

**JOINT BASE SAN ANTONIO
DROUGHT MANAGEMENT PLAN**

1.0. PURPOSE.....	3
2.0 DEFINITIONS.....	4
3.0. CRITICAL PERIOD (DROUGHT) MANAGEMENT.....	4
3.1. WATER USE STAGES.....	4
3.2. CRITICAL PERIOD DECLARATION	5
3.3. STAGE NORMAL (NOT-DROUGHT) WATER USE MEASURES.....	5
3.4. STAGE I RESTRICTIONS	8
3.5. STAGE II RESTRICTIONS.....	9
3.6. STAGE III RESTRICTIONS.....	9
3.7. STAGE IV RESTRICTIONS.....	10
3.8 STAGE V RESTRICTIONS.....	10
4.0. REPORTING	11

TABLES

Table 1. Water Use Stages.....	5
Table 2. Stage Normal Watering Times and Schedule.....	6
Table 3. Asset Management Flight Contact Information	8
Table 4. Stage I Restrictions Watering Times and Schedule	8

1.0 Purpose

The Edwards Aquifer is the sole source of potable water for San Antonio. The future growth and economic sustainability of Joint Base San Antonio (JBSA) and the greater San Antonio area rests with the propagation of effective water conservation measures. Not only is the aquifer the main source of water for San Antonio, it is also home to several endangered species and habitats, which depend on the flow from aquifer springs for survival. Demands on the aquifer, combined with meteorological conditions, drive the level of the aquifer down, such that the flows of the springs are decreased. During summer months, when these flows reach minimal levels, the lives of these endangered species are threatened.

In response to the political, socioeconomic, and environmental issues pertaining to the aquifer, the Texas Legislature created the Edwards Aquifer Authority (EAA), which is charged with implementing and enforcing reasonable measures necessary to protect aquatic life, as well as the interests of domestic, agricultural and industrial users of the aquifer. The EAA is now vested with all powers, rights and privileges to protect the aquifer. They have established water conservation policies that all non-DoD users of the aquifer must follow.

In compliance with Section 7 of the Endangered Species Act of 1973, as amended, Joint Base San Antonio and other Department of Defense Agencies, also known as the San Antonio DoD (SADoD), entered into consultation with the U.S. Fish and Wildlife Service (USFWS). As a result of the consultation, a "Biological Opinion" (BO) was signed by all parties on 5 Nov 99 and revised on 11 Jan 08. The BO commits the SADoD agencies to rigorous water conservation efforts, including drought management.

This drought management plan is a directive for all organizations at Joint Base San Antonio. **All individuals on JBSA (employees, housing residents, privatized housing residents, and contract personnel) are required to comply with these water conservation measures.** Failure to do so could result in administrative actions taken against JBSA. Persons found in violation of these measures will be held accountable for their actions. Team members of the Joint Base San Antonio Water Working Group will conduct assessments on a daily basis to identify water misuse/waste. When users are notified of discrepancies, they need to be corrected immediately.

The requirements of the Joint Base San Antonio Water Management Program are outlined in Air Force Energy Program Procedural Memorandum (AFEPMP) 96-2, 1 Jun 96. A key element in the program is the development of this drought management plan. Further, as the sole source of potable ground water for Joint Base San Antonio and the surrounding communities, the Edwards Aquifer is a vital resource for the continued operation and growth of the area. Successful implementation of sound drought management practices ensures quality of life and economic sustainability for both Joint Base San Antonio and the greater San Antonio area. This effort requires the action and support of all base personnel.

2.0 DEFINITIONS

2.1. Water is any water obtained from JBSA's water distribution system, or water brought onto JBSA by a contractor, unless the contractor has an affidavit proving that the water was not obtained from the Edwards Aquifer.

2.2. Person includes individuals, organizations, and contract personnel.

2.3. Lawn and turf includes grass and turf areas around housing units and base facilities, including parade and athletic fields.

2.4. Landscape includes shrubs, trees, flowers, vegetables, and other ornamental plants.

2.5. Kgal is a kilogallon, which equals 1,000 gallons. JBSA's water usage is measured in kilogallons.

2.6. Hand-held method is defined as using a hose whose diameter is less than 1 inch or using a bucket that holds 5 or fewer gallons.

