

**NOTICE OF OPEN MEETING OF THE
SOUTH CENTRAL TEXAS REGIONAL
WATER PLANNING GROUP**

TAKE NOTICE that a meeting of the South Central Texas Regional Water Planning Group as established by the Texas Water Development Board will be held on Thursday, February 2, 2017, at 9:30 a.m. at San Antonio Water System (SAWS), Customer Service Building, Room CR 145, 2800 US Highway 281 North, San Antonio, Bexar County, Texas. The following subjects will be considered for discussion and/or action at said meeting.

1. Public Comment
2. Election of Officers
3. Approval of the Minutes from the November, 2016, Meeting of the South Central Texas Regional Water Planning Group (Region L)
4. Status of Edwards Aquifer Habitat Conservation Plan (HCP) – Nathan Pence, Executive Director EAHCP
5. Status of Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays Basin and Bay Stakeholder Committee (BBASC) and Expert Science Team (BBEST)
6. Texas Water Development Board (TWDB) Communications
 - a. Goldwater Project Presentation on a Uniform Methodology for Measuring Conservation Across Regions
 - b. TWDB Rules Presentation
7. Chair's Report
 - a. 85th Legislative Report
8. 2021 Plan Enhancement Process: Recap of Guiding Principles Previously Discussed and Adopted
9. Discussion and Appropriate Action Adopting Guiding Principles on the Following Issues Identified Through the 2021 Plan Enhancement Process
 - a. The Adequacy of Evaluating the Plan's Effects on Freshwater Inflows to the San Antonio Bay; and The Adequacy of Environmental Assessments of Individual WMS's
 - b. Creation of an Environmental Assessment Workgroup
10. Discussion and Appropriate Action Regarding the Following Components of the 2021 Plan Enhancement Process
 - a. How Water Management Strategies are categorized; e.g. Recommended, Alternate, Needing Further Study.

- b. Establishing Minimum standards for Water Management Strategies included in the Plan.
 - c. Maintaining management supplies while avoiding "over planning".
- 11. Discussion and Appropriate Action Regarding Consultant's Work and Schedule
 - a. Texas Water Development Board's Draft Population and Water Demand Projections for Municipal and Mining
- 12. Commercial Scale Rainwater Harvesting Presentation from Region K Chair—John Burke
- 13. Possible Agenda Items for the Next Region L Meeting
 - a. Adoption of Guiding Principles
 - b. Discussion on the Following Components of the 2021 Plan Enhancement Process: 1) Identifying special studies or evaluations deemed important to enhance the 2021 Plan and identification of outside funding sources; 2) Address the role of reuse within the regional water plan; and 3) The extent to which innovative strategies should be used.
 - c. TWDB Planning 101 Presentation
- 14. Public Comment

1. Public Comment

2. Election of Officers

Current Officers	
Chair	Suzanne Scott, River Authorities
Vice-chair	Tim Andruss, Water Districts
Secretary	Gary Middleton, Municipalities
At-Large	Kevin Janak, Electric Generating Utilities
At-Large	Adam Yablonski, Agriculture

designated alternate for a voting member who serves as an officer shall not be allowed to serve in the capacity as an officer in the member's absence.

Because it is important in achieving consensus for all members to participate actively, keep up-to-date on the progress of the group, and develop a common base of information, members shall in good faith attempt to minimize the number of time they are absent from meetings or are represented by their designated alternates.

The Administrative Officer shall maintain a current list of all members and their designated alternates.

ARTICLE VIII OFFICERS

Section 1 Officers; Restrictions and Terms of Office

Voting members of the South Central Texas RWPG shall elect from the voting membership a Chair, Vice-Chair and Secretary to serve as officers. Each officer shall serve a term of one calendar year. Except as provided under Section 4 of this Article, an officer shall serve a term of one calendar year. Except as provided under Section 4 of this Article, an officer shall serve until his/her successor takes office. No two voting members representing the same interest shall serve as officers at the same time. Elections shall be held annually, with no restrictions on the number of consecutive terms an individual may serve as an officer other than those that apply because of his/her status as a voting member under these Bylaws.

Section 2 Selection

Officers shall be elected at the first meeting of each calendar year. Nominations shall be made from the floor by voting members. The voting members shall elect officers from among the nominees by consensus or by affirmative vote of a majority of the voting membership.

Section 3 Removal of Officers

Any officer may be removed from office for any of the grounds for removal of voting members set forth under Article V of these Bylaws, or for repeated failure to carry out the duties of the office, by a consensus or by majority vote of the voting membership. Removal of an officer shall be set as an agenda item at the next scheduled meeting upon written request signed by five voting members to the Chair or Secretary. The Chair or Secretary receiving the request shall notify the officer in writing that he/she shall be subject to a removal action at the next scheduled meeting. At that meeting, the officer subject to the possible removal action may present evidence of why he/she should not be removed. If the Chair is the subject of the possible removal action, The Vice-Chair shall preside over the meeting during the agenda item concerning the Chair's removal. The officer subject to the removal action shall not participate in any way in the removal decision, nor shall his/her membership count as part of the total membership for purposes of calculating the vote. The notice of the meeting shall be posted in accordance with the Open Meetings Act and shall state that the issue of possibly removing the officer will be on the agenda. Any vacancy caused by the removal shall be filled as provided under Section 4 of this Article.

Section 4 Vacancies of Officers

Whenever an officer vacancy exists, the vacancy shall be filled at the next properly noticed South Central Texas RWPG meeting. Nominations shall be made from the floor by voting members. The voting members shall elect a replacement officer from among the nominees by consensus or by affirmative vote of a majority of the voting membership. The next highest-ranking officer shall serve in the vacant position until a successor takes office, unless the office of the Secretary becomes vacant, in which case the Chair shall appoint a willing voting member to serve as Secretary until the successor to the Secretary takes office. The person selected to fill a vacancy for an officer shall serve for the unexpired term of his/her predecessor in office.

Section 5 Duties of Each Officer

- (a) Chair: The Chair shall be the executive officer of the South Central Texas RWPG. The Chair will preside at all meetings of the South Central Texas RWPG and perform all duties provided by these Bylaws. The Chair may establish and appoint such committees as may be necessary or desirable to assist in conducting the business of the South Central Texas RWPG, or as may be directed by the South Central Texas RWPG. If the Chair is unable to carry out his/her duties, the Vice-Chair shall assume the duties of the Chair.
- (b) Vice-Chair: The Vice-Chair shall assist the Chair in the discharge of his/her duties and, in the absence of the Chair, shall assume the Chair's full responsibilities and duties. In the event the Chair is unable to carry out his/her duties, the Vice-Chair shall serve as Chair until the South Central Texas RWPG elects a new Chair under Section 4 of this Article. The Vice-Chair shall perform other duties as assigned by the Chair or these Bylaws.
- (c) Secretary: The Secretary or the Administrative Officer shall maintain the minutes and take attendance of the South Central Texas RWPG meetings. The minutes and attendance shall be kept as part of the South Central Texas RWPG official records. The Secretary, or the Administrative Officer, shall ensure that all notices are properly posted as provided in the Bylaws, as required by law and as required by the Texas Open Meetings Act. The Secretary shall perform other duties as assigned by the Chair or these Bylaws. If both the Chair and Vice-Chair are unable to carry out the duties of the Chair, the Secretary shall assume the duties of the Chair.

Section 6 Executive Committee

The Executive Committee shall be composed of five South Central Texas RWPG members, including the Chair, Vice-Chair, Secretary and two members-at-large. No two voting members representing the same interest shall serve as members of the Executive Committee at the same time. The two members-at-large shall be elected annually in the same manner and with the same terms as set forth for the election of officers under this Article. Members-at-large shall be removed and their vacancies filled in the manner prescribed for officers under this Article.

The Executive Committee shall be responsible for carrying out the duties imposed on it in these Bylaws. The voting members of the South Central Texas RWPG may delegate any administrative decisions to the Executive Committee unless provided otherwise in these Bylaws.

All meetings of the Executive Committee shall comply with the provisions related to meetings generally as set forth in Article IX of these Bylaws.

ARTICLE IX

MEETINGS

Section 1 Open Meetings and Notice

3. Approval of the Minutes from the November, 2016, Meeting of the South Central Texas Regional Water Planning Group (Region L)

**Minutes of the
South Central Texas Regional Water Planning Group
November 3, 2016**

Chairwoman Suzanne Scott called the meeting to order at 9:30 a.m. in the San Antonio Water System's (SAWS) Customer Service Building, Room CR 145, 2800 US Highway 281 North, San Antonio, Bexar County, Texas.

30 of the 30 voting members, or their alternates, were present.

Voting Members Present:

Tim Andruss	Con Mims
Gene Camargo	Kevin Patteson
Rey Chavez	Iliana Pena
Will Conley	Robert Puente
Don Dietzmann	Steve Ramsey
Charlie Flatten	Weldon Riggs
Art Dohman	David Roberts
Blair Fitzsimons	Roland Ruiz
Vic Hilderbran	Dianne Savage
Kenneth Eller for Kevin Janak	Suzanne Scott
Jay Troell for Russell Labus	Greg Sengelmann
John Kight	John Clack for Thomas Taggart
Glenn Lord	Dianne Wassenich
Doug McGooky	Adam Yablonski
Dan Meyer	
Gary Middleton	

Voting Members Absent

None

Non-Voting Members Present:

Ron Ellis, Texas Water Development Board (TWDB)
Marty Kelley, Texas Department of Parks and Wildlife
Ronald Fieseler, Region K Liaison
Don McGhee, Region M Liaison

Non-Voting Members Absent:

Dan Hunter, Texas Department of Agriculture
Charles Wiedenfeld, Region J Liaison

Beginning with the February 11, 2016, meeting of the South Central Texas Regional Water Planning Group, all recordings are available for the public at www.regionaltexas.org.

All PowerPoint presentations and meeting materials referenced in the minutes are available in the meeting Agenda Packet at www.regionaltexas.org.

AGENDA ITEM NO. 1: PUBLIC COMMENT

Allen Montemayor, representing the Sierra Club, made comments about the Vista Ridge Pipeline, specifically that the pipeline reflects the California model of water planning that will cause unsupported growth in the region, and warned against the environmental impacts of the project.

Meredith McGuire spoke to the Planning Group about maximizing the use of rainwater. Dr. McGuire referenced a video she would share with group during the lunch break. A link to that video can be found here: <https://www.treepeople.org/about/policy>.

