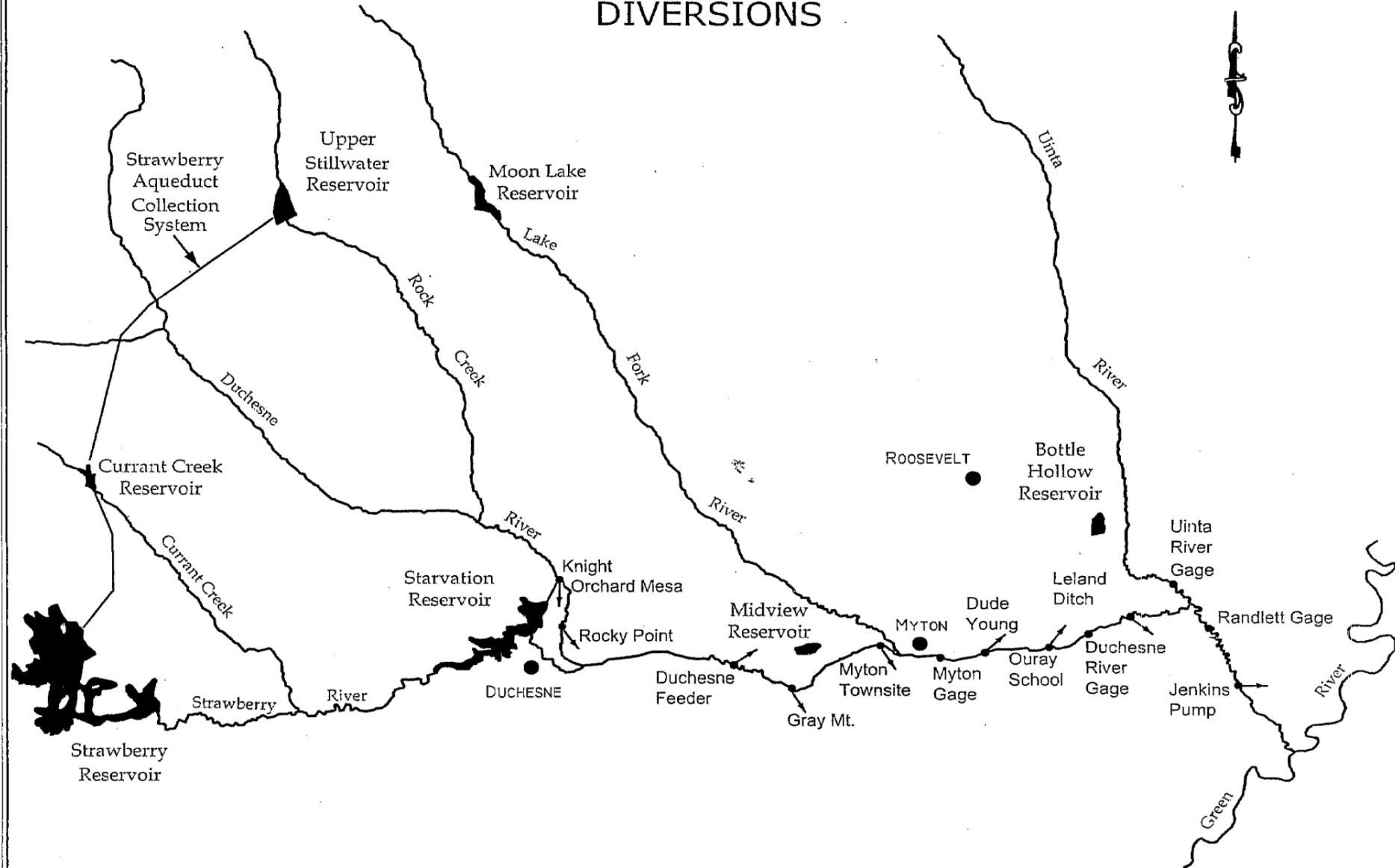
**Starvation  
Collection  
System**



**Starvation Reservoir 167,310 acre-feet**



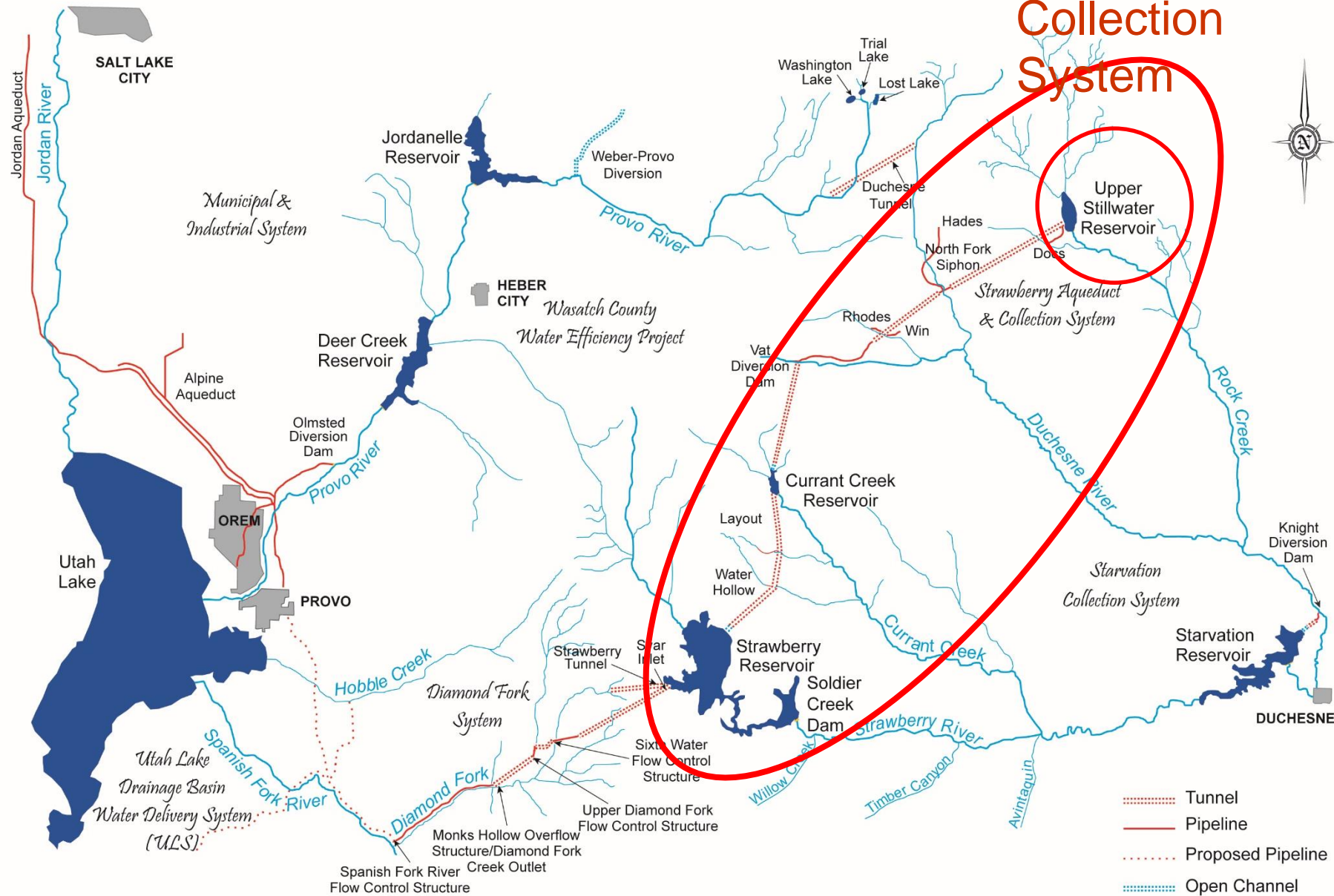
# LOWER DUCHESNE RIVER DIVERSIONS



NOT TO SCALE

# Bonneville Unit Area Map

## Strawberry Aqueduct and Collection System





**Upper Stillwater Reservoir 