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**TABLE OF CONTENTS**

**ARTICLE I. ORGANIZATION.....1**

Section 1. Organization Name ..... 1

Section 2. Regional Water Planning Area Name..... 1

Section 3. Establishment and Purpose ..... 1

Section 4. Principle Administrative Office ..... 1

Section 5. Responsibilities ..... 1

**ARTICLE II. VOTING MEMBERSHIP .....2**

Section 1. Initial Composition..... 2

Section 2. Current Composition ..... 2

Section 3. Terms of Office ..... 2

Section 4. Conditions of Membership ..... 2

Section 5. Selection of Voting Members..... 2

Section 6. Attendance ..... 2

Section 7. Code of Conduct ..... 3

Section 8. Removal of Voting Members ..... 3

**ARTICLE III. SELECTION OF NEW VOTING MEMBERS.....5**

Section 1. Timing ..... 5

Section 2. Solicitation Requirements ..... 5

Section 3. Submission of Nominations ..... 5

Section 4. Executive Committee Responsibilities..... 5

Section 5. Vote Required ..... 5

Section 6. Additional Members ..... 6

Section 7. Membership Criteria..... 6

Section 8. Principal Administrative Officer .....	6
Section 9. Appointed Voting Members .....	6
<b>ARTICLE IV. NON-VOTING MEMBERSHIP .....</b>	<b>6</b>
Section 1. Mandatory Members .....	6
Section 2. Discretionary Members .....	7
Section 3. Code of Conduct .....	7
<b>ARTICLE V. DESIGNATED ALTERNATES .....</b>	<b>8</b>
<b>ARTICLE VI. INDEMNIFICATION OF OFFICERS AND MEMBERS .....</b>	<b>8</b>
<b>ARTICLE VII. OFFICERS .....</b>	<b>9</b>
Section 1. Officers, Restrictions, and Terms of Office .....	9
Section 2. Selection .....	9
Section 3. Removal of Officers .....	9
Section 4. Vacancies of Officers .....	10
Section 5. Duties of Each Officer .....	10
Section 6. Executive Committee .....	11
Section 7. Designated Alternates.....	11
<b>ARTICLE VIII. MEETINGS .....</b>	<b>11</b>
Section 1. Open Meeting and Notices .....	11
Section 2. Regular Meetings.....	11
Section 3. Called (Special) Meetings.....	12
Section 4. Agenda.....	12
Section 5. Quorum .....	12
Section 6. Public Hearings/Meetings Required by Law.....	12
Section 7. Tape Recordings and Minutes.....	12
Section 8. Robert's Rules of Order .....	13
<b>ARTICLE IX. MAKING DECISIONS.....</b>	<b>13</b>

Section 1. Applicability; No Written Proxies .....	13
Section 2. Decision-Making Process .....	13
Section 3. Final Adoption of Regional Water Plan; Amendments .....	14
<b>ARTICLE X. BOOKS AND RECORDS .....</b>	<b>14</b>
Section 1. Required Documents and Retainment .....	14
Section 2. Inspection and Copying .....	14
Section 3. Availability of Reports .....	14
<b>ARTICLE XI. SUB REGIONAL WATER PLANNING GROUPS .....</b>	<b>15</b>
Section 1. Establishment .....	15
Section 2. Membership .....	15
Section 3. Officers.....	15
Section 4. Meetings.....	15
Section 5. Books and Records.....	15
Section 6. Code of Conduct .....	15
<b>ARTICLE XII. COMMITTEES .....</b>	<b>16</b>
Section 1. Establishment .....	16
Section 2. Membership .....	16
Section 3. Chairs.....	16
Section 4. Meetings.....	16
Section 5. Decision Making Process .....	16
<b>ARTICLE XIII. COMPENSATION.....</b>	<b>16</b>
<b>ARTICLE XIV. COST ALLOCATION .....</b>	<b>16</b>
<b>ARTICLE XV. CONTRACTUAL SERVICES.....</b>	<b>17</b>
<b>ARTICLE XVI. FISCAL YEAR.....</b>	<b>17</b>
<b>ARTICLE XVII. ADOPTING AND AMENDING THE BYLAWS .....</b>	<b>17</b>
<b>ARTICLE XVIII. RESOLUTION ADOPTING BYLAWS .....</b>	<b>17</b>

## **ARTICLE I. ORGANIZATION**

### **Article I. Section 1. Organization Name**

The official name of this organization shall be the "Brazos G Regional Water Planning Group" (hereinafter "RWPG").

### **Article I. Section 2. Regional Water Planning Area Name**

The official name of the regional water planning area designated as "Region G Texas Water Development Board" by the Texas Water Development Board (hereinafter "TWDB") in accordance with 31 Texas Administrative Code (hereinafter "TAC") Chapter 357 on February 19, 1998, shall be the "Brazos G Regional Water Planning Area" (hereinafter "RWPA").

### **Article I. Section 3. Establishment and Purpose**

The RWPG was established by appointment of an initial coordinating body by the TWDB on February 19, 1998, and any subsequent additional appointments by the initial coordinating body. The purpose of the RWPG shall be to provide comprehensive regional water planning and to carry out the related responsibilities placed on regional water planning groups by state law, including Texas Water Code Chapter 16 and TWDB rules, including 31 TAC Chapters 355, 357, and 358, in and for the RWPA.

### **Article I. Section 4. Principal Administrative Office**

The principal administrative office of the RWPG shall be the principal business offices of the Brazos River Authority ("BRA"). The administrative officer of the RWPG for purposes of the Texas Open Records Act shall be the General Manager of the Brazos River Authority. The Chair of the RWPG shall insure that the mailing address and physical address of the principal office and administrative officer are provided to all members of the RWPG and the Executive Administrator of the TWDB.

### **Article I. Section 5. Responsibilities**

The RWPG shall have the responsibility for performing the functions defined in Texas Water Code, Chapter 16 and in 31 TAC Chapters 355, 357 and 358 related to regional water planning groups for the RWPA. Foremost among those responsibilities shall be the development of a regional water plan for the RWPA that identifies both short and long-term water supply needs and recommends water management strategies for addressing them.

## **ARTICLE II. VOTING MEMBERSHIP**

### **Article II. Section 1. Initial Composition**

The initial voting members of the RWPG shall include the initial coordinating body appointed by the TWDB on February 19, 1998, plus the additional voting members appointed by the initial coordinating body to ensure adequate representation of the interests comprising the RWPA stated in Texas Water Code §16.053(c), if present, and other interests determined by the RWPG.

### **Article II. Section 2. Current Composition**

The current voting membership of the RWPG shall include adequate representation of the interests comprising the RWPA stated in Texas Water Code §16.053(c), if present in the RWPA, and other interests determined by the RWPG. The voting membership of the RWPG may also include persons added or removed as provided under this Article and any 31 TAC §357.11(d) member selected for voting membership under Article IV. The voting membership of the RWPG shall not exceed 23 members.

### **Article II. Section 3. Terms of Office**

Voting Members shall have no set term of office, but shall continue to serve until removed or replaced in accordance with the procedures set forth in these Bylaws.

### **Article II. Section 4. Conditions of Membership**

In order to be eligible for voting membership on the RWPG, a person at the time of taking office must represent the interest for which a member is sought, be willing to participate in the regional water planning process, abide by these Bylaws, and shall not have a change in status during their term. A change in status shall include, but not be limited to, a change in job title, job position, employment, occupation, or residency, to the extent such change relates to the interest category the member represents. Upon a change in status, the voting member shall within sixty (60) days of the change in status notify the Brazos G Chairperson in writing describing the change in status, and shall be subject to the process contemplated in Article II, Section 8(a)(3). The office of a voting member of the RWPG is specific to the individual selected or appointed as a member of the RWPG and may not be transferred by that individual.

### **Article II. Section 5. Selection of Voting Members**

New voting members shall be selected pursuant to the process set out in Article III.

### **Article II. Section 6. Attendance**

All voting members shall make a good faith effort to attend all RWPG meetings and hearings. Records of attendance shall be kept by the Secretary at all RWPG meetings and hearings and presented as part of the minutes. Voting members of the RWPG who have excessive absences shall be subject to removal from membership under Section 8(c) of

this Article. A voting member shall be considered to have excessive absences if the member is absent from more than twenty five percent (25%) of the RWPG meetings and hearings in a calendar year. Representation by a designated alternate pursuant to Article V does excuse a member's absence.

**Article II. Section 7. Code of Conduct**

- (a) Voting members and designated alternates of the RWPG shall ethically conduct the business of the RWPG and shall avoid any form or appearance of a conflict of interest, real or apparent.
- (b) 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 voting 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, at the Chair's discretion, for deliberation and voting purposes. An abstention from participation in deliberations, decisions, or voting and the reasons therefore shall be noted in the minutes.
- (c) To the full extent permitted by law, the following shall apply:

Notwithstanding any other provisions of these Bylaws, the fact that a member of the Group is also an employee or public official of an entity which has some relationship, direct or indirect, with the RWPG (for example: a County Judge, Mayor, City Manager, Water District or River Authority member or employee), shall not disqualify such person from voting membership and full participation or be considered as giving rise to a conflict of interest on matters coming before the RWPG in which such public entity is also involved. These Bylaws recognize that such circumstances will probably arise in the very nature of the work and the legal structure of the RWPG and that it is appropriate to expressly recognize such facts.

**Article II. Section 8. Removal of Voting Members**

- (a) Grounds for Removal of Voting Members. The following shall constitute grounds for removal of a voting member:
  - (1) excessive absenteeism as defined under Section 6 of this Article determined by the RWPG;
  - (2) inability to serve due to poor health;
  - (3) change in status so that the member no longer represents the interest he or she was selected to represent unless waived by the RWPG by a two-thirds vote of the voting membership present;
  - (4) failure to abide by the code of conduct provisions set forth under Section 7 of this Article;
  - (5) falsifying documents;

- (6) any other serious violation of these Bylaws as may be determined by the voting members; or
  - (7) the voting member's designated alternate engages in any acts described in this subsection.
- (b) The following shall automatically end the term of a voting member:
- (1) appointment of a successor by the voting members upon resignation of the voting member; or
  - (2) death.
- (c) **Process for Removing Voting Members.** Voting members may be removed at any time for any of the grounds for removal of voting members set forth in subsection (a) of this section: Any member with knowledge that events have occurred constituting a ground for removal under subsection (a) of this section shall report such information to the Chair. The Chair, upon discovering or receiving such information, shall contact that member to verify the events that have occurred or the acts that have been alleged. The member shall respond to the Chair within fifteen calendar days from the date of receipt of the Chair's request. The Chair may require any information or response to be in writing. If the Chair believes that a ground for removal may exist, then the Chair shall confer with the Executive Committee regarding the matter, and the Executive Committee may vote to place an item on the next subsequent agenda addressing the possible removal of the member. If the Chair does not believe that a ground for removal exists and indicates that he or she will not place an item on the next agenda addressing the possible removal, then if five voting members request its inclusion on the agenda in writing, the Chair shall place an item on the next subsequent meeting agenda addressing the possible removal of the member.

At the meeting, all discussion and debate with regard to the possible removal shall take place in an executive session, but the final vote on removal shall take place in an open meeting. During the executive session, the Chair shall lay out all of the correspondence and information that has been received related to the possible removal, and the member subject to the possible removal may present evidence refuting or verifying the information presented. The voting members may remove the member by a two-thirds vote of the voting membership present. The member subject to the removal action shall not participate in the removal vote, nor shall his or her membership count as part of the total voting membership for purposes of calculating a two-thirds vote. Removal of a voting member pursuant to this subsection shall become effective immediately, and such member shall no longer participate in the RWPG as a voting member.

- (d) Voting members appointed by ground water management areas as provided in Texas Water Code Section 16.053(c) shall not be subject to the voting member removal procedure set forth in Subsection (c); however, if the voting members decide by a two-thirds vote of the voting membership present, that a particular appointed voting member is hindering the regional water planning efforts of the RWPG, the Chair shall make a written request within ten calendar days to the applicable ground water



management area requesting the appointment of another person to serve as the ground water management area's appointee.

### **Article II. Section 9. Open Meetings Training**

RWPG voting members, non-voting members, and designated alternates shall complete the Texas Attorney General's Open Meetings Act training and furnish the RWPG administrative agent with a completion certificate, which shall be kept on file with the RWPG. Voting members and non-voting members must complete the training and furnish a completion certificate within 90 days of assuming responsibilities as a RWPG member. Designated alternates shall complete the training and furnish a completion certificate prior to participating in any RWPG meeting.

## **ARTICLE III. SELECTION OF NEW VOTING MEMBERS**

### **Article III. Section 1. Timing**

New voting member nominations will be solicited from the public within forty-five calendar days of an opening on the RWPG arising.

### **Article III. Section 2. Solicitation Requirements**

Such solicitations shall identify the particular interest for which nominations are sought, state the conditions of membership, delineate the method for submitting nominations, and establish a deadline for submission of nominations.

### **Article III. Section 3. Submission of Nominations**

Members of the RWPG may also submit nominations in the manner prescribed in the public solicitation.

### **Article III. Section 4. Executive Committee Responsibilities**

The Executive Committee shall receive and process the nominations and, no sooner than ten calendar days after the deadline for submitting nominations, shall recommend a nominee to the voting membership as a whole, giving strong consideration to an agreed upon nominee from those individuals and entities that collectively represent that interest.

The Executive Committee shall not be bound by the nominations received and may consider any person who meets the conditions of membership as a nominee. The voting membership as a whole shall not be bound by the recommendation of the Executive Committee and may consider any person who meets the conditions of membership as a nominee.

Outgoing voting members who have not otherwise been removed shall be given the opportunity to fully participate in the selection process for their successors. No voting member shall participate in a vote in which he or she is a nominee.