AGENDA ITEM NO. 2: APPROVAL OF THE MINUTES FROM THE AUGUST 4, 2016, MEETING OF THE SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP (SCTRWPG)

Dianne Wassenich made a motion to approve the minutes from August 4, 2016, meeting of the SCTRWP. Rey Chavez seconded the motion. There were no objections. The motion passed by consensus

AGENDA ITEM NO. 3: SELECTION OF REPRESENTATIVE TO FILL COUNTIES VACANCY ON SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP (SCTRWP)

Chairwoman Scott presented the SCTRWP Executive Committee's recommendations to the Planning Group to fill the Counties vacancy, which was postponed from the August 4, 2016, meeting to the November 3, 2016 meeting (*see* .August 4, 2016 Minutes). Chairwoman Scott informed the group that the Executive Committee recommended all nominees be considered by the full Planning Group to fill the Counties vacancy.

In total, four individuals were nominated to fill the Counties representative position: Thomas Jungman, Alan Cockrell, Curt Campbell, and Goliad County Judge Pat Calhoun. Each nominee gave remarks on their background and qualifications.

The Planning Group voted by ballot with all four nominees as options. A majority of 16 votes is necessary to be selected by the Planning Group. After one round of voting, the Planning Group selected Judge Pat Calhoun to fill the Counties representative vacancy.

Chairwoman Scott expressed gratitude on behalf of the Planning Group to John Kight, who had retired from his Counties seat, for his many years of service on the Planning Group.

AGENDA ITEM NO. 4: STATUS OF EDWARDS AQUIFER HABITAT CONSERVATION PLAN (HCP) – NATHAN PENCE, EXECUTIVE DIRECTOR EAHCP

Chairwoman Scott gave a brief recap of the recently held tour at the San Marcos Springs for Planning Group members. Several comments were made, and thanks was expressed to the Edwards Aquifer Authority for organizing the tour.

AGENDA ITEM NO. 5: STATUS OF GUADALUPE, SAN ANTONIO, MISSION, AND ARANSAS RIVERS AND MISSION, COPANO, ARANSAS, AND SAN ANTONIO BAYS BASIN AND BAY STAKEHOLDER COMMITTEE (BBASC) AND EXPERT SCIENCE TEAM (BBEST)

Chairwoman Scott told the Planning Group that the BBASC recently met and decided to focus on the membership of the BBASC. The BBASC has asked current members to either re-up their commitment to the stakeholder group, or vacate their seat. Once any transitions are in place, the BBASC will convene to refresh its focus on environmental flow standards.

AGENDA ITEM NO. 6: TEXAS WATER DEVELOPMENT BOARD (TWDB) COMMUNICATIONS

Ron Ellis provided some updates regarding recent TWDB actions. Notably, the TWDB would be considering amendments to the new chapter 357 rule changes on November 17, 2016. Once adopted, the rules would be effective early December 2016. Additionally, TWDB was working on updating the guidance document to reflect rule changes. Mr. Ellis also informed the Planning Group that the TWDB would be holding a planning session on the afternoon of November 17, to discuss the various approaches to planning across the state, including bylaws, the filling of vacancies, interest group representation, the total number of members on each Planning Group, decision making, and meeting frequency, among other things.

Additionally, Mr. Ellis informed the Planning Group that the TWDB would be posting a Request for Applications (RFA) to distribute the remainder of funds for the Fifth Planning Cycle. Mr. Ellis described the RFA process and the schedule, noting that more information would be forthcoming to the Planning Group Chair and Administrator. He also noted that Agenda Item 13 of this meeting would authorize the San Antonio River Authority to provide public notice and respond to the RFA by submitting a grant application on behalf of the Planning Group, and to negotiate and execute the respective amendment to the Planning Group's contract with the TWDB.

Mr. Ellis also informed the Planning Group that TWDB was putting together a Water Planning 101 training for members, which would be placed on the February 2017 meeting agenda. Mr. Ellis also added that the methodology review for projecting demands had been completed, and would be distributed to the Planning Group shortly.

AGENDA ITEM NO. 7: CHAIR'S REPORT

Chairwoman Scott noted that the Administrator sent a memo concerning the structural and operational aspects of the SCTRWPG as public comment, which was requested by the TWDB on October 27, 2016. Chairwoman Scott also noted that she would be attending the November 17, planning session at the TWDB.

AGENDA ITEM NO. 8: 2021 PLAN ENHANCEMENT PROCESS: RECAP OF GUIDING PRINCIPLES PREVIOUSLY DISCUSSED AND ADOPTED

Cole Ruiz, San Antonio River Authority, reviewed the previously approved Guiding Principles, and highlighted some changes made to the 2021 Plan Enhancement Schedule. This item will be a standing item for as long as the 2021 Plan Enhancement Process is ongoing.

AGENDA ITEM NO. 9: DISCUSSION AND APPROPRIATE ACTION ADOPTING GUIDING PRINCIPLES ON THE FOLLOWING ISSUES IDENTIFIED THROUGH THE 2021 PLAN ENHANCEMENT PROCESS

Chairwoman Scott briefed the Planning Group on the Executive Committee's recommendations following the August 4, 2016, SCTRWPG meeting discussion on the following components of the 2021 Plan Enhancement Process: 1) the role of regional water planning groups in influencing water development plans of water suppliers, and 2) the role of regional water planning groups in influencing permitting entities.

Chairwoman Scott asked for discussion or a motion to approve the first guiding principle addressing the role of regional water planning groups in influencing water development plans of water suppliers.

After some consideration and discussion, the Planning Group settled on the following language as a guiding principle regarding the role of regional water planning groups in influencing water development plans of water suppliers:

The role of the SCTRWPG is to ensure water needs are met with identified potentially feasible water management strategies. It is not the role of the SCTRWPG to influence or interfere with local water planning decisions. In the absence of a planning group recommended potentially feasible water management strategy to meet an identified need, the SCTRWPG may evaluate and report, as required, the social, environmental and economic impacts of not meeting the identified need.

Roland Ruiz made a motion to adopt the guiding principle. Glenn Lord seconded the motion. There were no objections. The motion passed by consensus.

Chairwoman Scott asked for discussion or a motion to approve the second guiding principle addressing the role of regional water planning groups in influencing permitting entities.

After some consideration and discussion, the Planning Group settled on the following language as a guiding principle regarding the role of regional water planning groups in influencing permitting entities.

Decisions made at the planning group level are non-regulatory, and are intended for planning purposes only. While some decisions made by the SCTRWPG could inevitably affect some decisions made by the governing boards of permitting entities, it is neither the responsibility, nor the role of the SCTRWPG to influence or interfere with the regulatory decisions made by the governing boards of permitting entities.

Pat Calhoun made a motion to adopt the guiding principle. Gary Middleton seconded the motion. There were no objections. The motion passed by consensus.

AGENDA ITEM NO. 10: DISCUSSION AND APPROPRIATE ACTION REGARDING THE FOLLOWING COMPONENTS OF THE 2021 PLAN ENHANCEMENT PROCESS

**a. THE ADEQUACY OF EVALUATING THE PLAN'S EFFECTS ON
FRESHWATER INFLOWS TO THE SAN ANTONIO BAY**

Brian Perkins, Black & Veatch, provided a summary of how the Planning Group has historically evaluated the regional water plan's impacts on fresh water inflows to the San Antonio Bay. Dianne Wassenich reminded the Planning Group that the source for addressing the topics identified in the 2021 Plan Enhancement Process grew from the public comments received after the adoption of the 2016 Initially Prepared Plan.

Mr. Perkins told that group that such an evaluation has not been conducted for every water management strategy in the plan. Rather, in Chapter 6 of the Plan, which details the Plan's impacts on the natural resources of the region, the Planning Group develops a diagram that demonstrates the cumulative effects of the Plan. The cumulative effects analysis assumes that all recommended strategies are being implemented by 2070 (the 50 year period set by TWDB for planning purposes) with consideration for drought conditions. Chapter 6 seeks to demonstrate the effects of such conditions on the natural resources of Region L. Mr. Perkins described the process conducted by the Planning Group consultants in detail, noting that the Plan provides a quantitative measure without a whole lot of description. Mr. Perkins provided that, of all the planning groups, the SCTRWPG goes beyond all in terms of reporting the cumulative effects of the Plan.

Ron Ellis, TWDB, informed the planning group of what TWDB requires of planning groups in terms of reporting the impacts of the plan on freshwater inflows to the San Antonio Bay. TWDB requires planning groups to evaluate and provide a quantitative reporting of how strategies could impact environmental and cultural resources including impacts to environmental water needs, wildlife habitats, cultural resources, and the effects of upstream development on the bays, estuaries, and arms of the Gulf of Mexico. Additionally, planning groups shall develop and document an overall methodology for evaluating impacts. However, regarding environmental flows, and incorporating appropriate limitations on strategies' yields, planning groups must follow TCEQ environmental flows standards and associated rules; and in the absence of these flow standards, use TWDB methodologies—found in Texas Administrative Code §357.34. Mr. Ellis also touched on the TWDB requirement that shows the impact on agriculture resources, and the TWDB requirements under section 357.35, which defers to the processes described herein and in section 357.34 (*see* TEX. ADMIN. CODE §357.34 and §357.35). Mr. Ellis then pointed to section 357.40, which requires planning groups to include a description of the impacts of the Plan on agriculture resources, other water resources of the state including other strategies and groundwater and surface water interrelationships, threats to agricultural or natural resources, third-party social and economic impacts resulting from voluntary redistributions of water and major impacts of recommended strategies on water quality (*see* TEX. ADMIN. CODE §357.40). Mr. Ellis also read section 357.41, which states: "RWPGs shall describe how RWPs are consistent with the long-term protection of the state's water resources, agricultural resources, and natural resources as embodied in the guidance principles. . ." (*see* TEX. ADMIN. CODE §357.41).

Con Mims pointed out that, by virtue of TWDB accepting it, the 2016 Plan adequately described Plan's impact on environmental flows. Thus, the question then becomes one of how much further, beyond that described in the 2016 Plan, should the Planning Group go in terms of describing the Plan's impacts on freshwater inflows to the San Antonio Bay. Brian Perkins reminded the group that there are budget ramifications for shifting focus to go beyond that which TWDB requires for going beyond that described herein.