32,009 acre-feet**







# Hades Diversion



# Docs Diversion



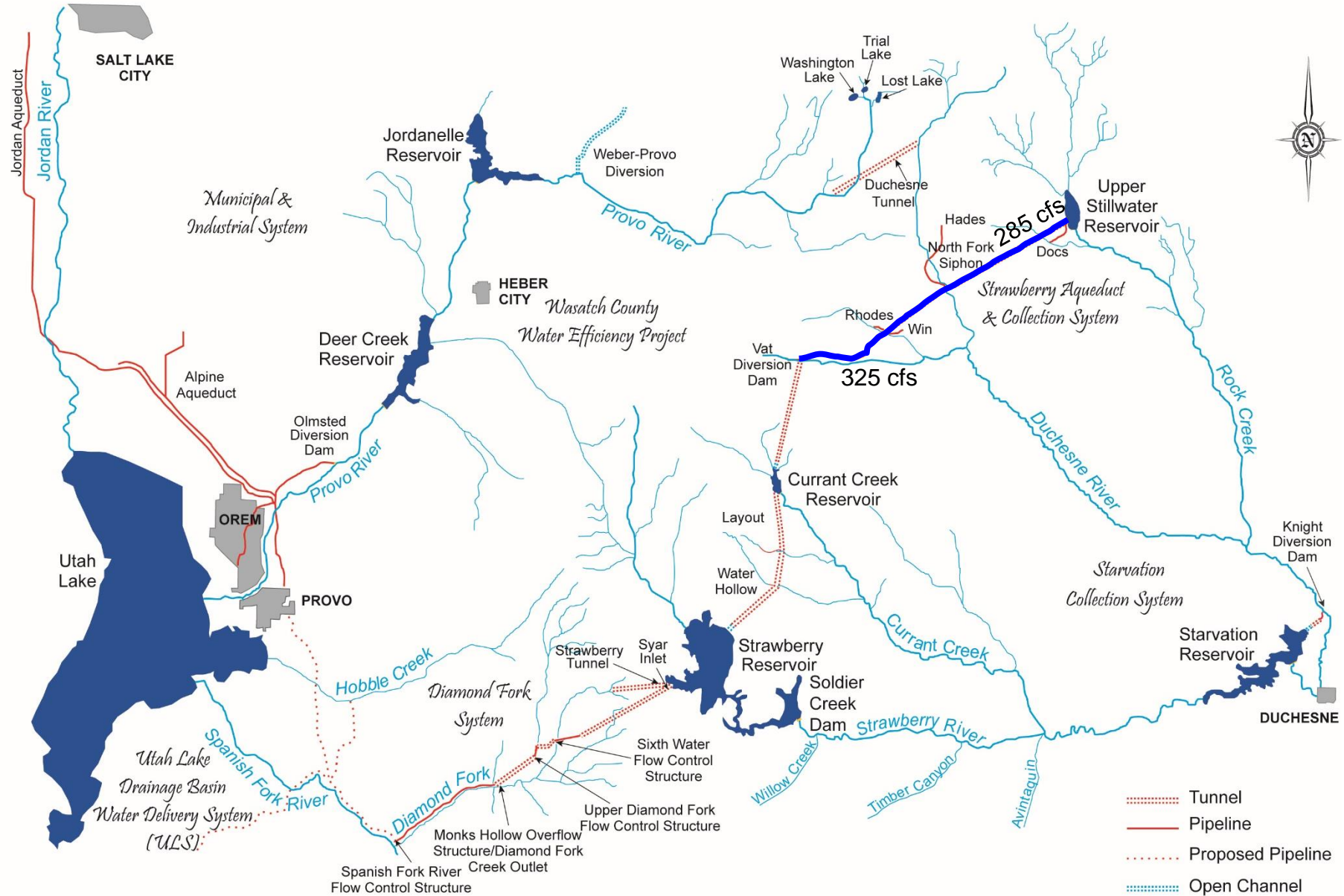
# Rhodes Diversion



# Win Diversion



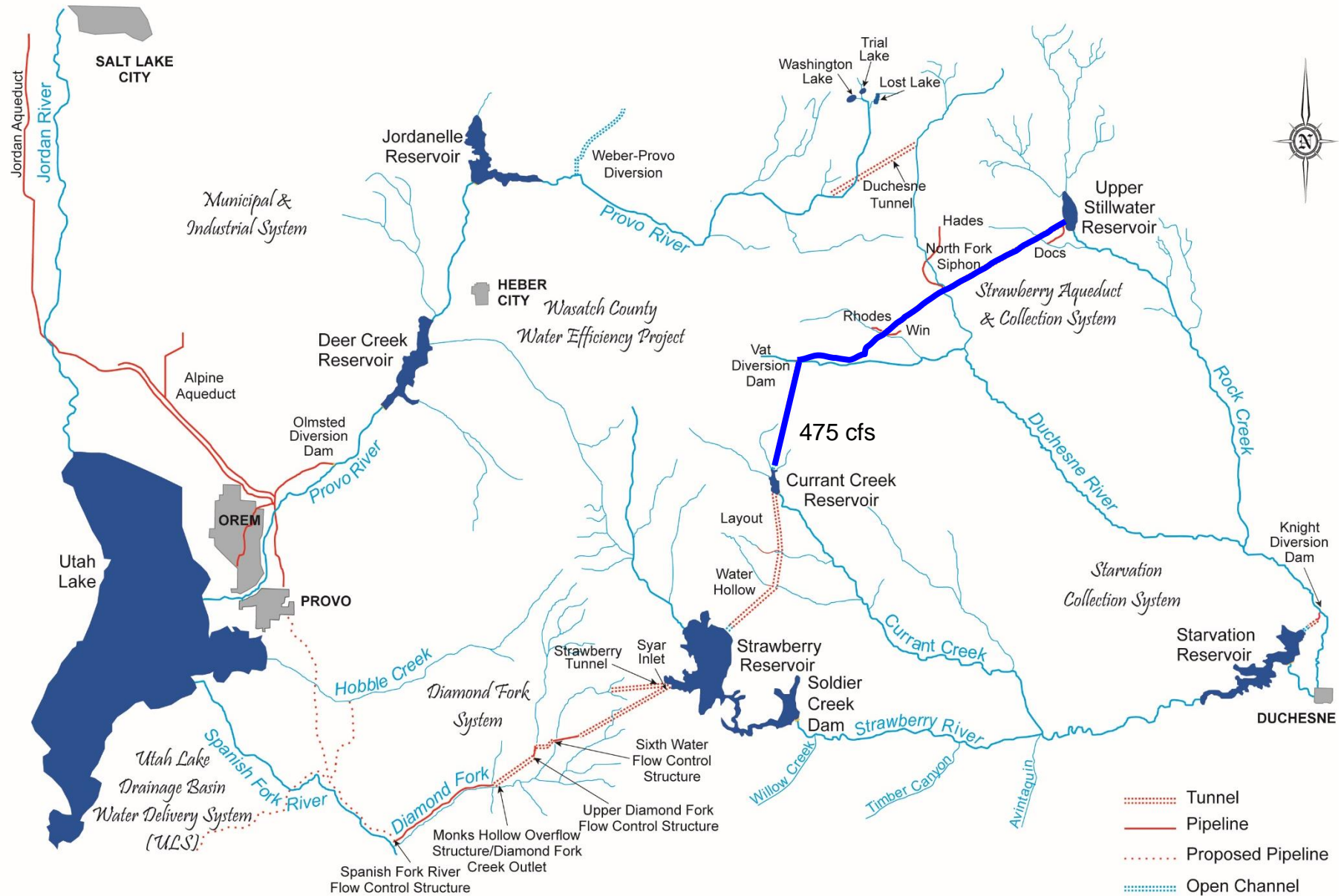
# Bonneville Unit Area Map





**Vat Diversion Dam**

# Bonneville Unit Area Map





**Carrant Creek Reservoir 15,671 acre-feet**





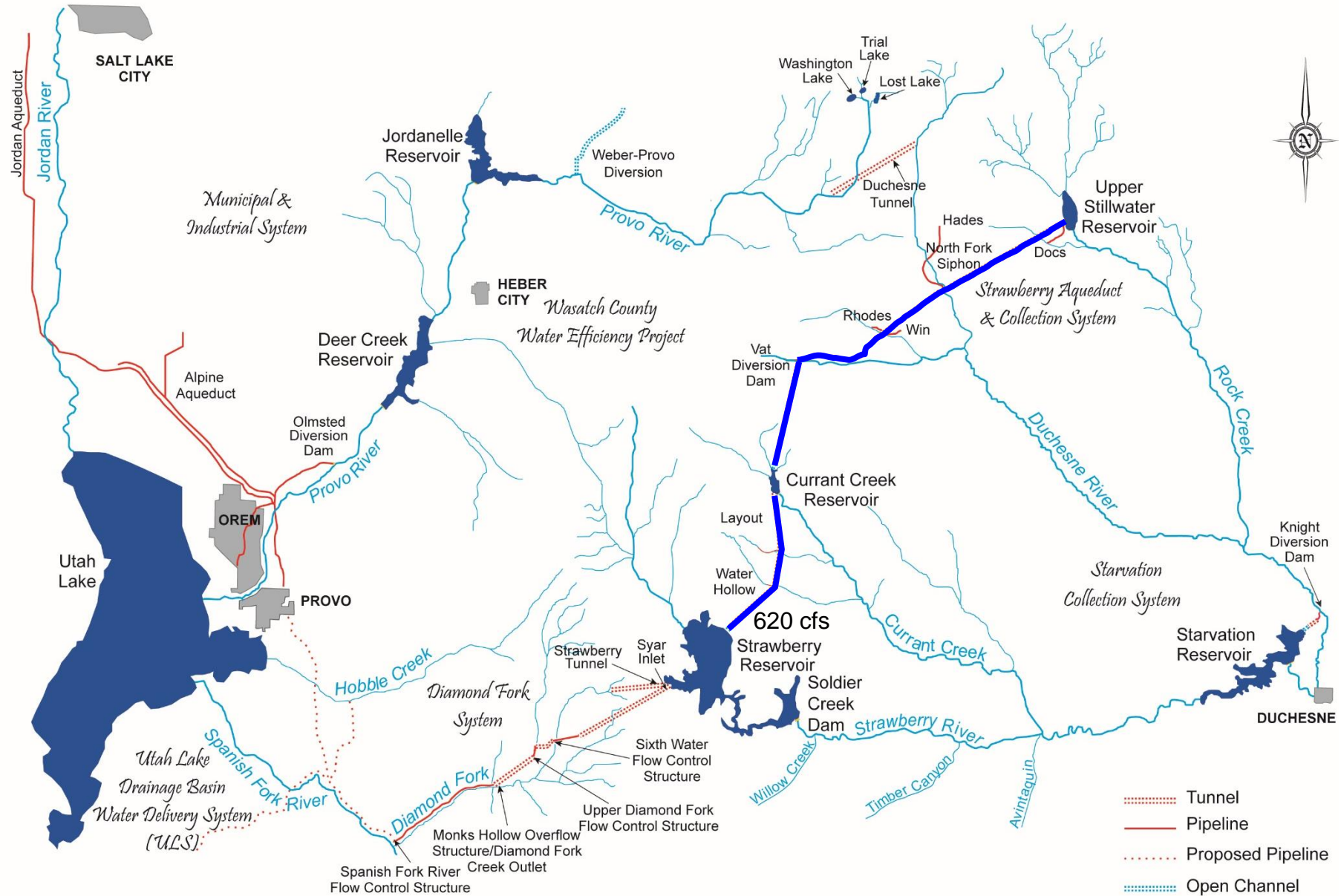
