## *4B.16 Voluntary Redistribution*

### *4B.16.1 Description of Option*

For the purposes of this discussion, "voluntary redistribution" is defined as an entity in possession of water rights or water purchase contracts freely selling, leasing, giving, or otherwise providing water to another entity. Typically, the entity providing the water has determined that it does not need the water for the duration of the transfer. The water could be transferred for a set period of years or permanently.

Voluntary redistribution is nothing new to Texas or to the Brazos G Area, and is essentially a water purchase. Typical examples of voluntary redistribution occurring in the region are the sale of water by entities such as the BRA, City of Waco, LCRA, and the City of Abilene through purchase contracts. The most common water sales occur when cities such as Waco or Abilene sell water to their surrounding communities.

Voluntary redistribution has many benefits over other supply options because it avoids implementation issues associated with new reservoir projects such as environmental, local impacts, and large capital costs. Most importantly, redistribution of water makes use of existing resources and provides a more immediate source of water.

### *4B.16.2 Available Supply and Shortages*

The first step towards voluntary distribution is determining where water supplies are available and are projected to be available for some future period. Water available for the voluntary redistribution option was identified for municipal and industrial uses only.

As potential sources of water for voluntary redistribution are identified, it is important to remember that the redistribution of water is voluntary. No entity is required to participate. For this reason, entities with available water will not be specifically identified in this analysis, and the quantity of unused water is aggregated on a county-wide basis.

The amount of water available for municipal use was determined from the projected demands and supplies. Each municipal water user group was examined for water that is projected to be in excess of projected demands.

#### *4B.16.2.1 Available Municipal Supplies*

The municipal water supplies available as a potential source for voluntary redistribution are approximately 167,000 acft/yr and 119,000 acft/yr, in 2030 and 2060, respectively. The total

municipal need for the region in 2030 and 2060 is 76,220 acft/yr and 185,099 acft/yr, respectively. It is important to note that municipal voluntary redistribution is typically only feasible when an entity with a projected shortage is located in close proximity to an entity with a projected surplus. The projected municipal shortages and the amount of water available for transfer within each county are shown for 2030 and 2060 in Table 4B.16-1.

***Table 4B.16-1.***
***Municipal Needs/Available Supplies for Voluntary Redistribution***

| County | Shortages | | Available Supplies | |
|---|---|---|---|---|
| | 2030 (acft/yr) | 2060 (acft/yr) | 2030 (acft/yr) | 2060 (acft/yr) |
| Bell | 732 | 3,134 | 30,686 | 19,205 |
| Bosque | 1,295 | 1,387 | 589 | 571 |
| Brazos | 6,077 | 13,581 | 5,013 | 3,876 |
| Burleson | 21 | 34 | 1,893 | 1,639 |
| Callahan | 1 | 0 | 960 | 1,068 |
| Comanche | 0 | 0 | 393 | 481 |
| Coryell | 2,172 | 4,342 | 6,017 | 4,135 |
| Eastland | 215 | 99 | 1,775 | 2,012 |
| Erath | 0 | 0 | 4,052 | 2,268 |
| Falls | 484 | 604 | 3,484 | 3,171 |
| Fisher | 0 | 0 | 224 | 275 |
| Grimes | 665 | 1,017 | 1,486 | 1,391 |
| Hamilton | 0 | 0 | 794 | 848 |
| Haskell | 383 | 472 | 80 | 109 |
| Hill | 506 | 936 | 2,412 | 520 |
| Hood | 1,309 | 3,644 | 7,262 | 3,792 |
| Johnson | 13,297 | 34,737 | 4,293 | 1,961 |
| Jones | 589 | 507 | 4,968 | 4,988 |
| Kent | 16 | 3 | 167 | 205 |
| Knox | 364 | 488 | 0 | 0 |
| Lampasas | 703 | 845 | 1,994 | 1,692 |
| Lee | 699 | 1,279 | 562 | 508 |
| Limestone | 0 | 87 | 2,035 | 1,374 |
| McLennan | 9,726 | 11,456 | 46,997 | 41,091 |
| Milam | 74 | 182 | 3,214 | 3,286 |
| Nolan | 2,095 | 1,714 | 7 | 20 |
| Palo Pinto | 7 | 181 | 3,587 | 3,244 |
| Robertson | 21 | 25 | 3,050 | 3,065 |
| Shackelford | 0 | 0 | 1,347 | 1,651 |
| Somervell | 231 | 260 | 38 | 37 |
| Stephens | 216 | 193 | 2,203 | 2,338 |
| Stonewall | 0 | 0 | 46 | 89 |
| Taylor | 13,748 | 12,649 | 1,173 | 1,237 |
| Throckmorton | 0 | 0 | 175 | 238 |
| Washington | 0 | 0 | 466 | 255 |
| Williamson | 20,574 | 91,243 | 22,039 | 4,581 |
| Young | 0 | 0 | 1,954 | 1,951 |

