

Guidance for R309-510. Facility Design and Operation: Minimum Sizing Requirements.

R309-510-1. Purpose.

Impact Fees, Water Rates, and Water Rights.

- *The intent of this rule is to regulate the design and construction of public drinking water systems and facilities. Neither the Drinking Water Board nor the Director of the Division of Drinking Water has the jurisdiction to regulate impact fees, water rates, or water rights.*

R309-510-4. General.

Running Out of Water.

- *The intent of this rule is to minimize the possibility that a Public Water System will run out of water. If a water system runs out of water, it creates risks to public health and safety, including contaminated water entering under-pressurized water lines and the loss of water for fire protection.*

R309-510-5. Reduction of Sizing Requirements.

Reduction Request.

- *The Division has jurisdiction over Public Drinking Water Systems. Any reduction request must be initiated by a Public Drinking Water System.*
- *The Division of Drinking Water has developed two documents to aid public water systems in understanding the information needed to request a reduction in the source or storage requirement.*
 - *“Information Needed for Reduction in Source Sizing”*
 - *“Information Needed for Reduction in Storage Sizing”**These documents are available on the Division of Drinking Water’s website.*

R309-510-7. Source Sizing.

Water Rights.

- *Water systems should investigate the availability and validity of water rights for their systems. Consult the Division of Water Rights concerning the legal right to use water.*

TABLE 510-2 Source Demand for Indoor Use - Individual Establishments.

- *Table 510-1 assumes a peaking factor of 2 between the peak day demand and the average day demand for residential connections. The same default peaking factor of 2 may be used to estimate the average day demand from the numbers in Table 510-2. Water systems may impose more stringent requirements.*

Irrigation Use.

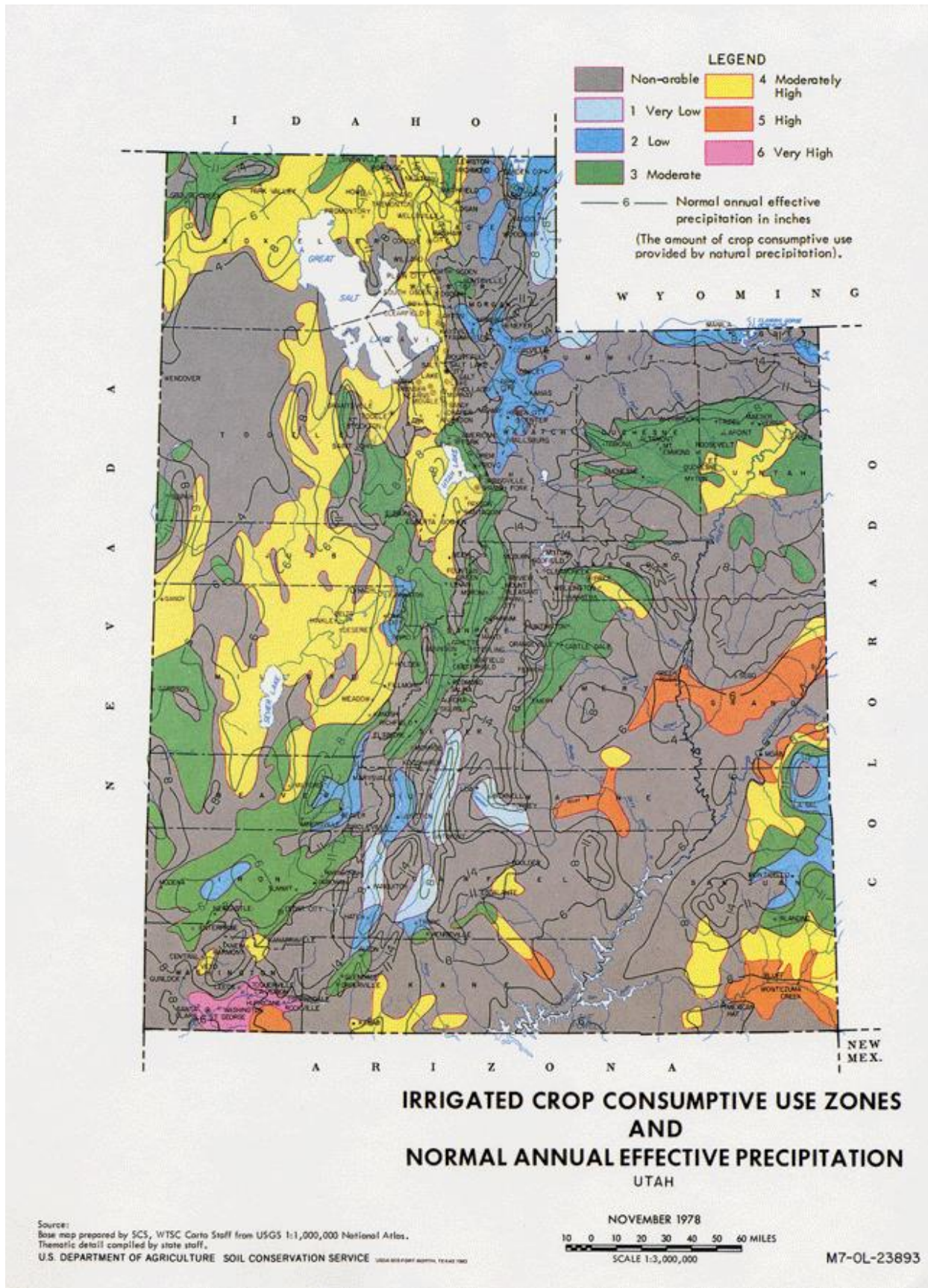
- *The irrigation zone map is provided below. This map is available on the Division of Drinking Water's website.*
- *To determine the net number of acres to be irrigated, start with the gross acreage, then subtract any area of roadway, driveway, sidewalk, or patio pavement along with housing foundation footprints that can be reasonably expected for lots within a new subdivision or which is representative of existing lots. Before any other land area which may be considered "non-irrigated" (e.g., steep slopes, wooded acres, etc.) is subtracted from the gross area, the Director should be consulted and agree that the land in question will not be irrigated. For instance, in the case of a heavily wooded mountain home subdivision, it may be claimed that large lawns will not be put in by the lot owners. The division should review and concur with this judgment.*

