

Water Use Information for Water Right Applications

Revised: June 24, 2003

The diversion figure in water right applications is the quantity of water expressed as a flow rate in cfs (cubic feet per second) and/or as a volume in acre-feet to be taken from a well, river, spring, etc. for the required purpose. The depletion figure is the quantity of water consumed which will be lost to the hydrologic system through said use. Depleted water does not return to the surface water sources or underground aquifers via seepage, drainage, etc. but is consumed in the growth of plants and animals, evaporation, and transmission away from the area. The following figures are used for general quantification. As new data is available, these figures may change. If applicants provide specific figures based on design criteria, testing data, monitored measurements, etc. which differ from these amounts, such information will be reviewed and considered. One cubic-foot per second equals about 450 gallons per minute. One acre-foot of water equals 325,851 gallons.

DOMESTIC (inside use only): Water diversion for a fulltime (permanent residence) use is evaluated at 0.45 acre-foot per family. Parttime (seasonal or recreational) use is equated at 0.25 acre-foot per family. Depletion is generally 20% if using a septic tank or drain field system. It varies if the residence is connected to a community sewage system depending on the treatment method used and its distance away from the diverted source.

Irrigation Duty Map

IRRIGATION (any outside watering): This purpose includes watering of crops, lawns, gardens, orchards, and landscaping. The diversion amount (irrigation duty) ranges from 2 acre-feet per acre in cool, mountain meadow areas to 6 acre-feet per acre in low, hot southern areas of the state. Higher, cooler valleys are generally 3 acre-feet per acre, and lower moderate areas 4 or 5 acre-feet per acre. If land is subirrigated or supplemented by other rights or supplies, the diversion rate may be less than average for the area. Generally the irrigation season is described as April 1 to October 31 and/or the general frostfree period in the area. Some court decrees and early rights authorize differing periods. Depletion varies considerably due to differing soils, temperatures, wind factors, etc. and can range from about 40% to about 70%. Figures are taken from available studies (particularly "Consumptive Use of Irrigated Crops in Utah", Research Report 145, tables from which are accessible on the internet). ← **Stations Map**

STOCKWATERING: The diversion figures for this purpose are based on year-round watering. Stock operations for lesser or intermittent periods would need adjustment accordingly. Water diverted for this use is generally considered to be 100% depleted by the animal, evaporation, phreatophytes, and/or waste water collection.

cow or horse	0.028	acre-foot	← ELU
sheep, goat, swine, moose, or elk	0.0056	acre-foot	
ostrich or emu	0.0036	acre-foot	
llama	0.0022	acre-foot	
deer, antelope, bighorn sheep, or mt. goat	0.0014	acre-foot	
chicken, turkey, chukar, sagehen, or pheasant	0.00084	acre-foot	
mink or fox (caged)	0.00005	acre-foot	

INDUSTRIAL, COMMERCIAL, RECREATIONAL, COMMUNITY AND MINING: Projects are evaluated on an individual basis. Parameters include method of processing or manufacturing, number of employees, length of workshift and period of operation, type of waste processing and/or discharge, and types of employee and/or public facilities (showers, food preparation, etc.). The Utah State Administrative Rules for Public Drinking Water Systems are guidelines for such estimates.

FORMULAS TO CALCULATE QUANTITY OF WATER

DOMESTIC:

Number of families x Domestic diversion duty

STOCKWATERING:

Number of ELUs x ELU diversion duty

ELU: Equivalent Livestock Unit (cow or horse)

IRRIGATION:

Irrigated area in acres x Irrigation duty from map

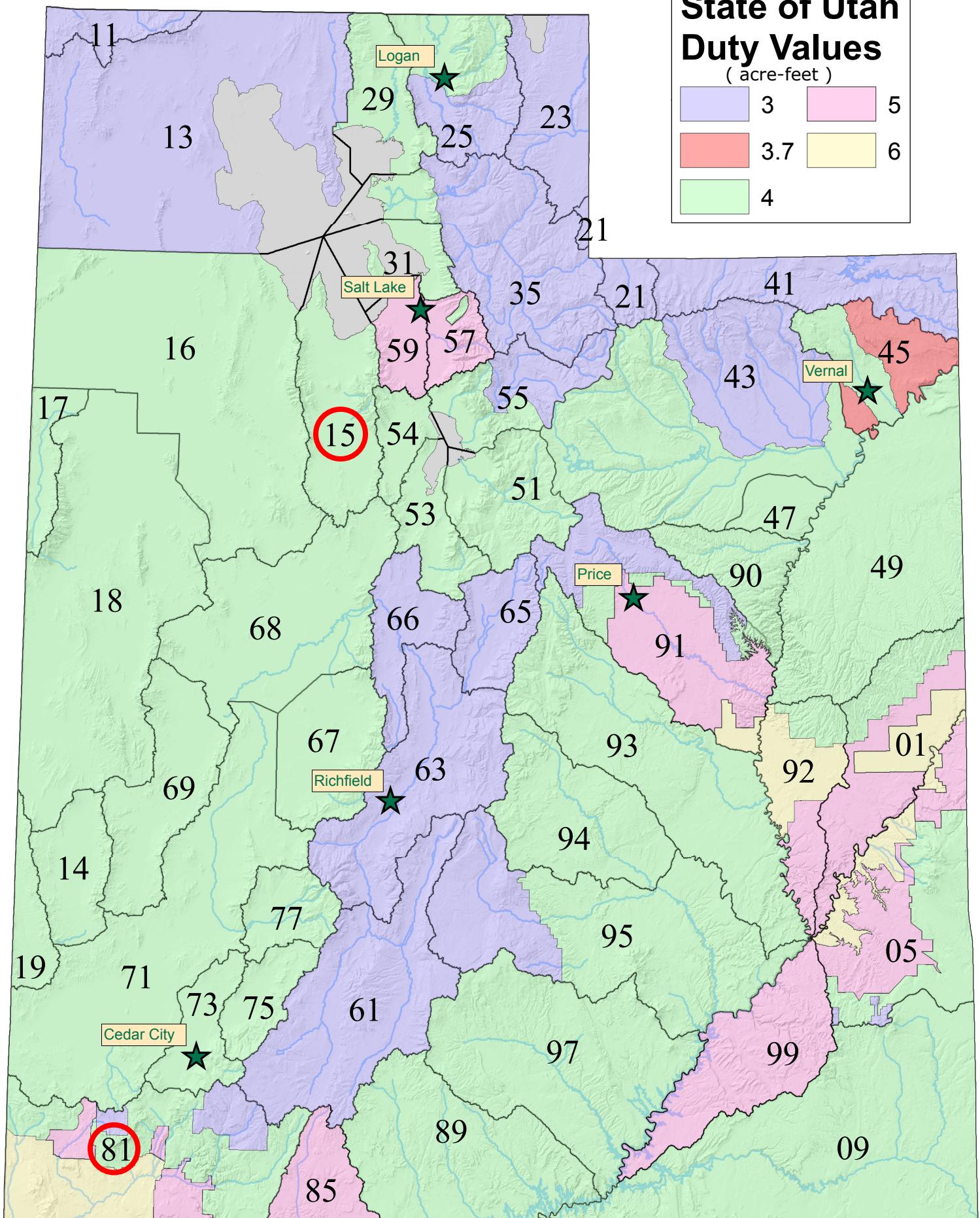
EVAPORATION LOSS:

Surface area of reservoir/pond in acres x E-LAKE value ÷ 12

State of Utah Duty Values

(acre-feet)

3	5
3.7	6
4	

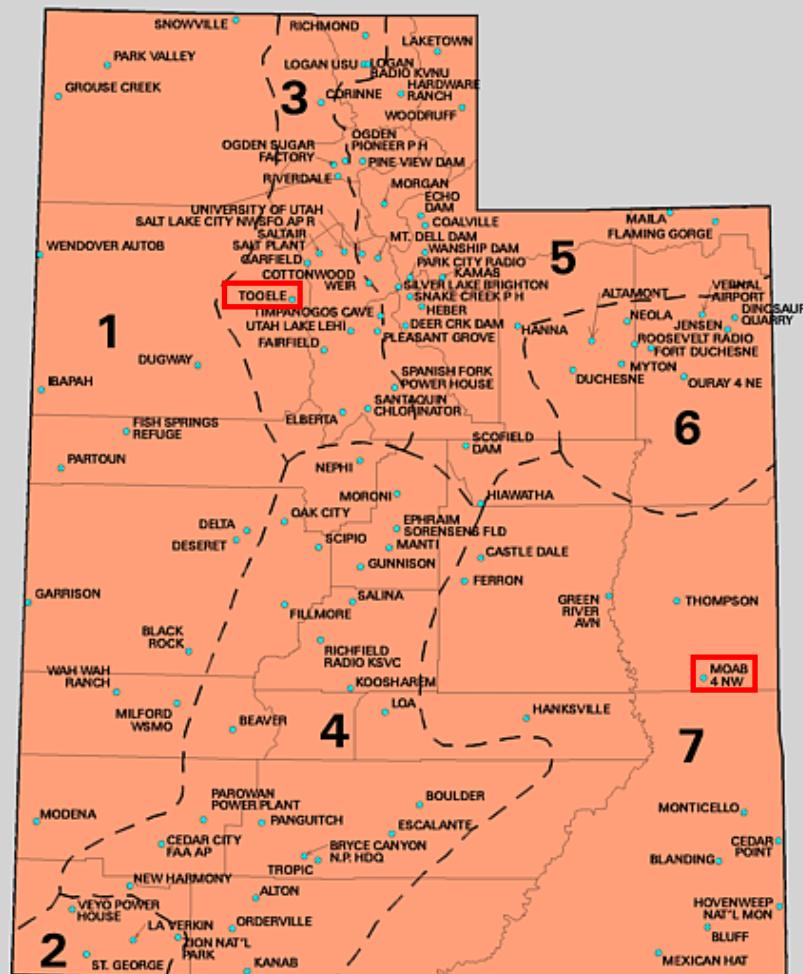


Utah Division of Water Rights



Consumptive Use Information Tables

Revised: June 29, 2001



National Weather Sites used in Determining Consumptive Use

Click on a point to see the consumptive use table for that location

Data derived from:

[UAES Research Report 145](#)

