**Description**

The University of Utah has established the objective of being water neutral by 2050. Your team’s objective is to win the project to develop the water management plan for the University of Utah. Together with your consultant team you will review existing system characteristics, develop a future vision, and identify a path to achieve the goal of the vision in preparation for an interview with the client (the University).

**Background**

For this study the University of Utah may be considered to have an area of 791 acres. The university currently purchases 1,300,000 ccf (X100 ft3) per year (2984 acre-ft/yr). Approximately 30-70% of the annual usage is for exterior application to landscapes. Peak monthly demands are 58 MG/month for irrigation demand and 103 MG/month overall meter. The Chiller Plant has a peak demand of 35 MG/month.

To achieve water neutrality the University is shifting their approach to water management by

1. Reducing water demand
2. Develop new water sources
3. Find opportunities to reuse water
4. Take advantage of differential use opportunities

**Activity**

As a consultant team prepare a set of responses to the following questions as best (and fast) as possible.

1. Define the water neutral goal for water management at U. of U. What should they try to achieve? No net water increase, water demand reduction, what combination of water sources, etc?

**University views water neutrality as reducing water demand to 950,000 ccf (2180 ac-ft/yr or 710 MG). The goal is to reduce outdoor usage substantially and bring it to near 30% of annual usage and have it be supplied mostly from reuse. This includes buildout.**

1. List stakeholders involved with water management at the U. and identify the decision makers?

**Plant Operations, Facilities Management, Grounds, Faculty, Staff, Students, Administration, Office of Sustainability, Local Community, Salt Lake City, Salt Lake County, State of Utah, Central Utah Water Conservancy District, U.S. Forest Service**

1. List possible alternative water sources for the University (alternative to purchasing water from city) and recommend combination of alternatives to meet the demand; include notes on advantages and disadvantages and issues to consider for each.

**See Alternative Water Sources Handout…**

1. List possible approaches to achieve water neutrality – what ideas do you have to achieve the goal? Think of Infrastructure Changes, Social/behavioral Changes, Policy Changes, etc.
	* + **Water reuse – rainwater harvesting, process water, cooling tower water, interior, graywater**
		+ **Waterwise landscaping (irrigation audits, soil profile)**
		+ **Leak detection and repair**
		+ **Equipment efficiency**
		+ **Evaporative cooling**
		+ **Water audit and meters**
		+ **Water rights**
		+ **Differential uses and distribution systems: secondary water for irrigation, graywater/blackwater separate**
		+ **Water conservation (behavior changes)**
		+ **Water-energy nexus**
2. List necessary water infrastructure to achieve future water neutrality – list in order of least expensive to most expensive.

**See Alternative Water Sources Handout…**

1. Describe the human behavioral changes you believe are needed to achieve your plan for U. water management.
2. List institutional/policy changes needed to implement your plan.
3. Is your plan ethical?
4. Is your plan technically feasible?
5. Is your plan Hydrotopia?