### **Article III. Section 5. Vote Required**

The voting members shall make a decision for a successor by a two-thirds vote of the voting membership present. If no decision can be reached, the voting members shall consider other nominations until a new member can be selected by a two-thirds vote of the voting membership present. The selection of a new member is effective immediately after the vote confirming his or her selection. Outgoing voting members who have not otherwise been removed shall be given the opportunity to fully participate in the selection process for their successors. No voting member shall participate in a vote in which he or she is a nominee. If any member is unable to participate in a vote under this section, an alternate for that member shall not participate in that vote. An alternate for a member shall not participate in any vote in which that alternate is a nominee.

### **Article III. Section 6. Additional Members**

In addition to selecting new voting members to fill vacancies caused by removal or the expiration of a term, the voting members may add members to ensure adequate representation of the interests comprising the RWPG by generally utilizing the selection process set forth in this Article. If such a new member is added, the existing voting members shall determine by a two-thirds vote of the voting membership present, the exact applicability of the membership term provisions and restrictions to the new member at the time of the new member's selection.

### **Article III. Section 7. Membership Criteria**

In both the consideration of nominees and the selection of new voting members, the Executive Committee and other voting members shall strive to achieve geographic, ethnic, and gender diversity.

### **Article III. Section 8. Principal Administrative Officer**

This Article shall not apply to the voting member of the RWPG representing River Authorities, who shall be the General Manager of the Brazos River Authority.

### **Article III. Section 9. Appointed Voting Members**

This Article shall not apply to the selection of voting members appointed by ground water management areas as provided in Texas Water Code Section 16.053(c). Such voting members shall be appointed by the ground water management area they represent in accordance with the statute.

## **ARTICLE IV. NON-VOTING MEMBERSHIP**

### **Article IV. Section 1. Mandatory Members**

- (a) The voting members of the RWPG shall add the non-voting members set forth in 31 TAC §357.11(e)(1)- (e)(5) and accept the designees appointed by the entities set forth therein. Such designees shall have no terms of office and shall serve until replaced by the designating entity. However, if the voting members decide by a two-thirds vote of the voting membership present, that a particular designee is hindering the regional water planning efforts of the RWPG, the Chair shall make a written request within ten calendar days to the entity requesting the designation of another person to serve as the entity's designee.
- (b) The voting members of the RWPG shall add at least one non-voting member as set forth in 31 TAC §357.11(e)(1)- (e)(5), in a manner to be determined by the voting members of the RWPG.

Once selected, a 31 TAC §357.11(e)(1)- (e)(5) non-voting member shall have no term of office and shall serve until removed by the voting members by a two-thirds vote of the voting membership present. The selection or acceptance of a new non- voting member is effective immediately after the vote confirming his or her selection or acceptance.

- (c) The voting members may at any time, including the time of initial selection of a 31 TAC §357.11(e)(1) - (e)(5)member, convert the membership of a 31 TAC §357.11(e)(1)- (e)(5) non-voting member into a voting membership by a two-thirds vote of the voting membership present. If selected to be a voting member, a 31 TAC §357.11(e)(1)- (e)(5) member shall have the rights, duties, terms, conditions, and other privileges and obligations of regular voting members. The members, excluding the 31 TAC §357.11(e)(1) - (e)(5) member subject to the possible membership conversion, shall determine the exact applicability of the membership term provisions and restrictions to the31 TAC §357.11(e)(1)- (e)(5)member at the time of such conversion by a two-thirds vote of the voting membership present.
- (d) The voting members, excluding the 31 TAC §357.11(e)(1)- (e)(5) member subject to the possible membership conversion, may at any time convert the membership of a 31 TAC §357.11(e)(1)- (e)(5) voting member into a non-voting membership by a two-thirds vote of the voting membership present, not including the voting membership of the31 TAC §357.11(e)(1) - (e)(5) member subject to the possible membership conversion.

### **Article IV. Section 2. Discretionary Members**

The voting members of the RWPG may add or remove as a non-voting member an entity set forth in 31 TAC §357.11(g) by a two-thirds vote of the voting membership present. If an entity is added, the Chair shall make a written request within ten calendar days to the entity requesting the designation of a person to serve as the entity's designee. Such designees shall have no terms of office and shall serve until replaced by the designating entity or until the entity is removed as a non-voting member.

However, if the voting members determine by a two-thirds vote of the voting membership present that a particular designee is hindering the regional water planning efforts of the RWPG and that the entity should remain as a non-voting member, the Chair shall make a written request within ten calendar days to the entity requesting the designation of another person to serve as the entity's designee.

**Article IV. Section 3. Code of Conduct**

All non-voting members shall comply with the code of conduct provisions under Article 2, Section 7 of these Bylaws.

## ARTICLE V. DESIGNATED ALTERNATES

~~In the event a voting or non-voting member is unable to attend a RWPG regular/special meeting, or hearing, the member shall designate an alternate who is in the same interest group as the member to represent the member at the meeting/hearing and, at least forty-eight hours prior to the meeting/hearing, notify the Chair in writing of the designated alternate's name and address. If the member fails to provide such notice, the Chair may forbid the participation of the designated alternate at the meeting or hearing. Each voting and non-voting member shall designate an alternate to represent him/her when he/she is unable to attend a RWPG meeting or hearing. A designated alternate is an individual in the same interest group as the member. A designated alternate may not represent more than one member per calendar year and a member cannot be represented by an alternate at more than two consecutive RWPG regular or special meetings or hearings. Each member must notify the Chair in writing of the name and address of the member's designated alternate at least forty-eight hours prior to the first meeting or hearing at which the designated alternate will appear on behalf of the member. If the member fails to provide such notice, the Chair may forbid the participation of the designated alternate at the meeting or hearing.~~

~~If a voting or non-voting member is unable to attend a committee meeting, the member may, but is not required, to designate an alternate to represent the member at the committee meeting. If a member designates an alternate, the alternate shall be in the same interest group as the member and the member shall provide at least forty-eight hours written notice, including the alternate's name and address, to the Chair of the committee prior to the committee meeting or the Chair may forbid the participation of the designated alternate at the meeting. A designated alternate for a committee meeting does not count toward the two consecutive RWPG regular or special meetings limitation set forth herein.~~

~~The designated alternate shall enjoy the same voting privileges, or lack thereof, and shall be bound by the same duties, terms and conditions as the member they represent, except as otherwise provided in these Bylaws. However, a 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. Designated alternates shall complete the Texas Attorney General's Open Meetings Act training and furnish the RWPG administrative agent with a completion certificate prior to participating in a meeting or hearing.~~

## ARTICLE VI. INDEMNIFICATION OF OFFICERS AND MEMBERS

No member or officer is liable to the RWPG or any third party for monetary damages for any act or omission in such member's or officer's capacity as such except to the extent otherwise provided by law of the State of Texas. To the fullest extent possible by applicable law, the RWPG shall indemnify and hold harmless any such member or officer who was, is or is threatened to be made a defendant or respondent in litigation or other proceedings because the person is or was a member, officer, or other person related to the RWPG.

Without limiting the foregoing, the RWPG shall indemnify any member, officer, or employee, or former member, officer, or employee of the RWPG, or any person who may have served at its request, against expenses actually and necessarily incurred by him or her, and any amount paid in satisfaction of judgments in connection with any action, suit or proceeding, whether civil or criminal in nature, in which he or she is made a party by reason of being or

**Commented [RW1]:** In the committee meeting, they asked to include a provision in Article XII. Section 2. Membership, that made clear that alternates could vote, but after looking at that section, I do not think we should add the language there as that section is about members, and alternates are not members. I think this section under Designated Alternates resolves the issue adequately. It is clear here that designated alternates may vote in meetings and committee meetings.

having been such a member, officer, or employee (whether or not a member, officer or employee at the time such costs or expenses are incurred by or imposed upon him or her) except in relation to matters as to which he or she shall be adjudged in such action, suit or proceeding to be liable for gross negligence or willful misconduct in the performance of duty. The RWPG may also reimburse any member, officer or employee the reasonable costs of settlement of any such action, suit or proceeding, if it shall be found by a majority of the members not involved in the matter in controversy, whether or not a quorum, that it was to the interests of the RWPG that such settlement be made and that such member, officer or employee was not guilty of gross negligence or willful misconduct. Such rights of indemnification and reimbursement shall not be deemed exclusive of any other rights to which such member, officer or employee may be entitled by law or under any Bylaw, RWPG resolution, agreement, or otherwise. Also without limiting the foregoing, to the extent applicable the RWPG, its members and officers, shall have immunities identical to those provided by Chapter 84 of the Civil Practice and Remedies Code. In addition, the RWPG is authorized to obtain such insurance to cover liability of members, officers and others related to the RWPG as the RWPG may find to be available and practicable from time to time.

## **ARTICLE VII. OFFICERS**

### **Article VII. Section 1. Officers, Restrictions, and Terms of Office**

Voting members of the RWPG shall select from the voting membership a Chair, Vice Chair, and Secretary/Treasurer to serve as officers. Each officer shall serve a term of two calendar years. Except as provided under Section 4 of this Article, an officer shall serve until his or her successor takes office. No two voting members representing the same interest shall serve as officers at the same time. Elections shall be held every other calendar year, with no restrictions on the number of consecutive terms an individual may serve as an officer.

### **Article VII. Section 2. Selection**

Officers shall be selected at the first meeting of every other calendar year as of January 2003. Written notice of the meeting to select officers shall be mailed to all members of the RWPG by the current Secretary thirty calendar days prior to the meeting. Nominations shall be made from the floor by voting members. The voting members shall select officers from among the nominees by a two-thirds vote of the voting membership present. An officer selected at this meeting shall take office immediately after the vote confirming his or her selection.

### **Article VII. 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 II of these Bylaws, or for repeated failure to carry out the duties of the office, by a two-thirds vote of the voting membership present. 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/ Treasurer. Such request shall include a copy of any documents or written information that the requesting members intend to present at the removal meeting. The Chair or Secretary/Treasurer receiving the request shall notify the officer in writing that he or she shall be subject to a removal action at the next scheduled meeting and shall include a copy of any documents or written information submitted by the requestors. At the meeting, all discussion and debate with regard to the possible removal

shall take place in an executive session, but the final vote on removal shall take place in an open meeting. During the executive session, the presiding officer shall lay out all of the correspondence and information that has been received related to the possible removal, and the officer subject to the possible removal may present evidence refuting or verifying the information presented. 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 or her membership count as part of the total membership for purposes of calculating a two-thirds 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.

#### **Article VII. Section 4. Vacancies of Officers**

Whenever an officer vacancy exists, the RWPG shall solicit nominations for a successor at the next RWPG meeting, in the manner consistent with the posting requirements of the Texas Open Meetings Act. Nominations shall be made from the floor by voting members. The voting members shall select a replacement officer from among the nominees by a two-thirds vote of the voting membership present. The next highest ranking officer shall serve in the vacant position until a successor takes office, unless the office of the Secretary/Treasurer becomes vacant, in which case the Chair shall appoint a willing voting member to serve as Secretary/Treasurer until the successor to the Secretary/Treasurer takes office. The person selected to fill a vacancy for an officer shall serve for the unexpired term of his or her predecessor in office.

#### **Article VII. Section 5. Duties of Each Officer**

- (a) Chair. The Chair shall be the executive officer of the RWPG and the Executive Committee. The Chair will preside at all meetings of the RWPG and the Executive Committee and perform all duties provided by these Bylaws. 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 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. The Vice Chair is a member of the Executive Committee pursuant to Section 6 of this Article.
- (c) Secretary/Treasurer. The Secretary/Treasurer of the RWPG shall be the General Manager of the Brazos River Authority. The Secretary/Treasurer shall maintain the minutes and take attendance of the RWPG meetings. The minutes and attendance shall be kept as part of the RWPG official records. The Secretary/Treasurer shall insure 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-Treasurer shall also

keep or cause to be kept accurate books and records of funds of the RWPG. The Secretary/Treasurer 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/Treasurer shall assume the duties of the Chair. The Secretary/Treasurer is a member of the Executive Committee pursuant to Section 6 of this Article.



**Article VII. Section 6. Executive Committee**

- (a) Composition. The Executive Committee shall be composed of five RWPG members, including the Chair, Vice Chair, Secretary/Treasurer, 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 selected initially, and thereafter every other calendar year, in the same manner and with the same terms as set forth for the selection of officers under this Article. Members-at-large shall be removed and their vacancies filled in the manner prescribed for officers under this Article.

Representation on the Executive Committee shall, to the maximum extent possible, achieve geographic balance.

- (b) Duties. The Executive Committee shall be responsible for carrying out the duties imposed on it in these Bylaws. The voting members of the RWPG may delegate any administrative decisions to the Executive Committee unless provided otherwise in these Bylaws.

**Article VII. Section 7. Designated Alternates**

A designated alternate of a member serving as an officer shall not serve in the member's capacity as an officer in lieu of the member. When an officer is absent or otherwise unable to serve, the next highest ranking officer shall serve for the officer. If no lower ranking officer exists or can serve, then a member designated by the Chair or acting Chair shall serve for the officer.

## **ARTICLE VIII. MEETINGS**

### **Article VIII. Section 1. Open Meetings and Notices**

All meetings of the RWPG shall be posted and open to the public in the manner of a governmental body under the Texas Open Meetings Act and as set forth in TWDB rules. All actions of the RWPG shall be deliberated and undertaken in open meeting, unless otherwise authorized by the Texas Open Meetings Act. The time and place of meetings shall be set to facilitate, to the greatest extent possible, the participation of the public in the regional water planning process. Copies of all materials presented or discussed shall be made available for public inspection prior to and following any meeting of the RWPG.