After much discussion, Con Mims offered up the following potential language for the guiding principle:

The SCTRWPG evaluation of its plan's effects on the freshwater inflows to the San Antonio Bay can be improved. It is the SCTRWPG's intent to improve its evaluation by identifying what improvements are desired, and to implement those improvements to the extent funds are available.

The discussion then lead to a suggestion from several members that upon adoption of the proposed guiding principle, the Planning Group would create a workgroup to identify potential improvements to its evaluation of the Plan's effects on freshwater inflows to the San Antonio Bay.

The Planning Group generally agreed that Mr. Mim's proposed guiding principle is a good base for adopting formal guiding principle language on this topic at the February 2017, meeting.

The Planning Group recessed for lunch.

b. THE ADEQUACY OF ENVIRONMENTAL ASSESSMENTS OF INDIVIDUAL WATER MANAGEMENT STRATEGIES

After lunch, Tim Andruss, Vice-Chair, reconvened the meeting in the absence of Chairwoman Scott. A quorum was maintained throughout the meeting.

Ron Ellis related to the Planning Group, TWDB's requirements with regard to the environmental assessments of individual strategies. Mr. Ellis re-visited section 357.34 of the Texas Admin Code, noting the requirement to evaluate and provide a quantitative reporting of how strategies could impact environmental and cultural resources including impacts to environmental water needs, wildlife habitats, cultural resources, and the effects of upstream development on the bays, estuaries, and arms of the Gulf of Mexico. Mr. Ellis then added that the TWDB requires a description of each threat to agricultural or natural resources, and how the threat would be addressed or affected by the water management strategies. The strategies that are selected should be environmentally sensitive, unless the Planning Group provides sufficient reason for why environmental sensitivity is not appropriate. . All strategies should be consistent with the long term protection of the State's natural resources and water resources.

Brian Perkins reviewed the current process used to describe the environmental impacts of each water management strategy within the context of each water management strategy evaluation, noting that the current process is more than TWDB requires, but not necessarily more than the Planning Group could choose to do.

After much discussion, Con Mims offered up his previous language, with addition of "and of its environmental assessments of individual water management strategies," so that the guiding principles for both components of the 2021 Plan Enhancement Process being considered under this agenda item (10) to read as follows:

The SCTRWPG evaluation of its plan's effects on the freshwater inflows to the San Antonio Bay, and of its environmental assessments of individual water

management strategies can be improved. It is the SCTRWPG's intent to improve its evaluation by identifying what improvements are desired, and to implement those improvements to the extent funds are available.

The Planning Group generally agreed that Mr. Mim's proposed guiding principle is a good base for adopting formal guiding principle language on this topic at the February 2017, meeting. In such instance, Mr. Mims clarified that the principle would be overarching for both components (evaluation of the plan's 1) effects on the freshwater inflows to the San Antonio Bay, and 2) of its environmental assessments of individual water management strategies). Similarly, a workgroup would be created at the February 2017, meeting to discuss and identify potential improvement opportunities for the fifth cycle of planning.

AGENDA ITEM NO. 11: DISCUSSION AND APPROPRIATE ACTION SETTING THE SCTRWPG MEETING SCHEDULE FOR CALENDAR YEAR 2016

Cole Ruiz, San Antonio River Authority, presented the Planning Group with the proposed schedule for Calendar Year 2017 SCTRWPG meetings. The meetings would follow tradition, occurring once a quarter on the first Thursday of February, May, August, and November 2017. The proposed schedule was as follows:

- February 2, 2017
- May 4, 2017
- August 3, 2017
- November 2, 2017

Dianne Wassenich motioned to approve the proposed calendar schedule for 2017. Gary Middleton seconded the motion. There were no objections. The motion passed by consensus.

AGENDA ITEM NO. 12: TEXAS A&M INSTITUTE FOR RENEWABLE NATURAL RESOURCES LAND TRENDS/ WATER RESOURCES STUDY PRESENTATION (ROEL LOPEZ)

Dr. Roel Lopez, Texas A&M Institute for Renewable Natural Resources, gave an overview of current trends and changes with regard to land use and population within Region L. The full recording and relevant slide to Dr. Roel's presentation are available on the Region L website at www.regionltexas.org.

AGENDA ITEM NO. 13: DISCUSSION AND APPROPRIATE ACTION AUTHORIZING THE SAN ANTONIO RIVER AUTHORITY TO PROVIDE PUBLIC NOTICE AND SUBMIT A GRANT APPLICATION TO THE TWDB ON BEHALF OF THE SCTRWPG FOR FUNDING TO COMPLETE THE FIFTH CYCLE OF REGIONAL WATER PLANNING, AND TO NEGOTIATE AND EXECUTE THE AMENDMENT TO THE TWDB CONTRACT

Con Mims made a motion to authorize the San Antonio River Authority to provide public notice and to submit a grant application to the TWDB on behalf of the SCTRWPG for funding to complete the fifth cycle of regional water planning, and to negotiate and execute the amendment to the TWDB contract.

Art Dohman seconded the motion. There were no objections. The motion passed by consensus.

AGENDA ITEM NO. 14: DISCUSSION AND APPROPRIATE ACTION REGARDING CONSULTANT'S WORK AND SCHEDULE

Brian Perkins briefly reviewed the consultants schedule for the fifth cycle of regional water planning.

Mr. Perkins then informed the group that TWDB had provided a list of public water suppliers, as well as a list of facilities and investor-owned utilities that may be considered for "water user group" status for the fifth cycle of water planning. Mr. Perkins told the Planning Group that Black & Veatch reached out to those facilities and investor-owned utilities to ask whether they wished to be included as a water user group for the fifth cycle. Of the investor-owned utilities contacted, four responded affirmatively, including Air Force Village, Aqua Texas, Canyon Lake Water Service Utility, and Kendall West Utility Co. The other investor-owned utilities either did not respond, or responded that they did not wish to be included. Those utilities' populations will be accounted for in the "county other" category. Regarding the utilities, Texas State University wished to be included as a water user group for the fifth cycle. Joint Base San Antonio failed to respond, and will likewise be included in "county other" or as part of SAWS' water user group.

AGENDA ITEM NO. 15: ADMINISTRATOR UPDATE ON INTERLOCAL AGREEMENT FOR FUNDING SCTRWPG ADMINISTRATIVE COSTS FOR THE FIFTH CYCLE OF REGIONAL WATER PLANNING

Cole Ruiz briefed the Planning Group on the Interlocal Agreement for Funding the Region L Administrative Costs for calendar years 2017-2020. Mr. Ruiz further explained that the ILA was in its final form, and was being circulated for signatures. The administrative budget for Calendar Year 2017 was agreed on at \$58,000.00, consistent with past years. The new ILA would go into effect on January 1, 2017.

AGENDA ITEM NO. 16: POSSIBLE AGENDA ITEMS FOR THE NEXT REGION L MEETING

- A. ELECTION OF OFFICERS**
- B. ADOPTION OF GUIDING PRINCIPLES**
- C. TWDB PLANNING 101 PRESENTATION**
- D. COMMERCIAL SCALE RAINWATER HARVESTING PRESENTATION FROM REGION K CHAIR, JOHN BURKE**

Tim Andruss reviewed the potential agenda items for the February 2017, SCTRWPG meeting. Dianne Wassenich and Con Mims pointed out that the creation of a workgroup, which was discussed under agenda item 10 herein, to identify potential improvements that could be made to Planning Groups of evaluation the Plan's effects on freshwater inflows to the San Antonio Bay, and the environmental impacts of individual water management strategies.

Dianne Wassenich suggested that the Planning 101 presentation might be pushed to the beginning of the meeting. Gary Middleton agreed, and asked that the suggestion be relayed to the Chair.

AGENDA ITEM NO. 17: PUBLIC COMMENT

No comments were made.

Vice Chair Andruss adjourned the meeting.

GARY MIDDLETON, SECRETARY

Approved by the South Central Texas Regional Water Planning Group at a meeting held on February 2, 2017.

SUZANNE SCOTT, CHAIR

GARY MIDDLETON, SECRETARY

Approved by the South Central Texas Regional Water Planning Group at a meeting held on February 2, 2017.

SUZANNE SCOTT, CHAIR

4. Status of Edwards Aquifer Habitat Conservation Plan (HCP) – Nathan Pence, Executive Director EAHCP

5. Status of Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays Basin and Bay Stakeholder Committee (BBASC) and Expert Science Team (BBEST)

6. Texas Water Development Board (TWDB) Communications
 - a. Goldwater Project Presentation on a Uniform Methodology for Measuring Conservation Across Regions
 - b. TWDB Rules Presentation

Texas Regional Water Planning

Update on Revised 31 Texas Administrative Rules Chapter 357

Ron Ellis

Project Manager
Water Use, Projections, & Planning
Texas Water Development Board

The following presentation is based upon professional research and analysis within the scope of the Texas Water Development Board's statutory responsibilities and priorities but, unless specifically noted, does not necessarily reflect official Board positions or decisions.