# Water Hollow Diversion



## Layout Diversion



# Bonneville Unit Area Map





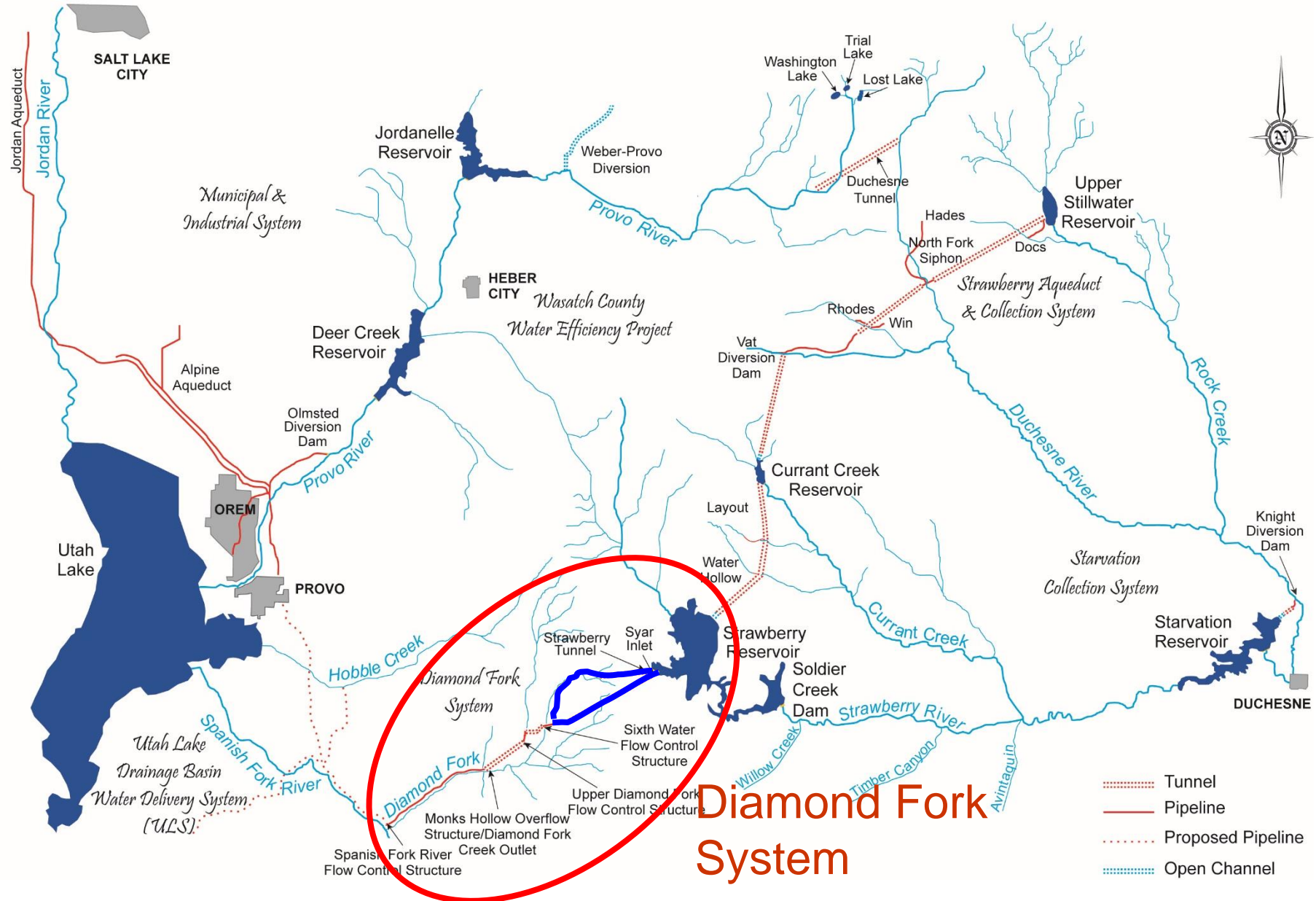
## Open Channel #2 The Ladders



**Strawberry Reservoir 1,106,500 acre-feet**



# Bonneville Unit Area Map



# Sixth Water Flow Control Structure



# Diamond Fork