

# **Texas Water Development Board**



## **2016 Region M Water Plan**

### **Chapter 8: Legislative Recommendations and Unique Sites**

# Table of Contents

List of Abbreviations .....	ii
Chapter 8. Legislative Recommendations and Unique Sites.....	8-1
8.1 Designation of Ecologically Unique Stream Segments .. <b>Error! Bookmark not defined.</b>	
8.2 Designation of Ecologically Unique Stream Segments .....	8-1
8.2.1 Criteria for Designation of Ecologically Unique Stream Segments .....	8-1
8.2.2 Candidate Stream Segments .....	8-2
8.2.3 Recommendation .....	8-3
8.3 Reservoir Sites.....	8-7
8.3.1 Brownsville- Matamoros Weir and Reservoir .....	8-7
8.3.2 Banco Morales Reservoir.....	8-7
8.3.3 Laredo Low Water Weir .....	8-8
8.3.4 Hidalgo County Drainage District Delta Watershed Project .....	8-8
8.3.5 United Irrigation District Off-Channel Reservoir.....	8-8
8.3.6 Recommendations.....	8-9
8.4 Legislative Recommendations .....	8-9
8.4.1 Recommendations on State Issues .....	8-9
8.4.2 Recommendations on National and International Issues .....	8-11
8.4.3 Issues Identified in Previous Planning Cycles .....	8-13

## Figures

Figure 8-1 TPWD Proposed Ecologically Significant Stream Segments.....	8-3
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## Tables

Table 8-1 Potential Ecologically Unique River and Stream Segments within the Rio Grande Region .....	8-4
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## List of Abbreviations

Acre-ft./year	acre-feet per year
BPUB	Brownsville Public Utilities Board
BRACS	Brackish Resources Aquifer Characterization
GAM	Groundwater Availability Model
GCD	Groundwater Conservation District
IBWC	International Boundary Water Commission
PUB	Public Utilities Board
RWPG	Regional Water Planning Group
SB 1	Senate Bill 1
TAC	Texas Administrative Code
TPWD	Texas Parks and Wildlife Department
TWDB	Texas Water Development Board
USDA	United States Department of Agriculture
WAC	Watermaster Advisory Committee
WAM	Water Availability Model
WMS	Water Management Strategy

## Chapter 8. Legislative Recommendations and Unique Sites

### 8.1 Introduction

In addition to making recommendations regarding strategies for meeting current and future water needs, TWDB rules for SB 1 regional planning allow the regional water planning groups (RWPG) to include recommendations in the regional water plan with regard to legislative designation of ecologically unique streams, sites for future reservoir development, and policy issues. The Region M Water Planning Group elected to consider recommendations in each of these areas, which are presented in this chapter.

### 8.2 Designation of Ecologically Unique Stream Segments

The Texas Legislature has provided clarification in Texas Water Code 16.051(f) that designation of a stream segment as having unique ecological value “solely means that a state agency or political subdivision of the state may not finance the actual construction of a reservoir in a specific river or stream segment designated by the legislature under this subsection.”

TWDB rules provide that the RWPGs forward any recommendations regarding legislative designation of ecologically unique streams to the TPWD and include TPWD’s written evaluation of such recommendations in the adopted regional water plan. The RWPG’s recommendation is then to be considered by the TWDB for inclusion in the state water plan. Finally, the Texas Legislature will consider any recommendations presented in the state water plan regarding designation of stream segments as ecologically unique.

#### 8.2.1 Criteria for Designation of Ecologically Unique Stream Segments

TWDB rules also specify the criteria that are to be applied in the evaluation of potential ecologically unique river or stream segments. These are:

- **Biological Function:** stream segments that display significant overall habitat value, including both quantity and quality, considering the degree of biodiversity, age and uniqueness observed, and including terrestrial, wetland, aquatic or estuarine habitats;
- **Hydrologic Function:** stream segments that are fringed by habitats that perform valuable hydrologic functions relating to water quality, flood attenuation, flow stabilization or groundwater recharge and discharge;
- **Riparian Conservation Areas:** stream segments that are fringed by significant areas in public ownership including state and federal refuges, wildlife management areas, preserves, parks, mitigation areas or other areas held by governmental organizations for conservation purposes, or segments that are fringed by other areas managed for conservation purposes under a governmentally-approved conservation plan;
- **High Water Quality/Exceptional Aquatic Life/High Aesthetic Value:** stream segments and spring resources that are significant due to unique or critical habitats and exceptional aquatic life uses dependent on or associated with high water quality; and/or
- **Threatened or Endangered Species/Unique Communities:** sites along streams where water development projects would have significant detrimental effects on state- or federally-listed threatened and endangered species, and sites along segments that are

significant due to the presence of unique, exemplary, or unusually extensive natural communities.

