

**Appendix 4C**  
**Methodology for Selecting Feasible Water Management Strategies**



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## Appendix 4C – Feasible Water Management Strategies

One of the requirements adopted by the TWDB for regional water planning is an open meeting presentation of the methodology that will be used to identify, screen and select water management strategies for a region. Specifically, 31 TAC Chapter 357(e)(4) states:

*Before a regional water planning group begins the process of identifying potentially feasible water management strategies, it shall document the process by which it will list all possible water management strategies and identify the water management strategies that are potentially feasible for meeting a need in the region. Once this process is identified, the regional water planning group shall present it to the public for comment at the public meeting required by §357.12(a)(1) of this title (relating to Notice and Public Participation);*

This memorandum presents the methodology for screening and selecting feasible water management strategies adopted by the Region F Water Planning Group on June 22, 2009.

### **Methodology for Selecting Feasible Water Management Strategies**

1. The consultants will identify needs for individual water user groups and regional water providers. “Need” can include, but is not limited to:
  - a. Shortage identified from supply/demand comparison using firm yields
  - b. Shortage due to established operation policies of water supplies (e.g., safe yield vs. firm yield)
  - c. Water quality issues
2. The consultants will review the need and recommended strategy from the 2006 *Region F Water Plan* and determine if new or changed strategies are needed.
3. Each need and potential strategy will be presented to the RWPG at an open meeting for review and public input. The RWPG will consider the types of strategies considered to be feasible to meet each need. Potential strategies include:
  - a. Water conservation and drought management
  - b. Wastewater reuse
  - c. Expanded use of existing supplies
    - i. System operation,
    - ii. Conjunctive use of groundwater and surface water,
    - iii. Reallocation of reservoir storage
    - iv. Voluntary redistribution of water resources
    - v. Voluntary subordination of water rights
    - vi. Yield enhancement
    - vii. Water quality improvements

- d. New supply development
    - i. Surface water resources
    - ii. Groundwater resources
    - iii. Brush control
    - iv. Precipitation enhancement
    - v. Desalination
    - vi. Water right cancellation
    - vii. Aquifer storage and recovery
  - e. Interbasin transfers
4. The RWPG will select strategies considered to be potentially feasible for further evaluation by the consultants.
  5. The RWPG and respective WUG will select the recommended and alternative strategy for inclusion in the *2011 Region F Water Plan*.

### **Screening Criteria**

The following offers screening criteria that will be used to assess the feasibility of potential strategies. These criteria are suggested guidelines. A strategy may be retained or dismissed at the discretion of the RWPG.

#### **General**

1. Feasible strategy must have an identified sponsor or authority.
2. Feasible strategy must consider the end use. This includes water quality, distance to end use, etc. For example, long transmission systems with pumping are not economically feasible for irrigation use.
3. Strategy should provide a reasonable percentage of the projected need (except conservation, which will be evaluated for all needs).
4. Strategy must meet existing federal and state regulations.
5. Strategies must be based on proven technology.
6. Strategy must be politically and culturally acceptable.
7. Strategy must be appropriate for regional water planning.

#### **By Water Strategy Type (as required in TWDB Guidelines):**

**WATER CONSERVATION** - Water conservation must be considered as a strategy for every identified need. If water conservation is not adopted, the reason must be documented.

**DROUGHT MANAGEMENT MEASURES** - RWPG may choose to implement emergency water management strategies where appropriate to help meet the projected water needs. Drought management is typically not considered for long-range water supply planning.

WASTEWATER REUSE - Reuse projects will be considered on a case-by-case basis. Both direct and indirect reuse will be considered as appropriate.

#### EXPANDED USE OF EXISTING SUPPLIES

*System Operation* - New or additional system operations may be considered pending owner consent. The RWPG will include existing operating policies.

*Conjunctive Use of Groundwater and Surface Water* - The conjunctive use of groundwater and surface water supplies may be considered when groundwater supplies are available. Applicable groundwater conservation district rules will be considered for such conjunctive systems.

*Reallocation of Reservoir Storage* - The RWPG will consider reallocation of reservoir storage if the owner is amenable to reallocation.