Creek Outlet





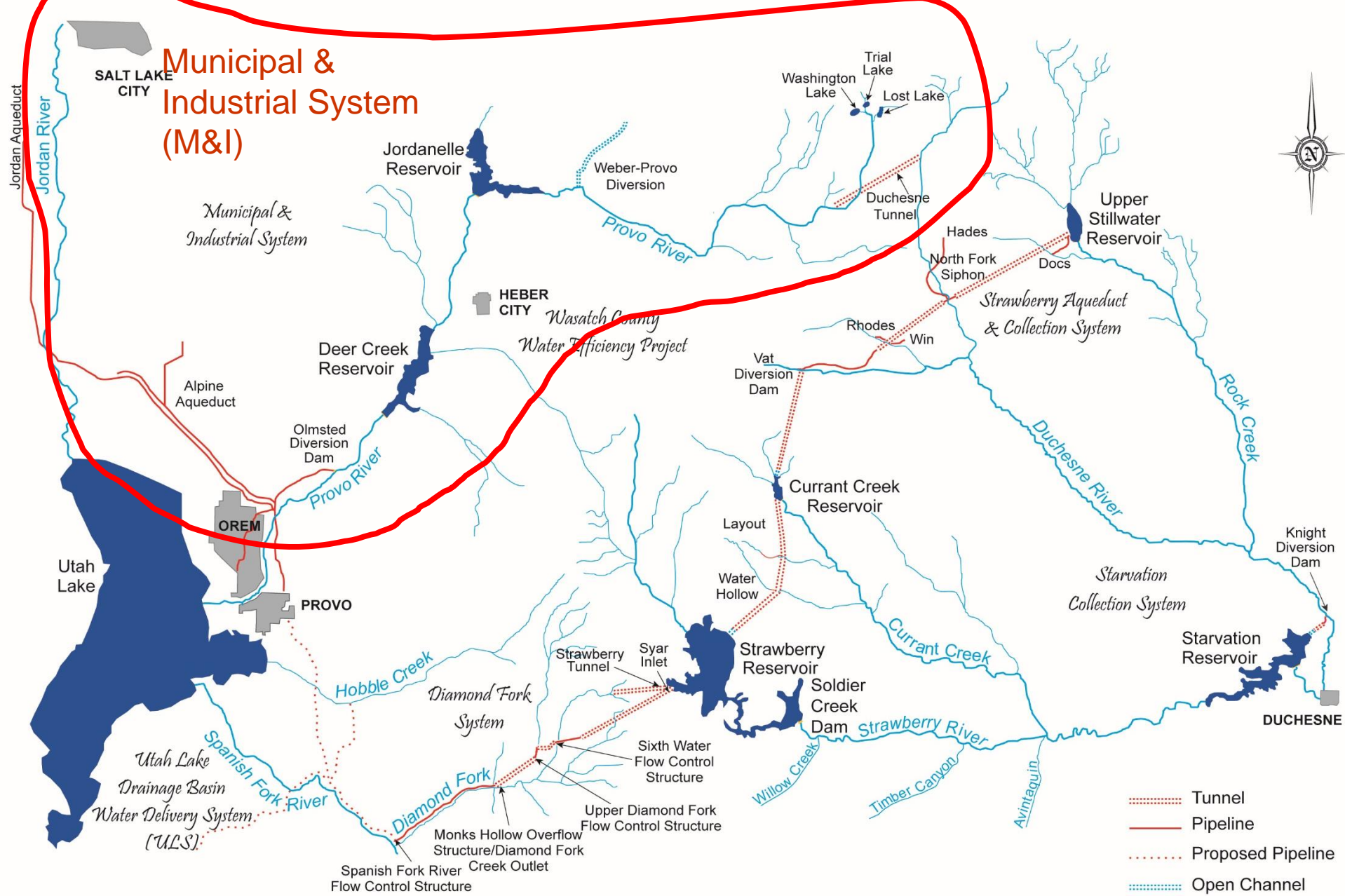


**Diamond Fork Tunnel**



**Utah Lake 870,000 acre-feet**

# Bonneville Unit Area Map





**Trial / Washington / Lost Lakes**  
**Total combined capacity of 5,786 acre-feet**

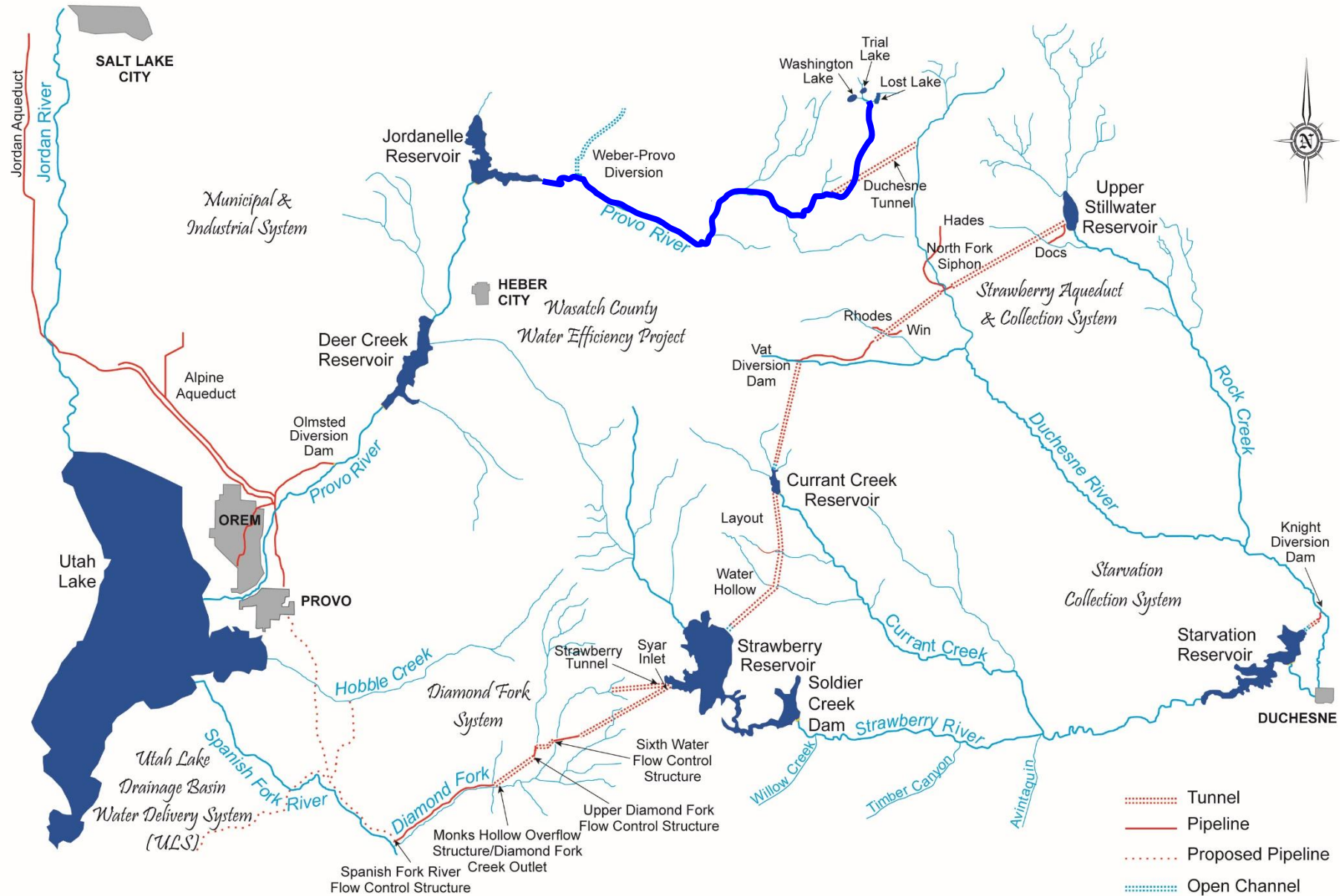