Purpose of 2016 Rule Revisions

- Implement legislative changes
- Address stakeholder concerns
- Improve the planning process
- Increase flexibility in planning requirements
- Reduce certain unessential reporting requirements
- Clarify rules and refine definitions

2016 Rule Revision Process

Obtained Preliminary Stakeholder Input

- State agencies
- RWPG members
- Other stakeholders

Proposed Draft Rule Revisions

- Board approved proposal on July 21st
- Published in Texas Register on August 5th
- Comments accepted through September 6th
- Held public hearing on August 24th

Revised and adopted final rules

- Board adopted rules on November 17th
- Rules effective on December 8th

Revised Water User Group (WUG) Definition - §357.10(41)

- Reflects the utility-based planning approach for municipal WUGs
- Sets a new lower, threshold of 100 acre-feet per year provided by the utility
- Privately-owned utilities must provide an average of 100 acre-feet per year across all owned systems
- County-Other definition revised to be consistent

Definitions of WWP and MWP – §357.10(42) and §357.10(19)

Wholesale Water Provider (WWP)

- Eliminates the annual 1,000 acre-foot delivery or sales threshold
- The RWPG will identify the WWPs in its region to be evaluated

Major Water Provider (MWP)

- Significant public or private WUG or WWP
- Designated by the RWPG
- MWP is a category to be used for reporting purposes in regional and state water planning instead of previous WWP-based reporting requirements

WMSPs and Prioritization of Projects

- §357.10(39) and §357.46

Water Management Strategy Project (WMSP) = a water project that has a capital cost and when implemented, would develop, deliver, or treat additional water supplies or conserve water for **WUGs** or **WWPs**

- May be required to implement a water management strategy (WMS)
- Defined to distinguish from a WMS and to clarify what RWPGs are to prioritize at the end of their planning efforts
- New §357.46 requires each RWPG to prioritize recommended WMSPs for SWIFT

Public Notice Revisions - §357.21

RWPGs may now post notices:

- Online on the RWPGs website, OR
- With each County Clerk in the RWPA

New §357.21(e)

- Pertains to notice for requesting research and planning funds from the TWDB

Existing Surface Water Supply Analysis - §357.32(c)

- Availability requirements for existing supplies of stored and run of river water are split out as §357.32(c)(1) and §357.32(c)(2)
- Evaluation of existing run of river surface water availability for municipal WUGs must be based on the minimum monthly diversion amounts that are available 100% of the time, if it is the only supply for the municipal WUG

Groundwater Availability Analysis - §357.32(d)

- Clearly stipulates that for an RWP to be consistent with a desired future condition, the groundwater availability in the RWP must not exceed the modeled available groundwater (MAG)*
- If there is no groundwater conservation district within the RWPA, then the RWPG will determine the availability of groundwater for regional planning purposes (in response to SB 1101)

*Or as adjusted by the MAG Peak Factor

MAG Peak Factor - §357.32(d)(3) and §357.10(20)

MAG Peak Factor = a percentage (e.g., greater than 100%) that is applied to a MAG value reflecting the annual groundwater availability that, for planning purposes, shall be considered temporarily available for pumping consistent with DFCs.

- Developed in response to stakeholder input
- Provides temporary accommodation of increased groundwater demands by accommodating anticipated fluctuations in pumping
- Does **not** limit permitting or guarantee approval of any future permit applications.
- Requires review and approval by relevant groundwater conservation districts, groundwater management areas, and the TWDB Executive Administrator

MAG Peak Factor

Its potential use will depend on a combination of many factors including

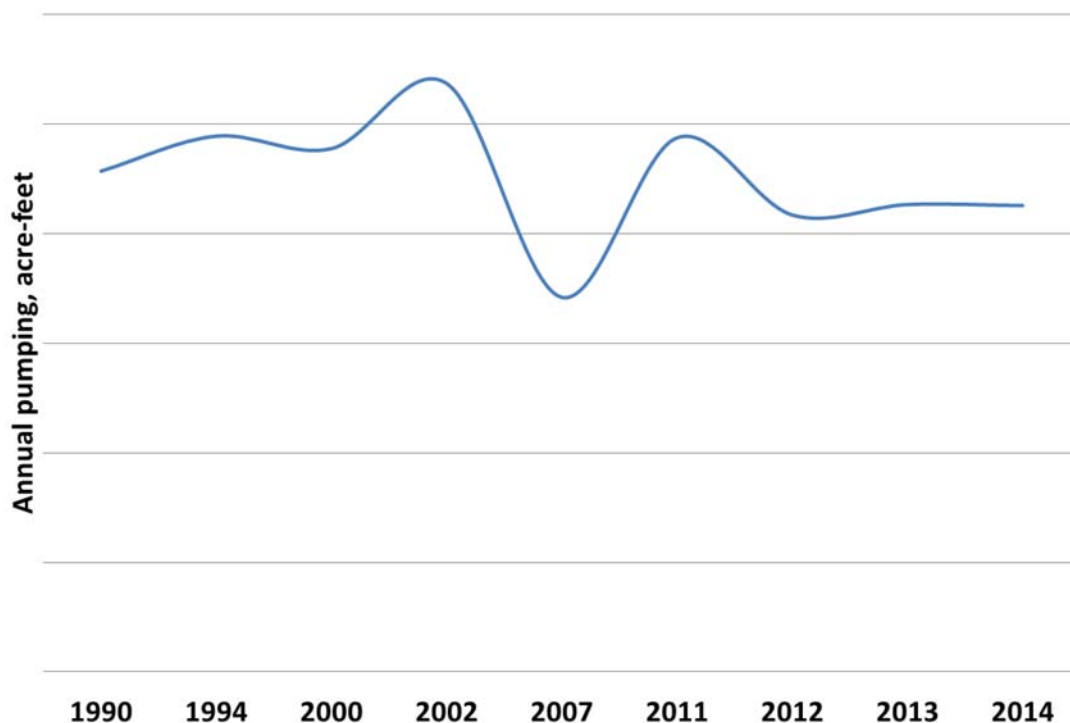
- the character of the aquifer
- specific location
- historical and anticipated future pumping volumes - including relative to the MAG
- historic and estimated future pumping patterns
- GCD, GMA, and TWDB approval

Historic and anticipated future **cyclical pumping** patterns

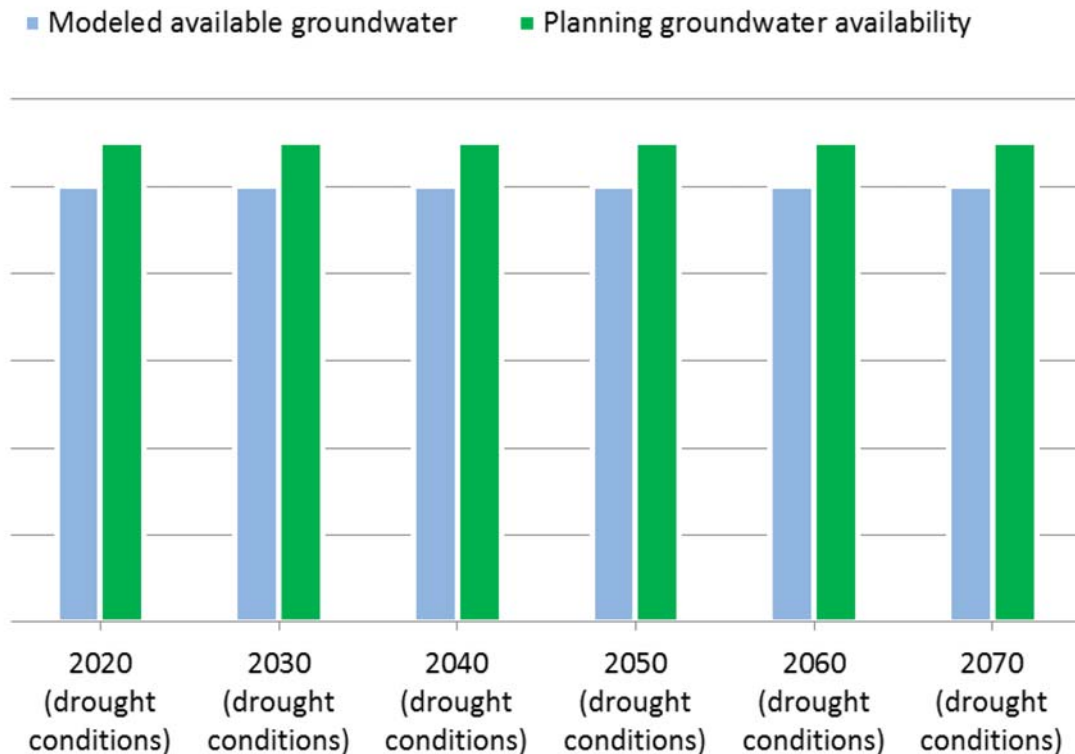
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Development Board 

EXAMPLE Historical Groundwater Pumping (acre-feet)

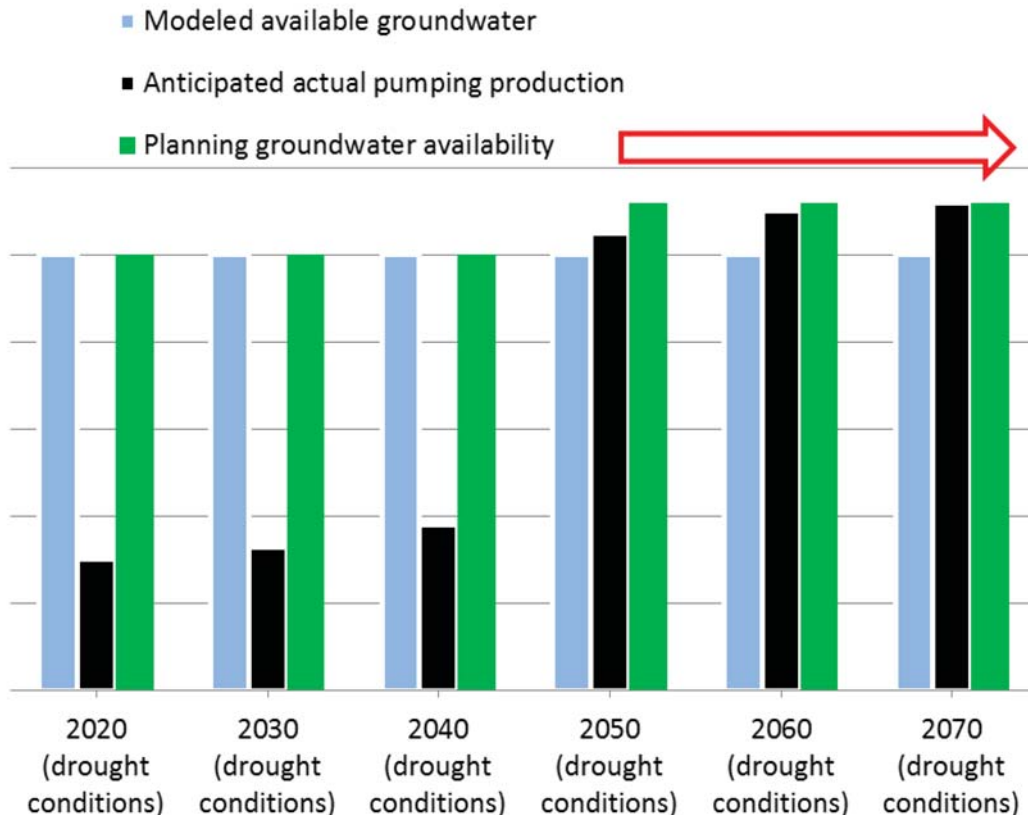


Example 1: MAG peak factor impact on planning groundwater availability *(based on historical and anticipated future cyclical pumping between wet and dry periods)*



Historic/future pumping that remains well below the MAG for a significant period of time

Example 2: MAG peak factor impact on planning groundwater availability *(based on low pumping in early decades)*



Process

Regional water planning groups must request that the TWDB Executive Administrator approve each MAG peak factor. Each planning group requests for MAG peak factors must

- include written approval from the relevant groundwater conservation district and the representative of the groundwater management area,
- include the technical basis for the factor value, and
- document how the MAG Peak Factor will not prevent the associated groundwater conservation district(s) from managing groundwater resources to achieve the desired future condition(s).

