METHODOLOGY

The first step…

RiverWare Model

The RiverWare model used in this study of the Weber Basin Conservancy District water system is based on the Utah Division of Water Resources Weber River Model. Originally designed from the Utah Division of Water Resources FORTRAN Model. “As mentioned, the Weber River Model has been updated, within the last several years to the RiverWare platform. This update has more easily allowed the opportunity to explore alternative scenarios with the model. Making adjustments to rules, reservoirs, inflows, demands, etc.”

Demand Computations

Demand is input into the RiverWare Model using an Annual Demand Values for 20 different service areas defined in the original Fortran Model. ***Input Table-5 from the UDWR RiverWare Model Description.*** (McGettigan and Melcher, 2018).

To compute different scenarios of demands, several subfactors where implemented. These subfactors include: population changes, per-capita indoor water usage, per-capita outdoor water usage, evapotranspiration and agricultural conversion.

Population changes include values for each county, a base case of the 2015 population and the projected 2070 population and 2150 population. The total scenario populations for the District for each year are shown in Table #.

**Table #.0 – Total District Population Values Used**

|  |  |  |
| --- | --- | --- |
| **Denotation for Change** | **Population (Persons)** | **Reference** |
| Same | 623,960 | (UDWR, 2015) |
| Increase | 978,500 | (WBCD, 2013) |
| Drastic Increase | 1,263,000 | (WBCD, 2013) |

Service Areas and Populations per Service Area

Per-Capita Usage Changes