*Voluntary Redistribution of Water Resources* - The RWPG will discuss the possible redistribution with the involved parties and come to a consensus on an approach. If the involved parties are not interested, the RWPG will not pursue this option.

*Voluntary Subordination of Existing Water Rights* - The RWPG will consider voluntary subordination of existing water rights if the TCEQ water availability model shows significantly less supply than assumed in previous planning efforts. Alternatively, the RWPG may recommend that the water right holder consider selling water under their water right to the willing buyer.

*Yield Enhancement* - The RWPG will consider yield enhancement projects as appropriate for the water source and identified need.

*Water Quality Improvement* - The RWPG will consider water quality improvement projects for municipal supplies that bring the existing water supply into compliance with state and federal regulations. General water quality projects may be considered if it improves the usability of the water source to help meet demands.

#### NEW SUPPLY DEVELOPMENT

*Surface Water Resources* - The RWPG will consider new surface water resources that can be permitted, provide a reasonable amount of supply to meet the identified need, and is located within a reasonable distance to the end users.

*Groundwater Resources* - The RWPG will consider groundwater supplies in areas where additional groundwater is available.

*Brush Control* - The RWPG will consider brush control as a general regional strategy. Specific impacts and quantity of supply will not be evaluated unless there is available data from existing studies. Note: Studies sponsored by the TSSWCB provide information on average stream flow. Reservoir yields were not evaluated.

*Precipitation Enhancement* - The RWPG will consider precipitation enhancement as a general regional strategy. Specific impacts and quantity of supply will not be evaluated unless there is available data from existing studies.

*Desalination* - The RWPG will consider desalination on a case-by-case basis.

*Water Right Cancellation* - The RWPG will generally not pursue water right cancellation as a means of obtaining additional water supplies. Instead, the RWPG will recommend that the water right holder consider selling water under their water right to the willing buyer.

*Aquifer Storage and Recovery (ASR)* - The RWPG will consider aquifer storage and recovery where the structure of the aquifer is such that this method is applicable. An ASR study must have already been performed to consider an area feasible for an ASR project.

**INTERBASIN TRANSFERS** - The RWPG will recommend interbasin transfers when necessary to transport water from the source to its destination. Interbasin transfers will be evaluated in accordance with current regulations.

**Attachment 4C-1**  
**Feasible Strategy Screening Matrices for Water User Groups**

**Table 4C-1  
Potentially Feasible Strategies for the City of Bronte**

| <b>Strategy</b>           | <b>Identified Sponsor</b> | <b>Compatible with End Use</b> | <b>Reasonable Percentage of Need</b> | <b>Consistent with State and Federal Regulations</b> | <b>Based on Proven Technology</b> | <b>Politically &amp; Culturally Acceptable</b> | <b>Appropriate for Regional Water Planning</b> | <b>Feasible?</b> | <b>Comments</b>  |
|---------------------------|---------------------------|--------------------------------|--------------------------------------|--|-----------------------------------|--|--|------------------|--|
| Water Conservation        | City of Bronte            | Yes                            | *                                    | Yes  | Yes                               | Yes  | Yes  | Yes              | Based on criteria developed by the RWPG                  |
| Drought Management        | City of Bronte            | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | Yes              | No data on specific practices                            |
| Reuse                     | City of Bronte            | Yes                            | Yes                                  | Yes  | Yes                               | Yes  | Yes  | Yes              | Golf course irrigation                                   |
| System Optimization       | City of Bronte            | Yes                            | No                                   | Yes  | Yes                               | Yes  | Yes  | No               |  |
| Reservoir Reallocation    | No                        |                                | No                                   |  | does not apply                    |  |  | No               | No storage in area reservoirs available for reallocation |
| Voluntary Redistribution  | No                        |                                | No                                   |  | does not apply                    |  |  | No               | No sources identified.                                   |
| Subordination             | City of Sweetwater        | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | See subordination analysis                               |
| Yield Enhancement         |                           |                                | No                                   |  |                                   |  |  | No               | No strategy identified.                                  |
| Quality Improvement       | City of Bronte            |                                |                                      |  |                                   |  |  |                  | Water quality not a limiting factor                      |
| New Surface Water         | City of Bronte            | Yes                            | No                                   | Yes  | does not apply                    | Yes  | Yes  | No               | No unappropriated water available in Region F            |
| New Groundwater           | City of Bronte            | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | Up to 5 new wells  |
| Brush Control             | City of Sweetwater        | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | Yes              | Amount of water uncertain. See section 4.x               |
| Precipitation Enhancement | CRMWD                     | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | CRMWD            | Amount of water uncertain. See section 4.x               |
| Desalination              | City of San Angelo        | Yes                            | Yes                                  | Yes  | Yes                               | Yes  | Yes  | Yes              | Regional desalination project                            |