### **Article VIII. Section 2. Regular Meetings**

At least one regular meeting of the RWPG shall be held each calendar year, and other meetings may be held as deemed necessary. The Secretary/Treasurer shall insure that an advance notice and an agenda for regular meetings will be provided to the full membership of the RWPG at least ten calendar days in advance of the meeting by first class U.S. Mail, facsimile, or electronic mail. Supporting information and member-requested materials shall be distributed to the full membership with the notice and agenda or at the meeting, as deemed appropriate by the Chair.

### **Article VIII. Section 3. Called (Special) Meetings**

The Chair or a simple majority of the total voting membership of the RWPG, excluding vacancies, may call special meetings of the RWPG. The Secretary/Treasurer shall insure that advance notice and an agenda for the called meeting is provided to the full membership of the RWPG at least five calendar days in advance by first class U.S. Mail, facsimile, or electronic mail. Supporting information and member-requested materials shall be distributed to the full membership with the notice and agenda or at the meeting, as deemed appropriate by the Chair.

### **Article VIII. Section 4. Agenda**

The Secretary/Treasurer of the RWPG shall insure that an agenda is prepared and distributed for all meetings, in accordance with Sections 2 and 3 of this Article. Items shall be placed on the agenda by the request of the Chair or by the request of at least three voting members of the RWPG. Consideration for approval of the previous meeting's minutes, as applicable, shall always be among the first items on the agenda. Copies of the agenda and all supporting information shall be made available for public inspection prior to and following any meeting of the RWPG.

### **Article VIII. Section 5. Quorum**

A quorum of the RWPG shall be a simple majority of the voting membership or their designated alternates excluding vacancies. At least a quorum shall be necessary to conduct any business of the RWPG, except to adjourn. In the absence of a quorum, a majority of the voting members present at any meeting, regular or special, may adjourn until the date fixed for the next regular or special meeting.

**Article VIII. Section 6. Public Hearings/Meetings Required by Law**

The RWPG shall post notice and conduct public hearings and public meetings that are specifically required by statute and/or TWDB rule, including those set forth for preplanning, draft regional water plan presentation, adoption of amendments to the regional water plan, and final regional water plan adoption, in accordance with the requirements of the relevant state law and/or TWDB rules. Notification requirements may be different than those specifically delineated in Texas Water Code §16.053 and/or 31 TAG §357.12.

**Article VIII. Section 7. Tape Recordings and Minutes**

- (a) Written minutes or a tape recording shall be kept of all open meetings of the RWPG and any committees of the RWPG.
- (b) The Secretary/Treasurer shall insure that tape recordings or minutes of all meetings of the RWPG are prepared. If the minutes are prepared, they shall:
  - (1) state the subject of each deliberation;
  - (2) indicate each vote, order, decision, or other action taken;
  - (3) indicate those members in attendance, noting the presence of a quorum, and noting the presence of those members of the public who participate in the course of the meeting;
  - (4) represent an accurate summary of the meeting's record; and state any other information required by these Bylaws to be included in the minutes.
- (c) The Secretary/Treasurer shall insure that true copies of the tape recordings or minutes are provided to the full membership as soon as possible following the meeting, but no later than ten calendar days prior to the next regular meeting of the RWPG.

**Article VIII. Section 8. Robert's Rules of Order**

Except as otherwise provided in these Bylaws, meetings of the RWPG shall be conducted under the provisions of the most current edition of *Robert's Rules of Order*. However, failure to follow such rules shall not constitute grounds for appeal of an action or a decision of the RWPG.

## **ARTICLE IX. MAKING DECISIONS**

### **Article IX. Section 1. Applicability - No Written Proxies**

- (a) Unless the method for making a particular decision is set forth in these Bylaws, the RWPG and its sub regional water planning groups shall make all decisions utilizing the process set forth in Section 2 of this Article.
- (b) Written proxies shall not be allowed in any decision making by the RWPG, its committees, or its sub regional water planning groups. However, designated alternates shall be allowed to participate in decision making as set forth in these Bylaws. Because it is important in achieving agreement for all members to participate actively, keep up-to-date on the progress of the RWPG, and develop a common base of information, members shall in good faith attempt to minimize the number of times they are absent from meetings or are represented by their designated alternates.

### **Article IX. Section 2. Decision-Making Process**

- (a) The RWPG shall make decisions and take action by a vote of a simple majority of the voting membership present, unless otherwise specified in these Bylaws.
- (b) Failure to Reach Agreement. If after good faith negotiations it appears likely to the Chair that the voting members will be unable to reach full agreement, the Chair shall institute a dispute resolution process.
- (c) Except as provided in Subsection (d), votes may be taken by roll call or voice votes. However, in the event a voice vote is utilized, the Chair shall audibly indicate whether the vote was unanimous and the names of any voting members abstaining or not present for the vote. In the event a voice vote is not unanimous, the Chair shall conduct a roll call vote.
- (d) Any decision or action of the RWPG that requires a two-thirds vote shall be taken by a roll call vote.

### **Article IX. Section 3. Final Adoption of Regional Water Plan Amendments**

The voting members of the RWPG shall finally adopt the regional water plan for the RWPA and any amendments thereto by a two-thirds vote of the voting membership present.

## **ARTICLE X. BOOKS AND RECORDS**

### **Article X. Section 1. Required Documents and Retainment**

Records of the RWPG shall be kept at the principal administrative office of the RWPG for a period of time equal to the retention period required of a local government entity subject to the Local Government Records Act.

### **Article X. Section 2. Inspection and Copying**

Records of the RWPG shall be available for inspection and copying at the principal place of business of the representative political subdivision during normal business hours. Procedures and fees for copying and inspection shall be the same as those used by the political subdivision housing the principal office of the RWPG for inspection and copying of its own public records.

### **Article X. Section 3. Availability of Reports**

All reports, planning documents, and work products resulting from projects funded by the TWDB shall be made available to the TWDB, the Texas Parks and Wildlife Department, and the Texas Commission on Environmental Quality or their successor agencies. At least one copy of the approved regional water plan shall be placed in the county clerk's office for each county and in at least one public library of each county having land within the RWPA, in accordance with state law.

### **Article X. Section 4. Public Information Coordinator**

The RWPG administrative agent shall serve as the RWPG Public Information Coordinator.

## **ARTICLE XI. SUB-REGIONAL WATER PLANNING GROUPS**

### **Article XI. Section 1. Establishment**

The RWPG may by motion establish Sub regional Water Planning Groups (hereinafter "SWPG") to assist and advise the RWPG in the development of the regional water management plan. The SWPG may be formed to address specific issues assigned by the RWPG and may have a specified term of membership.

### **Article XI. Section 2. Membership**

Membership in the SWPG shall generally follow the requirements and procedures of Article II of these Bylaws; membership of the SWPG should be inclusive, rather than exclusive in nature; the interests identified in the initial coordinating body will be invited and/or appointed as well as other interests that have been identified. Appointment to SWPGs shall be made by a two-thirds vote of the voting membership present. The terms of office for all members of SWPG shall be either upon the expiration of the term, if any, specified by the RWPG in the establishing motion for the SWPG or upon the expiration of the person's membership in the RWPG.

### **Article XI. Section 3. Officers**

The Chair, Vice Chair, and Secretary of an SWPG shall be selected from the duly-elected members of the respective SWPG, and shall be elected to their respective offices by a simple majority vote of membership present of the SWPG. Additional SWPG officers with associated responsibilities may be created as necessary by a simple majority vote of the membership present of the SWPG.

### **Article XI. Section 4. Meetings**

Requirements and procedures for SWPG meetings shall follow those established in Article VIII of these Bylaws, including requirements for notice. SWPGs may adopt their own rules of procedure, if authorized by the RWPG and the rules are not in conflict with State law, TWDB rules, or these Bylaws.

### **Article XI. Section 5. Books and Records**

Requirements and procedures for SWPG books and records shall follow those established for the RWPG in Article X of these Bylaws.

### **Article XI. Section 6. Code of Conduct**

Members of an SWPG are subject to the requirements of Article II, Section 7 of these Bylaws.

## **ARTICLE XII. COMMITTEES**

### **Article XII. Section 1. Establishment**

The RWPG may establish committees to address issues deemed appropriate. Committees may be formed to address specific issues assigned by the RWPG and may have the specified term of membership.

### **Article XII. Section 2. Membership**

Membership in committees shall be determined by the Chair of the RWPG. Committees may include both voting and non-voting members. The terms of committee membership for all members of committees shall expire either upon the expiration of the term of the committee, if any, specified by the Chair of the RWPG; upon the expiration of a person's membership of the RWPG; or, on a dissolution of the committee by the Chair of the RWPG.

### **Article XII. Section 3. Chairs**

A Chair for each committee shall be chosen from its membership by the Chair of the RWPG. Committee Chairs shall be appointed at the first meeting of every other calendar year at the same time RWPG officers are elected pursuant to Article VII.

### **Article XII. Section 4. Meetings**

Requirements and procedures for committees meetings shall follow those established in Article VIII, Sections 1, 3, 5, 7 and 8 of these Bylaws, including requirements for notice.

### **Article XII. Section 5. Decision Making Process**

Committees of the RWPG shall make decisions and take action by a vote of a simple majority of committee voting members present unless otherwise specified in these Bylaws. Committees shall follow the process set forth in Article IX Section 2(c) regarding voice votes.

## **ARTICLE XIII. COMPENSATION**

Members of the RWPG are not to be compensated for their services by the State of Texas. Travel expenses for voting members and the administrative agent may be reimbursed in accordance with rules adopted by the TWDB.

## **ARTICLE XIV. COST ALLOCATION**

The voting members of the RWPG shall develop and approve an equitable method or formula for the allocation of costs associated with the local match for state funding.

**ARTICLE XV. CONTRACTUAL SERVICES**

The voting members of the RWPG shall make all decisions related to final approval of persons or entities selected by an eligible applicant to provide contractual services for the RWPG, including all services related to preparation, development, or revisions of the regional water plan for the RWPA. However, the voting members may delegate to the Executive Committee the authority to make all administrative decisions concerning amendments to TWDB Research and Planning Fund grant contracts for services related to regional water planning, except those decisions concerning amendments related to scopes of work and budgets.

**ARTICLE XVI. FISCAL YEAR**

The fiscal year of the RWPG shall be September 1 through August 31.

**ARTICLE XVII. ADOPTING AND AMENDING THE BYLAWS**

These Bylaws shall have full force and effect upon approval and adoption by the voting members of the RWPG, acting on behalf of the interests comprising the RWPA, and upon submission to the TWDB in compliance with 31 TAC §357.11. The voting members shall adopt these Bylaws and any amendments thereto by a two-thirds vote of the voting membership present.

References to Texas statutes or Texas Administrative Code provisions in these Bylaws are references to such statutes and provisions as amended, modified, re-codified, substituted or supplemented from time to time.

**ARTICLE XVIII. RESOLUTION ADOPTING BYLAWS**


REVISED and amended by action of the RWPG at a properly noticed meeting on November 5, 2014, and effective for all purposes on that date.

The resolution adopted by the RWPG shall be placed in the minute book, and a full and true copy of the bylaws, certified by the Secretary/Treasurer, shall be kept at the principal office of the RWPG for inspection by members or the public at all reasonable times during business hours.

\_\_\_\_\_  
David Collinworth  
Secretary/Treasurer

\_\_\_\_\_  
Date






## Simplified Planning Process Declaration

Agenda Item 6.11

August 22, 2018

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### Background

#### TWDB guidelines for planning state:


- The Senate Bill 1511, 85th Legislative Session, provided RWPGs the option to implement simplified planning if there are no significant changes to the water availability, water supplies, or water demands in the regional water planning area.
- The rule identifies the **Technical Memorandum** (the mid-point analysis of water demand projections, source availability, WUG supplies, and WUG needs calculations) as the **decision point** for an RWPG to declare its intent whether or not to pursue simplified planning in accordance with either simplified planning provision (adequate existing supplies or no significant changes in water demands, source availability, or WUG supplies).
- Simplified planning, by either provision, may only be implemented during off-census planning cycles.



**Suggested Action:**

“The Brazos G Regional Water Planning Group does not intend to pursue Simplified Planning to develop the 2021 Brazos G Regional Water Plan.”







## Potentially Feasible Water Management Strategies

Agenda Item 6.12

August 22, 2018



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### Background

Regional water planning rules require that the “process” for identifying, evaluating and selecting water management strategies be formally considered by the regional water planning groups.

The mid-point Technical Memorandum requires a list of potentially feasible water management strategies.

Scope of Work Committee met on July 17 and Aug 17 to:

1. Review list of potentially feasible strategies, and
2. Identify which strategies to be evaluated for 2021 Brazos G Plan.