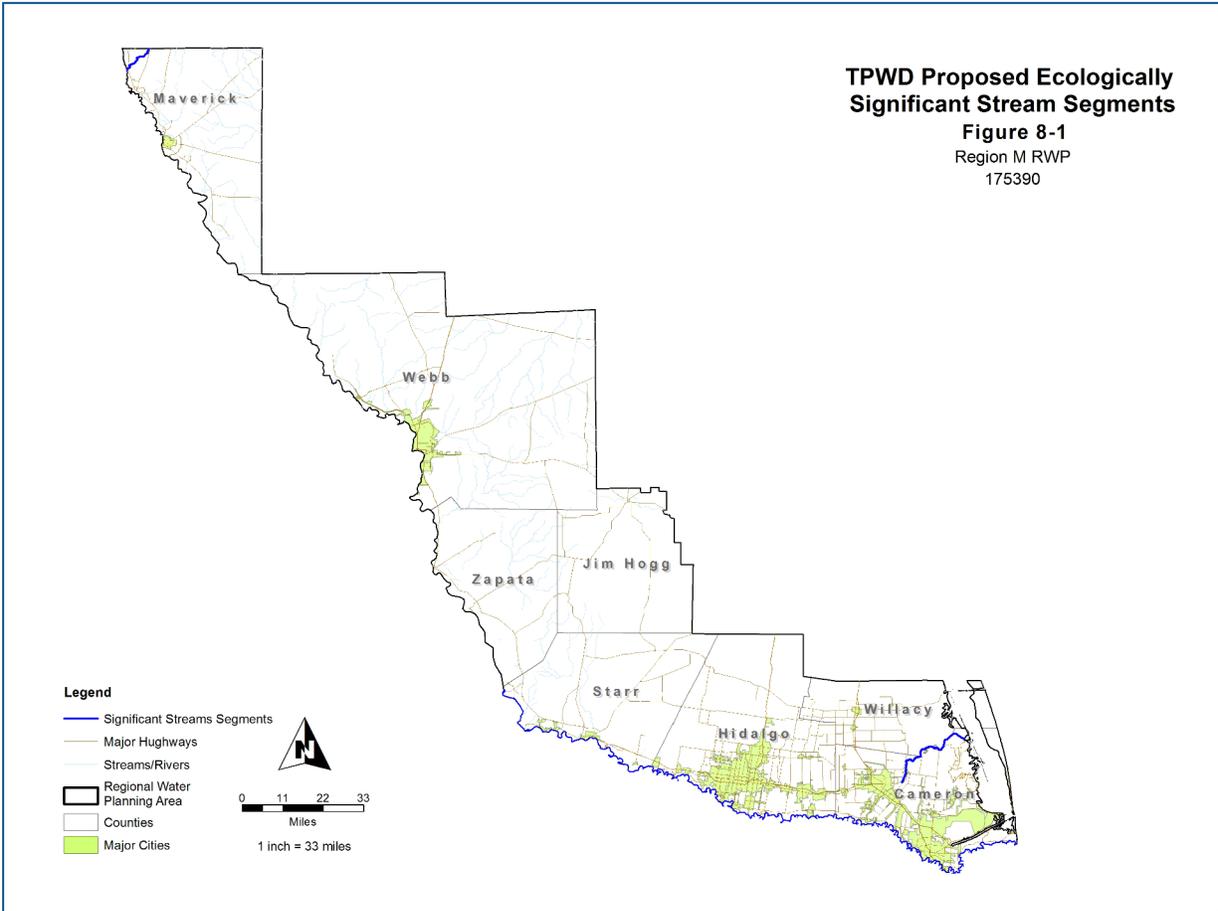
### **8.2.2 Candidate Stream Segments**

To assist each of the 16 RWPGs, the TPWD developed a list of candidate stream segments in each region that appear to meet the criteria for designation as ecologically unique. For the Rio Grande Region, TPWD prepared a report entitled Ecologically Significant River and Stream Segments of Region M, Regional Water Planning Area (May 2000) that presents information on four (4) stream segments within the region that meet one or more of the criteria for designation as ecologically unique. Additional comments from TPWD on the 2016 Initially Prepared Plan for Region M states that “TPWD continues to see importance I recommending and designating significant stream segments” and offers support for the next planning cycle. The complete comments are included in Appendix H.

The Region M Planning Group also received suggestions from the U.S. Fish & Wildlife Service, Zapata County, and the Texas Shrimp Association through two stakeholder “focus group” meetings during the previous plan. The focus group meetings were held in December 1999 and January 2000, and more than 200 individuals representing local, state, and federal agencies, environmental groups, and other parties with a known interest in the subject received written invitations to attend and provide input.

Subsequent to the 2006 plan, a request for additional consideration of unique stream segments was made. An Environmental Subcommittee to the Region M Water Planning Group was formed to look in greater detail at various environmental issues related to water management strategies, unique stream segments and other items affecting environmental considerations. The subcommittee met on several occasions to discuss the unique stream segments on the Rio Grande. The U.S. Fish and Wildlife Service and the TPWD made formal requests for designation of unique stream segments on the Rio Grande. A workshop was held by the Region M Water Planning Group for a presentation by the TPWD on January 25, 2005. No action was taken then. A meeting of the subcommittee was held February 16, 2005 to consider the proposals. A motion was made to accept the designation of the segment of the Rio Grande from the mouth of the Rio Grande upstream to the upstream boundary of the U.S. Fish and Wildlife Service Tulosa tract. The motion died for a lack of a second. No further appeals for designation of unique stream segments were made in the fifth cycle of planning.

