

**Region F
Strategy Evaluation Matrix**

Entity	County Used	Basin Used	Strategy	Quantity (Ac-Ft/Yr)	Reliability	Cost (\$/Ac-Ft)	Impacts of Strategy on:				Interbasin Transfer	Third Party Social & Economic Impacts	Implementation Issues	Comments
							Environmental Factors	Agricultural Resources/Rural Areas	Other Natural Resources	Key Water Quality Parameters				
Andrews	Andrews	Colorado	Water Conservation	310	Medium	\$185	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.
Andrews	Andrews	Colorado	Dockum Desalination	950	Medium	\$1,163	Low	Positive	None identified	Low	n/a	None identified	Co-disposal with oil field brine	
Bronte	Coke	Colorado	Reuse	110	High	\$2,345	Medium	Positive	None identified	Medium	n/a	None identified	Public perception, disposal, TCEQ rules	
Bronte	Coke	Colorado	New groundwater at Oak Creek	150	Unknown	\$2,060	Low to Medium	Positive	Low	Low	n/a	Provides service to local residents	High costs	Interconnection between Oak Creek reservoir and alluvium is unknown.
Bronte	Coke	Colorado	New groundwater and advanced treatment	350	Medium	\$1,740	Medium	Low	None identified	Low	n/a	None identified	Disposal of treatment discharge.	
Bronte	Coke	Colorado	Rehabilitation of Oak Creek pipeline	0	Medium	n/a	Low	Positive	None identified	Low	n/a	None identified	Funding	
Bronte	Coke	Colorado	Water Conservation	51	Medium	\$188	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.
Robert Lee	Coke	Colorado	Infrastructure Improvements	200	High	\$1,328	Low	Positive	None identified	TBD	n/a	Improved quality and reliability for the city	Financing	0.5 mgd treatment expansion and new storage tank
Robert Lee	Coke	Colorado	New groundwater	150	Medium to Low	\$1,047	Medium	Low	None identified	Low	n/a	None identified	Unknown quantity and quality	
Robert Lee	Coke	Colorado	Purchase from San Angelo	400	Medium to High	\$1,168	Low	Low	None identified	Low	n/a	None identified	Further study is needed on water quality issues associated with transporting water both directions and small quantities to Robert Lee.	May preclude San Angelo from using water from Spence reservoir
Robert Lee	Coke	Colorado	Reuse	110	High	\$2,345	Medium	Positive	None identified	Medium	n/a	None identified	Public perception, disposal, TCEQ rules	
Robert Lee	Coke	Colorado	Desalination of Spence Reservoir Water	500	High	\$1,879	Medium	Positive	None identified	Medium	n/a	Increased reliability and better water for city	Financing, disposal of brine reject	Strategy assumes that reject can be discharged. Costs may be significantly higher if other methods used.
Robert Lee	Coke	Colorado	Floating pump in Mountain Creek Reservoir	50	Low	\$1,132	Low	Positive	None identified	Low	n/a	None identified	Financing	Allows city to take more water when reservoir is low
Robert Lee	Coke	Colorado	Water Conservation	48	Medium	\$199	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.
Coleman	Coleman	Colorado	Water Conservation	107	Medium	\$101	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.
Eden	Concho	Colorado	RO treatment	392	High	\$819	Low to Medium	Positive	None identified	Medium	n/a	High cost takes away resources	Disposal of waste products	
Eden	Concho	Colorado	Replacement well	323	High	\$1,113	Low	Positive	None identified	Low	n/a			
CRMWD	Ector/Midland	Colorado	Odessa/Midland Reuse	9,799	High	\$1,354	Low	Low	None	Low to Medium	n/a	None identified	Public perception, disposal, TCEQ rules	
CRMWD	Howard	Colorado	Big Spring Reuse	1,855	High	\$824	Low	Low	None	Low to Medium	n/a	None identified	Public perception, disposal, TCEQ rules	
Manufacturing	Kimble	Colorado	Edwards-Trinity aquifer	1,000	Medium	\$1,080	Medium	None	None identified	None	n/a	None identified	Locating areas with sufficient production and acceptable water quality	Manufacturing demands appear to include recirculated water
Brady	McCulloch	Colorado	Water Conservation	239	Medium	\$132	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.
Richland SUD	McCulloch	Colorado	Specialty Media Treatment System	113	High	\$664	Low	Positive	None identified	Low	n/a	Security and worker safety, loss of revenue due to increased costs	Depends on ability to locate injection well. Will require long-term contract and minimum guaranteed payment.	
Richland SUD	McCulloch	Colorado	Bottled water program	1	High	\$28,780	Low	Positive	None identified	Low	n/a	Users need to travel to obtain water	Regulatory acceptance	Lowest overall cost
Richland SUD	McCulloch	Colorado	Replacement well	113	High	\$1,982	Low	Positive	None identified	Low	n/a	None identified	Assumes that an area with low radionuclide concentration can be identified	
Richland SUD	McCulloch	Colorado	System connection	200	High	\$2,615	Low	Positive	None identified	Low	n/a	None identified		
Menard	Menard	Colorado	Aquifer Storage and Recovery	240	High	\$1,271	Low	Positive	None identified	Low	n/a	None identified	Suitability of Hickory not established, financing	
Menard	Menard	Colorado	Water Conservation	33	Medium	\$211	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.