## Selection of Water Management Strategies

Three aspects:

1. Identification of “potentially feasible” water management strategies
2. Evaluation of water management strategies
3. Selection of water management strategies to meet needs



## Identification of Potentially Feasible Water Management Strategies

Three-step process:

1. Include strategies identified in previous plans
  - Recommended and alternative strategies from 2016
  - Strategies evaluated, but not recommended in 2016
  - Strategies evaluated in 2001 – 2011 Plans that were not moved forward
2. Identify draft needs (Aug 2018) and brainstorm additional ideas to meet those needs
3. Ongoing communication from local interests in 2018 – 2020

Determine initial list of “potentially feasible” strategies today

Add additional strategies later if local interests request and time/budget allow



## Selection of Water Management Strategies to Meet Needs

- Some strategies are identified for specific WUGs/WWPs
- Some strategies are identified initially w/out specific users
- WUGs and WWPs make preferences known during 2018 – 2020
- HDR recommends strategies when WUGs/WWPs do not communicate preferences
- Opportunities for comments/requests by WUGs and WWPs
  - WUG/WWP survey after needs are identified?
  - Regularly scheduled meetings throughout planning process
  - Directly to HDR, BRA and individual planning group members
  - At three subregional meetings, following completion of draft Initially Prepared Plan
  - During public comment period following completion of Initially Prepared Plan



## Task for Today

- Review and approve list of potentially feasible water management strategies



### Identify Potential Strategies

- HDR reviewed 2001, 2006, 2011 and 2016 Plans
- Initial list of 102 potentially feasible strategies to consider
  - Not all permutations or options in initial list
  - Added 2 more for today's consideration (Out of Region supplies)
- Tables to follow
  - Strategies not included in current SOW are identified



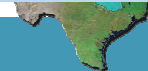
### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>Conservation and Demand Management</b>								
1	Municipal Conservation		X	X	R	na	na	1.45
2	Industrial Conservation		X	X	R	na	na	
3	Irrigation Conservation		X	X	R	na	na	0.70
4	Advanced Municipal Conservation (gpcd < 140)				R	na	na	
5	Advanced Industrial Conservation				R	na	na	
6	Drought Management		X	X	X			
7	Leave Needs Unmet				R			



### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>New Reservoirs</b>								
8	Breckenridge Reservoir		X			28,920	\$ -82,755,000	0.69
9	Brushy Creek Reservoir			X	R	1,450	\$ 20,836,000	1.48
10	Cedar Ridge Reservoir		X	X	R	26,575	\$ 290,868,000	3.16
11	Coryell County Off-Channel Reservoir			X	R	3,135	\$ 42,246,000	4.31
12	Double Mtn. Fork (East) Reservoir		X	X		36,025	\$ 211,373,000	1.37
13	Double Mtn. Fork (West) Reservoir		X	X		84,775	\$ -151,456,000	1.02
14	Lake Bosque	X				17,900	\$ -67,063,000	0.83
15	Groesbeck Off-Channel Reservoir	X	X	X	R	1,755	\$ 11,909,000	1.89
16	Hamilton County Reservoir				X	9,275	\$ 153,839,000	5.90
17	Lake Creek Reservoir				A	14,500	\$ 193,524,000	4.01
18	Lake Palo Pinto Off-Channel Reservoir		X	X	A	3,110	\$ -34,685,000	8.01
19	Little River Off-Channel Reservoir	X	X	X	R	56,150	\$ -248,761,000	1.27
20	Little River Reservoir			X		71,275	\$ -381,705,000	1.01
21	Brazos River Main Stem Off-Channel Reservoir				X			
22	Meridian Off-Channel Reservoir	X		X	A	615	\$ -21,702,000	12.15
23	Millican-Bundic Reservoir	X	X			88,080	\$ -464,764,000	2.80
24	Millican Panther Reservoir			X		194,500	\$ 1,159,907,000	1.90
25	Paluxy Reservoir	X				16,300	\$ -74,147,000	1.03
26	Peach Creek Off-Channel Reservoir	X	X	X	X	4,240	\$ -66,852,000	4.40
27	Somervell County Off-Channel Reservoir	X				2,000	\$ -24,633,000	3.38
28	South Bend Reservoir	X	X	X	X	62,100	\$ 504,509,000	1.73
29	Throckmorton Reservoir			X	R	3,540	\$ 28,041,000	1.85
30	Turkey Peak Reservoir		X	X	R	8,100	\$ 83,363,000	2.30
31	Wheeler Branch Off-Channel Reservoir		X	X		1,800		



### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>New Groundwater Supplies</b>								
32	Brazos River Alluvium - various entities	X			R			
33	County, others	X	X	X	R			
34	Gulf Coast Aquifer - various entities			X	R			
35	Trinity Aquifer - various entities			X	R			
36	Edwards Aquifer - various entities			X	R			
37	Sparta Aquifer - various entities				R			
38	Dockum Aquifer - various entities				R			
39	Woodbine Aquifer - various entities				R			
40	Blaine Aquifer - various entities				R			
41	Yegua-Jackson Aquifer - various entities				R			
42	Seymour Aquifer - various entities				R			



### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>Conjunctive Operation of Existing Supplies</b>								
43	BRA System Operation - various projects to utilize new supply		X	X	R	247,320		
44	Coordinated use of Fort Phantom Hill and Hubbard Creek Reservoir	X						
45	Coordinated Use of Lake Leon Water Supply with Local Groundwater	X						
46	Oak Creek Reservoir Conjunctive Management			X	R	4,142		
<b>Aquifer Storage and Recovery</b>								
47	Bryan ASR				R	19,839	\$ 57,328,000	1.18
48	College Station ASR				R	2,800	\$ 63,850,000	9.42
49	Trinity ASR in Johnson County (Johnson County SUD and Acton MUD)		X	X	A	3,400	\$ 22,045,300	4.61
50	Trinity ASR in McLennan County		X	X	R	8,000	\$ 50,516,000	2.31
51	Lake Granger ASR (Trinity Aquifer)				R	9,050	\$ 59,060,000	2.67
52	Seymour ASR Project	X	X	X		3,750	\$ 18,826,000	4.45



### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>Reuse</b>								
53	Reuse Supply - various reuse projects throughout Brazos G		X	X	R	83,527	\$ 160,277,000	2.82
54	College Station DPR				A	2,800	\$ 56,192,000	10.69
55	College Station Non-Potable Reuse				R	103	\$ 1,705,000	5.15
56	City of Bryan Lake Bryan Reuse				R	605	\$ 8,989,000	4.75
57	City of Bryan Miramont Reuse				R	600	\$ 2,544,000	1.25
58	City of Cleburne Reuse				R	2,031	\$ 14,059,000	2.26
59	Waco WMARSS Reuse Projects		X	X	R	7,847	multiple	multiple
60	Bell County WCID No. 1 Reuse			X	R	1,925	\$ 12,146,000	2.35
61	IRA Reuse - Joe Pool		X	X		20,000	\$ 79,257,000	4.84





### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>Regional Projects</b>								
62	Lake Belton to Lake Stillhouse Hollow Pipeline			X	R	30,000	\$ 38,069,000	154.00
63	Bosque County Regional Project	X	X	X	R	1,070	\$ 21,792,000	6.99
64	Brushy Creek RUA Water Supply Project	X	X	X	R	67,000	\$ 314,847,000	3.46
65	East Williamson County Water Supply Project			X	R	8,400	\$ 42,127,000	3.60
66	Phase I Lake Whitney Water Supply Project			X	R	2,128	\$ 42,221,700	8.75
67	Future Phases of Lake Whitney Water Supply Project			X	R	7,572	\$ 110,843,000	2.84
68	Somervell County WSP			X	R	600	\$ 35,249,000	18.20
69	West Central Brazos Water Distribution System	X	X	X	R	1,400	\$ 21,148,000	7.65



### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>Augmentation of Existing Supplies</b>								
70	Gibbons Creek Reservoir Expansion			X	R	2,605	\$ 12,979,000	1.10
71	Lake Aquilla Storage Reallocation			X	R	2,400	\$ 21,887,000	2.65
72	Lake Aquilla Augmentation - Cleburne (Lake Whitney to Aquilla)				R	14,700	\$ 88,231,000	3.19
73	Lake Cisco Augmentation	X				500	\$ 4,700,000	2.95
74	Lake Granger Augmentation		X	X	A	46,265	\$ 637,057,000	4.94
75	Lake Granger Storage Reallocation			X	A	1,940	\$ 28,710,000	4.76
76	Lake Stillhouse Hollow Reallocation				A	2,643	\$ 36,553,000	8.61
77	Lake Whitney Reallocation	X			A	20,842	\$ 89,948,000	1.11
78	Lake Whitney Over-Drafting Supply with Off-Channel Reservoir							
79	Lake Leon Augmentation	X				9,100	\$ 2,200,000	
80	Lake Stamford Augmentation	X				6,680	\$ 6,300,000	
81	Lake Sweetwater Augmentation	X				790	\$ 3,000,000	
82	Millers Creek Reservoir Augmentation			X	R	775	\$ 2,549,700	7.38
83	BRA Sediment Reduction Program			X	A			
84	South San Gabriel Diversion into Lake Georgetown							



### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>Chloride Reduction or Treatment</b>								
85	Brackish GW Desal	X		X	X			
86	Chloride Control Project (SFWQC)			X	R			
87	Supplies from Chloride Control Project - Aspermont, Jayton, Region O							
88	Lake Whitney Desal	X				11,202	\$ 29,085,000	1.58
89	Ocean Water Desal							
90	BRA SWATS reallocation of capacity	X		X	X			



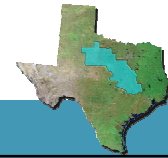
### Potentially Feasible Strategies

No.	Strategy	200	200	201	201	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gal)
<b>Other Strategies</b>								
91	Purchase and Use of Water from Possum Kingdom - Abilene				A	14,800	\$ 269,334,000	7.93
92	Brackish Groundwater				X			
93	Brush Control		X	X	R	0	\$ 7,532,000	
94	Restructure Contracts			X	R			
95	Subordination Agreements			X	R			
96	Weather Modification	X	X	X				
<b>Misc Strategies</b>								
97	Misc. Pipelines, Pump Stations and GW Options - various entities	X	X	X	R			
98	Misc. Purchases, Interconnects and Reallocations - various entities	X	X	X	R			
99	Rehabilitate Existing Wells			X	R			
100	Purchase from Walnut Creek Mine - Robertson County SE				R	9,000	N/A	1.55
101	Purchase from SAWS Vista Ridge Project (Williamson County)				R	5,700	None	6.68
102	Water Treatment Plant Expansions - various entities	X	X	X	R			
<b>New Supplies from Other Planning Areas</b>								
103	Trinity Basin Supplies (Trinity or Neches River projects to middle Brazos)							
104	Red River Off-Channel Reservoir near Arthur City							



**Suggested Action:**

“The Brazos G Regional Water Planning Group adopts the list of Potentially Feasible Water Management Strategies as presented above for inclusion in the mid-point planning Technical Memorandum.”



Potentially Feasible Water Management Strategies  
2021 Brazos G Regional Water Plan

No.	Strategy	2001	2006	2011	2016	Supply Developed (acft/yr)	Project Cost	Cost of Water (\$/1,000 gals)
<b>Conservation and Demand Management</b>								
1	Municipal Conservation		X	X	R	na	na	1.45
2	Industrial Conservation		X	X	R	na	na	
3	Irrigation Conservation		X	X	R	na	na	0.70
4	Advanced Municipal Conservation (gpcd < 140)				R	na	na	
5	Advanced Industrial Conservation				R	na	na	
6	Drought Management		X	X	X			
7	Leave Needs Unmet				R			
<b>New Reservoirs</b>								
8	Breckenridge Reservoir		X			28,920	\$ 82,755,000	0.69
9	Brushy Creek Reservoir			X	R	1,450	\$ 20,836,000	1.48
10	Cedar Ridge Reservoir		X	X	R	26,575	\$ 290,868,000	3.16
11	Coryell County Off-Channel Reservoir			X	R	3,135	\$ 42,246,000	4.31
12	Double Mtn. Fork (East) Reservoir		X	X		36,025	\$ 211,373,000	1.37
13	Double Mtn. Fork (West) Reservoir		X	X		34,775	\$ 151,456,000	1.02
14	Lake Bosque	X				17,900	\$ 67,063,000	0.83
15	Groesbeck Off-Channel Reservoir	X	X	X	R	1,755	\$ 11,909,000	1.89
16	Hamilton County Reservoir				X	9,275	\$ 153,839,000	5.90
17	Lake Creek Reservoir				A	14,500	\$ 193,524,000	4.01
18	Lake Palo Pinto Off-Channel Reservoir		X	X	A	3,110	\$ 34,685,000	3.01
19	Little River Off-Channel Reservoir	X	X	X	R	56,150	\$ 248,761,000	1.27
20	Little River Reservoir			X		71,275	\$ 331,705,000	1.01
21	Brazos River Main Stem Off-Channel Reservoir				X			
22	Meridian Off-Channel Reservoir	X		X	A	615	\$ 21,702,000	12.15
23	Millican-Bundic Reservoir	X	X			38,080	\$ 464,764,000	2.80
24	Millican-Panther Reservoir			X		194,500	\$ 1,159,907,000	1.90
25	Paluxy Reservoir	X				16,300	\$ 74,147,000	1.03
26	Peach Creek Off-Channel Reservoir	X	X	X	X	4,240	\$ 66,852,000	4.40
27	Somervell County Off-Channel Reservoir	X				2,000	\$ 24,633,000	3.38
28	South Bend Reservoir	X	X	X	X	62,100	\$ 504,509,000	1.73
29	Throckmorton Reservoir			X	R	3,540	\$ 28,041,000	1.85
30	Turkey Peak Reservoir		X	X	R	8,100	\$ 83,363,000	2.30
31	Wheeler Branch Off-Channel Reservoir		X	X		1,800		
<b>New Groundwater Supplies</b>								
32	Brazos River Alluvium - various entities	X			R			
33	others	X	X	X	R			
34	Gulf Coast Aquifer - various entities			X	R			
35	Trinity Aquifer - various entities			X	R			
36	Edwards Aquifer - various entities			X	R			


Potentially Feasible Water Management Strategies  
2021 Brazos G Regional Water Plan