Figure 8-1 shows the locations of the TPWD proposed ecologically significant stream segments and Table 8-1 provides further detail about the potentially unique stream segments.



**Figure 8-1 TPWD Proposed Ecologically Significant Stream Segments**

**8.2.3 Recommendation**

The Region M Water Planning Group reviewed the nominations submitted by TPWD and others with regard to legislative designation of river or stream segments as ecologically unique. The Environmental Subcommittee had no recommendation for the Region M Water Planning Group for inclusion in the plan. Designation would have the advantage of allowing entities to receive federal and state financial assistance for the preservation of lands adjoining these segments. The perceived disadvantage to the Region M Water Planning Group would be that a designation could be used to support further regulation of upstream development and environmental flows. Lack of action by the Region M Water Planning Group indicates a non-designation of unique stream segments recommendation at this time. It was agreed that the issue could be brought up and considered in the future.

**Table 8-1 Potential Ecologically Unique River and Stream Segments within the Rio Grande Region**

River Segment Number	TCEQ Segment ID	Basin/Waterway	Location/Sublocation	Remarks and Nominating Entity	Function
<b>Function Key:</b> B: Biological Q: High Water Quality, Exceptional Aquatic Life, High Aesthetic Value S: Threatened or Endangered Species, Unique Communities					
1		Lower Rio Grande /Las Moras Creek	From confluence with Rio Grande in Maverick County upstream to Maverick/ Kinney County line	Entire segment identified as significant, but primary area of concern due to spring-fed springs lies in Kinney County, outside Region M boundaries. Selection criteria from <i>Ecologically Significant River &amp; Stream Segments of the Rio Grande (Region M) Regional Water Planning Area (TPWD)</i>  Nominated by: TPWD	<b>B:</b> Riparian habitat with trees & shrubs; habitat & associated water very valuable for fish/wildlife <b>H:</b> Regulation & protection of baseflows, fisheries habitat, water supplies & groundwater <b>RCA:</b> None identified on this segment <b>Q:</b> Ecoregion stream, dissolved oxygen, benthic macroinvertebrates; aesthetic & economic value for fishing, birding, hiking, picnicking, camping <b>S:</b> wood stork, least tern, Proserpine shiner, ocelot, jaguarondi, several other state-threatened species
2	2301 2302	Lower Rio Grande/Rio Grande	From confluence with Gulf of Mexico in Cameron County upstream to Falcon Dam in Starr County	Selection criteria from <i>Ecologically Significant River &amp; Stream Segments of the Rio Grande (Region M) Regional Water Planning Area (TPWD)</i>  Nominated by: TPWD with support from FWS – Lower Rio Grande National Wildlife Refuge, Zapata County, and Texas Shrimp Association	<b>B:</b> Extensive freshwater and estuarine wetland habitat, resaca woodlands, lomas, emergent saltmarsh, seagrass beds in South Bay <b>H:</b> Flood control; regulation/protection of fisheries, water supplies, groundwater & baseflows in the river; freshwater inflow prevents saltwater intrusion <b>RCA:</b> Lower Rio Grande Valley NWR; Bentsen Rio Grande SP; Santa Ana NWR; Sabal Palm Sanctuary; Boca Chica SP; S. Bay Coastal <b>Q:</b> Overall use; benthic macroinvertebrates; high economic value for fishing, boating & birding; important for common snook population <b>S:</b> Texas ayenia, piping plover, Blackfin goby, several other state threatened species; Black Mangrove Series; Texas Palmetto

River Segment Number	TCEQ Segment ID	Basin/Waterway	Location/Sublocation	Remarks and Nominating Entity	Function
2A		Lower Rio Grande/Rio Grande	From confluence with Gulf of Mexico in Cameron County upstream to Falcon Dam in Starr County/ From Roma area upstream to Falcon Dam	No documentation submitted Nominated by: FWS – Lower Rio Grande National Wildlife Refuge	<b>S:</b> Wild muscovy duck, hookbill kite, breeding populations of brown jay and red-billed pigeon
2B		Lower Rio Grande/Rio Grande	From confluence with Gulf of Mexico in Cameron County upstream to Falcon Dam in Starr County/ From confluence with Gulf of Mexico upstream to just east of Brownsville	No documentation submitted Nominated by: FWS – Lower Rio Grande National Wildlife Refuge	<b>S:</b> Unique marine organisms, including blue land crab & red land crab
2C		Lower Rio Grande/ Rio Grande	From confluence with Gulf of Mexico in Cameron County upstream to Falcon Dam in Starr County/ From Rio Grande City area upstream to south of Falcon Dam	No documentation submitted Nominated by: Project Coordinator, Zapata County	
2D		Lower Rio Grande/Rio Grande	From confluence with Gulf of Mexico in Cameron County upstream to Falcon Dam in Starr County/ From confluence with Gulf of Mexico upstream to Laredo area	No documentation submitted Nominated by: Texas Shrimp Association	<b>B:</b> Recruitment value/ productivity of estuary, importance to marine shrimp of Laguna Madre and Gulf <b>H:</b> Geology/function of the Rio Grande/ Nueces Basin and the Tamaulipan Plain