3.0 CRITICAL PERIOD (DROUGHT) MANAGEMENT

3.1. WATER USE STAGES

The following table summarizes the JBSA Drought Plan Stage Reductions and stage indicator factors. Stages I and II incorporate the Bexar Index Well levels utilized by the City of San Antonio and the San Antonio Water System, which are more stringent than the USFWS Biological Opinion, to provide a seamless transition into the two most common water conservation stages. Stages III, IV, and V utilize the more stringent stage indicator factors required by the Biological Opinion.

Table 1

Aquifer Level is determined by these indicators.			
STAGE	Bexar Index Well (J-17) (feet above sea level)	Comal Spring Flow (cubic feet per second)	San Marcos Spring Flow (cubic feet per second)
Normal	Above 660.0 ft.	Above 250 cfs.	Above 80 cfs.
I	660.0 ft.	5 Days at or below 250 cfs.	3 days at or below 80 cfs.
II	650.0 ft.	5 Days at or below 200 cfs.	Any stage I trigger, plus 3 days at or below 80 cfs.
III	642.0 ft.	5 Days at or below 180 cfs.	Any stage II trigger, plus 3 days at or below 80 cfs.
IV	640.5 ft.	5 Days at or below 160 cfs.	Any stage III trigger, plus 3 days at or below 80 cfs.
V	<637.0 feet	5 Days at or below 100 cfs	Any stage IV trigger, plus 3 days at or below 80 cfs.
A water conservation stage begins whenever one of the above conditions is met. Data on the above indicators can be found at the Edwards Aquifer Authority's Water Levels website.			

3.2. CRITICAL PERIOD DECLARATION

Declaration of a critical period is made based on water level measurements taken at Bexar County index well J-17 at Ft Sam Houston, the Comal Spring or San Marcus Spring Flow, whichever hits trigger level first. These parameters are used to initiate or terminate the various critical period stages, and implement various water use restrictions associated with each stage. Critical period stages become effective on notification by the Military Water Working Group Chairperson.

General populace will be alerted through the weekly bulletin, marquee messages, newspaper articles, and commander's access channel announcements. Awareness activities will continue until all restrictions are lifted. Water use restrictions required for each critical period stage are discussed in sections 3.3-3.8.

3.3. STAGE NORMAL (NON-DROUGHT) WATER USE MEASURES

3.3.1. Any action resulting in water waste is prohibited. (OPR: ALL)

3.3.2. Lawn/landscape watering shall be restricted to the following times and methods for each respective organization and/or housing unit:

3.3.2.1. Turf/landscape sprinkler watering is allowed only twice a week as shown in Table 2 and is prohibited between 10:00 a.m. and 8:00 p.m. (OPR: ALL)

Table 2

Facility	Watering Day
MILITARY FAMILY HOUSING address with even numbers	Saturday and Tuesday
MILITARY FAMILY HOUSING address with uneven numbers	Sunday and Thursday
All Base Facilities	Monday and Friday
Athletic Fields	Monday and Wednesday
Golf Courses	Any Day

3.3.2.2. Apply approximately 1 inch of water to the turf/landscape at a time.

3.3.2.3. Watering with a hand-held garden hose with a diameter of 1" or less, or a 5 gallon or less bucket is permitted at any time of the day for short (10-15 min) watering periods.

3.3.2.4. No fire hose watering unless hooked into irrigation-type system, see respective Zone for approval/hook-up.

3.3.2.5. New turf/landscaping may be watered to maintain adequate growth until established.

Note: Daily watering of landscape/lawn does not help the deep-long growth of the roots needed to find water in the soil. By watering plants less often, the roots begin to grow and search for water in the soil. This will help and train them to survive using less water.

3.3.2.6. Special circumstances may be coordinated and approved by 502 ABW and added as an amendment to this Plan

3.3.2.7. Due to irrigation capacities of some systems throughout the installation, deviations of watering days will be made on a one-by-one basis. Coordination needs to be completed with the Base Civil Engineer.

3.3.3. Use turf/landscaping that features indigenous natural plant species. Indigenous plants, which are also called native plants, reduce the need for water. These plants can be attractively added to existing landscaping or can be used to replace all or part of existing landscape. Use a 2 to 3 inch layer of mulch around trees and in planting beds this will conserve soil moisture.