37	Sparta Aquifer - various entities				R			
38	Dockum Aquifer - various entities				R			
39	Woodbine Aquifer - various entities				R			
40	Blaine Aquifer - various entities				R			
41	Yegua-Jackson Aquifer - various entities				R			
42	Seymour Aquifer - various entities				R			
<b>Conjunctive Operation of Existing Supplies</b>								
43	BRA System Operation - various projects to utilize new supply		X	X	R	247,320		
44	Coordinated use of Fort Phantom Hill and Hubbard Creek Reservoirs	X						
45	Coordinated Use of Lake Leon Water Supply with Local Groundwater	X						
46	Oak Creek Reservoir Conjunctive Management			X	R	4,142		
<b>Aquifer Storage and Recovery</b>								
47	Bryan ASR				R	19,839	\$ 57,328,000	1.18
48	College Station ASR				R	2,800	\$ 63,850,000	9.42
49	Trinity ASR in Johnson County (Johnson County SUD and Acton MUD)		X	X	A	3,400	\$ 22,045,300	4.61
50	Trinity ASR in McLennan County		X	X	R	8,000	\$ 50,516,000	2.31
51	Lake Granger ASR (Trinity Aquifer)				R	9,050	\$ 59,060,000	2.67
52	Seymour ASR Project	X	X	X		3,750	\$ 18,826,000	1.45
<b>Reuse</b>								
53	Reuse Supply - various reuse projects throughout Brazos G		X	X	R	83,527	\$ 160,277,000	2.82
54	College Station DPR				A	2,800	\$ 56,192,000	10.69
55	College Station Non-Potable Reuse				R	103	\$ 1,705,000	5.15
56	City of Bryan Lake Bryan Reuse				R	605	\$ 8,989,000	4.75
57	City of Bryan Miramont Reuse				R	600	\$ 2,544,000	1.25
58	City of Cleburne Reuse				R	2,031	\$ 14,059,000	2.26
59	Waco WMARSS Reuse Projects		X	X	R	7,847	multiple	multiple
60	Bell County WCID No. 1 Reuse			X	R	1,925	\$ 12,146,000	2.35
61	TRA Reuse - Joe Pool		X	X		20,000	\$ 79,257,000	1.84
<b>Regional Projects</b>								
62	Lake Belton to Lake Stillhouse Hollow Pipeline			X	R	30,000	\$ 38,069,000	154.00
63	Bosque County Regional Project	X	X	X	R	1,070	\$ 21,792,000	6.99
64	Brushy Creek RUA Water Supply Project	X	X	X	R	67,000	\$ 314,847,000	3.46
65	East Williamson County Water Supply Project			X	R	8,400	\$ 42,127,000	3.60
66	Phase I Lake Whitney Water Supply Project			X	R	2,128	\$ 42,221,700	8.75
67	Future Phases of Lake Whitney Water Supply Project			X	R	7,572	\$ 110,843,000	2.84
68	Somervell County WSP			X	R	600	\$ 35,249,000	18.20
69	West Central Brazos Water Distribution System	X	X	X	R	1,400	\$ 21,148,000	7.65
<b>Augmentation of Existing Supplies</b>								
70	Gibbons Creek Reservoir Expansion			X	R	2,605	\$ 12,979,000	1.10
71	Lake Aquilla Storage Reallocation			X	R	2,400	\$ 21,887,000	2.65
72	Lake Aquilla Augmentation - Cleburne (Lake Whitney to Aquilla)				R	14,700	\$ 88,231,000	3.19
73	Lake Cisco Augmentation	X				500	\$ 4,700,000	2.95

Potentially Feasible Water Management Strategies  
2021 Brazos G Regional Water Plan

74	Lake Granger Augmentation		X	X	A	46,265	\$ 637,057,000	4.94
75	Lake Granger Storage Reallocation			X	A	1,940	\$ 28,710,000	4.76
76	Lake Stillhouse Hollow Reallocation				A	2,643	\$ <del>36,553,000</del>	3.61
77	Lake Whitney Reallocation	X			A	20,842	\$ 89,948,000	1.11
78	Lake Whitney Over-Drafting Supply with Off-Channel Reservoir							
79	Lake Leon Augmentation	X				9,100	\$ <del>2,200,000</del>	
80	Lake Stamford Augmentation	X				6,680	\$ <del>6,300,000</del>	
81	Lake Sweetwater Augmentation	X				790	\$ <del>3,000,000</del>	
82	Millers Creek Reservoir Augmentation			X	R	775	\$ 2,549,700	7.38
83	BRA Sediment Reduction Program			X	A			
84	South San Gabriel Diversion into Lake Georgetown							
<b>Chloride Reduction or Treatment</b>								
85	Brackish GW Desal	X		X	X			
86	Chloride Control Project (SFWQC)			X	R			
87	Supplies from Chloride Control Project - Aspermont, Jayton, Region O							
88	Lake Whitney Desal	X				11,202	\$ <del>29,085,000</del>	1.58
89	Ocean Water Desal							
90	BRA SWATS reallocation of capacity	X		X	X			
<b>Other Strategies</b>								
91	Purchase and Use of Water from Possum Kingdom - Abilene				A	14,800	\$ 269,334,000	7.93
92	Brackish Groundwater				X			
93	Brush Control		X	X	R	0	\$ 7,532,000	
94	Restructure Contracts			X	R			
95	Subordination Agreements			X	R			
96	Weather Modification	X	X	X				
<b>Misc Strategies</b>								
97	Misc. Pipelines, Pump Stations and GW Options - various entities	X	X	X	R			
98	Misc. Purchases, Interconnects and Reallocations - various entities	X	X	X	R			
99	Rehabilitate Existing Wells			X	R			
100	Purchase from Walnut Creek Mine - Robertson County SE				R	9,000	N/A	1.55
101	Purchase from SAWS Vista Ridge Project (Williamson County)				R	5,700	None	6.68
102	Water Treatment Plant Expansions - various entities	X	X	X	R			
<b>New Supplies from Other Planning Areas</b>								
103	Trinity Basin Supplies (Trinity or Neches River projects to middle Brazos)							
104	Red River Off-Channel Reservoir near Arthur City							



X = evaluated in the identified regional water plan  
R = recommended in the 2016 Brazos G Plan  
A = alternative strategy in the 2016 Brazos G Plan



## Technical Memorandum

Agenda Item 6.13

August 22, 2018



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### Background

- The TWDB regional water plan development guidance requires that a Technical Memorandum be submitted.
- Deadline: September 10<sup>th</sup>
- Includes preliminary analysis of:
  - Water demand projections
  - Water availability
  - Existing water supplies
  - Water needs
- Declaration of Brazos G's intent not to pursue simplified planning
- List of Potentially Feasible Water Management Strategies
- Summary of public comments during 14 days following Brazos G meeting



## Technical Memorandum (mid-point summary)

### Specific Requirements:

- DB22 Reports (Appendices A – I)
- Water demand projections
- Water availability (WAM and GAM input/output files, as needed)
- Existing water supplies
- Water needs
- Identification of potentially feasible WMS
- Simplified planning declaration
- Summary of public comments received (15 day comment period)
- September 10, 2018 submittal deadline



## DB22 Reports (119 pages)

- TWDB DB22 Report #1. WUG Population Projections (Appendix A)
- TWDB DB22 Report #2. WUG Water Demand Projections (Appendix B)
- TWDB DB22 Report #3. WUG Category Summary (Appendix C)
- TWDB DB22 Report #4. Source Water Availability (Appendix D)
- TWDB DB22 Report #5. WUG Existing Water Supplies (Appendix E)
- TWDB DB22 Report #6. WUG Identified Water Needs/Surpluses (Appendix F)
- TWDB DB22 Report #9. Source Water Balance (Appendix G)
- TWDB DB22 Report #10a. WUG Data Comparison to 2016 RWP (Appendix H)
- TWDB DB22 Report #10b. Source Data Comparison to 2016 RWP (Appendix I)






**Suggested Action:**

“The Brazos G Regional Water Planning Group directs HDR and BRA to coordinate with TWDB staff and submit the Technical Memorandum for use in the development of the 2021 Brazos G Regional Water Plan, updated with information received from public comments, and as necessarily modified during final coordination with the TWDB.”







## SOW for Task 5A

Agenda Item 6.14

August 22, 2018

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### Background

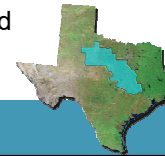
- TWDB has prepared a scope of work for development of the 2021 Plan
  - Identifies required elements to identify, evaluate and recommend water management strategies and water management strategy projections
- TWDB has allocated fixed funds for Task 5A. Evaluation and Recommendation of Water Management Strategies and Associated Water Management Strategy Projects
- Task 5A includes 4 primary tasks:
  1. Evaluation of water management strategies
  2. Recommendation of water management strategies and projects – determine “the plan”
  3. Entry of all WUG and WWP plans into DB22
  4. Preparation of Chapter 5 document (Volume II and Chapter 5 of Volume I)
- TWDB requires that RWPGs identify which strategies they will evaluate, prepare an associated budget, and request notice to proceed



## Status

### Scope of Work Committee

- July 17, 2018
  - Reviewed list of potentially feasible water management strategies
  - Selected subset for HDR to develop scope of work and budget
- Aug 17, 2018
  - Reviewed initial HDR scope of work and budget estimate
  - Finalized budget estimate for selected strategies
- Today
  - Review SOW Committee recommendations
  - Revise as necessary
  - Approve submitting to TWDB and request notice to proceed



## Additional Considerations (1)

- TWDB rules do not allow projects associated with “distribution system” improvements to be included in the regional water plans.

### 5.5.3 Infrastructure/Costs That Shall Not be Included in Regional Water Plans

If an infrastructure component is not required to increase the treated water supply volume delivered to an entity either as new supply or through demand reduction, then the component and its costs shall not be included in the RWP. Types of items and associated cost that shall not be incorporated into a RWP include, but are not limited to:

1. new facilities associated with internal distribution networks. (e.g., retail distribution within a WUG’s system) and that do not convey additional water supply volumes to a WUG;
2. internal distribution facilities including those associated with direct reuse water (per 31 TAC §357.34(e)(3)(A));
3. wastewater collection systems associated with a direct reuse project;
4. water system improvements to address compliance issues related to water quality or water distribution pressure;
5. new wells that are required simply to replace aging wells (i.e., maintenance);
6. maintenance of, or upgrades to, existing equipment or facilities that do not directly increase volumetric water supply (e.g., for improving water treatment processes at existing water treatment plants; replacement of electrical systems; replacement of pumps; or installation of cathodic protection on existing facilities);
7. preventative measures to protect or maintain infrastructure against future water loss or degradation; and,
8. water storage facilities directly associated with retail water distribution networks (e.g., elevated storage tank).



### **Additional Considerations (2)**

- Two additional potentially feasible water management strategies omitted from information provided to SOW Committee.
  - Trinity Basin Supplies (Trinity or Neches River Basin projects to the middle Brazos Basin)
  - Red River Off-Channel Reservoir near Arthur City
- Have been added to list of potentially feasible water management strategies
- Revise scope of work to include one or both?
  - Will require modification of recommended SOW



### **Scope of Work and Budget Estimate**

- Review table in packets and on screen



**Suggested Action:**

“The Brazos G Regional Water Planning Group directs HDR and BRA to finalize the Scope of Work and Budget for Task 5A as recommended by the Scope of Work Committee, and reflecting any changes directed by Brazos G during the August 22, 2018 meeting.”



**Technical Consultant  
Scope of Work and Budget for Task 5A  
to Develop the  
2021 Brazos G Regional Water Plan**

**Evaluation and Selection of Water Management Strategies**

**Background**

The TWDB has prepared a scope of work for development of the 2021 Brazos G Regional Water Plan (2021 Plan)<sup>1</sup>. This scope of work identifies elements required to evaluate and select water management strategies and projects to meet the needs of Water User Groups (WUGs) and Wholesale Water Providers (WWPs) under Task 5A. The TWDB has identified total funds available for Task 5A, Evaluation and Recommendation of Water Management Strategies and Associated Water Management Strategy Projects, but requires that each regional planning group submit a detailed scope of work identifying those water management strategies the planning group will evaluate as potentially feasible to meet needs within the planning area.

This scope of work identifies those strategies that have been identified by the Brazos G Regional Water Planning Group (Brazos G) to potentially meet the needs of WUGs and WWPs in the Brazos G Area in the 2021 Plan. Other strategies that were identified as potentially feasible but were not included in this scope of work are identified and listed at the end of this scope of work. Strategies included in this proposed scope of work for Task 5A funds will be evaluated following the guidelines presented in the Second Amended General Guidelines for Fifth Cycle of Regional Water Plan Development<sup>2</sup>.

**Task 5A. Evaluation and Selection of Water Management Strategies**

Task 5A involves the technical evaluation and selection of recommended and alternative water management strategies (WMSs) and water management strategy projects (WMSPs) to meet projected needs. Technical evaluations of WMSs and WMSPs in the 2021 Plan will be at the same level of detail and follow a similar pattern to evaluations completed in the 2016 Plan, except for where updated TWDB rules require additional evaluation elements. For existing water management strategies fully evaluated previously for the 2016 Plan, only costs and developed supply (using updated Brazos G WAM and/or groundwater availability information, as appropriate), will be updated. No additional analysis of existing water management strategies will be completed, except as described herein.

Tasks common to each strategy evaluation include:

- Estimate available supply using the Brazos G WAM, groundwater availability models, or other sources;
- Estimate costs using the TWDB's WMSP Costing Tool;

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<sup>1</sup>[https://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/doc/current\\_docs/contract\\_docs/2ndAmendedSOW.pdf?d=28462.600000202656](https://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/doc/current_docs/contract_docs/2ndAmendedSOW.pdf?d=28462.600000202656)

<sup>2</sup>[https://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/doc/current\\_docs/contract\\_docs/2ndAmendedExhibitC.pdf?d=9317.500000121072](https://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/doc/current_docs/contract_docs/2ndAmendedExhibitC.pdf?d=9317.500000121072)

### ***Technical Consultant Scope of Work for Task 5A***

- Evaluate each strategy in accordance with the Regional Water Planning Guidelines, including reliability, cost, environmental issues, impacts to agricultural and rural areas, impacts to natural resources, and other issues relevant to Brazos G; and
- Develop GIS maps for all strategies showing infrastructure improvements and supply sources.