**Table 4C-1: Potentially Feasible Strategies for the City of Bronte (Continued)**

| Strategy                 | Identified Sponsor   | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments                                       |
|--------------------------|----------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|--|
| Water Right Cancellation | TCEQ, City of Bronte | Yes                     | No                            | Yes   | does not apply             | No                                  | No                                      | No        | Politically unacceptable for pursuit by City   |
| ASR                      | City of Bronte       | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | No suitable aquifer in area                    |
| Interbasin Transfers     |                      |                         | No                            |   |                            |                                     |   | No        | No reasonable out-of-basin supplies identified |
| Other Strategies         | City of Bronte       |                         |                               |   |                            |                                     |   |           | Rehabilitate Oak Creek pipeline                |

\* Water conservation is evaluated for all municipal needs regardless of the quantity of water saved.

**Table 4C-2  
Potentially Feasible Strategies for the City of Robert Lee**

| <b>Strategy</b>           | <b>Identified Sponsor</b> | <b>Compatible with End Use</b> | <b>Reasonable Percentage of Need</b> | <b>Consistent with State and Federal Regulations</b> | <b>Based on Proven Technology</b> | <b>Politically &amp; Culturally Acceptable</b> | <b>Appropriate for Regional Water Planning</b> | <b>Feasible?</b> | <b>Comments</b>  |
|---------------------------|---------------------------|--------------------------------|--------------------------------------|--|-----------------------------------|--|--|------------------|--|
| Water Conservation        | City of Robert Lee        | Yes                            | *                                    | Yes  | Yes                               | Yes  | Yes  | Yes              | Based on criteria developed by the RWPG                  |
| Drought Management        | City of Robert Lee        | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | Yes              | No data on specific practices                            |
| Reuse                     | City of Robert Lee        | Yes                            | <b>No</b>                            | Yes  | Yes                               | Yes  | Yes  | Yes              | City already uses discharge for irrigation               |
| System Optimization       | City of Robert Lee, CRMWD | Yes                            | <b>No</b>                            | Yes  | Yes                               | Yes  | Yes  | <b>No</b>        |  |
| Reservoir Reallocation    | <b>No</b>                 |                                | <b>No</b>                            |  | does not apply                    |  |  | <b>No</b>        | No storage in area reservoirs available for reallocation |
| Voluntary Redistribution  | <b>No</b>                 |                                | <b>No</b>                            |  | does not apply                    |  |  | <b>No</b>        | No sources identified.                                   |
| Subordination             | CRMWD, UCRA               | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | See subordination analysis                               |
| Yield Enhancement         |                           |                                | <b>No</b>                            |  |                                   |  |  | <b>No</b>        | No strategy identified.                                  |
| Quality Improvement       | City of Robert Lee        |                                |                                      |  |                                   |  |  |                  | See desalination   |
| New Surface Water         | City of Robert Lee        | Yes                            | <b>No</b>                            | Yes  | does not apply                    | Yes  | Yes  | <b>No</b>        | No unappropriated water available in Region F            |
| New Groundwater           | City of Robert Lee        | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | Groundwater study identified potential areas for supply  |
| Brush Control             | CRMWD                     | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | CRMWD            | Amount of water uncertain. See section 4.x               |
| Precipitation Enhancement | CRMWD                     | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | CRMWD            | Amount of water uncertain. See section 4.x               |
| Desalination              | City of Robert Lee        | Yes                            | Yes                                  | Yes  | Yes                               | Yes  | Yes  | Yes              | Advanced treatment of Spence water                       |