River Segment Number	TCEQ Segment ID	Basin/Waterway	Location/Sublocation	Remarks and Nominating Entity	Function
3		Lower Rio Grande/Rio Grande	Rapids in 3 to 5-mile stretch, from just south of Rio Bravo in Zapata County, near Laredo	No documentation submitted  Nominated by: Project Coordinator, Zapata County	<b>H:</b> Water-quality data indicate aeration improves water quality below rapids
4	2201	Lower Rio Grande/Arroyo Colorado	From confluence with lower Laguna Madre upstream to Harlingen area	Selection criteria from <i>Ecologically Significant River &amp; Stream Segments of the Rio Grande (Region M) Regional Water Planning Area (TPWD)</i>  Nominated by: TPWD with support from Region M Planning Group member on behalf of Cameron County Commissioner; and Texas Shrimp Association	<b>B:</b> Unique because inflow from Arroyo provides main source of freshwater to Laguna Madre; recruitment value/ productivity of estuary, importance to marine shrimp of Laguna Madre and Gulf <b>H:</b> Downstream flood control; regulation of baseflows; protection of fisheries, water supply, groundwater; helps prevent saltwater intrusion upstream <b>RCA:</b> Laguna Atascosa NWR, Goat Island Wildlife Management Area, City of Harlingen property <b>Q:</b> High water quality/exceptional aquatic life/high aesthetic value <b>S:</b> Brown pelican, piping plover, ocelot, jaguarundi, Texas ayenia, sheep frog, common black-hawk, Coues' rice rat, and several other state threatened species
5		Lower Rio Grande/Los Olmos Creek		Only upon confirmation that stream is not intermittent	

## **8.3 Reservoir Sites**

TWDB rules (31 TAC, Section 357.9) for the preparation of regional water supply plans provide that the regional water planning groups "...may recommend sites of unique value for construction of reservoirs by including descriptions of the sites, reasons for the unique designation and the expected beneficiaries of the water supply to be developed at the site."

TWDB rules further specify that the following criteria be applied to determine whether a site is unique for reservoir construction:

1. site-specific reservoir development is recommended as a specific water management strategy or in an alternative long-term scenario in an adopted regional water plan; and,
2. the location, hydrologic, geologic, topographic, water availability, water quality, environmental, cultural, and current development characteristics or other pertinent factors make the site uniquely suited for:
  - a. reservoir development to provide water supply for the current planning period; or,
  - b. where it might reasonably be needed to meet needs beyond the 50-year planning period.

The reservoir sites discussed below have been considered by the Region M Planning Group.

### **8.3.1 Brownsville- Matamoros Weir and Reservoir**

An overview of the proposed Brownsville Weir and Reservoir is provided in Chapter 5 of this plan. The City of Brownsville Public Utilities Board (PUB) has acquired the required state water right permit and the federal Section 10/404 permit for this project and has obtained federal funding for engineering design and construction. Currently, the PUB is working with the U.S. and Mexican Sections of the International Boundary and Water Commission (IBWC) to develop an implementation plan for the project, including consideration of ownership, financing and operational issues. Implementation of the project will require approvals from the IBWC and Mexico. The PUB also is discussing a partnership with the City of Matamoros for the project whereby the two cities would share in the benefits of the project. There is currently no timetable set for this project.

The Brownsville Weir and Reservoir project is expected to provide approximately 20,000 acre-ft./year of additional dependable surface water supply for the City of Brownsville. This additional supply will play an important role in meeting Brownsville's projected water supply needs through the planning period. The development of the project is included as a recommended alternative water supply strategy for the City of Brownsville, and was recommended in the 2001 and 2011 Rio Grande Regional Water Plans.

### **8.3.2 Banco Morales Reservoir**

The Banco Morales Reservoir is being proposed by the Brownsville Public Utilities Board (BPUB) as a surface water development project on the Lower Rio Grande in Cameron County. This project is proposed to provide additional dependable water supply for municipal and industrial use for the City of Brownsville, by capturing and diverting "excess" flows of United States waters in the Rio Grande, as well as storing the City's existing water rights. As it stands now, the excess water is currently allowed to flow through Brownsville and into the Gulf of

Mexico. It will now have a chance to be captured and stored and pumped to future users. This Project is proposed to meet the future municipal and industrial water needs of the BPUB and the Region. Existing municipal and industrial water supply sources for BPUB cannot currently satisfy the anticipated future water needs for the region.

The Banco Morales Reservoir project is expected to provide approximately 238 acre-ft./year of additional dependable surface water supply for the City of Brownsville. The additional supply will play an important role in meeting Brownsville's projected supply needs through the planning period. The development of the project is included as a recommend water supply strategy in this round of planning.