Additional Rule Changes – New and Revised Definitions

- §357.10(1) – Agricultural Water Conservation (*new*)
- §357.10(3) – Availability (*revised*)
- §357.10(10) – Drought Management WMS (*new*)
- §357.10(11) – Drought of Record (*revised*)
- §357.10(13) – Existing Water Supply (*revised*)
- §357.10(14) – Firm Yield (*revised*)
- §357.10(21) – Planning Decades (*new*)
- §357.10(26) – RWPG-Estimated Groundwater Availability (*new*)

Additional Rule Changes – New and Revised Definitions (continued)

- §357.10(28) – Reuse (*new*)
- §357.10(32) – State Water Planning Database (*new*)
- §357.10(33) – Unmet Water Need (*new*)
- §357.10(34) – Water Conservation Measures (*revised*)
- §357.10(35) – Water Conservation Plan (*revised*)
- §357.10(36) – Water Conservation Strategy (*new*)
- §357.10(37) – Water Demand (*new*)
- §357.10(40) – Water Need (*new*)

Additional Rule Changes (continued)

- §357.22(a) – Impacts on public health, safety, or welfare *(revised)*
- §357.34(c) – Seawater and brackish groundwater WMSs *(revised)*
- §357.34(d) – WMSs and WMPs must reduce consumption, loss, or waste; improve efficiency; or develop, deliver, or treat additional water supply volumes *(new)*
- §357.35(g)(2) – Management supply factor *(revised)*

Additional Rule Changes (continued)

- §357.50(j) – Unmet municipal needs *(new)*
- §357.51(a) – Amendment petitions *(revised)*
- §357.51(b) and (c) – Unmet needs in major and minor amendments *(revised)*
- §357.51(e) – Substituting alternative for recommended WMSs *(revised)*
- §357.60 – Consistency of RWPs *(revised)*

Questions?

Texas Water Development Board

Ron Ellis

Ron.Ellis@twdb.texas.gov

7. Chair's Report

a. 85th Legislative Report

8. 2021 Plan Enhancement Process: Recap of Guiding Principles Previously Discussed and Adopted

2021 Plan Enhancement Process Schedule

May 2016	The appropriateness and adequacy of how demand and need are determined.	Discussed: May 5, 2016 Adopted: August 4, 2016
	The role of regional water planning groups in influencing population growth and land use.	Discussed: May 5, 2016 Adopted: August 4, 2016
	Defining conflicts of interests of planning group members	Discussed: May 5, 2016 Adopted: August 4, 2016
August 2016	The role of regional water planning groups in influencing water development plans of water suppliers.	Discussed: August 4, 2016 Adopted: Nov. 3, 2016
	The role of regional water planning groups in influencing permitting entities.	Discussed: August 4, 2016 Adopted: Nov. 3, 2016
November 2016	The adequacy of evaluating the Plan's effects on freshwater inflows to San Antonio Bay.	Discussed: Nov. 3, 2016 Adopted:
	The adequacy of environmental assessments of individual WMS's.	Discussed: Nov. 3, 2016 Adopted:
February 2017	How Water Management Strategies are categorized; e.g. Recommended, Alternate, Needing Further Study.	Discussed: Adopted:
	Establishing Minimum standards for Water Management Strategies included in the Plan	Discussed: Adopted:
	Maintaining management supplies while avoiding "over planning".	Discussed: Adopted:
May 2017	Identifying special studies or evaluations deemed important to enhance the 2021 Plan and identification of outside funding sources.	Discussed: Adopted:
	Address the role of reuse within the regional water plan.	Discussed: Adopted:
	The extent to which innovative strategies should be used.	Discussed: Adopted:

South Central Texas Regional Water Planning Group

2021 Regional Water Plan Enhancement Process Guiding Principles

Appropriateness and Adequacy of How Demand and Need are Determined

Guiding Principle:

Discussed at SCTRWPG meeting on May 5, 2016, Adopted on August 4, 2016

The South Central Texas Regional Water Planning Group (SCTRWPG) generally defers to the Texas Water Development Board (TWDB) on matters related to population and water demand projections. However, the SCTRWPG retains the duty to review TWDB projections on a case by case basis. Where the SCTRWPG finds a discrepancy in TWDB's projections, and can adequately justify its findings by verifying one or more of the "criteria for adjustment," TWDB – in consultation with Texas Department of Agriculture, Texas Commission on Environmental Quality, and Texas Parks and Wildlife Department – may adjust population and/or water demand projections accordingly (see generally *General Guidelines for Fifth Cycle of Regional Water Plan Development*, Article 2. *Population and Water Demand Projections*). Consistent with Chapter 8 of the 2016 Regional Water Plan for Region L, the SCTRWPG supports greater TWDB flexibility through relaxation of current methodological assumptions holding regional and state population projection totals fixed (see Chapter 8.9.3 *Population and Water Demand Projections*). Water demand projections used in developing the Regional Water Plan should be consensus figures arrived at by using TWDB data along with local input from the cities, counties, and groundwater districts.

Role of Regional Water Planning Groups in Influencing Population Growth and Land Use

Guiding Principle:

Discussed at SCTRWPG meeting on May 5, 2016, Adopted August 4, 2016

Where the concepts of population growth and land use necessarily interrelate with the Regional Water Plan, the SCTRWPG shall, to the greatest extent possible, develop strategies to meet future projected demands. However, it is neither the role, nor the responsibility of the SCTRWPG to influence population growth or land use. While the SCTRWPG has a duty to remain cognizant of the sensitive relationship between the Regional Water Plan, population growth and land use, decisions concerning permitting and influencing population growth are inherently local, and remain wholly independent from the regional water planning process.

Conflicts of Interests With Respect to Planning Group Members

Guiding Principle:

Discussed at SCTRWPG meeting on May 5, 2016, Adopted August 4, 2016

1. Active Planning Group Members

All disclosures pursuant to Article V, Section 6 of the SCTRWPG Bylaws, are the responsibility of the planning group member or designated alternate who has the potential conflict of interest. Therefore, disclosures are the responsibility of the planning group member or designated alternate. If the voting member chooses to abstain from participation in deliberations, decisions, or voting, pursuant to Article V, Section 6 of the SCTRWPG Bylaws, the reason for abstention shall be noted in the minutes.

SCTRWPG Bylaw Excerpt

Potential conflicts of interest shall be clearly stated by the voting member or designated alternate prior to any deliberation or action on an agenda item with which the joint member or designated alternate may be in conflict. Where the potential conflict is restricted to a divisible portion of an agenda item, the Chair may divide the agenda item into parts for deliberation and voting purpose. An abstention from participation in deliberations, decisions or voting and the reason therefore shall be noted in the minutes.

(see *SCTRWPG Bylaws*, Article V, Section 6, (b))

2. Nomination Process

Where the SCTRWPG is soliciting nominations to fill vacancies on the planning group, nominators shall provide information regarding the nominee's current employer, and provide a description of the nominee's experience that qualifies him/her for the position in the interest group being sought to represent.

Additionally, nominees shall agree to abide by the Code of Conduct, which is incorporated in the SCTRWPG Bylaws (see *SCTRWPG Bylaws*, Article V, Section 6). As per the Bylaws, the Executive Committee will conduct an interview process whereby nominees will be evaluated. Prior to the interview, nominees will be provided a copy of the Bylaws. During the interview process, nominees will be asked if they are willing to agree to the Bylaws, and specifically, if they are willing to comply with the Code of Conduct.

The Role of the Planning Group in Influencing Water Development Plans of Water Suppliers

Guiding Principle:

Discussed at SCTRWPG meeting on August 4, 2016, Adopted: November 3, 2016

The role of the SCTRWPG is to ensure water needs are met with identified potentially feasible water management strategies. It is not the role of the SCTRWPG to influence or interfere with local water planning decisions. In the absence of a planning group recommended potentially feasible water management strategy to meet an identified need, the SCTRWPG may evaluate and report, as required, the social, environmental and economic impacts of not meeting the identified need.

The Role of the Planning Group in Influencing Permitting Entities

Guiding Principle:

Discussed at SCTRWPG meeting on August 4, 2016, Adopted: November 3, 2016

Decisions made at the planning group level are non-regulatory, and are intended for planning purposes only. While some decisions made by the SCTRWPG could inevitably affect some decisions made by the governing boards of permitting entities, it is neither the responsibility, nor the role of the SCTRWPG to influence or interfere with the regulatory decisions made by the governing boards of permitting entities.

9. Discussion and Appropriate Action Adopting Guiding Principles on the Following Issues Identified Through the 2021 Plan Enhancement Process
 - a. The Adequacy of Evaluating the Plan's Effects on Freshwater Inflows to the San Antonio Bay; and The Adequacy of Environmental Assessments of Individual WMS's
 - b. Creation of an Environmental Assessment Workgroup

The adequacy of evaluating the Plan's effects on freshwater inflows to San Antonio Bay.

And

The adequacy of environmental assessments of individual WMS's.

Guiding Principle:

Discussed at SCTRWPG meeting on August 4, 2016, Adopted:

The SCTRWPG's evaluation of its plan's effects on the freshwater inflows to the San Antonio Bay, and its environmental assessments of individual water management strategies can be improved. It is the SCTRWPG's intent to improve its evaluation by identifying what improvements are desired, and to implement those improvements to the extent funds are available. The SCTRWPG will create a workgroup to identify what improvements are desired to effect the 2020 Regional Water Plan for subsequent consideration by the SCTRWPG.