**Table 4C-2: Potentially Feasible Strategies for the City of Robert Lee (continued)**

| Strategy                 | Identified Sponsor       | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments  |
|--------------------------|--------------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|---|
| Water Right Cancellation | TCEQ, City of Robert Lee | Yes                     | No                            | Yes   | does not apply             | No                                  | No                                      | No        | Politically unacceptable for pursuit by City    |
| ASR                      | City of Robert Lee       | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | No suitable aquifer in area                     |
| Interbasin Transfers     |                          |                         | No                            |   |                            |                                     |   | No        | No reasonable out-of-basin supplies identified  |
| Other Strategies         | City of Robert Lee       | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | New storage facilities, expand WTP, new intakes |

\* Water conservation is evaluated for all municipal needs regardless of the quantity of water saved.

**Table 4C-3  
Potentially Feasible Strategies for the Colorado River Municipal Water District**

| <b>Strategy</b>          | <b>Identified Sponsor</b>           | <b>Compatible with End Use</b> | <b>Reasonable Percentage of Need</b> | <b>Consistent with State and Federal Regulations</b> | <b>Based on Proven Technology</b> | <b>Politically &amp; Culturally Acceptable</b> | <b>Appropriate for Regional Water Planning</b> | <b>Feasible?</b> | <b>Comments</b>   |
|--------------------------|-------------------------------------|--------------------------------|--------------------------------------|--|-----------------------------------|--|--|------------------|---|
| Water Conservation       | CRMWD Customers                     | Yes                            | *                                    | Yes  | Yes                               | Yes  | Yes  | Yes              | Water conservation will be evaluated for individual customers, not CRMWD as a whole         |
| Drought Management       | CRMWD, customers                    | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | Yes              | CRMWD drought plan  |
| Reuse                    | CRMWD                               | Yes                            | Yes                                  | Yes  | Yes                               | Yes  | Yes  | Yes              | Regional Water Reclamation Project  |
| System Optimization      | CRMWD                               | Yes                            | No                                   | Yes  | Yes                               | Yes  | Yes  | No               | Insufficient unappropriated water   |
| Reservoir Reallocation   | None                                | Yes                            | No                                   | Yes  | does not apply                    | Yes  | Yes  | No               | No supplies for reallocation  |
| Voluntary Redistribution | BRA, Mesa, University Lands, others | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | Various sources.  |
| Subordination            | CRMWD, LCRA, others                 | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | See Comments column                            | Yes              | Specific form of agreement will not be evaluated  |
| Yield Enhancement        |                                     |                                | No                                   |  |                                   |  |  | No               | No strategy identified. Brush control and precipitation enhancement are a separate strategy |
| Quality Improvement      | CRMWD                               | Yes                            | No                                   | Yes  | Yes                               | Yes  | Yes  | No               | Quality improvement will not increase available supplies                                    |
| New Surface Water        | CRMWD                               | Yes                            | No                                   |  | does not apply                    | No   | Yes  | No               | No new surface sources identified. Existing sources covered under voluntary redistribution  |
| New Groundwater          | CRMWD                               | Yes                            | Yes                                  | Yes  | does not apply                    | Political barriers for some sources            | Yes  | Yes              | Winkler well field  |

**Table 4C-3: Potentially Feasible Strategies for the Colorado River Municipal Water District (continued)**

| Strategy                  | Identified Sponsor | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments  |
|---------------------------|--------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|---|
| Brush Control             | CRMWD, others      | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Amount of water uncertain   |
| Precipitation Enhancement | Others             | Yes                     | Unknown                       | Yes   | Yes                        | Mixed                               | Yes                                     | <b>No</b> | CRMWD has discontinued program; Amount of water uncertain                   |
| Desalination              | CRMWD              | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Trans-Pecos desalination facility   |
| Water Right Cancellation  | TCEQ, CRMWD        | Yes                     | Yes                           | Yes   | does not apply             | <b>No</b>                           | <b>No</b>                               | <b>No</b> | Politically unacceptable for pursuit by District                            |
| ASR                       | CRMWD              | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | In conjunction with Regional Water Reclamation Project                      |
| Interbasin Transfers      | CRMWD              | Yes                     | <b>No</b>                     | Yes   | Yes                        | Yes                                 | Yes                                     | <b>No</b> | No reasonable source of water identified                                    |
| Other Strategies          |                    |                         |                               |   |                            |                                     |   |           | Supplemental wells and maintain groundwater capacities of existing sources. |

\* Water conservation is evaluated for all municipal needs regardless of the quantity of water saved.