**Trial Lake Spillway**



**Lost Lake**

# Bonneville Unit Area Map





**Jordanelle Reservoir Outlet Structure**

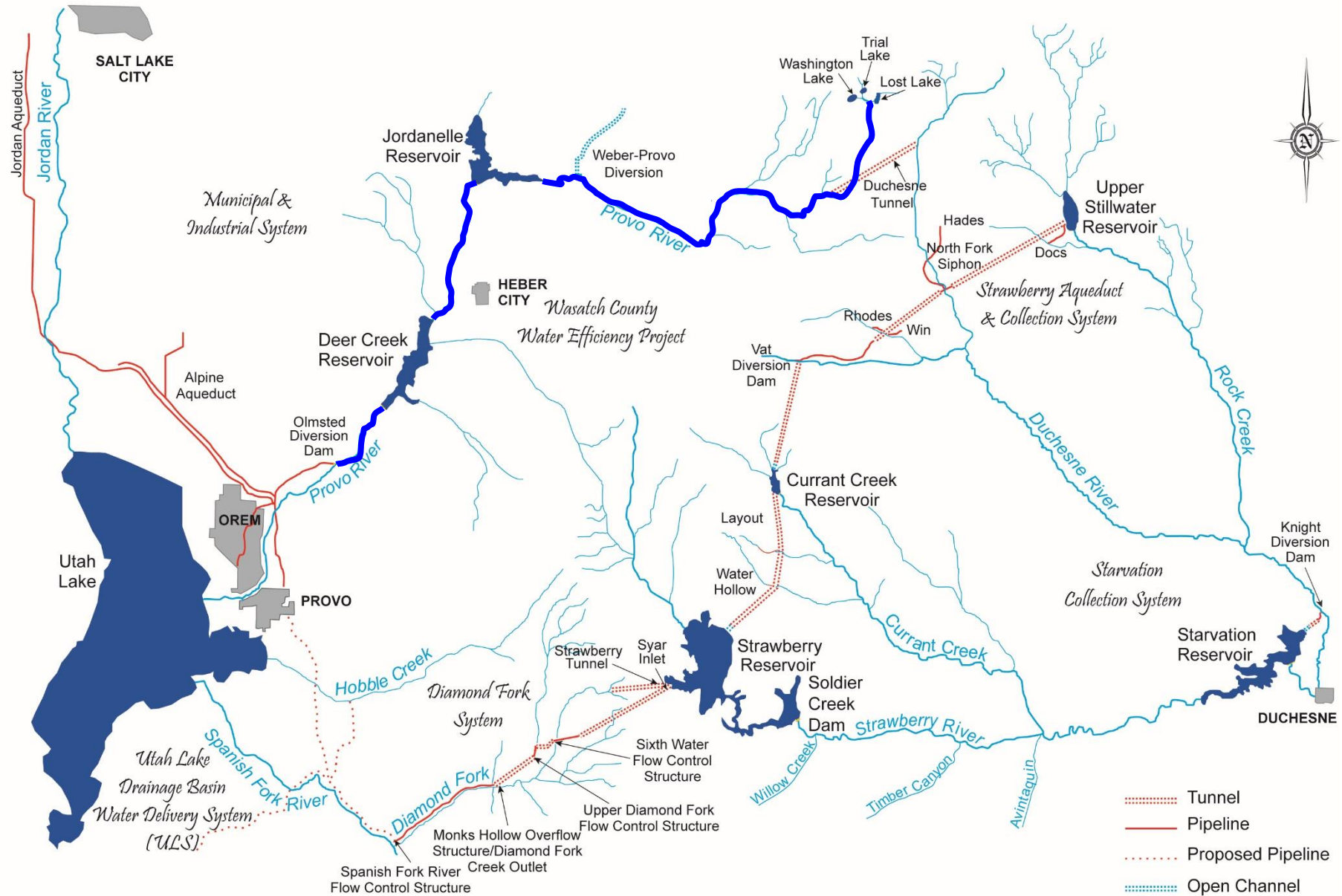




**Jordanelle Reservoir 314,006 acre-feet**



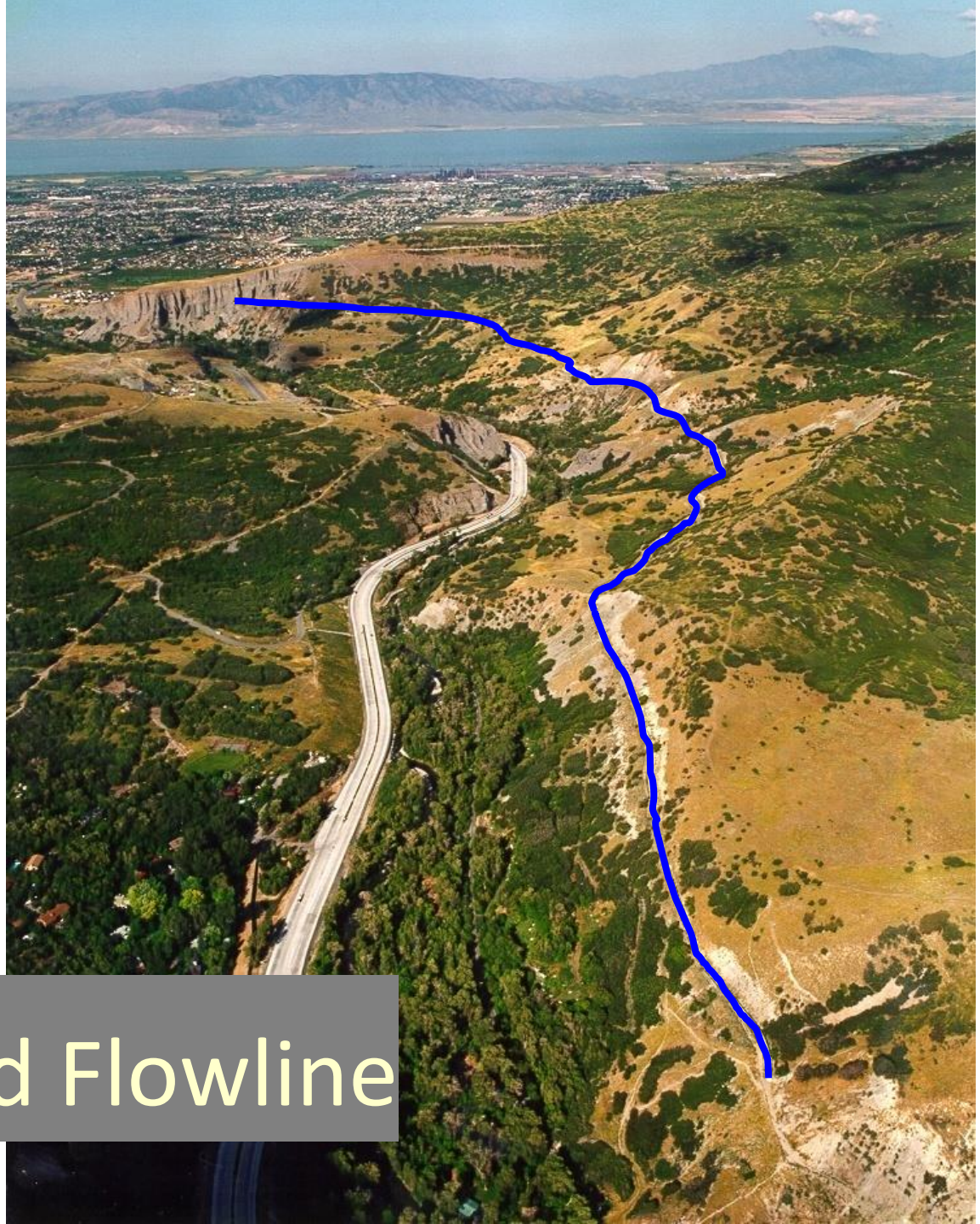
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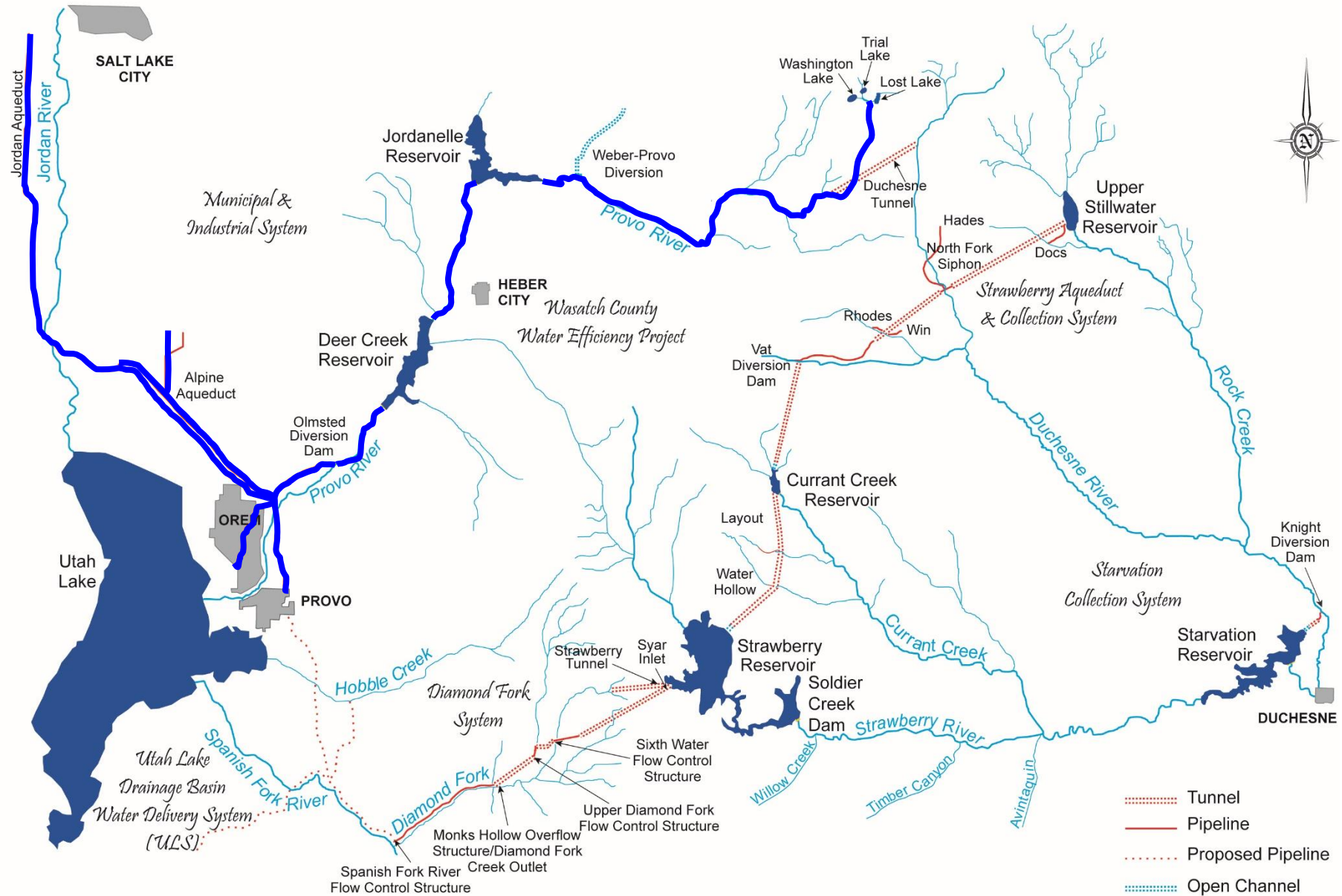
**Olmsted Diversion Dam**