#### **1. Water Conservation.**

For each municipal WUG having an identified need, advanced water conservation will be evaluated as a water management strategy. For municipal WUGs, a single set of “active” strategies will be evaluated that will result in a hypothetical water savings. As the actual water savings and costs associated with any individual conservation strategy for any individual water utility is nearly impossible to quantify, water savings and costs will be based upon the best available information and presented in the cumulative, with the expectation that each individual WUG will pursue one or more specific strategies to achieve the stated conservation goals. The resulting savings and costs will be based upon a hypothetical group of strategies. In addition to the mix of strategies included in the 2011 Plan, the specific conservation strategies to be evaluated will include landscaping/xeriscaping incentives, such as turf replacement/reimbursement programs.

Based on preliminary needs analysis, conservation will be considered as a water management strategy for approximately 149 municipal WUGs with needs.

For non-municipal WUGs (irrigation, manufacturing and steam electric), conservation strategies will be evaluated to meet needs as appropriate in similar fashion to the 2016 Plan, following updated TWDB requirements.

**Task 1 Budget: \$11,200**

#### **2. Reuse.**

##### **2.1. Miscellaneous Reuse Projects**

Reuse supplies potentially available will be identified based on estimated effluent and return flow projections applied during surface water availability analysis. Reuse supplies will be considered to meet needs for all water use sectors based on availability and proximity. Up to ~~10~~5 reuse strategies/projects will be evaluated under this task/budget per TWDB guidelines.

<b>Task</b>	<b>2.1</b>	<b>Budget:</b>
<b>\$49,700</b>	<b>40,850</b>	

##### **2.2. City of College Station Direct Potable Reuse**

The City of College Station is considering direct potable reuse as a future water supply. Brazos G will coordinate with College Station to identify any changes to the City’s plans

### ***Technical Consultant Scope of Work for Task 5A***

since this strategy was evaluated for the 2016 Plan. Supply, cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines.

**Task 2.2 Budget: \$3,300**

#### **2.3. City of College Station Indirect Reuse**

The City of College Station is considering expanding its use of reclaimed water for irrigation within the City. Brazos G will coordinate with College Station to identify any changes to the City's plans since this strategy was evaluated for the 2016 Plan. Supply, cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines.

**Task 2.3 Budget: \$3,300**

#### **2.4. City of Bryan Lake Bryan Reuse**

The City of Bryan is considering options for augmenting supplies at the Bryan Utilities Lake. Brazos G will coordinate with the City of Bryan to obtain the City's latest plans for these projects and will update supplies, costs and environmental evaluation for the projects per TWDB guidelines.

**Task 2.4 Budget: \$3,300**

#### **2.5. City of Bryan Miramont Reuse**

The City of Bryan is considering utilizing reclaimed water to irrigate facilities at the Miramont Country Club. Brazos G will coordinate with the City of Bryan to obtain the City's latest plans for this project and will update supplies, costs and the environmental evaluation for this project per TWDB guidelines.

**Task 2.5 Budget: \$3,300**

#### **2.6. City of Cleburne Reuse**

Brazos G will coordinate with the City of Cleburne to obtain the City's latest plans for expanding its reuse system and will update supplies, costs and the environmental evaluation for this project per TWDB guidelines.

**Task 2.6 Budget: \$3,300**

#### **2.7. Waco WMARSS Reuse Projects**

For the 2016 Plan, Brazos G evaluated four reuse systems from the Waco Metropolitan Area Sewerage System (WMARSS), which would utilize supplies from the WMARSS Central Plant and the Bullhide Creek Plant. These evaluations will be updated for supplies, costs and environmental issues per TWDB guidelines:

- Waco East Reuse – Hallsburg, Mart and Riesel



**Technical Consultant Scope of Work for Task 5A**

- Bellmead/Lacy Lakeview Reuse
- Bullhide Creek Reuse – Hewitt and Lorena
- Flat Creek Reuse – various Waco industrial customers
- Waco North Reuse – Chalk Bluff WSC and Gholson

**Task 2.7 Budget: \$13,400**

**2.8. Bell County WCID No. 1 Reuse Projects**

Bell County WCID No. 1 is considering implementing the North Reuse Project and the South Reuse Project, utilizing Type I reclaimed water from its three wastewater treatment plants. Brazos G will coordinate with the District to obtain current plans for these projects, and will update evaluations of these two projects, including supplies, costs and environmental evaluations per TWDB guidelines.

**Task 2.8 Budget: \$6,600**

**Task 2 Budget: ~~\$86,200~~ \$66,150**

**3. New Reservoirs.**

New reservoir projects that could be developed to meet needs will be evaluated. Some were evaluated in the 2016 Plan and will require updates to project yield and cost, and some have been identified subsequent to the 2016 Plan and will require fully new evaluations. Some reservoir projects are currently identified for specific WUGs or WWPs, while others are considered to be regional supplies, for which the potential project sponsor will be identified as the 2021 Plan is developed.

**3.1. Brushy Creek Reservoir – City of Marlin Supply**

Yield, project cost and environmental evaluation will be updated per TWDB guidelines, based on the City of Marlin’s current plans for the reservoir project.

**Task 3.1 Budget: \$8,800**

**3.2. Cedar Ridge Reservoir – regional supply for City of Abilene and customers**

Yield, project cost and environmental evaluation will be updated per TWDB guidelines, based on the City of Abilene’s current plans for the reservoir project.

**Task 3.2 Budget: \$6,600**

**3.3. Coryell County Off-Channel Reservoir – regional supply**

Yield, project cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines.

**Task 3.3 Budget: \$4,600**

**3.4. Groesbeck Off-Channel Reservoir – regional supply**

## *Technical Consultant Scope of Work for Task 5A*

Yield, project cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines. Additional coordination with the City of Groesbeck will be required to confirm the location of the potential off-channel reservoir site.

**Task 3.4 Budget: \$6,100**

### **3.5. Hamilton County Reservoir – regional supply**

Yield, project cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines.

**Task 3.5 Budget: \$4,600**

### **3.6. Lake Creek Reservoir – regional supply for NCTMWA and customers**

Yield, project cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines.

**Task 3.6 Budget: \$7,200**

### **3.7. Brazos River Main Stem Off-Channel Reservoir – regional supply**

An abbreviated analysis to identify potential off-channel reservoir sites proximate to the main stem of the Brazos River in the central part of the Brazos G Area was conducted during development of the 2016 Plan. Fourteen potential sites were identified, and yield analyses and costs were estimated for two of those. One of the sites is no longer considered feasible (Little River OCR) and the second (Milam County OCR) is located in an area that may preclude its feasibility, also. The 14 locations identified previously will be evaluated again, and a more detailed search for additional sites will also be made. Two candidate sites will be evaluated per TWDB guidelines for possible recommendation by Brazos G. Supplies to the off-channel reservoir sites would be made available from the BRA's System Operations Permit or from additional unappropriated flows in the Brazos Basin.

**Task 3.7 Budget: \$22,500**

### ~~**3.8. Peach Creek Off-Channel Reservoir – regional supply for Brazos County and surrounding area**~~

~~Yield, project cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines.~~

~~**Task 3.8 Budget: \$4,600**~~

### ~~**3.98. South Bend Reservoir – regional supply**~~

~~Yield, project cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines.~~

~~**Task 3.9 Budget: \$8,200**~~

### ~~**3.910. Throckmorton Reservoir – regional supply**~~

~~Yield, project cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines.~~

*Technical Consultant Scope of Work for Task 5A*

**Task 3.10 Budget: \$4,600**

**3.10H. Turkey Peak Reservoir – regional supply for Palo Pinto County MWD No. 1 and customers**

Yield, project cost and environmental evaluation will be updated from the 2016 Plan per TWDB guidelines, based on PPCMWD No. 1's current plans for the project.

**Task 3.10 Budget: \$5,600**

**Task 3 Budget: ~~\$83,400~~ \$78,800**

**4. New Groundwater Supplies and Groundwater Projects**

Additional groundwater development will be required to meet future needs. The final list of WUGs for which additional groundwater development will be evaluated will be determined during the planning process as the final water needs are established and those entities are coordinated with to determine their preferred strategies and projects. Strategies and projects to increase groundwater supplies will be evaluated from the following aquifer systems, consistent with projects recommended in the 2016 Brazos G Plan and continued coordination with WUGs in the Brazos G Area. Final selection of projects will be made based on remaining aquifer availability after current supplies are met, proximity to WUGs with needs, and preferences of local sponsors.

- Blaine Aquifer
- Brazos River Alluvium
- Carrizo-Wilcox Aquifer
- Cross Timbers Aquifer
- Dockum Aquifer
- Edwards BFZ
- Ellenburger-San Saba Aquifer
- Gulf Coast Aquifer System
- Navasota River Alluvium
- Queen City Aquifer
- Seymour Aquifer
- Sparta Aquifer
- Trinity Aquifer
- Woodbine Aquifer
- Yegua-Jackson Aquifer
- Other aquifers, as needed to meet local needs

Based upon projects and strategies evaluated and/or recommended in the 2016 Plan, and the number of new WUGs added since the 2016 Plan, approximately 90 individual groundwater projects will be evaluated for the 2021 Plan, in addition to three larger strategies for College Station, Bryan and Williamson County entities. Supplies may be made available from the SAWS Vista Ridge project for which additional projects may be evaluated to supply needs in Williamson and Bell Counties that would utilize the SAWS Vista Ridge project as a source.

## *Technical Consultant Scope of Work for Task 5A*

### **4.1. Miscellaneous GW Strategies/Projects**

Supplies, project costs and GIS information will be developed for approximately 90 groundwater projects. Supplies will not be developed that would cause the MAG for any aquifer to be exceeded. Potential strategies and projects may involve brackish groundwater in some cases where brackish sources are in closer proximity than fresh sources. Environmental evaluations will be performed for those expected to potentially impact cultural or environmental resources, otherwise all evaluations will assume that pipelines and well fields will avoid sensitive areas and few environmental issues will need to be addressed. Brazos G will coordinate with local groundwater conservation districts to identify recently permitted groundwater well projects that should be included as water management strategies.

**Task 4.1 Budget: \$98,200**

### **4.2. Update Groundwater Strategy for Bryan**

Brazos G will coordinate with the City of Bryan to update the current groundwater strategy in the 2016 Plan that increases Bryan's supplies from the Carrizo-Wilcox Aquifer in Brazos and Robertson Counties. Brazos G will incorporate the most recent project information obtained from Bryan during this update.

**Task 4.2 Budget: \$11,000**

### **4.3. Update Groundwater Strategy for College Station**

Brazos G will coordinate with the City of College Station to update the current groundwater strategy in the 2016 Plan that increases College Station's supplies from the Carrizo-Wilcox Aquifer and potentially other aquifers in Brazos and potentially Robertson Counties. Brazos G will incorporate the most recent project information obtained from College Station during this update.

**Task 4.3 Budget: \$11,000**

### **4.4. Update Groundwater Strategy for Williamson County**

Brazos G will coordinate with Williamson County entities and potential groundwater suppliers to develop a water management strategy for developing groundwater supplies to meet Williamson County needs. Brazos G will include supplies from the SAWS Vista Ridge project if appropriate.

**Task 4.4 Budget: \$26,500**

**Task 4 Budget: \$146,700**

## **5. BRA System Operations Supplies**

The BRA's recently granted System Operations Permit provides roughly 100,000 acft/yr of additional supply. The BRA has recently begun considering where the agency might provide additional water through new contractual agreements. Brazos G will coordinate with the BRA to identify specific WUGs and/or WWP's that might purchase these additional supplies and develop specific projects (intakes, pipelines, pump stations, water treatment plants) to allow them to access these supplies. Because the amount of water

### ***Technical Consultant Scope of Work for Task 5A***

available under the System Operations Permit varies accordingly to where contractual diversions are located in the basin, additional WAM simulations will be needed to confirm availability of supplies at the diversion locations identified. Up to 15 individual projects will be evaluated per TWDB guidelines.

**Task 5 Budget: \$21,500**

#### **6. Oak Creek Reservoir Conjunctive Management – City of Sweetwater**

Oak Creek Reservoir, located in the Colorado River Basin in Region F, is used by the City of Sweetwater for water supply. When reservoir levels are low, Sweetwater utilizes the Champion Well Field. Conjunctively operating the reservoir and well field together has been shown to increase the total combined supply from the two sources, when supplies in Oak Creek are augmented with a subordination agreement (recommended strategy in the 2016 Brazos G and Region F Plans). This strategy will be updated from the information in the 2016 Plan, with new supply estimates and costs per TWDB guidelines

**Task 6 Budget: \$9,900**

#### **7. Aquifer Storage and Recovery**

Brazos G will coordinate with project sponsors for the following Aquifer Storage and Recovery (ASR) projects that were evaluated for the 2016 Brazos G Plan. Updated project information will be obtained. Project supplies, costs and environmental and cultural resource issues will be updated from the 2016 Plan per TWDB guidelines. Sources for some of these ASR projects may be either fresh water or reuse supplies.

##### **7.1. City of Bryan ASR**

Yield, project cost and environmental evaluation will be updated per TWDB guidelines, based on the City of Bryan's current plans for the project.

**Task 7.1 Budget: \$3,500**

##### **7.2. City of College Station ASR**

Yield, project cost and environmental evaluation will be updated per TWDB guidelines, based on the City of College Station's current plans for the project.

**Task 7.2 Budget: \$3,500**

##### **7.3. Trinity Aquifer ASR in Johnson County**

Yield, project cost and environmental evaluation will be updated per TWDB guidelines for this ASR project.

**Task 7.3 Budget: \$5,800**

##### **7.4. Trinity Aquifer ASR in McLennan County**

### **Technical Consultant Scope of Work for Task 5A**

Yield, project cost and environmental evaluation will be updated per TWDB guidelines for this ASR project.

**Task 7.4 Budget: \$9,400**

#### **7.5. Lake Granger ASR (Trinity Aquifer)**

This ASR project is operated conjunctively with Lake Granger to supplement the reservoir's supplies. The Brazos G WAM analysis will be updated for this project, and yield, project cost and environmental evaluation will be updated per TWDB guidelines.