To: Mr. Brian Perkins, Black & Veatch

From: Christine Westerman, SWCA Environmental Consultants

Date: January 18, 2017

Re: **Region L Water Planning – Environmental Analysis for the Regional Water Plan**

The South Central Texas Regional Water Planning Group (Region L; planning group) is developing guiding principles for the 2021 regional planning cycle. During its November 2016 meeting, the planning group discussed the adequacy of evaluating the Regional Water Plan's (RWP) effects on freshwater inflows to the San Antonio Bay and the adequacy of environmental assessments for individual water management strategies (WMS) included in the RWP. The planning group members requested that Black & Veatch, together with SWCA Environmental Consultants (SWCA), prepare a list of environmental review scenarios for consideration by the planning group or workgroup members at a future meeting. SWCA is available to meet with you, or members of the planning group, as appropriate to discuss these items in further detail.

SWCA has reviewed prior RWPs and identified areas where Region L may wish to modify the previously utilized environmental review. SWCA identified three primary areas for consideration: (1) expanding and/or altering the assessment of effects on instream flows and freshwater inflows (estuarine inflow); (2) improving, clarifying, and/or enhancing the cumulative effects analysis included in the RWP; and (3) improving, clarifying, and/or enhancing the assessment of individual WMSs. A discussion on each of these consideration areas and the estimated financial implication for each is included below.

In general, SWCA believes that the environmental review could, at a minimum, be improved through modifying the presentation/organization of environmental review sections in the RWP. For example, some discussions that are currently repeated multiple times for multiple WMSs could be condensed to one section (for example Volume II or Chapter 6 of RWP) that could apply to all the WMSs. Later sections on WMSs could then reference this condensed discussion. Further, the planning group may wish to update the current ranking system used to evaluate environmental impacts to reflect regulatory changes and associated feasibility for each WMS in a way that may provide more useful analysis for project planners. One challenge associated with an updated method of review is how the current RWP compares to previous RWPs and State Water Plans (SWP) prior to Senate Bill 1. While the Texas Water Development Board does not require an analysis of how current versus prior plans affect the environment, per se, Region L has consistently provided this analysis in the past. As such, Region L may consider adapting this comparison in one of five ways described in Table 1.

Table 1. Levels of Environmental Effects Comparison from Previous RWP/SWPs to New RWPs.

Level of Analysis	Comments	Rough Cost (2016 dollars)
No Change	Use the same level of environmental analysis as previous RWPs; consider the same indicators and utilize the same ranking system.	\$8,000
Change; No Environmental Comparison to Prior Years	Update the environmental analysis with more relevant metrics and improve the ranking system to reflect project feasibility; include caveat that the environmental review process has changed and do not provide a comparison to prior RWPs.	\$8,000
Change; Qualitative Comparison to Prior Years	Update the environmental analysis with more relevant metrics and improve the ranking system to show project feasibility; provide a qualitative analysis of how the current RWP varies from prior RWP/SWPs without the quantitative analysis provided in the 2016 RWP.	\$9,000
Change; Update RWP from 2001 to 2016 with New Review Method for Comparison	Update the environmental analysis with more relevant metrics and improve the ranking system to show project feasibility; revise the environmental comparison in RWPs dating back to 2001 with the updated methodology.	\$20,000
Change; Update all prior RWP/SWPs with New Review Method for Comparison	Update the environmental analysis with more relevant metrics and improve the ranking system to show project feasibility; revise the environmental comparison in all prior RWP/SWPs with the updated methodology. Note: this may not be feasible with all prior plans due to uncertainty regarding plan assumptions.	TBD

Instream and Freshwater Flows Analysis

During the November Region L meeting, some planning group members expressed interest in having information on how current conditions would appear in the instream flow model and a discussion on how instream flow levels affect local wildlife species and the overall health of the ecosystem at current and proposed flow conditions. It is our understanding that data is available from 1990-1999 that was previously used to develop a trend line for current conditions in the 2006 RWP. It is unlikely that substantial information is readily available to modify this existing trend line, so re-introducing this prior trend line to the RWP would require little additional effort beyond quality control/quality assurance.

For example, additional modeling that considers effluent discharge would alter the prior trend line, but could also provide additional information for the planning group. This modeling effort and costs analysis would be conducted by Black & Veatch.

To assess the relationship between instream flow levels and biological conditions, the environmental review could be expanded to consider the TCEQ instream flow requirements. Applying information available in the current literature to evaluate trends between flow levels and ecosystem health would allow for a quantitative and qualitative understanding of how to best maintain the health of the bay. This exercise could help evaluate instream flow thresholds based on biological indicators that the planning group could consider as they assess the RWP's effect on instream flows. SWCA estimates that the cost for considering the BBEST flow recommendations and the TCEQ instream flow requirements would be approximately \$5,000. A detailed literature review that considered target species would cost another approximately \$5,000 - \$10,000 depending on the breadth of the review.

Cumulative Effects Analysis and Costs

Previous versions of the RWP/SWP have included a discussion of environmental impacts that considers all of the WMSs implemented collectively. SWCA believes that this section of the RWP could be used to summarize a lot of information that was repeated for each management strategy in prior plans. For example, the list of affected species in each county is the same regardless of the strategy, and the RWP could be streamlined by only including this list one time compared to previous RWP/SWPs that included the list for each WMS and in Appendix G. This section could also be structured to include a discussion on the types of environmental impacts based on different activity types (such as pipeline construction) that can then be used to summarize effects for each WMS without duplicating effort or content.

The level of environmental analysis included for the whole plan could also be expanded to include review of additional human resources closely tied to water such as recreation. There is also an opportunity to include an expanded discussion on climate variability. This could include a qualitative analysis that examines impacts to ecosystems that might result from natural weather events caused by climate variability (such as, more frequent extreme weather events, changes in average temperatures, increased likelihood and duration of drought periods, water quality impacts). A quantitative analysis could also be conducted that would involve adjustments to precipitation values used in the flow models. These additional levels of analysis and estimated costs associated with them is identified in Table 2.

Table 2. Expanded Cumulative Effects Analysis and Costs

Level of Analysis	Comments	Rough Cost (2016 dollars)
Extended Review of Human Resources	Qualitative analysis including additional resources.	\$10,000
Expanded Climate Variability Analysis	Qualitative analysis.	\$15,000
Quantitative Analysis	Includes adjusting inputs to the flow model.	B&V Cost

Individual Water Management Strategy Analysis

Evaluation of individual WMSs could be addressed along a range of level of effort, exemplified through these four approaches:

- Option 1: Desktop level review consistent with 2016 RWP;
- Option 2: Desktop level review with revised metrics more applicable to actual project feasibility;
- Option 3: Desktop level review with revised metrics more applicable to actual project feasibility *and* additional effort to attempt to geo-locate project impacts for a more quantitative assessment of project impacts (include subsistence and base flow quantification from SB3 process for basins);
- Option 4: Desktop level review with revised metrics more applicable to actual project feasibility *and* additional effort to attempt to geo-locate project impacts for a more quantitative assessment (same as Option 3) of project impacts *and* an expanded analysis of water quality and water quantity impacts to aquatic ecosystems affected by the proposed WMS.

Each of these levels of analysis and the estimated financial impacts are summarized in Table 3.

Table 3. Individual Water Management Strategy Analysis.

Level of Analysis	Comments	Rough Cost (2016 dollars)
Option 1	Would be consistent with 2016 RWP. Does not include georeferenced T&E species habitat. Has more info on protected species than other resources, including cultural. Cultural resources analysis does not look at archaeological sites or previous surveyed culturally significant sites.	\$2,000 - \$5,000 per WMS
Option 2	Adjust metrics from previous plan. Add archaeology sites and high probability areas where we have location info. Add discussion on significant environmental constraints (such as jeopardy, ad mod, or known cultural site).	\$2,000 - \$5,000 per WMS
Option 3	Same as Option 2 plus additional GIS analysis of impacts to potential T&E species habitat and incorporation of known archaeology sites and high probability areas for significant cultural resources. Include SB3 subsistence and base flow recommendations	\$2,500 - \$6,000 per WMS
Option 4	Same as Option 3 plus additional review of water quality and water quantity implications on aquatic ecosystems relevant to the project.	\$2,500 - \$6,500 per WMS

10. Discussion and Appropriate Action Regarding the Following Components of the 2021 Plan Enhancement Process
 - a. How Water Management Strategies are categorized; e.g. Recommended, Alternate, Needing Further Study.
 - b. Establishing Minimum standards for Water Management Strategies included in the Plan.
 - c. Maintaining management supplies while avoiding "over planning".

BUILDING A WORLD OF DIFFERENCE

February 2, 2017


WATER MANAGEMENT STRATEGIES

- **CATEGORIZATION**
- **MINIMUM STANDARDS**
- **MANAGEMENT SUPPLY VS OVER-PLANNING**

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WATER MANAGEMENT STRATEGY CATEGORIES

- **“Recommended” (TWDB)**
 - Water Management Strategies (WMSs) that are in the plan, have been fully evaluated, & have been designated to meet a identified Need
 - Eligible for SWIFT Funding
- **“Alternative” (TWDB)**
 - WMSs in the plan that have been fully evaluated, but are not designated to meet a identified Need. These WMSs are labelled “Alternative” by the sponsoring entity as a backup plan, should another strategy not be viable
 - Plan amendment necessary to become “Recommended”
- **“Needs Further Study” (SCTRWPG)**
 - WMSs that have either not been fully evaluated or have not been included by any entities in their plans
 - Needs full evaluation & sponsoring entity to become either an “Alternative” or “Recommended”

 **2**

WATER MANAGEMENT STRATEGY MINIMUM STANDARDS

- **Evaluations include:**
 - Description of the strategy, including a map (if possible)
 - Summary of firm (reliable) supply available through a repeat of the Drought of Record
 - Hydrology, Legally, & Physically
 - Includes applicable Environmental Flow Standards
 - Information on potential impacts to water, environmental, agricultural, & cultural resources
 - Facilities information, engineering, & cost summary
 - Implementation information/requirements



3

WHY MANAGEMENT SUPPLIES?