**Table 4C-4  
Potentially Feasible Strategies for the City of Menard**

| Strategy                  | Identified Sponsor   | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments  |
|---------------------------|----------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|---|
| Water Conservation        | City of Menard       | Yes                     | *                             | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Based on criteria developed by the RWPG   |
| Drought Management        | City of Menard       | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | No data on specific practices   |
| Reuse                     | City of Menard       | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | City does not have a wastewater collection system   |
| System Optimization       | City of Menard       | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | Single source of water  |
| Reservoir Reallocation    | No                   | Yes                     | No                            | Yes   | does not apply             | Yes                                 | Yes                                     | No        | No reasonable reservoir source available in area  |
| Voluntary Redistribution  | City of Menard, LCRA | Yes                     | Yes                           | Yes   | does not apply             | Yes                                 | Yes                                     | Yes       | Off-channel reservoir on the San Saba River. Limited partnering options.                  |
| Subordination             | City of Menard       | Yes                     | No                            | Yes   | does not apply             | Yes                                 | Yes                                     | No        | City water right has a senior priority date   |
| Yield Enhancement         |                      |                         | No                            |   |                            |                                     |   | No        | No strategy identified.   |
| Quality Improvement       | City of Menard       | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | Current supplies not limited by water quality   |
| New Surface Water         | City of Menard       | Yes                     | No                            | Yes   | does not apply             | Yes                                 | Yes                                     | No        | No unappropriated water available in Region F   |
| New Groundwater           | City of Menard       | Yes                     | Yes                           | Yes   | does not apply             | Yes                                 | Yes                                     | Yes       | Hickory aquifer or Edwards-Trinity Plateau aquifer. Hickory may have water quality issues |
| Brush Control             | No                   | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | No        | Amount of water uncertain. No sponsor in area   |
| Precipitation Enhancement | No                   | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | No        | Amount of water uncertain. No sponsor in area.  |

**Table 4C-4: Potentially Feasible Strategies for the City of Menard (continued)**

| Strategy                 | Identified Sponsor   | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments                                       |
|--------------------------|----------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|--|
| Desalination             |                      |                         | No                            |   |                            |                                     |   | No        | No source or sponsor identified                |
| Water Right Cancellation | TCEQ, City of Menard | Yes                     | Yes                           | Yes   | does not apply             | No                                  | No                                      | No        | Politically unacceptable for pursuit by City   |
| ASR                      | City of Menard       | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Potential strategy for future evaluations      |
| Interbasin Transfers     |                      |                         | No                            |   |                            |                                     |   | No        | No reasonable out-of-basin supplies identified |
| Other Strategies         |                      |                         |                               |   |                            |                                     |   |           | None identified                                |

\* Water conservation is evaluated for all municipal needs regardless of the quantity of water saved.