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							Environmental Factors	Agricultural Resources/Rural Areas	Other Natural Resources	Key Water Quality Parameters				
Menard	Menard	Colorado	New Hickory well	160	Medium to High	\$1,456	Low	Positive	None identified	Low	n/a	None identified	Water quality unknown.	May be higher impacts if advanced treatment needed.
Menard	Menard	Colorado	San Saba Off-Channel Reservoir	500	High	\$4,430	Medium	Positive	None identified	Low	n/a	Property owners at reservoir site	Specific site not selected. Priority date of water significantly affects feasibility.	Assuming that diversion is under existing Menard or LCRA water right.
Midland	Midland	Colorado	T-Bar Well Field	13,600	High	\$1,422	Low	Low	Low	Low	Not required for groundwater		Pipeline route and well field layout not determined	Additional studies underway. Not available for this plan.
Midland	Midland	Colorado	Water Conservation	3,663	Medium	\$132	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.
Colorado City	Mitchell	Colorado	New wells in Dockum aquifer	2,200	Medium	\$1,153	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Finished water amount may be less pending treatability analyses.
CRMWD	Multiple	Colorado	Winkler Well Field	6,000	High	\$1,444	Low	Low	Low	Low	Not required for groundwater		Pipeline route and well field layout not determined	
CRMWD	Multiple	Colorado	Water from SW Pecos County	15,000	Medium	\$1,485	Low to Medium	May impact Belding Farms	None identified	Low	Not required for groundwater	May impact other groundwater users in Pecos County	Needs additional studies regarding supplies and impacts	
CRMWD	Multiple	Colorado	Water from Roberts County	25,000	High	\$3,319	Low	Low	Low	Low	Not required for groundwater	Other users of Roberts County water	Would be more cost-effective with other participants	
Multiple	Multiple	Multiple	Subordination of senior water rights	80,130	Medium	TDB	Medium	Positive	None identified	Low	n/a	None identified	Needs further analysis before implementation	Done in conjunction with Region K
Ballinger	Runnels	Colorado	Voluntary redistribution - Hords Creek Reservoir	220	Low	\$3,361	Low	Positive	None identified	Low	n/a	None identified	Subordination to downstream water rights	May require modifications to contracts with Corps of Engineers
Ballinger	Runnels	Colorado	Voluntary Redistribution - purchase water from CRMWD	600	High	\$658	Low	Positive	None identified	Low	n/a	None identified	Must have agreement with CRMWD and WCTMWD	Uses existing WCTMWD and Ballinger pipelines
Ballinger	Runnels	Colorado	Reuse	220	High	\$1,473	Medium	Positive	None identified	Medium	n/a	None identified	Public perception, disposal, TCEQ rules	
Ballinger	Runnels	Colorado	Water Conservation	144	Medium	\$208	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.
Winters	Runnels	Colorado	Reuse	110	High	\$2,345	Medium	Positive	None identified	Medium	n/a	None identified	Public perception, disposal, TCEQ rules	
Winters	Runnels	Colorado	Water Conservation	76	Medium	\$248	Low	Positive	None identified	Low	n/a	None identified	Site specific data needed. May require financial and technical assistance.	Conservation based on generic assessment. Site-specific data not available.
CRMWD	Scurry	Colorado	Snyder Reuse	726	High	\$1,521	Low	Low	None	Low to Medium	n/a	None identified	Public perception, disposal, TCEQ rules	
CRMWD	Multiple	Colorado	Capitan Reef Desalination	9,500	Medium	\$1,875	Low	Low	None	Low	n/a	None identified	Reliability of large-scale development not established.	
San Angelo	Tom Green	Colorado	Water Conservation	2,371	Medium	\$110	Low	Low	None identified	Low	n/a	None identified	City developing a water conservation program	Actual conservation savings may be greater.
San Angelo	Tom Green	Colorado	Edwards-Trinity aquifer - Schleicher Co.	12,000	Medium	\$660	Medium	Potential impact to local users	None identified	Low	n/a	Potential impact to local users	Locating areas with sufficient production. Groundwater conservation district rules that discourage large-scale development	
San Angelo	Tom Green	Colorado	Water from SW Pecos County	12,000	Medium	\$2,643	Low to Medium	May impact Belding Farms	None identified	Low	Not required for groundwater	May impact other groundwater users in Pecos County	Needs additional studies regarding supplies and impacts	
San Angelo	Tom Green	Colorado	McCulloch Well Field	12,000	High	\$1,936	Low	Potential impact to other Hickory users	None identified	Low	n/a	Potential impact to other Hickory users	Pipeline route and well field layout currently being studied	Water may not meet standards for Radium & require advanced treatment, which may increase costs
San Angelo	Tom Green	Colorado	Desalination Facility	11,200	High	\$1,075	Low	Low	None identified	Low	n/a		Lack of data on target aquifer	
San Angelo	Tom Green	Colorado	Rehabilitation of Spence Pipeline	2,300	High	\$311	Low	Low	None identified	Low	n/a			
Steam Electric	Not determined	Not determined	CCGT and ACC Generation	15,000	Medium to High	\$1,127	Low	None	None identified	Low	n/a		Implementation based on economic decisions by power industry	Technology requires very little water

