CEI Overview
10 Steps to Better Drought Planning

1. **Defined Goals and Expectations**
   Goals should include establishing customer communication, for example, at what level do you increase your public outreach towards conservation? Goals should also include establishing benchmarks for normal and dry conditions and identifying guidelines for system specific monitoring and developing standard operating procedures to respond to drought conditions.
2. **Evaluation of Sources**
   The plan should include a summary of the system's existing water supplies, pumping capacities, safe yields and any restrictions on use or sequencing for bringing on secondary or emergency sources.
3. **Evaluation of Available Storage**
   Having adequate finished water storage will help in times of drought. This should include an evaluation of existing equalization storage volume to make sure available storage meets current peak demands. The facilities should provide some emergency volume, which may be needed in times of crisis. Properly designed storage also allows resting of sources to avoid pumping 24/7, which may assist in allowing groundwater levels to recover.
4. **Analysis of Water Demands**
   The plan should include an assessment of historical demand to identify average, maximum and peak demands. Establishing expected demands help identify when restrictions must be implemented to avoid exceeding supply.
5. **Emergency Supplies and Connections**
   Sources sometimes go down unexpectedly, so the plan should include contingencies for getting more water, for example, emergency interconnections or trucking in water for times of extreme drought.
6. **Drought Indicators**
   What drought indicators make sense for your system? Items such as precipitation, groundwater levels, reservoir levels, streamflow, available supply and historical demand may impact the need to impose water use restrictions. These become the basis for establishing drought triggers.
7. **Drought Triggers**
   Drought triggers are used to determine what phase of drought you may be in. A thorough review of historical levels for each indicator during normal and dry conditions is a key component. Analysis of these levels establishes the trigger points for drought conditions.
8. **Drought Responses**
   A stepped response to drought allows system's to implement restrictions as a drought worsens. Multiple drought phase responses may include voluntary restrictions, mandatory even/odd restrictions, mandatory two day a week restrictions and no outdoor water use restriction. The responses should be appropriate for the phase of drought.
9. **Drought Management Strategy**
   Now that a plan is in place, who is responsible for monitoring and responding to conditions? The drought management strategy should include responsibilities of staff to determine who will be monitoring data, comparing to trigger levels and implementing responses.
10. **Drought Management By-laws**
    Most systems already have drought management by-laws. These by-laws should be reviewed and potentially revised to assure the ability to impose the drought responses contained within the plan.

For more information on drought management planning please contact Kristen Berger, P.E. at (508) 281-5160 X399 or kberger@ceiengineers.com.