#### *4B.16.2.2 Available Industrial Supply*

Industrial uses include manufacturing, steam-electric, and mining. The industrial water supplies available as a potential source for voluntary redistribution are approximately 89,000 acft/yr and 71,000 acft/yr, in 2030 and 2060, respectively. The total industrial need for the region in 2030 and 2060 is 49,238 acft/yr and 111,013 acft/yr, respectively. The projected industrial shortages and the amount of water available for transfer are shown by county for 2030 and 2060 in Table 4B.16-2.

### *4B.16.3 Environmental Issues*

No substantial environmental impacts are anticipated, as available water resources identified for this option are from existing supplies. A summary of the few environmental issues that might arise for this alternative are presented in Table 4B.16-3.

### *4B.16.4 Engineering and Costing*

A cost estimate to this option cannot be fully assessed. Many unknowns exist including the price of the water, potential costs of new pipelines or water treatment facilities, and the proximity of the water needs to the water supply.

Potential costs of purchasing and using water available from voluntary redistribution are listed below:

- Cost of raw water;
- Treatment costs;
- Conveyance costs;
- Engineering costs of designing and constructing treatment and conveyance systems; and
- Additional costs required by water supplier. Many times when the water supplier is a city, water will be sold for 1.5 times the price of water sold within the city limits.

Table 4B.16-4 lists estimates of costs of voluntary redistribution. The raw water purchase price is estimated to be between $45 and $115 per acft. The price of raw water from the BRA (System Rate) and LCRA is $45.75/acft and $115/acft, respectively. The total potential cost of water from voluntary redistribution is $371 to $1,215 per acft, or $1.14 to $3.73 per 1,000 gallons.

***Table 4B.16-2.***
***Industrial Needs/Available Supplies for Voluntary Redistribution***

| County | Shortages | | Available Supplies | |
|---|---|---|---|---|
| | 2030 (acft/yr) | 2060 (acft/yr) | 2030 (acft/yr) | 2060 (acft/yr) |
| Bell | 1,163 | 1,446 | 4,469 | 1,663 |
| Bosque | 4,418 | 9,523 | 0 | 0 |
| Brazos | 96 | 232 | 276 | 0 |
| Burleson | 0 | 98 | 2 | 0 |
| Callahan | 0 | 0 | 0 | 0 |
| Comanche | 0 | 0 | 7 | 0 |
| Coryell | 0 | 0 | 3 | 0 |
| Eastland | 0 | 0 | 1,085 | 1,070 |
| Erath | 16 | 40 | 0 | 0 |
| Falls | 0 | 0 | 1,465 | 1,427 |
| Fisher | 155 | 236 | 0 | 0 |
| Grimes | 807 | 9,904 | 16 | 16 |
| Hamilton | 0 | 0 | 3 | 0 |
| Haskell | 52 | 47 | 1,807 | 1,550 |
| Hill | 21 | 53 | 0 | 0 |
| Hood | 33 | 39 | 33,980 | 27,794 |
| Johnson | 4,031 | 5,154 | 0 | 0 |
| Jones | 0 | 0 | 1,330 | 565 |
| Kent | 0 | 0 | 0 | 0 |
| Knox | 3 | 3 | 0 | 0 |
| Lampasas | 159 | 192 | 0 | 0 |
| Lee | 0 | 0 | 3 | 0 |
| Limestone | 44 | 15,883 | 1,447 | 0 |
| McLennan | 22,717 | 35,524 | 0 | 0 |
| Milam | 4,700 | 8,200 | 2,071 | 494 |
| Nolan | 1,576 | 3,253 | 100 | 0 |
| Palo Pinto | 0 | 1,658 | 1,087 | 514 |
| Robertson | 31 | 8,361 | 1,800 | 9 |
| Shackelford | 0 | 0 | 50 | 50 |
| Somervell | 98 | 92 | 25,570 | 25,510 |
| Stephens | 5,884 | 6,662 | 53 | 50 |
| Stonewall | 0 | 0 | 0 | 0 |
| Taylor | 5 | 4 | 16 | 1 |
| Throckmorton | 0 | 0 | 0 | 0 |
| Washington | 70 | 199 | 0 | 0 |
| Williamson | 3,159 | 4,210 | 0 | 0 |
| Young | 0 | 0 | 12,268 | 10,663 |