### **8.3.3 Laredo Low Water Weir**

Laredo has been investigating the feasibility of developing a low water weir on the Rio Grande approximately 200 feet downstream of the existing La Bota site. The project as presently structured will not develop additional water supply, and is therefore not recommended as a water management strategy. The goals of the project are to improve water quality, construct a new diversion location for a new regional water treatment plant, assist with flood control, and provide hydroelectric power. Recreational amenities may also be developed. The proposed structure would be 56 feet high, which would provide a water surface elevation below the 100-year flood plain. The design and operation of the structure would not alter the normal flows of the Rio Grande. The weir would store approximately 66,007 acre-ft. of water. Laredo intends to lease water rights for the initial filling of the reservoir. The Laredo Low Water Weir project is included as a potentially feasible, considered but not recommended WMS in this plan.

### **8.3.4 Hidalgo County Drainage District Delta Watershed Project**

The Hidalgo County Drainage District has proposed construction of two reservoirs in northeastern Hidalgo County to capture tailwaters and precipitation run-off for beneficial use, discussed in detail in Chapter 5. The Santa Cruz/Lake Edinburg reservoir (425 Acres) and the proposed Delta Region Reservoir (350 Acres) are both in the Delta Watershed, which is distinct from other portions of the Nueces Rio Grande Watershed, and impact no downstream water rights. Recently established environmental flow requirements for the Nueces Rio Grande basin do not place any limitations on the drainageways that will be impacted by this strategy. These reservoirs will allow for better control and management of flows in the drainage network, and will allow for the Drainage District to treat and distribute a portion of the flows for irrigation and as a raw water source for municipal treatment and distribution. The Edinburg reservoir requires construction of a ring dike around a 10 ft. depth reservoir. The existing Panchita Control Structure and associated weir would be raised for the Delta Reservoir, which is also proposed to be 10 ft. deep.

### **8.3.5 United Irrigation District Off-Channel Reservoir**

A storage reservoir is proposed between the pump station on the Rio Grande River and the first pump station within the ID canal network which would have a 640 AF storage capacity, as opposed to the estimated 80 AF capacity that is currently available in the main canal. This would allow for general operational improvements within the district, but will also yield an estimated additional 2,000 AF of supply in a drought of record scenario without any additional water

rights. This reservoir will allow United ID to better meet the needs of Region M over the planning horizon and beyond.

### **8.3.6 Recommendations**

The Brownsville-Matamoros Weir and Reservoir has been considered a recommended alternative, based on cost, yield, and permitting concerns. The Laredo Low Water Weir may have considerable value as a flood control mechanism, but does not meet the requirements to be recommended in the plan because it does not provide an increase in supply. The Banco Morales Reservoir, Delta Watershed Project reservoirs, and the United Off-Channel Reservoir have all been recommended by the RWPG and are recommended as reservoir sites in order to ensure supplies to water users in Region M over the planning horizon.

## **8.4 Legislative Recommendations**

Texas Water Development Board rules provide that regional water plans may include “regulatory, administrative, or legislative recommendations that the regional water planning group believes are needed and desirable to facilitate the orderly development, management, and conservation of water resources and preparation for and response to drought conditions....” [31 TAC 357.7(a)(10)]

### **8.4.1 Recommendations on State Issues**

1. The RWPG recommends continued evaluation of the connection between the pumping of groundwater and its impact on surface water, specifically the impact of pumping groundwater in the Pecos and Devils River valleys on the flows into the Rio Grande. For example, current studies indicate that up to one-third of the recharge flows into Amistad Reservoir depend on flow from the Pecos and Devils river valleys and Goodenough Springs, which are shown to be sensitive to groundwater pumping.<sup>1</sup> There is not an underground water district in the affected area, which could provide a mechanism for local management of these interconnected resources. The RWPG recommends enforcement of current laws and consideration of new laws establishing rules for permitting which acknowledge the impact of groundwater development on surface water.
2. The Lower Rio Grande Valley farmers, as a result of the uncertainty of surface water delivery and the fact that most farmers do not own their own Rio Grande water rights, are limited in their ability to provide collateral for loans for on-farm conservation and improvements. This makes many of the loan programs currently available to farmers in other regions of Texas difficult for farmers in the Rio Grande Valley to access. Additionally, in many cases the types of irrigation conservation measures used in the RGV are installed underground as opposed to above ground equipment like center pivot systems used in the High Plains. Financial entities prefer the salvage value of above ground equipment for collateral as compared to underground equipment, which can mean another barrier to accessing loans. TWDB and the State of Texas should work with farmers in the Region to develop loan programs that enable on-farm water conservation specific to this Region.