**Table 4C-5  
Potentially Feasible Strategies for the City of Midland**

| <b>Strategy</b>          | <b>Identified Sponsor</b> | <b>Compatible with End Use</b> | <b>Reasonable Percentage of Need</b> | <b>Consistent with State and Federal Regulations</b> | <b>Based on Proven Technology</b> | <b>Politically &amp; Culturally Acceptable</b> | <b>Appropriate for Regional Water Planning</b> | <b>Feasible?</b> | <b>Comments</b>   |
|--------------------------|---------------------------|--------------------------------|--------------------------------------|--|-----------------------------------|--|--|------------------|---|
| Water Conservation       | City of Midland           | Yes                            | *                                    | Yes  | Yes                               | Yes  | Yes  | Yes              | City of Midland is implementing an aggressive water conservation program                    |
| Drought Management       | City of Midland, CRMWD    | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | Yes              | Apply drought management identified in Midland and CRMWD drought contingency plans          |
| Reuse                    | CRMWD                     | Yes                            | Yes                                  | Yes  | Yes                               | Unknown  | Yes  | Yes              | See CRMWD strategies  |
| System Optimization      | CRMWD                     | Yes                            | <b>No</b>                            | Yes  | Yes                               | Yes  | Yes  | <b>No</b>        | Previous studies did not identify significant yield gains due to system optimization        |
| Reservoir Reallocation   | CRMWD                     | Yes                            | <b>No</b>                            | Yes  | does not apply                    | Yes  | Yes  | <b>No</b>        | No storage available for reallocation   |
| Voluntary Redistribution | CRMWD                     | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | Renew contract with CRMWD   |
| Subordination            | CRMWD, LCRA, others       | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | See Comments column                            | Yes              | Implemented by CRMWD  |
| Yield Enhancement        |                           |                                | <b>No</b>                            |  |                                   |  |  | <b>No</b>        | No strategy identified. Brush control and precipitation enhancement are a separate strategy |
| Quality Improvement      | City of Midland, CRMWD    | Yes                            | <b>No</b>                            | Yes  | Yes                               | Yes  | Yes  | <b>No</b>        | Will not make more water available for use  |
| New Surface Water        | City of Midland, CRMWD    | Yes                            | <b>No</b>                            |  | does not apply                    | <b>No</b>                                      | Yes  | <b>No</b>        | No new surface sources identified. Existing sources covered under voluntary redistribution  |
| New Groundwater          | City of Midland           | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | T-Bar Well Field  |

**Table 4C-5 (Continued) Potentially Feasible Strategies for the City of Midland**

| Strategy                  | Identified Sponsor | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments   |
|---------------------------|--------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|--|
| Brush Control             | CRMWD              | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | CRMWD is participating in salt cedar removal programs. Amount of water uncertain |
| Precipitation Enhancement | CRMWD              | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | CRMWD sponsors a precipitation enhancement program. Amount of water uncertain    |
| Desalination              | CRMWD              | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Pecos County Regional Desalination Facility. Implemented by CRMWD.               |
| Water Right Cancellation  | TCEQ, CRMWD        | Yes                     | Yes                           | Yes   | does not apply             | No                                  | No                                      | No        | Considered to be politically and culturally unacceptable by Region F             |
| ASR                       | CRMWD              | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Assumed to be implemented by CRMWD   |
| Interbasin Transfers      | CRMWD              | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | No reasonable source of water available  |
| Other Strategies          |                    |                         |                               |   |                            |                                     |   |           | None identified  |

\* Water conservation is evaluated for all municipal needs regardless of the quantity of water saved.

**Table 4C-6  
Potentially Feasible Strategies for the City of Ballinger**

| <b>Strategy</b>           | <b>Identified Sponsor</b>                 | <b>Compatible with End Use</b> | <b>Reasonable Percentage of Need</b> | <b>Consistent with State and Federal Regulations</b> | <b>Based on Proven Technology</b> | <b>Politically &amp; Culturally Acceptable</b> | <b>Appropriate for Regional Water Planning</b> | <b>Feasible?</b> | <b>Comments</b>  |
|---------------------------|---|--------------------------------|--------------------------------------|--|-----------------------------------|--|--|------------------|--|
| Water Conservation        | City of Ballinger                         | Yes                            | *                                    | Yes  | Yes                               | Yes  | Yes  | Yes              | Based on criteria developed by the RWPG                    |
| Drought Management        | City of Ballinger                         | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | Yes              | No data on specific practices                              |
| Reuse                     | City of Ballinger                         | Yes                            | Yes                                  | Yes  | Yes                               | Yes  | Yes  | Yes              |  |
| System Optimization       | City of Ballinger                         | Yes                            | No                                   | Yes  | Yes                               | Yes  | Yes  | No               | May be a future strategy if other sources become available |
| Reservoir Reallocation    | No  |                                | No                                   |  | does not apply                    |  |  | No               | No storage in area reservoirs available for reallocation   |
| Voluntary Redistribution  | City of Ballinger, City of Coleman, CRMWD | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | Hords Creek Reservoir, CRMWD sources                       |
| Subordination             | City of Ballinger                         | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | See subordination analysis                                 |
| Yield Enhancement         |   |                                | No                                   |  |                                   |  |  | No               | No strategy identified.                                    |
| Quality Improvement       | City of Ballinger                         |                                |                                      |  |                                   |  |  |                  | Water quality not a limiting factor                        |
| New Surface Water         | City of Ballinger                         | Yes                            | No                                   | Yes  | does not apply                    | Yes  | Yes  | No               | No unappropriated water available in Region F              |
| New Groundwater           | City of Ballinger                         | Yes                            | No                                   | Yes  | does not apply                    | Yes  | Yes  | No               | No source identified                                       |
| Brush Control             | CRMWD, others                             | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  |                  | Amount of water uncertain. See section 4.9.2               |
| Precipitation Enhancement | CRMWD                                     | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  |                  | Amount of water uncertain. See section 4.9.1               |