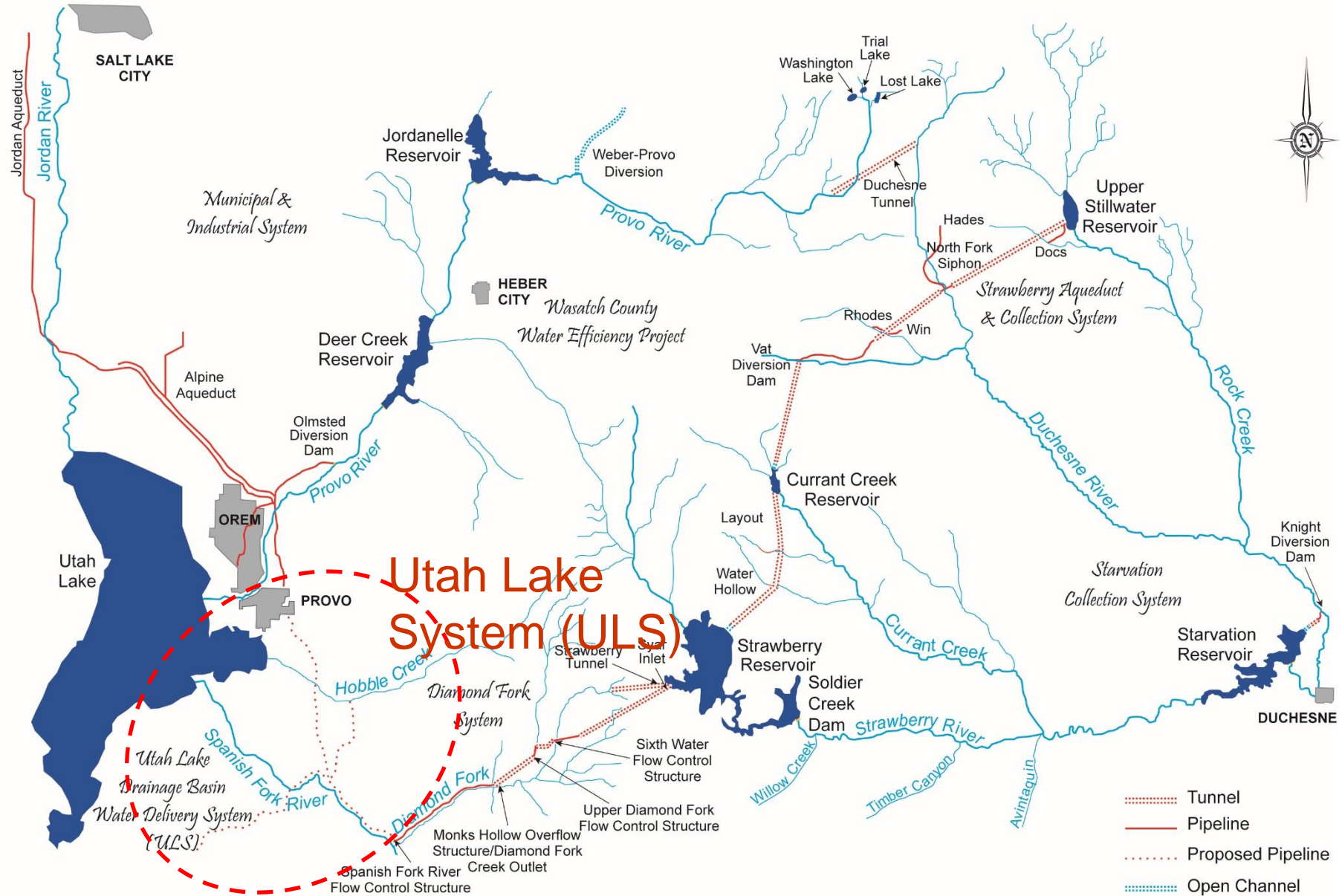


Olmsted Flowline

# Bonneville Unit Area Map



# Bonneville Unit Area Map





# Utah Lake System



Strawberry Reservoir

Diamond Fork Pipeline (Completed)

Spanish Fork Pipeline (2 Mi.)  
(Start Construction 2007)

Spanish Fork Pipeline (3 Mi.)  
(Start Construction 2009)

Mapleton-Springville Lateral Pipeline

Moark Junction

Spanish Fork - Provo Pipeline

Spanish Fork - Santaquin Pipeline



Spanish Fork - Provo Pipeline

89

Mapleton-Springville Lateral Pipeline

Moark Junction

Spanish Fork Pipeline (3 Mi.)  
(Start Construction 2009)

Spanish Fork - Santaquin Pipeline

6

Spanish Fork Pipeline (2 Mi.)  
(Start Construction 2007)

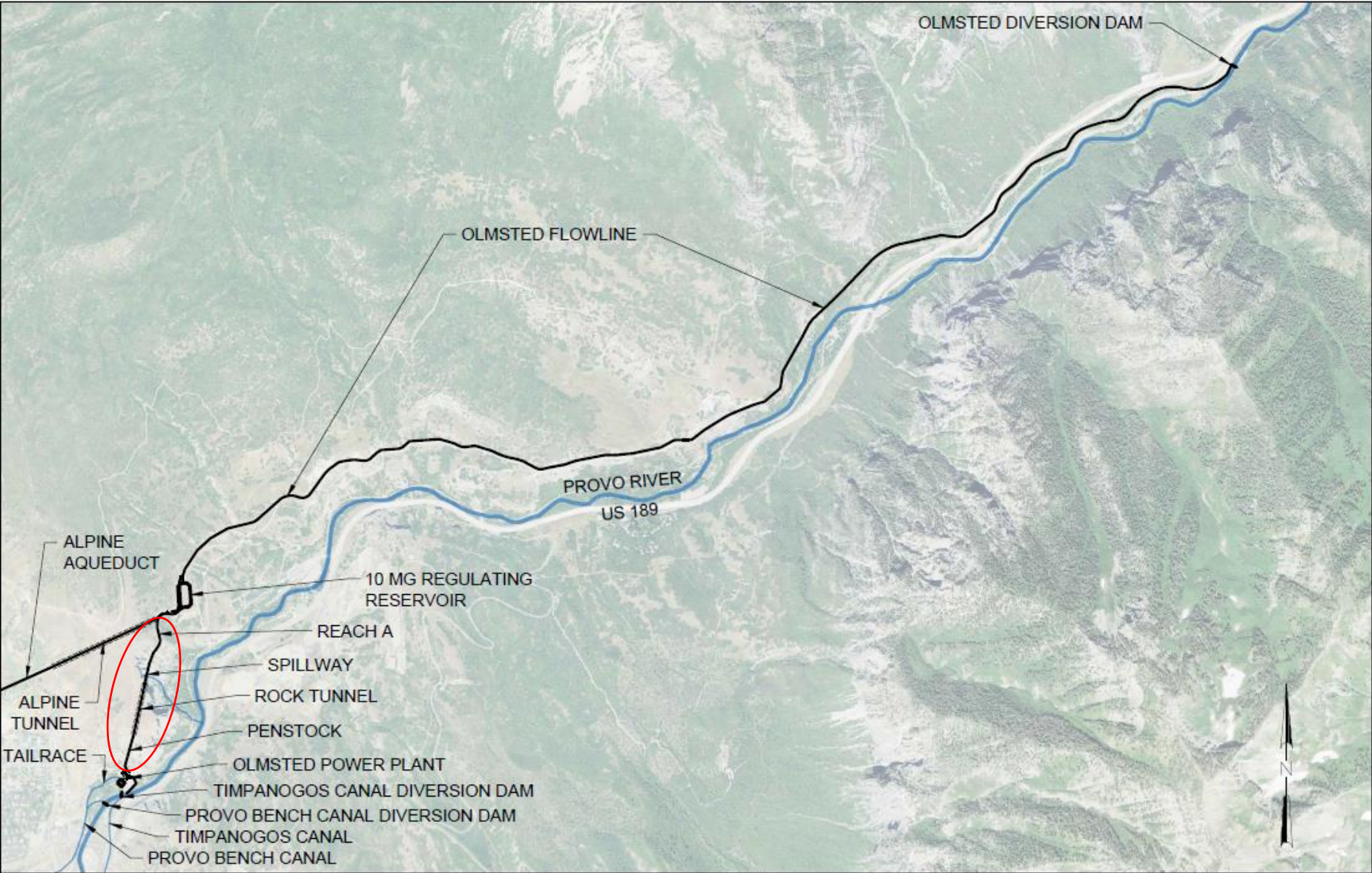
Diamond Fork Pipeline (Completed)