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<sup>1</sup> Dr. Green, Devils and Pecos River Watershed Basin Study Proposal

3. Region M encourages collaboration between farmers in the Rio Grande Valley, local political subdivisions, and the TWDB to establish a mechanism or entity in the Rio Grande Valley to accept on farm irrigation conservation loans from the TWDB and to lend those funds to farmers for on-farm water conservation.
4. Changes in the purpose of use for water rights, as well as recent droughts make it imperative that the Rio Grande Water Availability Model is periodically updated. The current drought of record, as established by the current Rio Grande WAM, extends from 1993 through 2000, although the actual drought continued past that date and may have been exceeded since, which could significantly impact Water Availability, as the basis for planning. The State should fully fund appropriate revisions and updates to the WAM to include naturalized flows using the most current data available, allowing for a more comprehensive estimate of the drought of record.
5. The State should continue to consider the impacts of climate change in terms of Regional Water Planning and future water supplies. The US. Bureau of Reclamation's Lower Rio Grande Basin Study evaluated climate impacts on the availability, which should be considered in future planning efforts.
6. Accounting of water between the United States and Mexico pursuant to the 1944 Treaty should be consistent with the 1906 Convention, which provides that all waters measured at Fort Quitman, Texas, are 100 percent allocated to the United States.
7. The State should investigate the true impact and treaty compliance factors associated with the potential construction in Mexico of an aqueduct from Falcon Reservoir to Matamoros, Tamaulipas, Mexico.
8. The State should assist in finding new technical and financial resources to help the region combat Arundo Donax, aquatic weeds, and salt cedar and thus protect its water supplies. The Region M Planning Group encourages funding for projects aimed at eradicating Arundo Donax, aquatic weeds and salt cedar in the Rio Grande watershed and for ongoing long-term brush management activities. The USDA has studied and implemented a biological controls program with costs and quantified water savings.<sup>2</sup>
9. The State should continue providing technical and financial resources to fully develop the regional GAM. The Brackish Resources Aquifer Characterization (BRACS) 2014 report for the Lower Rio Grande Valley is an essential resource as brackish groundwater desalination continues to be one of the recommended strategies to meet future needs.<sup>3</sup>
10. The TCEQ should provide assistance to the Region M Planning Group as it reviews rules on converting water rights from one use to another and considers appropriate rule amendments, if necessary. This includes reviewing the necessity to apply the conversion factor rule if it has the effect of reducing the water volume demand on the Rio Grande making the reservoir system less efficient. In this regard it is noted that the conversion rule is an administrative rule in that it was not required in the Court adjudication in the Valley Water Suit Judgment or in the Adjudication case covering the Middle Rio Grande.

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<sup>2</sup> Goolsby, John. Biological Control of Arundo Donax; and invasive weed of the Rio Grande Basin. USDA, 2007.

<sup>3</sup> Meyer, John E. Brackish Groundwater in the Gulf Coast Aquifer, Lower Rio Grande Valley, Texas, September 2014. Texas Water Development Board.

11. The RWPG encourages entities within the region to cooperate to resolve water issues through such means as regional water and wastewater utilities. The Rio Grande Regional Water Authority, Southmost Regional Water Authority, and other entities have pursued and in some cases constructed regional projects that supply water to multiple cities.
12. The formation of groundwater conservation districts should be encouraged as a means to protect groundwater supplies, which are increasingly being tapped as a new water supply for municipal, industrial, and mining use. As the aquifers in Region M are more extensively developed, the impact of pumping has started to be seen in spring flows and drawdown. Region M supports new and expanded groundwater districts to protect the regional groundwater resources, and recommends that the State provide continued technical assistance regarding formation, structure, and technical basis for GCDs to operate meaningfully.
13. The State should appropriate sufficient funds to the Texas Railroad Commission to allow for capping abandoned oil and gas wells that threaten groundwater supplies.
14. The Texas Legislature should provide technical and financial assistance to implement water management strategies identified in the regional water plans, including the development and implementation of Advanced Water Conservation measures with statewide public outreach and education.
15. Educational programs for farmers, Irrigation District Boards of Directors, and Irrigation District employees are recommended and should be supported by the TWDB, TCEQ, and the universities in Texas.
16. The Rio Grande Center for Ag Water Efficiency (Texas AWE) flow meter demonstration and calibration facility is intended to be available as an educational and testing and calibration resource for Districts looking to implement or expand their metering programs. Continued funding and expanded use of these facilities is recommended by the Region M Planning Group.
17. Continued evaluation of Irrigation District infrastructure is recommended, including the work that has been done by Texas A&M University through the Texas Water Resources Institute and the Irrigation District Engineering and Assistance Program (IDEA). This program has assisted districts in mapping and evaluating the current state of their conveyance systems and rates of urbanization. These measures can assist districts in prioritizing improvements so that the greatest gains are made with the least cost.

#### **8.4.2 Recommendations on National and International Issues**

18. The State of Texas and the U.S. Congress as well as the International Boundary and Water Commission (IBWC) should renew efforts to ensure that Mexico complies with Minute 309 and set in place means to achieve full compliance with the 1944 Treaty, including enforcement of Minute 234, which addresses the actions required of Mexico to completely eliminate water delivery deficits within specified treaty cycles. Water saved in irrigation conservation projects in Mexico should be dedicated to ensure deliveries to the Rio Grande pursuant to the 1944 Treaty under Article 4B(c) and Minute No. 234. Mexico should plan in advance to meet the requirements of the 1944 Treaty. An important step would be for Mexico officially recognize the U.S. as a water user and allocate water to the U.S. as part of their annual water allocation process.