**Task 7.5 Budget: \$10,300**

#### **7.6. Additional ASR Projects**

Several other ASR project ideas have been hypothesized recently, such as an ASR project to augment supplies in Williamson County. Brazos G will identify and evaluate ~~two~~one additional ASR project to meet needs in the Brazos G Area.

**Task 7.6 Budget:**  
**~~\$19,800~~9,200**

**Task 7 Budget:**  
**~~\$52,300~~42,400**

### **8. Regional Projects**

#### **8.1. Lake Belton to Stillhouse Hollow Pipeline**

The BRA is planning to construct a pipeline to transfer water from Lake Belton to Lake Stillhouse Hollow. In conjunction with the existing pipeline from Lake Stillhouse Hollow to Lake Georgetown, this project will improve the flexibility of the BRA's Little River System of reservoirs, allowing supplies from all three reservoirs to be utilized most efficiently. Brazos G will coordinate with BRA to obtain the latest project information and will update supplies, costs and environmental evaluation per TWDB guidelines.

**Task 8.1 Budget: \$1,800**

#### **8.2. Bosque County Regional Project**

With groundwater reliability remaining a concern in Bosque County, this project contemplates increasing the capacity of the City of Clifton Off-Channel Reservoir to increase supply to be made available to WUGs in Bosque County. Project information will be updated from the 2016 Plan for supply, costs and environmental evaluation per TWDB guidelines.

**Task 8.2 Budget: \$6,900**

#### **8.3. Brushy Creek RUA Water Supply Project**

The Cities of Leander, Cedar Park and Round Rock are pursuing implementation of a project to utilize supplies from the Highland Lakes (Colorado River Basin, Region K). Brazos G will coordinate with the Brushy Creek Regional Utility Authority to obtain

### ***Technical Consultant Scope of Work for Task 5A***

current project information, and will update supply, costs and environmental evaluations per TWDB guidelines.

**Task 8.3 Budget: \$5,600**

#### **8.4. East Williamson County Water Supply Project**

The Lonestar Regional Water Authority is pursuing projects to deliver water from the BRA's East Williamson County Water Treatment Plant located near Taylor, Texas to various entities in Williamson and possibly southern Bell Counties. Brazos G will coordinate with Lonestar to obtain recent project information, as well as identify potential future directions of the project. Supplies, costs and environmental evaluation for the project will be updated per TWDB guidelines.

**Task 8.4 Budget: \$7,400**

#### **8.5. Phase I and Future Phases of the Lake Whitney Water Supply Project**

The City of Cleburne has contracted for supplies from Lake Whitney and Lake Aquilla. This project will develop pipeline and treatment systems to deliver water from Lake Aquilla to Cleburne, and deliver water from Lake Whitney to either Lake Aquilla or Cleburne, depending on the option selected. Brazos G will coordinate with Cleburne to obtain the latest project information and will update supplies, costs and environmental evaluation per TWDB guidelines.

**Task 8.5 Budget: \$8,600**

#### **8.6. Somervell County Water Supply Project**

The Somervell County Water District recently constructed Wheeler Branch Reservoir and began projects to deliver this water to customers throughout Somervell County. Brazos G will coordinate with the District to obtain the latest project information and will update supplies, costs and environmental evaluation per TWDB guidelines.

**Task 8.6 Budget: \$4,000**

#### **8.7. West Central Brazos Water Distribution System**

The West Central Texas Municipal Water District recently acquired this water distribution system from the BRA. The project can deliver water to District customers from Possum Kingdom Lake and possibly from Hubbard Creek Reservoir. Brazos G will coordinate with the District to identify the District's current plans to upgrade and utilize this resource, and will evaluate supplies, costs and environmental issues per TWDB guidelines.

**Task 8.7 Budget: \$8,600**

**Task 8 Budget: \$42,900**

### **9. Augmentation of Existing Reservoir Supplies**

#### **~~9.1. Gibbons Creek Reservoir Expansion~~**

## **Technical Consultant Scope of Work for Task 5A**

~~Gibbons Creek Reservoir is operated by the Texas Municipal Power Agency (TMPA) to provide steam electric cooling water to the TMPA generating station located at the lake. Despite TMPA plans to liquidate the facilities, the reservoir remains a resource to supply water for steam electric generation, whether at the Gibbons Creek Power Station or elsewhere. Brazos G will update supplies, costs and environmental evaluation of the proposed raising of the reservoir pool. Supplies will be updated using WAM analyses. All evaluations will be completed per TWDB guidelines.~~

**Task 9.1 Budget: \$7,000**

### **9.12. Lake Aquilla Storage Reallocation**

The BRA and the U.S. Army Corps of Engineers have been investigating the feasibility of reallocating some of the flood storage in Lake Aquilla to conservation storage for water supply purposes. Brazos G will coordinate with the BRA and the Corps to obtain the latest project information from their evaluation, and will update supplies, costs and environmental evaluation per TWDB guidelines. Supplies will be updated using WAM analyses.

**Task 9.2 Budget: \$7,000**

### **9.23. Lake Granger Storage Reallocation**

The BRA and the U.S. Army Corps of Engineers have been investigating the feasibility of reallocating some of the flood storage in Lake Granger to conservation storage for water supply purposes. Brazos G will coordinate with the BRA and the Corps to obtain the latest project information from their evaluation, and will update supplies, costs and environmental evaluation per TWDB guidelines. Supplies will be updated using WAM analyses.

**Task 9.3 Budget: \$7,000**

### **9.4. Lake Stillhouse Hollow Storage Reallocation**

~~The BRA and the U.S. Army Corps of Engineers have been investigating the feasibility of reallocating some of the flood storage in Lake Stillhouse Hollow to conservation storage for water supply purposes. Brazos G will coordinate with the BRA and the Corps to obtain the latest project information from their evaluation, and will update supplies, costs and environmental evaluation per TWDB guidelines. Supplies will be updated using WAM analyses.~~

**Task 9.4 Budget: \$7,000**

### **9.35. Lake Whitney Storage Reallocation**

The BRA and the U.S. Army Corps of Engineers have been investigating the feasibility of reallocating some of the flood storage in Lake Whitney to conservation storage for water supply purposes. Brazos G will coordinate with the BRA and the Corps to obtain the latest project information from their evaluation, and will update supplies, costs and environmental evaluation per TWDB guidelines. Supplies will be updated using WAM analyses.

**Task 9.5 Budget: \$7,000**



## *Technical Consultant Scope of Work for Task 5A*

### **9.46. Lake Granger Augmentation**

The BRA has been considering augmenting supplies from Lake Granger with regional groundwater supplies to meet water needs in Williamson County and southern Bell County. Brazos G coordinate with BRA to update supplies, costs and environmental evaluation of the proposed project. Supplies will be updated using WAM analyses, coupled with evaluation of available groundwater supplies. All evaluations will be completed per TWDB guidelines.

**Task 9.6 Budget: \$12,600**

### **9.57. Lake Whitney Overdrafting Supply into Off-Channel Reservoir**

Lake Whitney is frequently in its flood pool, and it often takes the Corps of Engineers days or weeks to release the water so as to not increase flooding downstream. During these times, water could be diverted from the flood pool and stored in an off-channel reservoir for future use. Brazos G will evaluate supplies that could be made available to store in an off-channel reservoir, will identify a potential location for such a project, and will develop supplies, costs and environmental evaluation for the project per TWDB guidelines. Water supply analyses will be completed using WAM analyses.

**Task 9.7 Budget: \$12,500**

### **9.68. Millers Creek Reservoir Augmentation**

The North Central Texas Municipal Water Authority owns and operates Millers Creek Reservoir. Millers Creek does not have a reliable supply, and the Authority has been exploring ways to increase supplies from the reservoir. Brazos G will coordinate with the Authority to identify current plans and/or new concepts for augmenting supplies, and will complete an evaluation of the Authority's preferred alternative. Brazos G will develop supplies, costs and environmental evaluation for the proposed project. Supplies will be updated using WAM analyses. All evaluations will be completed per TWDB guidelines.

**Task 9.8 Budget: \$12,900**

### **9.79. BRA Sediment Reduction Program**

The BRA system of reservoirs is projected to lose substantial yield due as reservoir storage capacity is lost due to reservoir sedimentation. Brazos G will coordinate with BRA to research and identify pro-active measures the BRA could pursue to reduce sediment inflows and extend the useful life of the BRA's water supplies. Estimates for how much sediment inflows might be reduced will be estimated, and updated year 2070 yields will be determined. These updated yields will not require TCEQ permitting because they will not represent a new appropriation of water, so the Brazos G WAM will be used to determine future 2070 yields under the sediment reduction program so that supplies are consistent and comparable to the estimates of existing supplies performed under Task 3. Brazos G will estimate the costs of the program and will evaluate potential environmental issues. All analyses of sediment reduction and costs will be based upon literature research.

**Task 9.9 Budget: \$26,600**

### **9.810. South San Gabriel Diversion into Lake Georgetown**

## ***Technical Consultant Scope of Work for Task 5A***

During high flow events, there may be the opportunity to divert flows from the South San Gabriel River into Lake Georgetown to supplement storage in the reservoir. Brazos G will determine the supplies that such a project may make available through increasing the yield of Lake Georgetown. Brazos G will determine the costs of the necessary facilities and will complete an environmental evaluation of the proposed project per TWDB guidelines. Supplies will be determined using WAM analyses.

**Task 9.10 Budget: \$5,400**

**Task 9 Budget:**  
**\$105,000~~91,000~~**

## **10. Salt Fork Water Quality Control Corporation Chloride Control Project**

### **10.1. Update 2016 Evaluation with New/Changed Data**

Control of naturally occurring chlorides originating from the upper Brazos Basin has been a subject of study for decades among university researchers and various state and federal agencies. The Salt Fork Water Quality Corporation (SFWQC) has been implementing a project to capture brine before it seeps into Brazos Basin streams, remove the salt, and utilize the salt and fresh water produced for economic purposes. Brazos G has completed extensive evaluation of this project and its benefits for the 2011 and 2016 Plans. For the 2021 Plan, Brazos G will coordinate with the SFWQC to obtain the latest project configuration and facilities costs. The 2016 Plan presented an evaluation of the effectiveness of the chloride control using the WRAP-SALT program developed at Texas A&M University. That analysis will not be updated for this study because the underlying data have not changed since that analysis. The 2016 Plan also presented an evaluation of the potential savings in treatment costs that might be realized by downstream users of the water. That analysis will be updated only to reflect treatment costs consistent with other strategies in the 2021 Plan.

**Task 10.1 Budget: \$16,600**

### **10.2. Fresh Water Supply Projects from the SFWQC Chloride Control Project**

A new feature of the SFWQC project is the capability to supply approximately 2,000 acft/yr of fresh water that is a product of the desalination process. Several entities in the upper Brazos Basin (both in the Brazos G Area in the Region O Area) have expressed an interest in obtaining this new supply. Brazos G will coordinate with the SFWQC, WUGs that would be potential purchasers of the fresh water, and Region O to evaluate water management strategy projects that would utilize this source. Brazos G will develop costs for those projects and evaluate environmental issues per TWDB guidelines.

**Task 10.2 Budget: \$6,600**

**Task 10 Budget: \$23,200**

## **11. Possum Kingdom Reservoir Supplies to Abilene**

### ***Technical Consultant Scope of Work for Task 5A***

The City of Abilene has recently implemented an emergency supply project from Possum Kingdom Reservoir. Brazos G will coordinate with the City and the BRA to determine supplies that might be available should the City pursue this project as a permanent supply, and will identify other potential users in the vicinity that may have water needs. This strategy will be updated from the information in the 2016 Plan, with new supply estimates and costs per TWDB guidelines.

**Task 11 Budget: \$4,100**

### **12. Brush Control**

Brazos G will update the evaluation of Brush Control as a water management strategy from the 2016 Plan.

**Task 12 Budget: \$4,300**

### **13. New, Increased, or Restructured Contracts and Agreements**

Often, supplies can be made available simply by restructuring existing water supply contracts or water treatment agreements, or by entering into new agreements, including subordination agreements. For this strategy, Brazos G will identify WUGs and WWP's that have needs that could be alleviated through restricting or increasing existing contracts or entering into new agreements, and evaluate the possibility of increasing supplies under those contracts. Supply increases due to subordination agreements will be determined using WAM analyses. Projects (pipelines, pump stations, water treatment plants, etc.) that may be required to utilize increased supplies under this strategy will be evaluated as Miscellaneous Projects under Task 14. Miscellaneous Strategies and Projects.

	<b>Task</b>	<b>13</b>	<b>Budget:</b>
	<b>\$7,100</b>	<b>3,600</b>	

### **14. Miscellaneous Strategies and Projects**

#### **14.1. Miscellaneous Pipelines, Pump Stations, Connections and Interconnections**

During the planning process, a number of necessary smaller projects consisting of pipelines, pump stations, storage tanks, and connections between neighboring systems are identified. In the 2016 Plan, approximately 15 such projects are identified and evaluated. For the 2021 Plan, an estimated 25 such projects will be identified and evaluated. Supplies, project costs and GIS information will be developed for each of these per TWDB guidelines. Environmental evaluations will be performed for those projects expected to potentially impact cultural or environmental resources, otherwise all evaluations will assume that pipelines and system interconnections will avoid sensitive areas and few environmental issues will need to be addressed.