***Table 4B.16-3.***
***Environmental Issues: Voluntary Redistribution***

| | |
|---|---|
| Water Management Option | Voluntary Redistribution |
| Implementation Measures | Voluntary Redistribution or water purchase from an entity with available water supply to entities in need of water. Terms of the contract would be drawn up on a case by case basis. |
| Environmental Water Needs / Instream Flows | Possible low impacts. The primary source of water identified as available to this option is stored in existing reservoirs. |
| Bays and Estuaries | No substantial impact identified. |
| Fish and Wildlife Habitat | Potential impacts include constructing and maintaining easements for new pipelines or pump stations. Extent of impacts dependent on location and size of projects. |
| Cultural Resources | Possible low impact. |
| Threatened and Endangered Species | Potential impacts include impacts of constructing and maintaining easements for new pipelines or pump stations. Extent of impacts dependent on location and size of projects. |
| Comments | Assumes infrastructure is needed to distribute purchased water to the entity in need. |

***Table 4B.16-4.***
***Potential Annual Costs of Water from Voluntary Redistribution (i.e. Water Purchase)***

| *Raw Water Purchase*[1] *($/acft)* | *Treatment ($/acft)* | *Conveyance ($/acft)* | *Potential Total Cost ($/acft)* |
|---|---|---|---|
| $45.75 to $115 | $325 to $800 | $0 to $300 | $371 to $1,215 ($1.14 to $3.73/1,000 gallons) |

[1] Based on raw water costs from BRA (System Rate) and LCRA of $45.75 and $115 per acft, respectively.

### *4B.16.5 Implementation Issues*

This water supply option has been compared to the plan development criteria, as shown in Table 4B.16-5, and the option meets each criterion.

An issue facing redistribution is appropriate compensation for the entity or individual that owns the water right or contract for water. If an entity has arranged through contracts to have more water than they currently need or may need in the study period, they should be compensated for the expense and upkeep of any facilities and purchase contracts already in place.

The following issues should be considered when negotiating a voluntary redistribution agreement:

- Quantity of water to be redistributed;
- Location of excess water supply in relation to buyer with need;
- Necessary water treatment and distribution facilities;
- Determination of fair market value;
- Consideration of how existing contracts will effect the sale or lease;
- Length of agreement;
- Drought contingencies;
- Protections needed by entity providing water;
- Protections needed by entity needing water;
- Enforcement of protections; and
- Other conditions specific to buyer and seller.

***Table 4B.16-5.***
***Comparison of Voluntary Redistribution Option to Plan Development Criteria***

| *Impact Category* | *Comment(s)* |
|---|---|
| A. Water Supply | |
| 1. Quantity | 1. Significant quantities available in parts of the region |
| 2. Reliability | 2. High reliability |
| 3. Cost | 3. Low to moderate |
| B. Environmental factors | |
| 1. Environmental Water Needs | 1. Possible low impact |
| 2. Habitat | 2. Low impact possible where new pipelines are constructed |
| 3. Cultural Resources | 3. Possible low impact |
| 4. Bays and Estuaries | 4. No substantial impact |
| 5. Threatened and Endangered Species | 5. None or Low impact |
| 6. Wetlands | 6. None or Low impact |
| C. Impact on Other State Water Resources | • No apparent negative impacts on state water resources; no effect on navigation |
| D. Threats to Agriculture and Natural Resources | • Could affect agriculture if supplies converted to M&I; beneficial effect on natural resources by avoiding need for new projects |
| E. Equitable Comparison of Strategies Deemed Feasible | • Option is considered to meet municipal and industrial shortages |
| F. Requirements for Interbasin Transfers | • Not applicable |
| G. Third Party Social and Economic Impacts from Voluntary Redistribution | • Supplies considered are excess to 30-year needs; no anticipated third party effects |