19. The United States and Mexico should reinforce the powers and duties of both Sections of the IBWC pursuant to Article 24(c) which provides, among other things, for the enforcement of the Treaty and other Agreement provisions that "... each Commissioner shall invoke when necessary the jurisdiction of the Courts or other appropriate agencies of his Country to aid in the execution and enforcement of these powers and duties."
20. Projects funded by national and international agencies to modernize and improve the facilities of irrigation districts in the Rio Grande Basin should be supported and given priority. In particular, both countries should support continued grant funding for conservation projects.
21. The conservation irrigation projects are authorized through the Bureau of Reclamation for improvement to the irrigation systems of irrigation districts in the Rio Grande Basin in the United States should be supported and the U. S. Congress should be encouraged to appropriate money to pay for approved projects.
22. For purposes of clarity, the IBWC should approve a Minute setting out the definition of "extraordinary drought" as that term is implicitly defined in the second subparagraph of Article 4B(d) as an event which makes it difficult for Mexico "... to make available the *run-off* of 350,000 acre-ft. (431,721,000 cubic meters) annually." A drought condition occurs when there is less than 1,050,000 acre-ft. annually of *run-off waters* in the watersheds of the named Mexican tributaries in the 1944 Treaty, measured as water enters the Rio Grande from the named tributaries, of which the U. S. 1/3 share is 350,000 acre-ft. For better water management in the Lower Reach of the Rio Grande, downstream of Anzalduas Dam, both countries should reaffirm operational policies that Mexico continue to take its share of waters through the Anzalduas canal diversion at the Anzalduas Dam or account for its water at that point, including any diversions by Mexico from the proposed Brownsville Weir Project storage, to the extent of its participation in the project and at other points of diversion by Mexico users downstream of Anzalduas Dam.
23. IBWC should convene a binational meeting of water planners and water use stakeholders in both countries within six months following completion of the annual water accounting in which an annual deficit in flows from the named Mexican tributaries in the 1944 Treaty occurs. This meeting would be designed to share data and information useful in planning for water needs and contingencies in the intermediate future.
24. IBWC should restore the Rio Grande below Fort Quitman, Texas.
25. The IBWC should assume all local and regional financial responsibility for upkeep and maintenance of El Morillo Drain.
26. IBWC should coordinate bilateral efforts to review and evaluate existing sources of data regarding groundwater development in both countries in the Rio Grande Basin below Fort Quitman to the Gulf of Mexico. This effort should be focused on the potential impact on surface water supply in the Rio Grande watershed, with the goal of pursuing such actions as may be necessary to evaluate present conditions and promote programs protecting the historical surface water supply in affected regions.

27. Regional watershed planning should be encouraged on both sides of the Rio Grande throughout the basin, including efforts to promote binational coordination of long-range water plans.
28. Interstate compacts between affected states in Mexico, similar to the Rio Grande Compact and Pecos River Compact between affected states in the United States, which deal with apportionment of available water supply from the Rio Grande and its tributaries to each state consistent with existing domestic and international law should be encouraged.
29. U. S. Congressional legislation requires the U. S. State Department to report to Congress periodically on status of Mexico's deliveries of water to the Rio Grande for U. S. use and Region M supports the continuation of this effort.
30. The Region M Planning Group encourages funding for projects aimed at eradicating Arundo Donax, salt cedar, and aquatic weeds in the Rio Grande watershed and for ongoing long-term brush management activities. These activities are not constrained to the state or national boundaries, and would benefit from widespread support.

### **8.4.3 Issues Identified in Previous Planning Cycles**

In the second round of regional water planning, the TWDB emphasized “input from RWPGs for the policy portion of the 2011 State Water Plan” (Memo from William Mullican, then Deputy Executive Administrator, Office of Planning, July 2, 2003). The Board disseminated an “Initial List of Policy Topics” as a catalyst for discussion among the planning groups. In September 2003, Rio Grande Regional Water Planning Group members ranked each issue on the list as to level of importance in the region's water planning efforts (“not at all important,” “somewhat important,” “important,” and “extremely important”).

The policy issues receiving top rankings from Region M Planning Group members fell into four major categories:

- A. International compliance with the 1944 Treaty
- B. Competing Water Demands Between Agricultural & Municipal Interests
  - sustainable growth, including impacts of growth
  - assessment of the current water resources regulatory system to meet water management needs of the 21<sup>st</sup> century
  - impacts on water supply and quality resulting from conversion of agricultural lands to urban lands
  - protecting agricultural and rural water supplies, considering economic constraints and competing purposes
  - conservation of agricultural water for additional agricultural use, urban use or for environmental purposes
- C. Alternative Water Supply/Water Quality
  - integrating water quality and water supply considerations
  - watershed planning/source water protection
  - sustainability and groundwater management
- D. Technical & Financial Resources

- state participation
- potential funding sources for water supply
- retail customer water pricing
- incentives for planning implementation
- improving groundwater availability data
- education

The Region M Planning Group also approved a resolution encouraging the formation of groundwater conservation districts and greater oversight by of sales of groundwater produced from State-owned lands. The group also approved motions supporting the following:

- capping abandoned oil and gas wells
- improving the stretch of the Rio Grande known as the “Forgotten River”, which has a significant amount of salt cedar without defined bed and banks. The water flowing downstream in this area, which could be put to beneficial use downstream, is spread over large area and experiences high losses.
- identifying and eradicating growing stands of salt cedar
- continue efforts to control and manage *Arundo Donax*
- supporting Valley Water Summits

The Region M Planning Group continues to believe that these issues are tightly interconnected and that they cannot be effectively evaluated, much less resolved, in a vacuum.