**Region F
Environmental Quantification Matrix**

Entity	County	Basin	Strategy	Environmental Factors										Comments
				Acres Impacted	Wetland Acres	Envir Water Needs	Habitat	Threat and Endanger Species	Cultural Resources	Bays & Estuaries	Envir Water Quality	Other	Overall Environmental Impacts	
Andrews	Andrews	Colorado	Dockum Desalination	15		Low	Low	6	Low	None	Low		Low	Disposal through existing deep well injection
County Other	Brown	Colorado	Voluntary redistribution	53		Low	Low	10	Low	None	Low		Low	Not a significant draw on reservoir
Bronte	Coke	Colorado	Reuse	10		Medium	Medium	8	Low	None	Medium		Medium	Assuming that waste stream from treatment process would be discharged or use land application.
Bronte	Coke	Colorado	New groundwater at Oak Creek	5		Low to Medium	Low	8	Low	None	Low		Low to Medium	The connection between the alluvium and surface water is unknown.
Bronte	Coke	Colorado	New groundwater and advanced treatment	12		Low to Medium	Low	8	Low	None	Medium		Medium	Unknown how discharge from advanced treatment will be handled.
Bronte	Coke	Colorado	Rehabilitation of Oak Creek pipeline	32		Low	Low	8	Low	None	Low		Low	
Bronte	Coke	Colorado	Water Conservation	0		Low	Low	8	Low	None	Low		Low	
Robert Lee	Coke	Colorado	Infrastructure Improvements	4		Low	Low	8	Low	None	Low		Low	0.5 mgd treatment plant and new storage tank
Robert Lee	Coke	Colorado	New groundwater	36		Low to Medium	Low	8	Low	None	Low		Low	The connection between the alluvium and surface water is unknown.
Robert Lee	Coke	Colorado	Purchase frm San Angelo	<1		Low	Low	8	Low	None	Low		Low	
Robert Lee	Coke	Colorado	Reuse	10		Medium	Medium	8	Low	None	Medium		Medium	Assuming that waste stream from treatment process would be discharged or use land application.
Robert Lee	Coke	Colorado	Desalination of Spence Reservoir Water	5		Medium	Medium	8	Low	None	Medium		Medium	
Robert Lee	Coke	Colorado	Floating pump in Mountain Creek Reservoir	1		Low	Low	8	Low	None	Low		Low	Allows city to take more water when reservoir is low
Robert Lee	Coke	Colorado	Water Conservation	0		Low	Low	8	Low	None	Low		Low	
Eden	Concho	Colorado	RO treatment	<1		Low to Medium	Low to Medium	8	Low	None	Medium		Low to Medium	Long-term impacts of land application of naturally occurring radionuclides unknown
Eden	Concho	Colorado	Replacement well	<1		Low	Low	8	Low	None	Low		Low	Small amount of water treated
CRMWD	Ector/Midland	Colorado	Odessa/Midland Reuse	152		Low	Medium	6	Low	None	Low		Low	Impacts due to decreased flow in Monahans Draw.
CRMWD	Howard	Colorado	Big Spring Reuse	6		Low	Low	6	Low	None	Medium		Low	No impact below Beals Creek diversion
Manufacturing	Kimble	Colorado	Edwards-Trinity aquifer	<1		Medium	Medium	9	Low	None	Medium		Medium	Potential impact on surface water flows
Richland SUD	McCulloch	Colorado	Specialty Media Treatment System	<1		Low	Low	5	Low	None	Low		Low	Spent media disposed using deep-well injection.
Richland SUD	McCulloch	Colorado	Bottled water program	<1		Low	Low	NA	Low	None	Low		Low	Small amount of water treated
Richland SUD	McCulloch	Colorado	System Connection	25		Low to Medium	Low	11	Low	None	Low		Low	
Richland SUD	McCulloch	Colorado	Replacement well	1		Low	Low	11	Low	None	Low		Low	Replaces existing well
Menard	Menard	Colorado	Aquifer Storage and Recovery	2		Low to Medium	Low	12	Low	None	Low		Low	In conjunction with Hickory well
Menard	Menard	Colorado	Water Conservation	0		Low	Low	12	Low	None	Low		Low	
Menard	Menard	Colorado	New Hickory well	2		Low	Low	12	Low	None	Low		Low	Impacts may be higher if advanced treatment required because of brine disposal
Menard	Menard	Colorado	San Saba Off-Channel Reservoir	80		Medium	Medium	12	Low to Medium	None	Low		Medium	Specific site not selected
Midland	Midland	Colorado	T-Bar Well Field	212		Low	Low	7	Low	None	Low		Low	Estimated impacts. Precise route unknown pending routing study.
Midland	Midland	Colorado	Water Conservation	0		Low	Low	6	Low	None	Low		Low	
Colorado City	Mitchell	Colorado	New wells in Dockum aquifer	35		Low	Low	9	Low	None	Low to Medium		Low	Evaporation ponds have been known to accumulate selenium and other constituents. This should be considered during design.
CRMWD	Multiple	Colorado	Winkler Well Field	112		Low	Low	7	Low	None	Low		Low	Estimated impacts. Precise route unknown pending routing study.
CRMWD	Multiple	Colorado	Water from SW Pecos County	265		Low to Medium	Low	23	Low	None	Low to Medium		Low to Medium	
CRMWD	Multiple	Colorado	Water from Roberts County	1125		Low to Medium	Low		Low	None	Low		Low	Possible impact on Canadian River flows
Multiple	Multiple	Multiple	Subordination of senior water rights	0		Medium	Low	varies	Low	Medium to Low	Medium to Low		Medium	
Ballinger	Runnels	Colorado	Voluntary redistribution - Hords Creek Reservoir	51		Low	Low	10	Low	None	Low		Low	

