WATER SYSTEM OPTIMIZATION

Finding the right balance between System Performance, Energy Efficiency, and Water Quality
What is Water System Optimization?

Water system optimization involves a comprehensive review of a water utility’s system layout and operations to evaluate system performance, energy efficiency, and water quality. An optimized water system achieves a balance of these three parameters.

Benefits of Water System Optimization

- Reduced energy use and costs
- Reduced water use and costs
- Reduced pressure swings
- Deferred or eliminated capital improvement projects
- Improved chlorine residual / reduced DBPs
- Increased life of pumps and motors
- Improved system reliability
- Greater operator confidence (peace of mind)

Key Elements of Water System Optimization

- Physical data for system layout
- Historical meter records
- Electrical power bills
- Data from SCADA system
- Water quality test data
- Anecdotal data from operator observations
- Calibrated extended time period simulation model
Issues Addressed During Water System Optimization

System Performance
Control settings
Efficient use of storage
Efficient use of sources
System layout issues
Issues caused by improperly-sized facilities
Maintenance trouble spots
Water loss
Pressure management

Energy Efficiency
Efficiency of pumps and motors
Unnecessary pumping
Appropriateness of power rate schedules used
Prioritization of water sources (use cheapest sources first)
Using storage to take advantage of lower-cost, off-peak power rates

Water Quality
Water age
Fate of chlorine & fluoride
Contaminant concentration
Locations of contaminant sources
Effectiveness of mixing strategies
We can help!

Many water systems have significant untapped efficiency improvement potential.

HAL has decades of experience in finding solutions to water system inefficiencies.

We can help you to develop an extended time period water model that will help you improve system performance, energy efficiency, and water quality.

Ask us about programs that can help pay for the cost of water system optimization!