Table 510-3 Source Demand for Irrigation.

- *The average yearly demand for irrigation water use (in acre-feet per irrigated acre) is based on 213 days of irrigation, e.g., April 1 to October 31. If the irrigation season differs from the assumed 213 days, the average yearly demand numbers may need to be adjusted.*

Variations in Source Yield.

- *Some water sources, such as deep wells, yield consistent quantities of water while others, such as springs, yield inconsistent quantities that vary seasonally and annually. Sources that yield inconsistent quantities of water should be studied and understood prior to the commitment of those sources for future uses, such as providing will-serve letters or approving proposed developments.*



R309-510-8. Storage Sizing.

Equalization Storage.

- *Water systems capable of meeting the intent of the equalization storage requirements, for example, by redundancy configuration or operation strategy, may request a reduction in storage sizing requirements per R309-510-5.*

Fire Flow Storage.

- *Utah has adopted a state-wide fire code. However, local fire code officials are authorized to determine fire flow requirements in their jurisdictions.*

Emergency Storage.

- *It is advisable to provide water storage for emergency situations, such as pipeline failures, major trunk main failures, equipment failures, electrical power outages, water treatment facility failures, raw-water supply contamination, or natural disasters. Generally, the need for emergency storage shall be determined by the water supplier and design engineer.*

R309-510-9. Distribution System Sizing.

Peak Instantaneous Demand for Indoor Water Use.

- *An alternative for calculating peak instantaneous demand for a single pipeline is the equation: $Q = 10.8 \times N^{0.64}$ where N equals the total number of ERC's, and Q equals the total flow (gpm) delivered to the total connections served by that pipeline. The equation should only be used to estimate the flow required for N connections from a single pipeline and should not be used to estimate node or junction demands utilized in hydraulic analyses.*