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Environmental Quantification Matrix**

Entity	County	Basin	Strategy	Environmental Factors										Comments
				Acres Impacted	Wetland Acres	Envir Water Needs	Habitat	Threat and Endanger Species	Cultural Resources	Bays & Estuaries	Envir Water Quality	Other	Overall Environmental Impacts	
Ballinger	Runnels	Colorado	Voluntary Redistribution - purchase water from CRMWD	0		Low	Low	10	Low	None	Low		Low	Pipeline already in place
Ballinger	Runnels	Colorado	Reuse	10		Medium	Medium	10	Low	None	Medium		Medium	Assuming that waste stream from treatment process would be discharged or use land application.
Ballinger	Runnels	Colorado	Water Conservation	0		Low	Low	10	Low	None	Low		Low	
Winters	Runnels	Colorado	Reuse	10		Medium	Medium	10	Low	None	Medium		Medium	Assuming that waste stream from treatment process would be discharged or use land application.
Winters	Runnels	Colorado	Water Conservation	0		Low	Low	10	Low	None	Low		Low	
CRMWD	Scurry	Colorado	Snyder Reuse	9		Low	Low	6	Low	None	Medium		Low	No impact below Colorado City
CRMWD	Multiple	Colorado	Capitan Reef Desalination	164		Low	Low	7	Low	None	Low		Low	Estimated impacts. Precise route unknown pending routing study.
San Angelo	Tom Green	Colorado	Water Conservation	0		Low	Low	10	Low	None	Low		Low	Conserved water expected to remain in reservoirs for later use, use by others, or lost due to evaporation. Not expected to have a significant positive impact on environmental flows.
San Angelo	Tom Green	Colorado	Edwards-Trinity aquifer - Schleicher Co.	83		Medium to high	Medium	10	Low	None	Medium to Low		Medium	
San Angelo	Tom Green	Colorado	Water from SW Pecos County	448		Low to Medium	Low	23	Low	None	Low to Medium		Low to Medium	
San Angelo	Tom Green	Colorado	McCulloch Well Field	476		Low	Low	12	Low	None	Low		Low	Estimated impacts. Precise route unknown pending routing study.
San Angelo	Tom Green	Colorado	Desalination Facility	100		Low	Low	10	Low	None	Low		Low	Using deep well injection for brine disposal
San Angelo	Tom Green	Colorado	Rehabilitation of Spence Pipeline	0		Low	Low	10	Low	None	Low		Low	Existing pipeline
Steam Electric	Not determin	Not determ	CCGT and ACC Generation	0		Low	Low	unknown	Low	None	Low		Low	Location of new generation not determined