**Table 4C-7 Potentially Feasible Strategies for the City of Ballinger (continued)**

| Strategy                 | Identified Sponsor      | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments                                       |
|--------------------------|-------------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|--|
| Desalination             | No                      | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | No        | No sponsor and no local source.                |
| Water Right Cancellation | TCEQ, City of Ballinger | Yes                     | No                            | Yes   | does not apply             | No                                  | No                                      | No        | Politically unacceptable for pursuit by City   |
| ASR                      | City of Ballinger       | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | No suitable aquifer identified                 |
| Interbasin Transfers     |                         |                         | No                            |   |                            |                                     |   | No        | No reasonable out-of-basin supplies identified |
| Other Strategies         |                         |                         |                               |   |                            |                                     |   |           | None identified                                |

\* Water conservation is evaluated for all municipal needs regardless of the quantity of water saved.

**Table 4C-7  
Potentially Feasible Strategies for the City of Winters**

| <b>Strategy</b>           | <b>Identified Sponsor</b> | <b>Compatible with End Use</b> | <b>Reasonable Percentage of Need</b> | <b>Consistent with State and Federal Regulations</b> | <b>Based on Proven Technology</b> | <b>Politically &amp; Culturally Acceptable</b> | <b>Appropriate for Regional Water Planning</b> | <b>Feasible?</b> | <b>Comments</b>  |
|---------------------------|---------------------------|--------------------------------|--------------------------------------|--|-----------------------------------|--|--|------------------|--|
| Water Conservation        | City of Winters           | Yes                            | *                                    | Yes  | Yes                               | Yes  | Yes  | Yes              | Based on criteria developed by the RWPG                  |
| Drought Management        | City of Winters           | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | Yes              | No data on specific practices                            |
| Reuse                     | City of Winters           | Yes                            | Yes                                  | Yes  | Yes                               | Yes  | Yes  | Yes              |  |
| System Optimization       | City of Winters           | Yes                            | No                                   | Yes  | Yes                               | Yes  | Yes  | No               | Single source  |
| Reservoir Reallocation    | No                        |                                | No                                   |  | does not apply                    |  |  | No               | No storage in area reservoirs available for reallocation |
| Voluntary Redistribution  | BCWID                     | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | Brown/Coleman/Runnels Regional System                    |
| Subordination             | City of Winters           | Yes                            | Yes                                  | Yes  | does not apply                    | Yes  | Yes  | Yes              | See subordination analysis                               |
| Yield Enhancement         |                           |                                | No                                   |  |                                   |  |  | No               | No strategy identified.                                  |
| Quality Improvement       | City of Winters           |                                |                                      |  |                                   |  |  |                  | Water quality not a limiting factor                      |
| New Surface Water         | City of Winters           | Yes                            | No                                   | Yes  | does not apply                    | Yes  | Yes  | No               | No unappropriated water available in Region F            |
| New Groundwater           | City of Winters           | Yes                            | No                                   | Yes  | does not apply                    | Yes  | Yes  | No               | No source identified                                     |
| Brush Control             | City of Winters, CRMWD    | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | Yes              | Amount of water uncertain. See section 4.x               |
| Precipitation Enhancement | CRMWD                     | Yes                            | Unknown                              | Yes  | Yes                               | Yes  | Yes  | CRMWD            | Amount of water uncertain. See section 4.x               |
| Desalination              | No                        | Yes                            | Yes                                  | Yes  | Yes                               | Yes  | Yes  | No               | No sponsor and no available source.                      |