Many of the issues and needs of the region arise from the fact that the Rio Grande is an international river whose waters are shared by the U.S. and Mexico. No other regional water planning area faces this reality. Water right holders in Texas lack any ready recourse to compel Mexico to observe the 1944 Treaty that apportions inflows between the countries. In addition, international protocols impact efforts to address water quality and resolve problems created by aquatic weeds, such as hydrilla and water hyacinth, and other invasive species, including salt cedar.

Currently, Mexico is in a deficit in the current five (5) year cycle under the 1944 Treaty, and there are no enforcement mechanisms for preventing similar situations in the future.

Because of the unique way in which water rights are prioritized along the Rio Grande, the Mexican water debt has first and foremost directly impacted agricultural interests. However, repercussions from the debt also have affected municipal and industrial users. With the few exceptions of the Brownsville Public Utilities Board, Laguna Madre Water District (serving Port Isabel, South Padre Island and Laguna Vista) and the City of Laredo, municipal users of surface water depend on irrigation districts to pump and convey water supplies to their treatment plants. When irrigation flows are curtailed, municipalities must either find new ways to push raw water or turn to alternative sources.

Brackish groundwater resources have become a viable alternative for municipal suppliers including those located at a significant distance from the Rio Grande. Improvements in technology, coupled with the cost of surface water rights, are making groundwater desalination an economical and reliable option. However, limited research has been conducted on the quality

and quantity of groundwater supplies in the region. Furthermore, groundwater in certain parts of the region is threatened by abandoned uncapped oil and gas wells.

Irrigation districts also are looking to new technology and improved processes to minimize conveyance and evaporation losses attributable to an aging and outdated infrastructure. Districts do not have ready access to low-cost loans that are readily available to municipal suppliers. Several districts have secured funding from the North American Development Bank and the U.S. Bureau of Reclamation, but others cannot meet the local match requirements. The Water Conservation Investment Fund from the North American Development Bank is no longer available, and mechanisms for funding are in need of development.

The water debt has created both challenges and opportunities for municipal and irrigation users to work together. The Region M Planning Group has supported initiatives such as the Valley Water Summits that bring different interests together to share problems and jointly create solutions.

The Watermaster Advisory Committee (WAC) also has proven to be an effective forum for addressing issues. Subsequent to the first planning cycle, the committee developed a rule change that freed up water in storage for irrigation use with no detriment to municipal supplies. Operations of the Rio Grande Watermaster are paid entirely by fees levied on water right holders. However, appropriations to the Watermaster are capped at a level that is significantly lower than revenues. This limits the ability of the office to provide services to meet changing needs, such as maintaining and updating the Rio Grande Water Availability Model.

Particular attention should be directed to rules pertaining to water rights. Currently, when the intended use of irrigation water rights is changed to municipal and industrial use, a conversion factor provided in 30 TAC § 303.43 is applied so that the municipal use after conversion will receive a “definite quantity of water in acre-ft. per annum.” This rule is consistent with the treatment of certain municipal, industrial and domestic allocations approved in the Final Judgment of the Valley Water Suit, which provided for a reserve of 60,000 acre-ft./year to be held for domestic use and use by cities to support these allocations. Through a conversion rule adopted by the then Texas Water Rights Commission on July 2, 1986 that followed the conclusion of the Middle Rio Grande Adjudication the reserve has been increased to 225,000 acre-ft./yr. Information developed through the WAM and as part of the Regional Planning process would indicate that this practice should be reviewed with respect to long term water management practices on the Lower and Middle Rio Grande downstream from Amistad Reservoir. Additional studies are required to analyze the long term impact of reducing authorized municipal and industrial reserves on two fronts: (1) providing a defined entitlement and (2) promoting water conservation in both Amistad and Falcon Reservoirs.

Environmental flows also have been critically impacted by the water debt and over-reliance on surface water supplies. During the second round of regional planning, the Rio Grande actually ceased flowing into the Gulf of Mexico.

Finally, international attention also could enhance water quality as well as safety. Lower valley water interests have been responsible for a significant portion of the construction and upkeep of El Morillo Drain, built in 1969 to divert salty water from the Rio Grande. Currently, The International Boundary and Water Commission has assumed complete responsibility for the U.S. share of the upkeep, including maintenance of levees. The Rio Grande Regional Water Planning Group supports this move.