**Task 14.1 Budget: \$28,800**

#### **~~14.2. Lower Existing Wells~~**

## Technical Consultant Scope of Work for Task 5A

~~Desired Future Conditions (DFCs) associated with the Modeled Available Groundwater (MAG) estimates represent decreases in groundwater levels or piezometric heads in confined aquifer systems. These decreased groundwater levels may require that pumps in existing supply wells be lowered, or that new wells be developed to replace wells that no longer have high enough water levels. This is a particularly noticeable issue in McLennan County, where the desired future conditions in the Trinity Aquifer allow for several hundred feet of additional drawdown. Brazos G will access the TWDB groundwater well inventory and import well information into a Geographic Information System (GIS) for the wells associated with municipal WUGs. Brazos G will estimate well pump elevations and compare those elevations to projected groundwater levels under the DFCs to identify specific public supply wells that may be in danger of “going dry” under the DFCs.~~

~~Brazos G will estimate costs for well pump lowering or well replacement, as appropriate for those wells requiring some form of action.~~

**Task 14.2 Budget: \$33,000**

### 14.23. Water Treatment Plant Expansions

The 2016 Plan identifies 10 water user groups or wholesale water providers requiring a water treatment plant expansion or a new water treatment plant in order to utilize existing supplies. These plants or plant expansion are not included in any other water management strategy or project. For the 2021 Plan, 10 entities are expected to require a similar project.

**Task 14.3 Budget: \$4,600**

<b>Task</b>	<b>14</b>	<b>Budget:</b>
	<b>\$66,400</b>	<b><u>\$33,400</u></b>

### 15. Additional Strategies

During the course of preparing the 2021 Plan, it is likely that new potentially feasible water management strategies will be identified. This task allocates a portion of the overall budget provided by the TWDB for Task 45A to allow evaluation of new strategies that might be identified during the remainder of the planning process. If sufficient funds are not available to evaluate a strategy that comes to the planning group's attention, then a local sponsoring entity may be required to fund the evaluation of the strategy. New strategies will not be evaluated without prior approval of the Brazos G Regional Water Planning Group and concurrence of the TWDB.

<b>Task</b>	<b>15</b>	<b>Budget:</b>
	<b>\$25,000</b>	<b><u>\$22,496</u></b>

### 16. Plan Development

A plan will be developed for each WUG and WWP assigning recommended or alternative water management strategies to meet the needs of each entity. As water management strategies are evaluated, the plan for each WUG and WWP will be

### ***Technical Consultant Scope of Work for Task 5A***

developed that meets each projected water need. This task includes coordination as necessary with the WUGs and WWP's regarding individual plans.

**Task 16 Budget: \$32,700**

### **17. Database Entry**

All recommended or alternative water management strategies will be entered into the TWDB water planning database (DB22), and supplies and costs distributed to the WUGs and WWP's receiving water from each strategy. Specific tasks include:

- Define each recommended and alternative strategy in accordance to database requirements;
- Assign WUGs and WWP's to specific strategies and distribute supply from the strategy to each;
- Enter capital and annual costs for each WUG and WWP;
- Coordinate with adjacent regions sharing the source or with shared WUGs or WWP's;
- Quality control/quality assurance checks of the data entered into the database;
- Coordination with TWDB staff as needed.

**Task 17 Budget: \$33,800**

### **18. Chapter 5 Preparation**

Chapter 5 documents the evaluation and selection of water management strategies and presents the water supply plan for each WUG and WWP. The technical evaluations of the water management strategies are presented in a separate bound volume of the regional water plan due to the extensive and voluminous nature of the evaluations. This separate volume exceeded 850 pages of text, tables, maps and figures in the 2016 Plan. The section of chapter 5 presenting the plans for each WUG and WWP exceeded 350 pages of text and tables in the 2016 Plan. This task includes the effort to compile all the required information into Chapter 5 (both volumes), coordination with the planning group, TWDB staff, and other entities regarding comments on the final chapters in the Initially Prepared and Final Plans, as required by TWDB planning rules.

**Task 18 Budget: \$35,400**

**Total Task 5A Fee Estimate: ~~\$791,100~~703,546**

**Total TWDB Funding: \$703,546**

**~~Additional Funds Needed: \$87,554~~**

**Technical Consultant Scope of Work for Task 5A**

**Table 1  
Technical Consultant Budget for Task 5A**

<b>Task No.</b>	<b>Task Name / Report Section</b>	<b>Technical Consultant Budget</b>
Task 1	Water Conservation	\$ 11,200
Task 2	Reuse	\$ <del>86,200</del> 66,150
Task 3	New Reservoirs	\$ <del>83,400</del> 78,800
Task 4	Groundwater Supplies and Projects	\$ 146,700
Task 5	BRA System Operations Supplies	\$ 21,500
Task 6	Oak Creek Reservoir Conjunctive Managemnet	\$ 9,900
Task 7	Aquifer Storage and Recovery (ASR)	\$ <del>52,300</del> 42,400
Task 8	Regional Projects	\$ 42,900
Task 9	Augmentation of Existing Reservoir Supplies	\$ <del>105</del> 91,000
Task 10	Salt Fork Water Quality Corporation Chloride Control Project	\$ 23,200
Task 11	Possum Kingdom Reservoir Supplies to Abilene	\$ 4,100
Task 12	Brush Control	\$ 4,300
Task 13	New, Increased or Restructured Contracts and Agreements	\$ <del>7,100</del> 3,600
Task 14	Miscellaneous Strategies and Projects	\$ <del>66</del> 33,400
Task 15	Additional Strategies	\$ <del>25,000</del> 22,496
Task 16	Plan Development	\$ 32,700
Task 17	Database Entry	\$ 33,800
Task 18	Chapter 5 Preparation	\$ 35,400
<b>Total - Technical Consultant Budget for Task 5A</b>		\$ <del>791,400</del> 703,546

**Task 5A Budget-SOW Comm**  
**per 17 Aug 2018 SOW Committee**

Suggested for modification or deletion from original SOW budget.  
 Deleted or reduced fee from original SOW budget.


**Fee**

Task 5A Fee	\$ 703,546
Estimated	\$ 703,546
Remaining	\$ -
Total Planned HDR Hours	4710
Total Planned SRA Hours	100
Total Planned FNI Hours	0

No.	Strategy	Task Fee	Subtask	Subtask Fee	Hours
1	Conservation	\$ 11,200	1 Conservation Determination and Costing	\$ 11,200	72
2	Reuse	\$ 66,150	1 Update Available Reuse Supplies	\$ 4,300	24
			1 Identify Potential Reuse Projects	\$ 5,300	32
			1 Evaluate 10 Reuse Projects	\$ 20,050	272
			2 College Station DPR	\$ 3,300	22
			3 College Station Indirect Reuse	\$ 3,300	22
			4 Bryan Lake Bryan Reuse	\$ 3,300	22
			5 Bryan Miramont Reuse	\$ 3,300	22
			6 Cleburne Reuse	\$ 3,300	22
			7 Waco WMARSS Reuse Projects	\$ 13,400	88
			8 Bell County WCID No. 1 Reuse Projects	\$ 6,600	44
3	New Reservoirs	\$ 78,800	1 Brushy Creek Reservoir	\$ 8,800	52
			2 Cedar Ridge Reservoir	\$ 6,600	40
			3 Coryell County OCR	\$ 4,600	28
			4 Groesbeck OCR	\$ 6,100	36
			5 Hamilton County Reservoir	\$ 4,600	28
			6 Lake Creek Reservoir	\$ 7,200	42
			7 Brazos River Main Stem OCR	\$ 22,500	132
			8 Peach Creek OCR	\$ -	28
			9 South Bend Reservoir	\$ 8,200	46
			10 Throckmorton Reservoir	\$ 4,600	28
			11 Turkey Peak Reservoir	\$ 5,600	32
4	Groundwater Supp	\$ 146,700	1 Misc. GW Projects (assume 90)	\$ 98,200	692
			2 Update GW Strategy for Bryan	\$ 11,000	53
			3 Update GW Strategy for College Station	\$ 11,000	53
			4 Update GW Strategy for Williamson County	\$ 26,500	114
5	BRA System Opera	\$ 21,500	1 BRA System Operations Supplies	\$ 21,500	114
6	Oak Creek Reservo	\$ 9,900	1 Oak Creek Reservoir Conjunctive Operation	\$ 9,900	46
7	Aquifer Storage an	\$ 42,400	1 Bryan ASR	\$ 3,500	20
			2 College Station ASR	\$ 3,500	20
			3 Trinity ASR in Johnson County	\$ 5,800	28
			4 Trinity ASR in McLennan County	\$ 9,400	42
			5 Lake Granger ASR (Trinity Aquifer)	\$ 10,300	46
			6 Additional ASR Projects (2)	\$ 9,900	88
8	Regional Projects	\$ 42,900	1 Lake Belton to Stillhouse Pipeline	\$ 1,800	15
			2 Bosque County Regional Project	\$ 6,900	42
			3 Brushy Creek RUA Water Supply Project	\$ 5,600	34
			4 East Williamson County Water Supply Project	\$ 7,400	52
			5 Phase I and Future Phases Lake Whitney Water Supp	\$ 8,600	54
			6 Somervell County Water Supply Project	\$ 4,000	32
			7 West Central Brazos Water Distribution System	\$ 8,600	54
9	Augmentation of E	\$ 91,000	1 Gibbons Creek Reservoir Expansion	\$ -	42
			2 Lake Aquilla Storage Reallocation	\$ 7,000	48
			3 Lake Granger Storage Reallocation	\$ 7,000	48
			4 Lake Stillhouse Hollow Reallocation	\$ -	48

			5	Lake Whitney Reallocation	\$ 7,000	48
			6	Lake Granger Augmentation	\$ 12,600	72
			7	Lake Whitney Over-Drafting Supply with Off-Channel	\$ 12,500	76
			8	Millers Creek Reservoir Augmentation	\$ 12,900	70
			9	BRA Sediment Reduction Program	\$ 26,600	188
			10	South San Gabriel Diversion into Lake Georgetown	\$ 5,400	38
10	SFWQC Chloride Cr	\$ 23,200	1	Update 2016 Plan Evaluation	\$ 16,600	80
			1	SFWQC Freshwater Supplies	\$ 6,600	42
11	Possum Kingdom S	\$ 4,100	1	Update evaluation	\$ 4,100	24
12	Brush Control	\$ 4,300	1	Update evaluation	\$ 4,300	26
13	New, Increased or	\$ 3,600	1	Identify and Evaluate Opportunities	\$ 3,600	32
14	Misc. Strategies an	\$ 33,400	1	Misc. Pipelines, Pump Stations, Connections and Int	\$ 28,800	202
			2	Lower Existing Wells	\$ -	172
			3	WTP Expansions	\$ 4,600	26
15	Additional Stratgie	\$ 22,496	1	Identify and Evaluate Other Strategies	\$ 22,496	123
16	Plan Development	\$ 32,700	1	Assign WMSs to WUGs and WWPs	\$ 32,700	164
17	Database Entry	\$ 33,800	1	Complete and QC database entry of WMWs	\$ 33,800	248
18	Chapter 5 Preparat	\$ 35,400	1	Compile Evaluations into Single Chapter	\$ 35,400	160







## Notice to Proceed for Task 5A

Agenda Item 6.15

August 22, 2018



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### Background

- TWDB will have comments and suggestions on the recommended scope of work and budget for Task 5A.
- Need to coordinate with TWDB to develop a “final” scope of work and budget that reflects TWDB comments. Then Brazos G can request notice to proceed.
- Two options:
  1. Direct HDR to submit SOW to TWDB, coordinate with TWDB to develop “final” SOW and budget. Approval of the final SOW and budget to occur at a subsequent Brazos G RWPG meeting before requesting notice to proceed.
  2. Direct HDR to submit and coordinate with TWDB, make necessary changes to the SOW and budget, and request notice to proceed if no “substantial” changes are made from what Brazos G approved on August 22, 2018. “Substantial” changes being defined by the SOW Committee Chair and the Brazos G Chair.

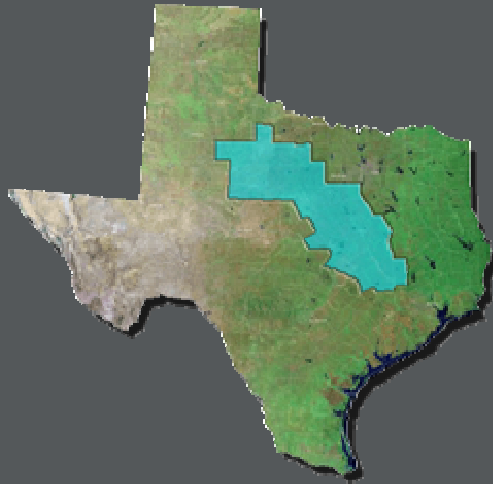


**Suggested Action:**

“The Brazos G Regional Water Planning Group directs HDR and BRA to submit the Scope of Work and Budget for Task 5A as approved at the August 22, 2018 Brazos G meeting, and coordinate any necessary changes with the TWDB.

The Brazos G Regional Water Planning Group authorizes the Chair of the Brazos G Water Planning Group to review and approve the final Scope of Work and budget for Task 5A and request Notice to Proceed for Task 5A, with the concurrence of the Chair of the Scope of Work Committee.”





# Schedule to Develop the 2021 Brazos G Plan

Agenda Item 6.16.1

August 22, 2018





# Working Schedule for the 2021 Planning Cycle

- Apr 17, 2018 – TWDB approved Hydrologic Variance Request
- May/June/July/Aug – determine available supplies
  - SW availability analyses
  - GW allocations, including MAG Peak Factors (if applicable)
  - Allocate supplies to WUGs and WWP
  - Database entry
- June/July – identify potentially feasible strategies – SOW Committee
  - July 17 and Aug 17
- Aug 15 – Technical Memorandum completed
- August – Brazos G RWPG meeting
  - Adopt tech memo
  - Approve SOW and Budget for Task 5A
- Sep 10, 2018 – Technical Memorandum due
- Fall 2018 – negotiate Task 5A SOW and begin Task 5A
- Fall 2018 – December 2019 – develop 2021 Plan (detailed schedule in early 2019)
- March 2020 – Initially Prepared Plan