**Table 4C-7: Potentially Feasible Strategies for the City of Winters (Continued)**

| Strategy                 | Identified Sponsor    | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments                                       |
|--------------------------|-----------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|--|
| Water Right Cancellation | TCEQ, City of Winters | Yes                     | No                            | Yes   | does not apply             | No                                  | No                                      | No        | Politically unacceptable for pursuit by City   |
| ASR                      | City of Winters       | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | No suitable aquifer in area                    |
| Interbasin Transfers     |                       |                         | No                            |   |                            |                                     |   | No        | No reasonable out-of-basin supplies identified |
| Other Strategies         |                       |                         |                               |   |                            |                                     |   |           |  |

\* Water conservation is evaluated for all municipal needs regardless of the quantity of water saved.

**Table 4C-8  
Potentially Feasible Strategies for the City of San Angelo**

| Strategy                 | Identified Sponsor        | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments  |
|--------------------------|---------------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|---|
| Water Conservation       | City of San Angelo        | Yes                     | *                             | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Based on current practices by the City of San Angelo plus criteria developed by the RWPG    |
| Drought Management       | City of San Angelo        | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Based on the City's experience during recent drought  |
| Reuse                    | City of San Angelo        | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       |   |
| System Optimization      | City of San Angelo, CRMWD | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       |   |
| Reservoir Reallocation   | BurRec, COE               | Yes                     | No                            | Yes   | does not apply             | Yes                                 | Yes                                     | No        | Insufficient extra supplies for reallocation  |
| Voluntary Redistribution | CRMWD, others             | Yes                     | Yes                           | Yes   | does not apply             | Yes                                 | Yes                                     | Yes       | Additional water from CRMWD, purchase water rights,   |
| Subordination            | CRMWD, LCRA, others       | Yes                     | Yes                           | Yes   | does not apply             | Yes                                 | See Comments column                     | Yes       | Specific form of agreement will not be evaluated  |
| Yield Enhancement        |                           |                         | No                            |   |                            |                                     |   | No        | No strategy identified. Brush control and precipitation enhancement are a separate strategy |
| Quality Improvement      | City of San Angelo        | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | Quality improvement will not increase available supplies                                    |
| New Surface Water        | City of San Angelo        | Yes                     | No                            |   | does not apply             | No                                  | Yes                                     | No        | No new surface sources identified. Existing sources covered under voluntary redistribution  |
| New Groundwater          | City of San Angelo        | Yes                     | Yes                           | Yes   | does not apply             | Political barriers for some sources | Yes                                     | Yes       | Hickory aquifer, Edwards-Trinity Plateau aquifer. Other sources covered under desalination. |

**Table 4C-8: Potentially Feasible Strategies for the City of San Angelo (Continued)**

| Strategy                  | Identified Sponsor               | Compatible with End Use | Reasonable Percentage of Need | Consistent with State and Federal Regulations | Based on Proven Technology | Politically & Culturally Acceptable | Appropriate for Regional Water Planning | Feasible? | Comments   |
|---------------------------|----------------------------------|-------------------------|-------------------------------|---|----------------------------|-------------------------------------|---|-----------|--|
| Brush Control             | City of San Angelo, UCRA, others | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Amount of water uncertain  |
| Precipitation Enhancement | City of San Angelo, UCRA, others | Yes                     | Unknown                       | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Amount of water uncertain  |
| Desalination              | City of San Angelo               | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Clear Fork Formation, possibly in conjunction with Spence water. |
| Water Right Cancellation  | TCEQ, City of San Angelo         | Yes                     | Yes                           | Yes   | does not apply             | No                                  | No                                      | No        | Politically unacceptable for pursuit by City                     |
| ASR                       | City of San Angelo               | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | Does not provide significant additional supplies                 |
| Interbasin Transfers      |                                  | Yes                     | No                            | Yes   | Yes                        | Yes                                 | Yes                                     | No        | No reasonable source of water identified                         |
| Other Strategies          | City of San Angelo               | Yes                     | Yes                           | Yes   | Yes                        | Yes                                 | Yes                                     | Yes       | Rehab Spence pipeline,   |

\* Water conservation is evaluated for all municipal needs regardless of the quantity of water saved.