- **Population & Water Demand Projections are educated guesses**
 - $\text{Municipal Water Demands} = \text{Population} \times \text{GPCD}$
- **Region could experience a drought WORSE than the Drought of Record (1947-1956)**
- **Climate change can alter viability of projects**
- **Flexibility for entities to further pursue, evaluate, finance, and permit new projects**
 - Difficulties in developing WMSs in timely manner
- **Project viability can go away**
- **SWIFT Prioritization & Funding (other sources as well)**
- **Supplies beyond 2070 horizon**



4

IMPLEMENTATION OF WMSs

- **All Plans***
 - Conservation, Drought Management, Contract Renewals, Edwards Transfers, Local GW, & Purchase for WWPs
- **2001 SCTRWP (4/24)**
 - SAWS Recycled Water Program
 - SAWS ASR
 - SSLGC Water Supply Project
 - Facility Expansions*
- **2006 SCTRWP (3/20)**
 - CRWA Wells Ranch
 - Regional Carrizo for SAWS*
 - Canyon Reservoir Amendment
- **2011 SCTRWP (4/27)**
 - CRWA Wells Ranch Project (Version of 2006 Plan)
 - Regional Carrizo for SAWS (Version of 2006 Plan)
 - Brackish Wilcox GW for SAWS
 - Facility Expansions*
- **2016 SCTRWP (3/44)**
 - EAHCP*
 - CRWA Wells Ranch – Phase 2
 - Brackish Wilcox GW for SAWS (Version of 2011 Plan)

**Varying degrees of implementation*



5

WATER MANAGEMENT STRATEGIES & MANAGEMENT SUPPLIES

	Region*		
	L	C	H
2070 Needs (acft/yr)	483,000	1,200,000	1,018,000
Recommended WMSs (acft/yr)	787,000	1,790,000	1,800,000
Management Factor	1.63	1.49	1.77

**All 3 regions use Drought of Record as basis*



6

11. Discussion and Appropriate Action Regarding Consultant's Work and Schedule
 - a. Texas Water Development Board's Draft Population and Water Demand Projections for Municipal and Mining

Estimated Schedule

February 2017 RWPG Meeting

KEY:


-  *Scheduled Region L Meetings*
-  *Anticipated Region L Meetings*
-  *Currently Funded Tasks*
-  *Public Hearing(s) on 2021 IPP*
-  *Anticipated Activity*
-  *Activity Uncertainty*

BUILDING A WORLD OF DIFFERENCE

February 2, 2017

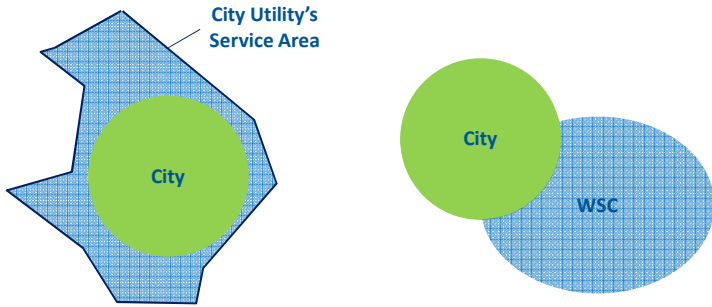
POPULATION/MUNICIPAL WATER DEMAND PROJECTIONS & MINING WATER DEMAND PROJECTIONS

DRAFT PROJECTIONS FROM TWDB

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UTILITY-BASED PLANNING

- 2016 RWPs



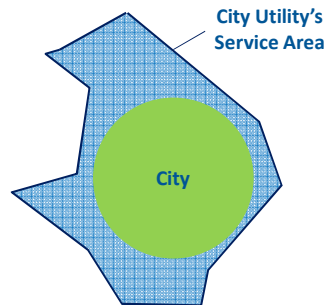
Example 1

Example 2

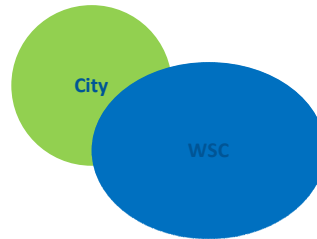
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UTILITY-BASED PLANNING

- 2021 RWPs



Example 1



Example 2



3

OBSERVATIONS ON THE DRAFT PROJECTIONS

- Mining Projections Are Unchanged from 2016 Plan
- Region-wide Population Projection is Nearly Identical
 - All Counties Population Expected to Increase
 - County-wide, Some Are Expected to Grow Slower than 2016 Plan (Bexar, Guadalupe, & Wilson), while Others Expected to Grow Faster than 2016 Plan (Atascosa, Comal, Kendall, Hays, & Medina)



4

OBSERVATIONS (CONT)

- **Region-wide Municipal Water Demand Projection Increases by ~12,500 acft/yr (~1.6%) by 2070**
- **Effects of Eagle-Ford Shale Activities on Municipal Water Demands Have Been Taken Out (7 Counties)**
- **County-wide, 3 Counties Water Demand Projections Are Significantly Lower (Caldwell, Guadalupe, & Wilson)**
- **County-wide, 7 Counties Water Demand Projections Are Significantly Higher (Atascosa, Bexar, Comal, Hays, Medina, Uvalde, & Victoria)**



5

ODDITIES & QUESTIONS

- **2 Entities Have Extremely High Base GPCDs**
 - Fort Sam Houston (1,903 gpcd)
 - Clear Water Estates Water System (1,090 gpcd)
- **No Projection for Calhoun County WSC**
- **Seguin/Springs Hill WSC Split Needs Verification**
- **4 New WUGs That Were Unexpected**
 - Tri-Community WSC, South Buda WCID #1, Kendall County WCID #1, & West Medina WSC



6

ODDITIES & QUESTIONS (CONT)

- **6 New WUGs Expected, But Aren't Included**
 - Fayette WSC, GBRA, Hays County WCID #1, Hays County WCID #2, Aqua Texas, & Kendall West Utility
- **Additional Information Needed on Splits of New Berlin, Santa Clara, and St Hedwig**
- **Confirm Declining GPCDs and Slowly Rising Populations Are Leading to Apparent Temporary Declines in Water Demands in Some Counties (DeWitt, Karnes, & Refugio)**



7

PROPOSED PROCEDURE

- **Ask TWDB for Clarification on a Few Issues**
- **Survey WUGs/WWPs for Review of TWDB Draft Projections**
- **Report WUG/WWP Comments to Region L Planning Group at a Future Meeting**
- **Develop List of Requested Revisions for Submittal to TWDB**



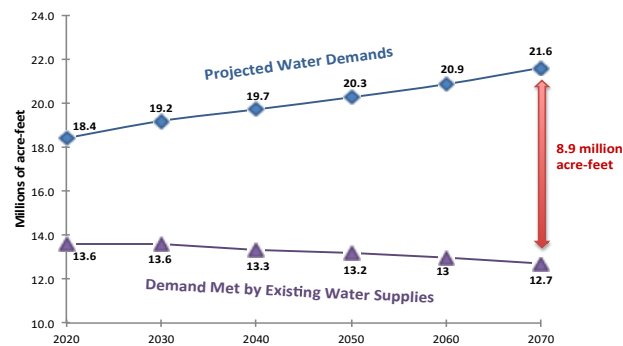
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12. Commercial Scale Rainwater Harvesting Presentation from Region K Chair—John Burke

Rainwater Harvesting & More

JOHN BURKE, P.E.

2017 State Water Plan Potential Water Deficit

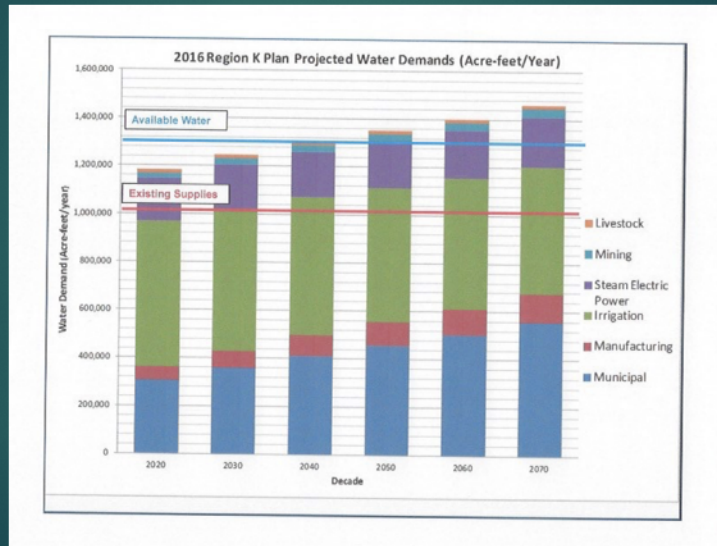


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2016 Region K Projected Demands



Rainwater harvesting dates back to Greek and Roman times



Rainwater Harvesting Around the World



Singapore

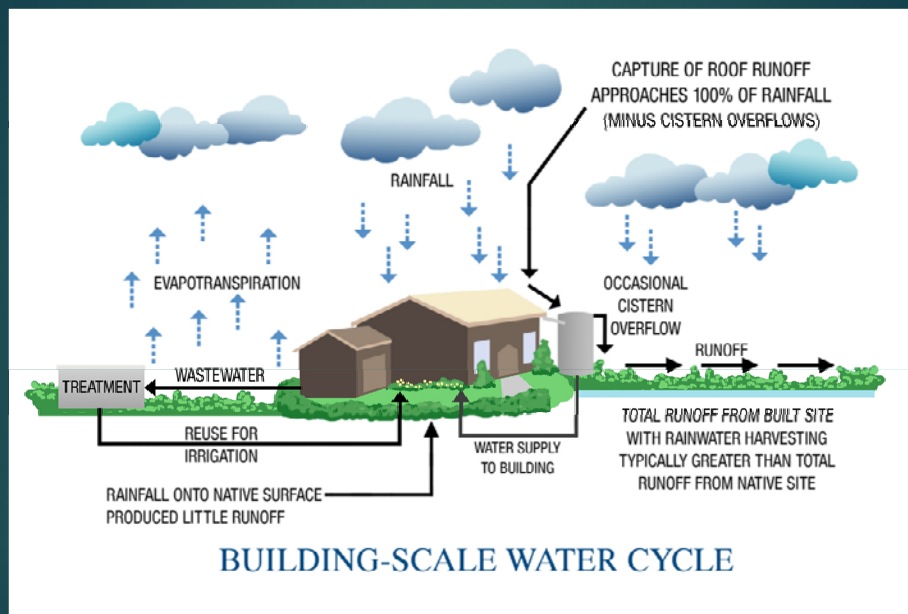
Tokyo Japan

Gansu Province China

The Island of Hawaii

The Island of Bermuda





"Right Sized" RWH Facilities for Austin Area

▶ **Two** Person Occupancy

- ▶ Roof Print 2500 sq. ft.
- ▶ Cistern Size 15,000 gals.
- ▶ Usage 40 gpcd

▶ **Three** Person Occupancy

- ▶ Roof Print 4,000 sq. ft.
- ▶ Cistern Size 25,000 gals.
- ▶ Usage 45 gpcd

▶ **Four** Person Occupancy

- ▶ Roof Print 4,500 sq. ft.
- ▶ Cistern Size 35,000 gals.
- ▶ Usage 40 gpcd

- TWDB Rainwater Harvesting Report October 25, 2013

Rainwater Harvesting for Irrigation

- ▶ Approximately 50% of municipal use is for outside irrigation
- ▶ Incentivize rain barrels at existing homes and buildings for outside irrigation
- ▶ Require all new buildings and subdivisions to use RWH for outside irrigation
- ▶ Net Zero Buildings
- ▶ New subdivisions – The Big Challenge