Native grasses can be used to replace existing grass in areas where traditional carpet grass effect is not needed. (OPR: ALL)

3.3.4. Washing/rinsing driveways, streets, and sidewalks is approved for health/safety reasons only. (OPR: ALL)

3.3.5. Washing of privately owned vehicles (POVs) is authorized anytime. A positive shutoff nozzle must be used with hoses when washing cars to prevent water waste. (OPR: ALL)

3.3.6. Initiate an education program promoting water conservation. Activities include: public service announcements, news items, Base Bulletin announcements and other media information on water conservation techniques. (OPR: 902 CES, 802 CES, 502 CES)

3.3.7. Initiate a program to have base residents/employees watch for and report dripping faucets, leaking toilets, and water puddling in grassy areas or moving along street curbs which could indicate a subsurface broken water pipe. All problems should be reported to the installation Asset Management Flight. Enforce the use of low-flow toilets, low-flow showerheads, more efficient faucets and sprinkler systems when designing projects on base. (OPR: ALL)

3.3.8. Avoid driving vehicles over turf/landscape areas. The compacting of the soil makes the drainage of the water into the soil more difficult and damages root systems. (OPR: ALL)

3.3.9. Charity car washes are permitted provided they are performed at car wash facilities that recycle water, and coordinated with the Base Civil Engineer.

3.3.10. Pools used for medical/therapy reasons are exempted from pool water restrictions. (OPR: ALL)

3.3.11. As good management practice, it is recommended base personnel use a glass/cup when drinking water from water fountains and coolers to avoid waste. (OPR: ALL)

3.3.12. JBSA personnel will be directed to adopt any stage (1-5) from this Plan at any time when the base approaches the monthly water withdrawal limits.

3.3.13. Facilities that utilize recycled water from the San Antonio Water System (SAWS) will comply with watering set forth in the SAWS Recycled Water User's Handbook. Section 2.3.1 of the Handbook prohibits irrigation between 10:00 a.m. and 8:00 p.m. (OPR: ALL).

3.3.14. Facilities that utilize recycled water from Cibolo Creek Municipal Authority (CCMA) will comply with watering set forth by the CCMA.

3.3.15. If you have any questions or want to report any misuse or waste of water, please contact the installation Asset Management Flight:

Table 3

Flight	Phone Number
Lackland Asset Management	671-4844
Randolph Asset Management	652-5205
Fort Sam Houston Asset Management	221-5063

3.4. STAGE I RESTRICTIONS

3.4.1. Continue Stage Normal Water Use Measures, except where noted.

3.4.2. Turf/landscape may be watered by sprinkler only once a week, between the hours 12:00 a.m. (midnight) to 10:00 a.m. and 8:00 p.m. to 12:00 a.m. (midnight) on the days designated below: (OPR: ALL).

Table 4

Last Digit of Address/Facility #	Watering Day
0, 1	Monday
2, 3	Tuesday
4, 5	Wednesday
6, 7	Thursday
8, 9	Friday

3.4.3. New turf/landscaping may be watered normally until adequate growth is maintained.

3.4.4. POVs may be washed in accordance with the designated landscape watering schedule. A positive shutoff nozzle must be used with hoses when washing cars to prevent water waste.

3.4.5. Irrigation of athletic fields is permitted only as required to maintain the turf viability/safety. Athletic fields continue Stage Normal Water Use Measures.

3.4.6. Restaurants and other eating establishments are prohibited from serving water to customers unless it is requested by the customer.

3.4.7. Swimming pools must be covered with an effective evaporation screen or shields covering at least 25% of the surface of the pool when not in use for maintenance or swimming.

3.4.8. No person or organization may use water for an ornamental fountain or similar feature, unless the water is recycled.

3.4.9. Foundation soaker hoses may be utilized as required for safety/maintenance purposes.

3.4.10. Water is prohibited on impervious surfaces.

3.5. STAGE II RESTRICTIONS

3.5.1. Continue practices from Stage I, except as noted.

3.5.2. Lawn/turf watering will be continued on the days from Stage I, but only between the hours of 3:00 a.m. to 8:00 a.m. and 8:00 p.m. to 10:00 p.m. (OPR: ALL).

3.5.3. Installation of new landscape plantings or turf is prohibited unless included in contract deliverables, required to repair damage resulting from maintenance or construction actions, or authorized by the Base Civil Engineer. Frequent watering of new turf requires installation Base Civil Engineer approval.

