



**2012 WaterSmart Business Program**  
*Recognized for Wise Water Management*  
**National Outdoor Leadership School**

The National Outdoor Leadership School (NOLS) teaches its students outdoor skills and environmental ethics, among a host of things. With locations around the world, certain basics apply most everywhere and some subjects are tailored to a particular region. Thus, it is no surprise that water management is an important component of the training in its Tucson location.

NOLS is a leader in outdoor education. The school in Tucson sits on 11 acres of land that was an Arabian horse ranch until the 1980s. Nearly all the surrounding desert remains undisturbed and the natural cycles of rain provide the water for the native plants and trees.

NOLS staff and often its students live on the property. Water is used in food preparation, washing (bodies and clothes), sinks and toilets, and for maintaining a small garden and some fruit trees. This water is used wisely.

A free-standing building was converted into a shower house. The shower heads are low-flow and a solar water heater on its roof ensures that a comfortable and desired temperature is quickly reached.



Rain catchments are abundant and staff plans to add more. Nearly every roof is pitched to some degree and gutters are in place for collection and routing. Rain water is used primarily for washing school vehicles, as these are driven lots of miles on lots of backroads transporting students to wilderness destinations.

Because wilderness leadership training involves living on one's own for days or weeks at a time, the concept of using water wisely and efficiently is key in students' preparation. Staff monitors water use at the school and continues to make improvements. Urinals are waterless, toilets are low-flow, and aerators are efficient. There are multiple refrigerators, freezers and washing machines on site and conversion to energy-efficient models has been underway for some time.



A check of NOLS water usage and billing history showed modest numbers, given the nature of its operation and the people that pass through its doors. It also reflected something one doesn't see much of in Tucson: The school is closed for a portion of the summer, so when nearly every other Tucson Water customer's bill shows a rise in usage, its bill drops for nearly three months.

This WaterSmart Business Program audit resulted in some suggestions for NOLS, rather than a tutorial on how to better use water. Staff told of plans to increase the number of rain water catchments since there were several ways to put more to use. Drip irrigation is planned for the few areas needing regular watering. And there's one remaining toilet that needs to be jettisoned. We suggest expanding the capture and use of gray water, which can be an abundant resource when multiple people are living on site. In addition, every nozzle, aerator, and shower head should be regularly checked for efficient flow. Toilets should also be regularly checked to ensure there are no little leaks. There is a swimming pool on site, part of the original horse ranch, and staff keeps it covered to reduce evaporation.

Because of its mission and core values, the National Outdoor Leadership School also supplements the goals of Tucson Water in educating residents and visitors on the importance of recognizing that water is a finite resource here in the desert and it should be used accordingly.

(One last note: The site visit revealed something not often seen. NOLS sits on 11 acres. The main road is a bit of a distance away, meaning the property's water meter is not close to the main dwelling. What happens if there is a major water leak or break in the main line after the meter? Someone with foresight installed two separate shutoff valves in the ground nearer to the buildings, providing easy and quick access to stop a potential major water loss and the increased damage that could accompany it.)