New Subdivisions – The Big Challenge

1. Total new way to do things – low reliance on centralized water system
2. Use water twice on site
 1. First → drinking
 2. Second → use reclaimed water for outside irrigation
3. TCEQ 72 hour detention rule

The Cost for Potable Use on Site

\$1.00 per gallon

\$30,000 for 30,000 gallon System

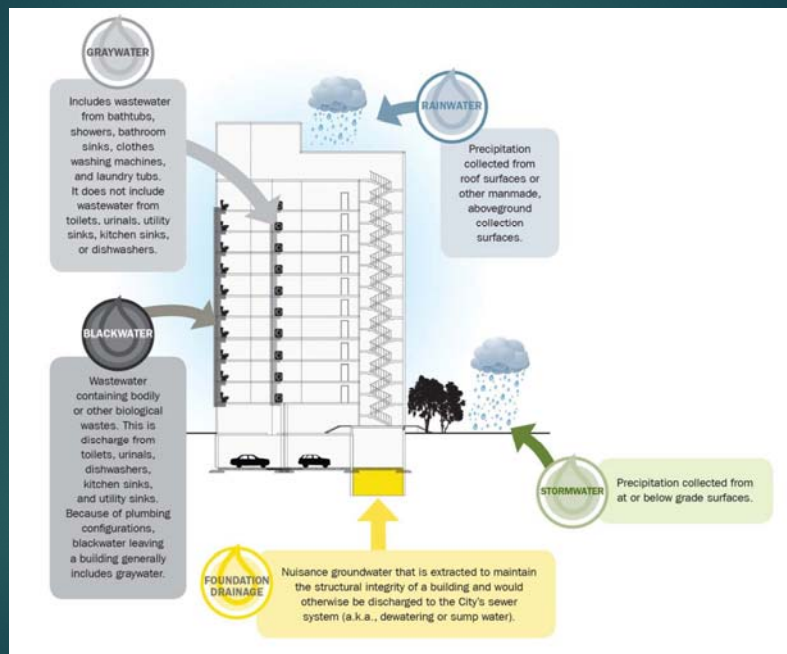
The Cost of a Tank for Outside Irrigation only

2500 Gallon Galvanized Tank \$4700

2500 Gallon Polyethylene \$2700

We know how to do this

There are no water lines to
the space station

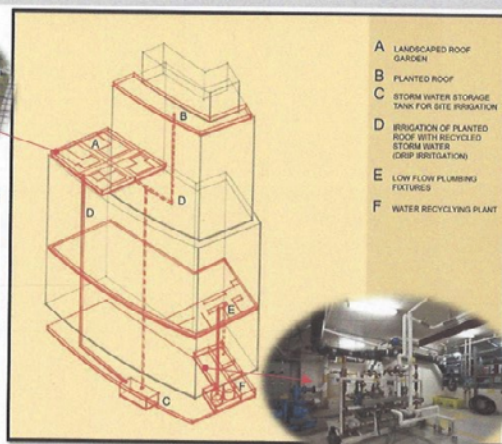


Integrated Water Resource Management



Reuse Applications:

- Toilet Flushing
- Cooling Tower Make-Up Water
- Landscape Irrigation
- Laundry



Kings Street Center - Seattle



Kings Street Center Basement





Bullitt Center - Seattle



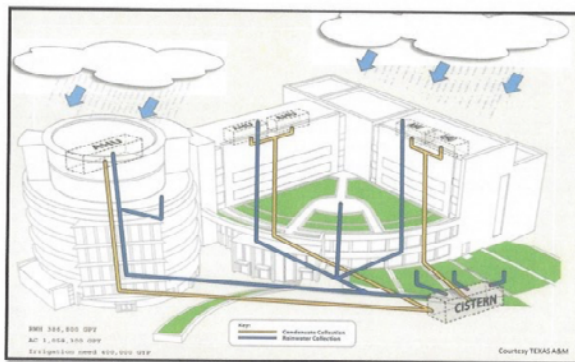
Bullitt Center



Bullitt Center



Texas A&M new dormitory



ARCSA Rainwater Harvesting Manual Chapter 10. Above Ground and Underground Storage Tanks

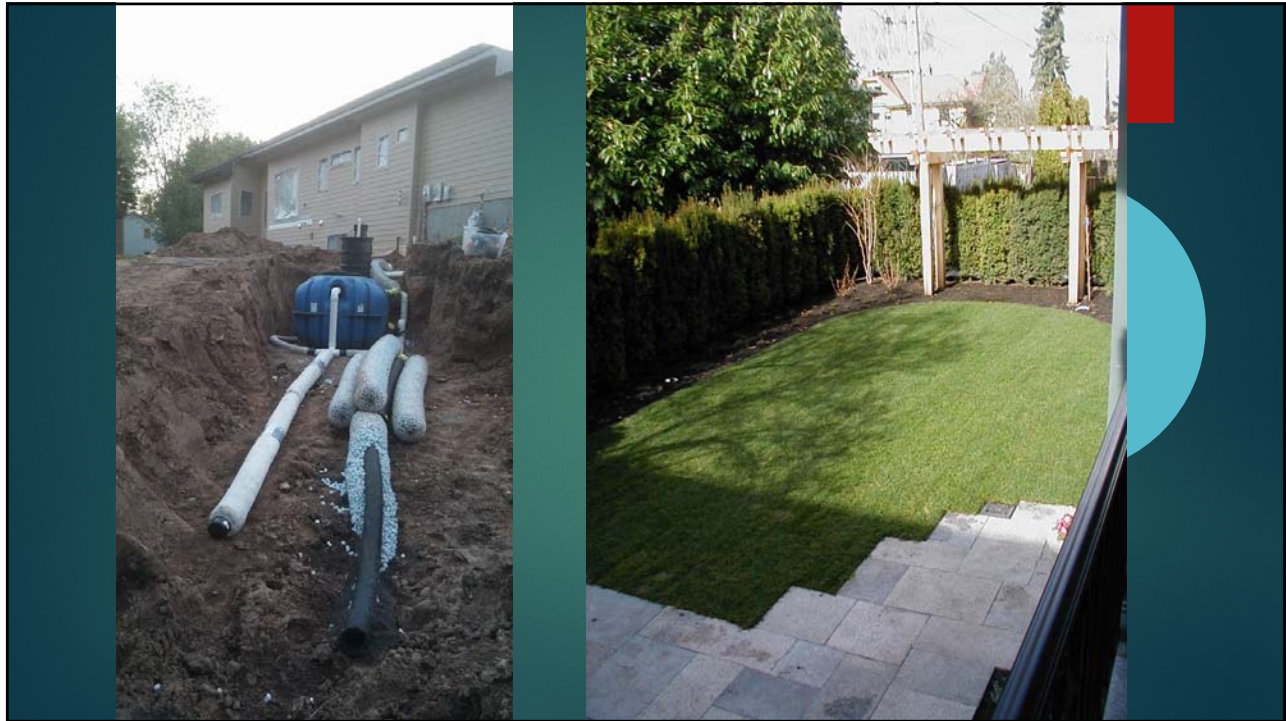
90

UT School of Nursing









SOURCES OF WATER FOR CENTRALIZED SYSTEMS

Reservoirs

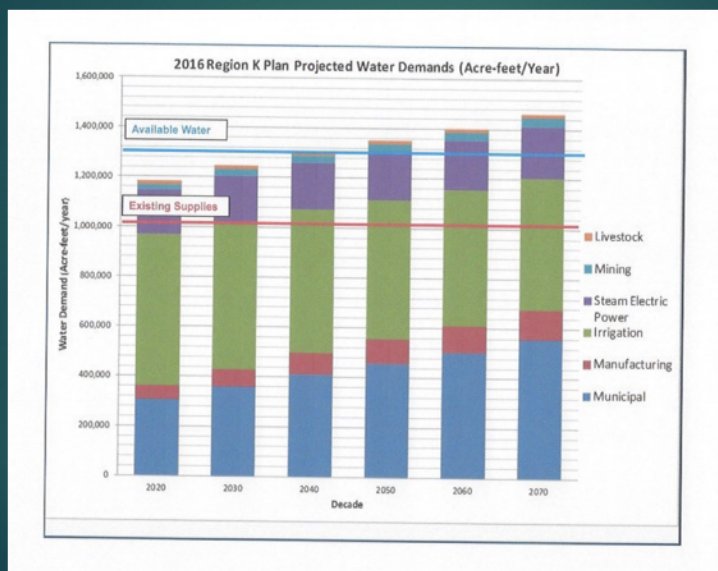
Aquifers


Ocean Desal

Inland Desal


Aquifer Storage &
Recovery

2016 Region K Projected Demands






Austin's Population
Doubles in the Next
30 Years



LOOKING FORWARD MOST OF
AUSTIN HAS NOT
BEEN BUILT YET




HOW Much Water Supply Would
Saved, If Going Forward
All New Construction
Was Required to Use RWH
For Outside Irrigation?



Tucson Arizona Requires 50% of
All Outside Irrigation be From RWH

Santa Fe County New Mexico
Requires RWH on All commercial
And Residential Development
For Outside Irrigation



All That takes is an Ordinance
No Construction of New
Water Lines or Water Plants



THANK YOU

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13. Possible Agenda Items for the Next Region L Meeting

- a. Adoption of Guiding Principles
- b. Discussion on the Following Components of the 2021 Plan Enhancement Process: 1) Identifying special studies or evaluations deemed important to enhance the 2021 Plan and identification of outside funding sources; 2) Address the role of reuse within the regional water plan; and 3) The extent to which innovative strategies should be used.
- c. TWDB Planning 101 Presentation

14. Public Comment