# Olmsted Hydroelectric Powerplant Replacement Project

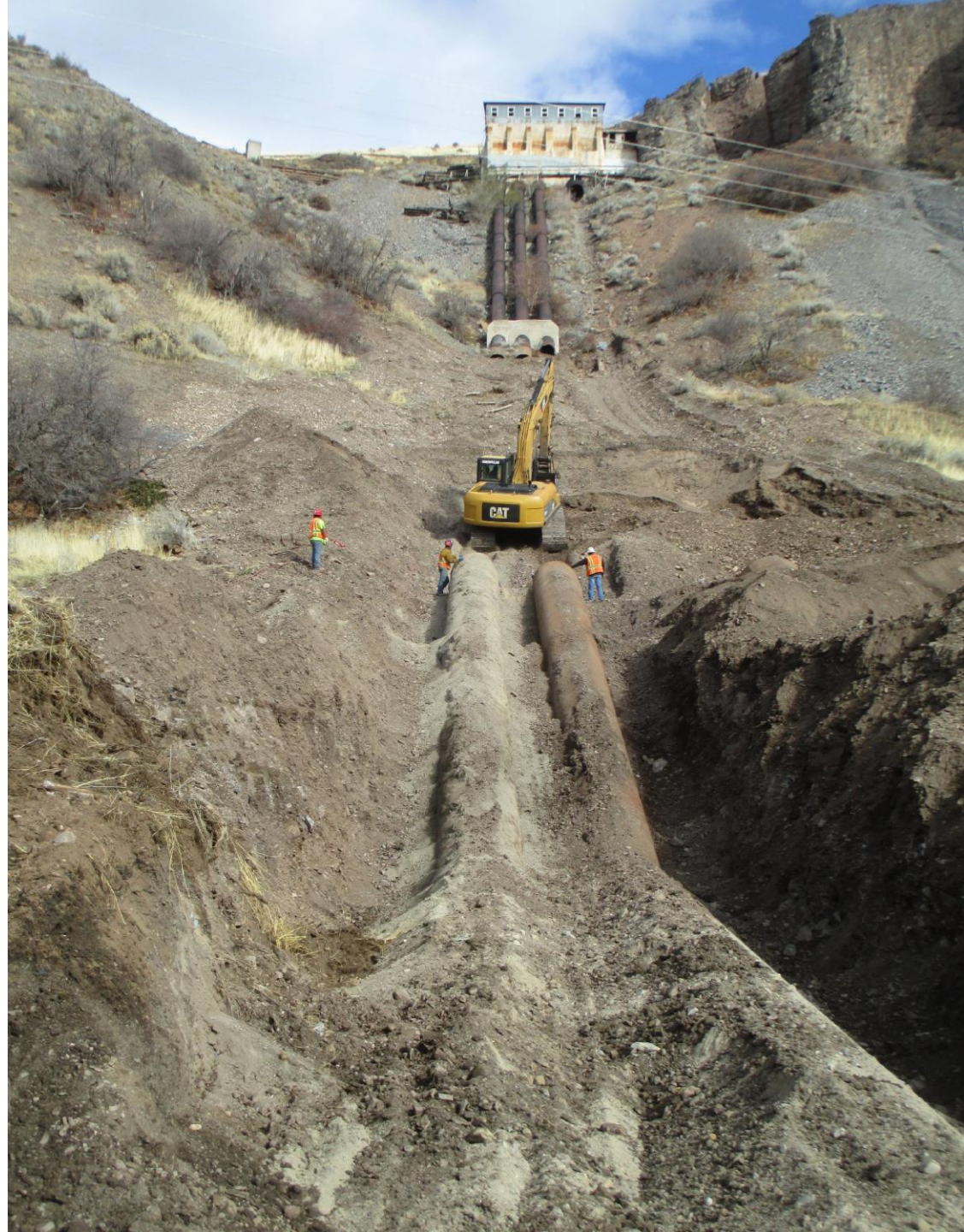


# Olmsted Facilities and Project Facilities Map











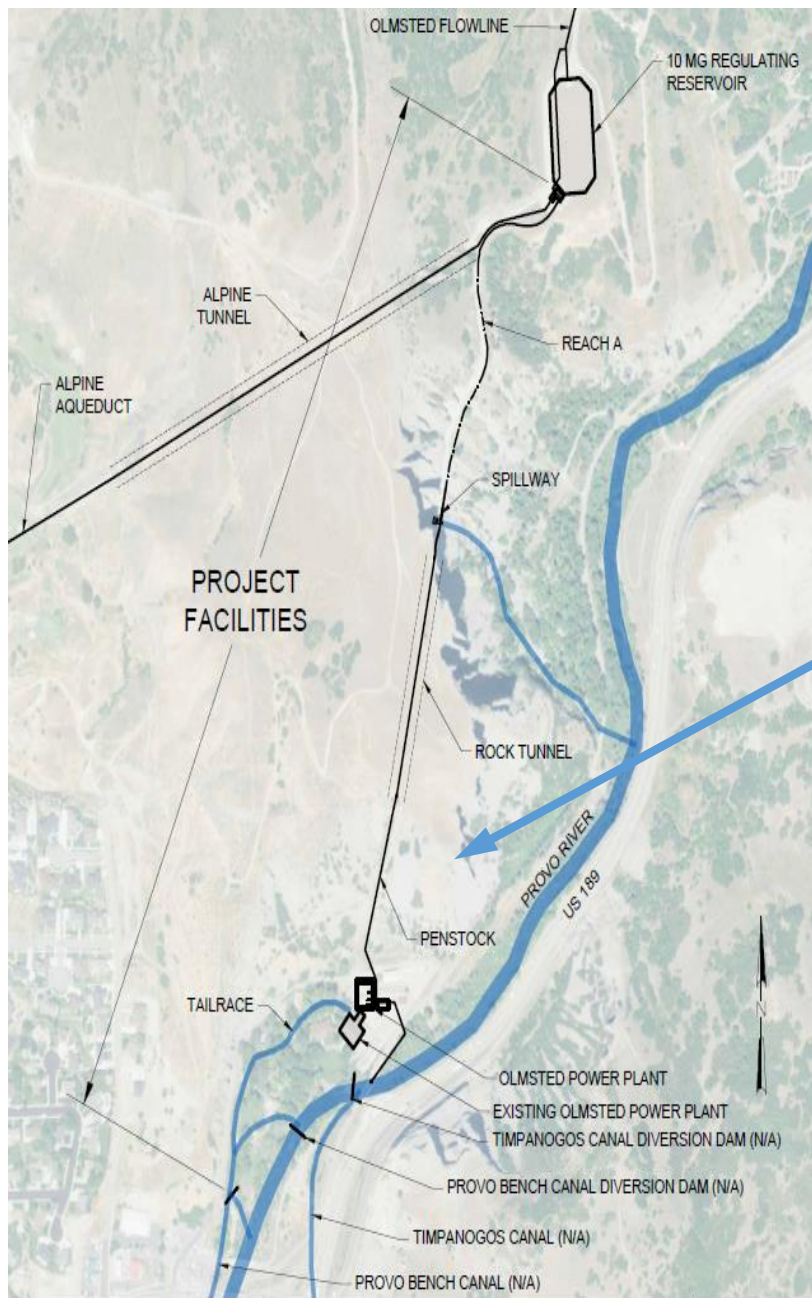


2220-22-189

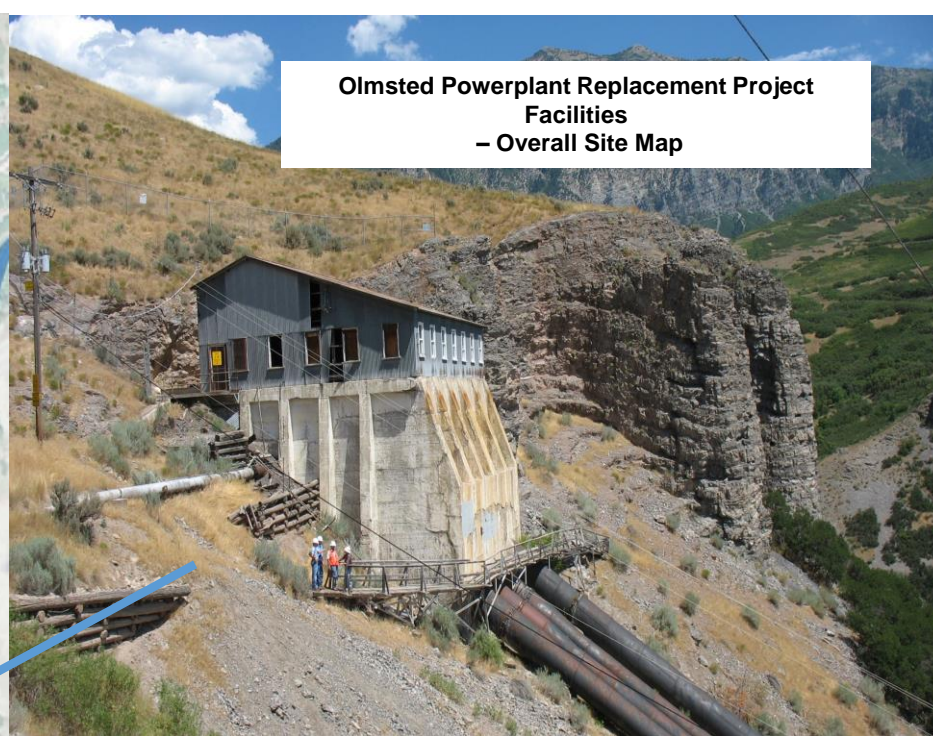


WAGSTAFF  
Cable Service

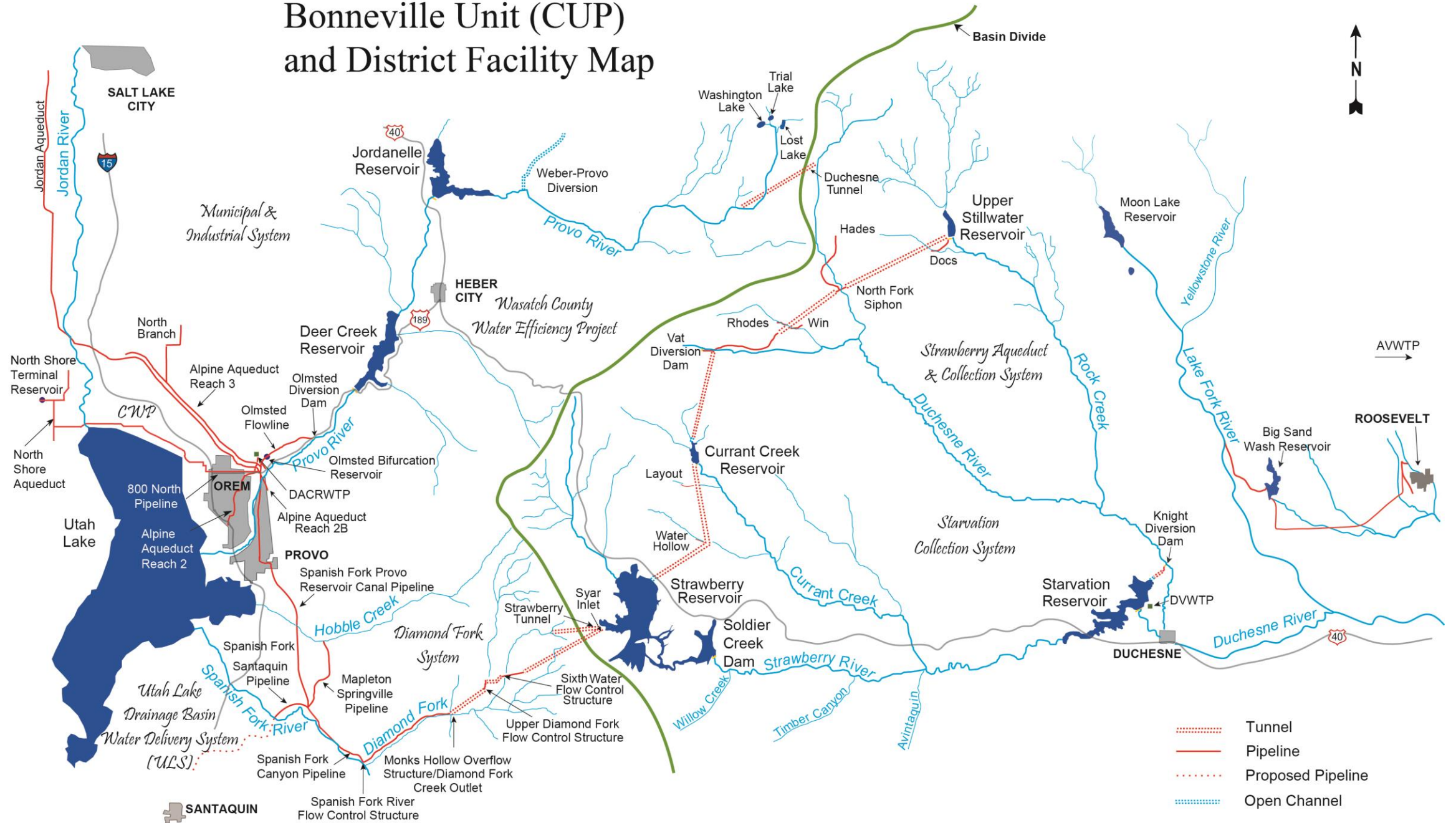
VAG



**Olmsted Powerplant Replacement Project  
Facilities  
– Overall Site Map**



# Bonneville Unit (CUP) and District Facility Map



AWWTP →

- ⋯⋯⋯ Tunnel
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# Many Facilities Are Involved in Developing The CUP Water Supply



# Bonneville Unit Water Deliveries

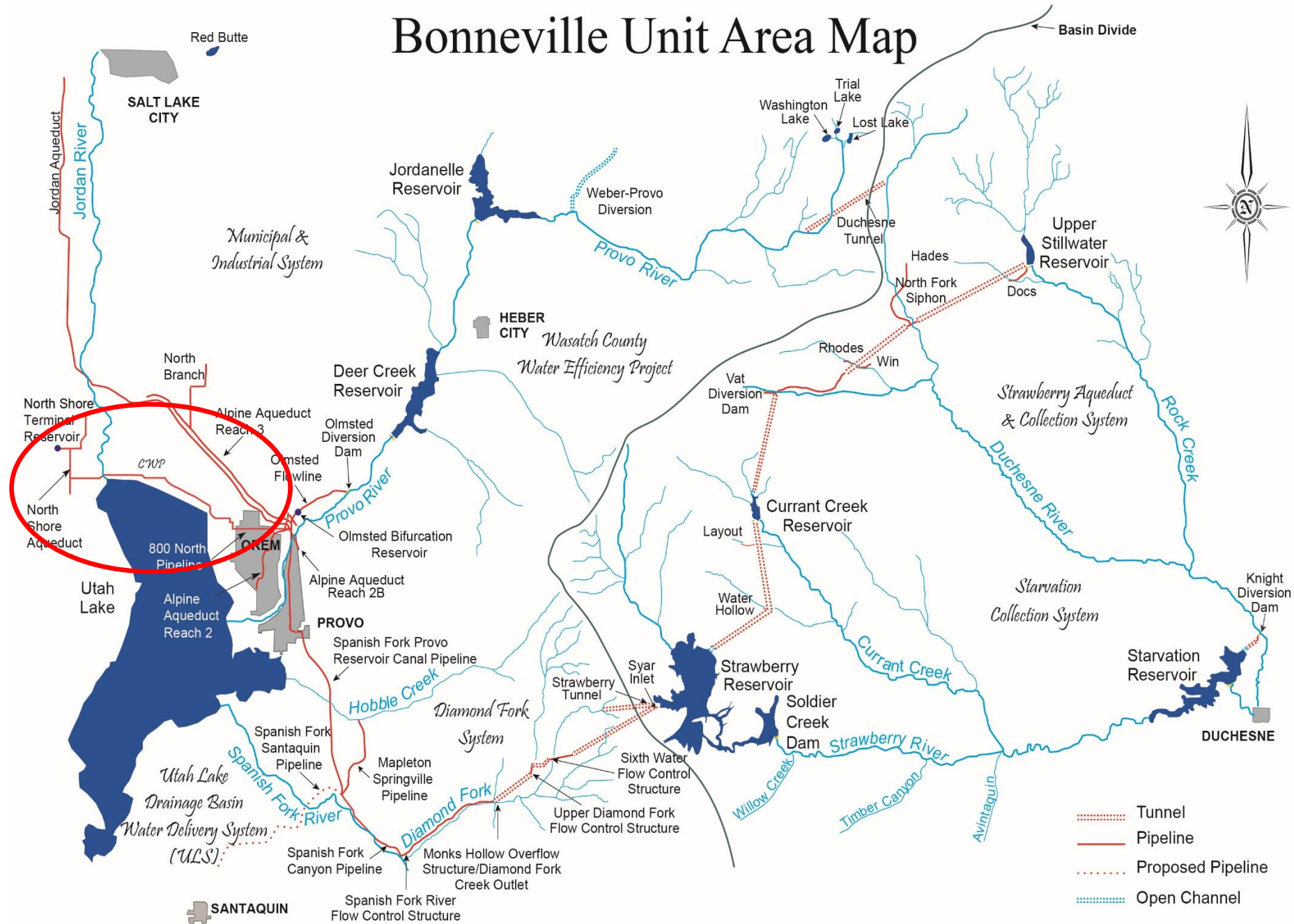
(Ultimate Demand)

<b>M&amp;I (Culinary) Water</b>	<b>157,750 A-F</b>
<b>Irrigation Water</b>	<b>42,000 A-F</b>
<b>Instream Flow (Uinta Basin)</b>	<b><u>44,400 A-F</u></b>
<b>Total</b>	<b>244,150 A-F</b>

**Instream Flows Also Delivered to  
Provo and Spanish Fork Rivers**



# Bonneville Unit Area Map





# NORTH SHORE AQUEDUCT ALIGNMENT



FILE Path\_L\_CAWCD\_northshore.aug\_010.mxd 2/24/10



# Pipeline Layout



# Water Supply Agreements Status – August, 2013

Summary of CWP Water Supply  
March, 2012

		Acre-Feet	Commencing In	Acre-Feet
<b>II.</b>	<b>Total CWP Infrastructure Water (Culinary Water)</b>			<b>53,312</b>
<b>III.</b>	<b>FY2009 A Water Supply Agreements (September, 2008)</b>			
	Jordan Valley Water Conservancy District	11,680	July, 2014	
	Lehi City	2,500	July, 2019	
	Eagle Mountain City	2,500	July, 2011	
