**Water Management Plan FSS/PPS No. 08.07**

**Issue No. 5**

**Effective Date: 01/26/2021**
**Next Review Date: 02/01/2023 (E2Y)**

**Sr. Reviewer: Director, Grounds and Waste Management Operations**

1. **POLICY STATEMENTS**
	1. This policy describes water and drought management guidelines for the various water sources used by Texas State University.

01.02 The university will follow the [Irrigation Conservation Plan](https://www.facilities.txstate.edu/grounds/Irrigation) developed to meet watering needs while addressing the city of San Marco’s water use reduction goals.

# PROCEDURES FOR PUMPING WATER FROM THE EDWARDS AQUIFER

* 1. University withdrawals will not exceed the permitted water allotments set by the Edwards Aquifer Authority (EAA).
	2. The university will comply with the [EAA Groundwater Conservation Plan](https://www.edwardsaquifer.org/wp-content/uploads/2019/04/Groundwater_Conservation_Plan_Nov2014.pdf) and all applicable industrial best management practices (Ind BMP) as an industrial user of Edwards Aquifer water.
	3. Ind BMP-1 System Water Audits, Leak Detection, and Repairs – Meters for potable water applications will be monitored. Water audits and leak detection inspections will be conducted, and appropriate actions will be taken based on the results.
	4. Ind BMP-3 Sub-Metering – All landscape irrigation systems will be sub-metered, and records of landscape water consumption will be maintained.
	5. Ind BMP-4 Landscape Conservation Programs – Grounds Operations will comply with the [variance](http://gato-docs.its.txstate.edu/jcr%3A8cee5728-815a-4028-8a3e-564e81c395af/GCPVarianceOrder06142005.pdf) granted by EAA in 2004.
	6. Ind BMP-6 Athletic Field Conservation Programs – The Department of Campus Recreation and Athletics will comply with the [variance](http://gato-docs.its.txstate.edu/jcr%3A8cee5728-815a-4028-8a3e-564e81c395af/GCPVarianceOrder06142005.pdf) granted by EAA in 2004.
	7. Ind BMP-8 Cooling Tower Conservation Program – Make-up water will be metered. The university will conduct regular inspections for leaks and malfunctions and appropriate actions will be taken based on the results. Cycling will be monitored with the goal to maximize the number of cycles of concentrations.
	8. Ind BMP-9 Conservation Programs for Industrial Users – The university will pursue the following actions as funding allows:
	9. recover thermal water used in the provision of steam and chilled water to maximize the amount of water that is reused in order to reduce the amount of fresh make-up water introduced into the systems;
	10. monitor and control the use of water in all chiller plant cooling towers to minimize losses due to leakage and drift;
	11. utilize cooling coils with higher delta T to improve the temperature differential, thereby saving energy and reducing water requirements;
	12. implement building HVAC control strategies to reduce building heating and cooling energy;
	13. utilize high efficiency chillers at the chiller plants;
	14. utilize high-efficiency, condensing hot water boilers for hot water boiler applications;
	15. repair or upgrade the thermal water infrastructure to replace leaking, broken, or poorly insulated thermal lines and fittings to reduce water and energy losses;
	16. verify, calibrate, and replace potable water and thermal water meters in academic buildings, as well as residence halls and auxiliary buildings;
	17. maintain water conservation initiatives implemented by the Department of Housing and Residential Life, Dining Services, Recreational Center, and the LBJ Student Center including:
		+ 1. tray-less service programs in the four dining halls, thereby reducing the amount of water used in their dishwashing process;
			2. waste-pulper recycler at the Commons Dining Hall and Harris Dining Hall to reduce the use of dishwashing water and allow for the reuse of that water;
			3. retrofit sink and shower faucet handles at the Recreational Center and LBJ Student Center to push-button faucets to reduce running water and water usage in restrooms and locker rooms;
			4. utilize programmable irrigation systems at all sports and recreational fields that include rain or moisture sensors to shut off the system in the event of rain. The programs are monitored for effectiveness and set to cycle through the stations for pre-determined times on designated days; and
			5. retrofit bathroom fixtures at residence halls with low flow shower heads, low flow commodes and urinals, and motion-activated water faucets.

# PROCEDURES FOR DIVERSIONS FROM THE SAN MARCOS RIVER

* 1. Under [TCEQ Certificates 18-3865 and 18-3866,](http://eaahcp.org/habitat-protection-measures/san-marcos-springs/diversions-of-surface-water/) Texas State’s total diversion rate from the headwaters of the San Marcos River for consumptive use is limited to 8.1 cubic feet per second (cfs) (see Section 2.5.5 of the [Edwards Aquifer Habitat Conservation Plan](http://www.facilities.txstate.edu/grounds/EA-con.html)). The diversion rate from Spring Lake is limited to 4.88 cfs, and the diversion rate from the San Marcos River at Sewell Park is limited to 3.22 cfs (see Sections 2.5.5.1 and 2.5.5.2, respectively, of the [Edwards Aquifer Recovery Implementation Program Habitat Conservation Plan December 2011](https://www.facilities.txstate.edu/grounds/EA-con.html)) for a total of 8.1 cfs. To minimize the impacts of these diversions, when flow at the U.S. Geological Survey (USGS) gauge at the University Bridge falls below 80 cfs, Texas State will reduce the total rate of surface water diversion by two cfs (i.e., to a total of approximately 6.1 cfs).

This reduction in pumping will occur at the pump just below Spring Lake Dam in order to maximize the benefits to salamanders, Texas wild-rice, and other aquatic resources in the San Marcos River below Spring Lake Dam. The university will reduce the total rate of surface water diversion by an additional two cfs when the USGS gauge falls below 60 cfs. The additional two cfs reduction will be achieved at the pumps located in the slough arm of Spring Lake, and therefore, maximize the benefits to the aquatic resources within the main stem of the San Marcos River below Spring Lake Dam. When the USGS gauge falls below 49 cfs, Texas State will reduce the total diversion rate to 1.0 cfs. This further reduction will be achieved by restricting the pumps in Sewell Park. The diversion of water will be suspended when the spring flow falls below 45 cfs. Texas State’s total diversion rates for consumptive use are summarized below.

|  |  |  |  |
| --- | --- | --- | --- |
| Streamflow (cfs) | Spring Lake Diversions (cfs) Cert. No. 18-3865 | San Marcos River Diversions (cfs)Cert. No. 18-3866 | Total Diversion Rate (cfs) |
| >80 | 4.9 | 3.2 | 8.1 |
| 80 – 60 | 2.9 | 3.2 | 6.1 |
| 60 – 49 | 0.9 | 3.2 | 4.1 |
| 49 – 45 | 1.0 | 0 | 1.0 |
| <45 | 0 | 0 | 0 |

# REVIEWER OF THIS PPS

* 1. Reviewer of this PPS includes the following:

Position Date

Director, Grounds and Waste February 1 E2Y

Management Operations

1. **CERTIFICATION STATEMENT**

This PPS has been reviewed by the following individuals in their official capacities and represents Texas State Finance and Support Services policy and procedure from the date of this document until superseded.

Director, Grounds and Waste Management Operations; senior reviewer of this PPS

Associate Vice President for Facilities

Vice President for Finance and Support Services