3.5.4. Irrigation of athletic fields is permitted only as required to maintain the turf viability/safety. Athletic fields may water between the hours of 3:00 a.m. to 10:00 a.m. and 8:00 p.m. to 10:00 p.m. once per week on the days from Stage I Turf schedule.

3.5.5. Landscapes may be watered by a 1 inch diameter or less hand held garden hose, soaker hose, or a 5 gallon (or less) bucket any day at the appropriate times, on a schedule such to maintain them.

3.5.6. Filling of new and existing pools is prohibited, except to replenish pools to maintenance level, unless at least 30% of the water is obtained from a source other than the Edwards Aquifer. Drainage of swimming pools is permitted only on a pervious surface or pool deck where the water is transmitted directly to a pervious surface and only if necessary to:

3.5.6.1. Remove excess water from the pool due to rain in order to lower the water to the maintenance level.

3.5.6.2. Repair, maintain, or replace a pool component that has become hazardous, or repair a pool leak.

3.5.7. Government vehicle washing allowed twice a month. POVs may be washed on landscape watering days.

3.6. STAGE III RESTRICTIONS

3.6.1. Continue practices from Stage II, except as noted.

3.6.2. Lawn/turf may be watered by sprinkler only once every other week, between the hours 3:00 a.m. to 8:00 a.m. and 8:00 p.m. to 10:00 p.m. on the days designated in Stage I (OPR: ALL).

3.6.3. The use of yard pools is prohibited.

3.6.4. Athletic Fields continue practices from Stage II.

3.6.5. Fire hydrant and sewer line flushing is prohibited, except as necessary to accomplish repairs or for critical testing requirements. Routine fire hydrant and sewer line flushing should be scheduled during typical noncritical months (i.e., November-February).

3.6.6. Government vehicle washing allowed once per month. POVs may be washed on landscape watering days.

3.6.7. Restrict Civil Engineer ground crews and base residents from planting grass and plants except where absolutely essential.

3.7. STAGE IV RESTRICTIONS

3.7.1. Continue practices from Stage III, except as noted. (OPR: ALL)

3.7.2. New landscaping will not be allowed unless essential and approved by the Base Civil Engineer.

3.7.3. Lawn/turf watering is prohibited.

3.7.4. Landscapes may be watered by a 1 inch diameter or less hand held garden hose, soaker hose, or a 5 gallon (or less) bucket every two weeks from 3:00 a.m. to 8:00 a.m. and 8:00 p.m. to 10:00 p.m. on day from Stage I.

3.7.5. Athletic Fields may be watered once every two weeks between the hours of 3:00 a.m. to 10:00 a.m. and 8:00 p.m. to 10:00 p.m. once per week on the days from Stage I Turf schedule.

3.8. STAGE V RESTRICTIONS

3.8.1. Continue practices from Stage IV, except as noted. (OPR: ALL)

3.8.2. Installation of new turf is prohibited. (OPR: ALL)

3.8.3. Landscape watering is prohibited. (OPR: ALL)

3.8.4. Government vehicle and POV washing allowed on extreme need. . (OPR: ALL)

3.8.5. Joint Base San Antonio Military Water Working Group will convene an emergency session to consider appropriate emergency rules in addition to all previous prohibitions applicable in Stage I-IV.

4.0. REPORTING

4.1. Water use restrictions will be enforced by the Base Civil Engineer. Violations should be reported to the installation Base Civil Engineer.

4.2. At Lackland AFB:

4.2.1. Report water waste to the Water Conservation Hotline at 671-SAVE (7283).

4.2.2. Report water leaks during normal duty hours to your respective Civil Engineer Area Maintenance Unit (AMU) and after duty hours to EMCS at 617-2288/2289.

4.3. At Randolph AFB:

4.3.1. For water conservation questions, contact the Asset Management office at 652-5205.

4.3.2. Report water waste and leaks to EMCS at 652-3151.

4.4. At Fort Sam Houston:

4.4.1. For water waste and water conservation questions contact the FSH Environmental Office at 221-4842.

4.4.2. Report water leaks in base facilities other than Military Family Housing to the 502d Civil Engineer Squadron Service Call desk at 221-3144.

4.4.3. Report water leaks in Military Family Housing to Lincoln Military Housing at 225-5564.