	Sub-total -	16,680		16,680
<b>V.</b>	<b>FY2010 A Water Supply Agreements (October 2009)</b>			
	City of Saratoga Springs	10,000	July, 2019	
	Eagle Mountain City	1,000	July, 2019	
	Eagle Mountain City	11,500	July, 2019	
		22,500		22,500
<b>VI.</b>	<b>FY2010 B Water Supply Agreement (June 2010)</b>			
	Pacificorp	2,840	July, 2015	2,840
<b>V.</b>	<b>FY 2011 A Water Supply Agreement (June, 2011)</b>			
	Town of Vineyard -	70	July, 2011	70
	Remaining CWP Infrastructure Water -			11,222
	Geneva Water Rights Purchase Reservation (AGDI) until 2020 -			7,930
	Remaining CWP Infrastructure Water without reservations -			3,292

# **CUWCD Operates and Maintains**

**8 Dams / Reservoirs – 1.6 million A-F of Storage**

**3 Major and 6 Minor Diversion Dams**

**100 + Miles of Large-Diameter Tunnels and Pipelines**

**3 Water Treatment Plants**

<b>Don A Christiansen RWTP</b>	<b>100 MGD</b>
<b>Duchesne Valley WTP</b>	<b>8 MGD</b>
<b>Ashley Valley WTP</b>	<b>20 MGD</b>



# Central Utah Water Deliveries to Salt Lake County (AF)

<u>Source</u>	<u>JVWCD</u>	<u>MWDSL&amp;Sandy</u>
CUP M&I (Jordanelle)	50,000	20,000
Future CUP ULS	21,400	8,600
CWP	<u>11,680</u>	<u>          </u>
TOTAL	83,080	28,600





Kennicott mine smelter smokestack.

Salt Lake City

Magna

201

2100 S Fwy

South Salt Lake

80

West Valley City

East Millcreek

Millcreek

Taylorsville

Murray

Kearns

Salt Lake

215

West Jordan

Midvale

Cottonwood Heights

40

South Jordan

Sandy

Riverton

Draper

15

83

Questions?





**CENTRAL UTAH WATER**

