

Region H  
Table 4A-2: Water Management Strategy Screening

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Water Management Strategy	Water User Group or Wholesale Provider	Strategy Description	Strategy Cost (\$)	Cost of Water (\$/ac-ft)	WUG/ WMS	Earliest Potential Starting Decade	Firm Yield (ac-ft/yr)	Basin	Interbasin Transfer (Yes/No)	Impacts on Habitat / Stream / B&E Flows	Impacts on Landform	Decision Matrix Factors (High, Medium, Low)										Total of Screening Factors	Selected as Part of 2001 Plan	Selected as Part of 2006 Plan					
												Cost	Yield	Location	Water Quality	Environment	Local Preference	Institutional Constraints	Risk of Inoperability	Impact on Water Resources	Impact on Other Management Strategies								
<b>Conservation Strategies</b>																													
Industrial Conservation	Manufacturing	Reduce water demand through selected BMPs	TBD	TBD		2010	TBD	All	No	No impact	None	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	No	No	
Irrigation Conservation																													
Brazoria County	Irrigation	Reduce irrigation losses through land leveling, point irrigation and canal lining	\$2,048,840	\$98		2010	18,792	Brazos, Brazos-Colorado	No	Reduces losses that feed small streams	None	1	1	1	0	0	0	1	0	1							5	Yes	Yes
Chambers County	Irrigation	Reduce irrigation losses through land leveling, point irrigation and canal lining	\$2,616,070	\$97		2010	24,018	Trinity	No	Reduces losses that feed small streams	None	1	1	1	0	0	0	1	0	1							5	Yes	Yes
Galveston County	Irrigation	Reduce irrigation losses through land leveling, point irrigation and canal lining	\$259,380	\$96		2010	2,382	San Jacinto - Brazos	No	Reduces losses that feed small streams	None	1	1	1	0	0	0	1	0	1							5	Yes	Yes
Liberty County	Irrigation	Reduce irrigation losses through land leveling, point irrigation and canal lining	\$2,279,400	\$100		2010	20,877	Trinity	No	Reduces losses that feed small streams	None	1	1	1	0	0	0	1	0	1							5	Yes	Yes
Waller County	Irrigation	Reduce irrigation losses through land leveling, point irrigation	\$727,950	\$110		2050	6,606	San Jacinto	No	Reduces losses that feed small streams	None	1	1	1	0	0	0	1	0	1							5	Yes	Yes
Municipal Conservation	Multiple	Reduce demand through various methods	From \$9,866,953 to \$22,755,445	\$202 (\$m Sys) \$311 (Med Sys) \$213 (Lg Sys)		2010	From 29,764 to 100,987	All	No	No impact	None	0	1	1	0	0	1	1	0	1							5	Yes	Yes
<b>Contractual Strategies</b>																													
Increase Current Contracts	Multiple	Increase existing contracts to meet customer demands	At WUG level	System Rate		2010		Multiple	Yes	Reduced streamflows due to use of currently unused supplies	None	1	0	1	0	0	1	1	0	1							5	Yes	Yes
New Contracts from Existing Supply	Multiple	Create new contracts from existing unallocated supplies	At WUG level	System Rate		2010		Multiple	Yes	Reduced streamflows due to use of currently unused supplies	None	1	0	1	0	0	1	1	0	1							5		Yes
Reallocation of Existing Supply	Multiple	Reallocate surplus water to WUGs with shortages	At WUG level	System Rate		2010		Multiple	Yes	Altered location of return flows	None	1	0	1	0	0	1	1	0	1							5	No	No
TRA to SJRA contract	TRA / SJRA	Sell uncommitted supply to SJRA	TBD - depends on conveyance	TBD - Contract Rate plus conveyance	Y	2050	80,000	Trinity to San Jacinto	Yes	Potential introduction of invasive species	Unknown	0	1	0	0	0	0	0	-1	0							0	No	Yes
TRA to Houston Contract	TRA / Houston	Sell uncommitted supply to Houston	None - Existing Infrastructure	TBD - Contract Rate	Y	2010	200,000	Trinity to San Jacinto	Yes	Potential introduction of invasive species	Unknown	1	1	0	0	0	1	1	-1	0							3	Yes	Yes
WUG Level Contracts	Multiple WUGs	Contracts from WUGs to WUGs	NA	Contract Rate		2010		All	Yes (source-dependent)	None - impacts associated with yield-creating WMS or infrastructure	None	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WWP Contracts	Multiple WUGs	Contracts between WUGs	NA	Contract Rate		2010		All	Yes (source-dependent)	None - impacts associated with yield-creating WMS or infrastructure	None	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Groundwater Strategies</b>																													
Expanded Use of Groundwater	Multiple	Increase groundwater use, to the sustainable or permitted yield.	\$524,000 per 1 mgd well	\$185		2010	NA	All	No	Uses existing supply, return flows remain in basin of origin.	New wells may require some land clearing.	0	1	1	1	0	1	0	0								4	Yes	
Interim Groundwater Use	Brazoria, Galveston, Harris, and Montgomery Counties	Temporary groundwater use in excess of available supply	\$524,000 per 1 mgd well	\$185	Y	2010	NA	Multiple	No	Potential for subsidence and excess drawdown	New wells may require some land clearing.	1	1	1	0	-1	1	0	1	0							4	No	No
New Groundwater Wells	Multiple	Added well capacity to facilitate expanded pumping or interim groundwater use	\$524,000 per 1 mgd well	\$185		2010	NA	All	No	None - impacts associated with yield-creating WMS or infrastructure	New wells may require some land clearing.	0	NA	1	1	0	1	0	0	0							3		Yes
<b>Groundwater Reduction Plans</b>																													
CHCRWA GRP	CHCRWA	Conversion of CHCRWA to surface water.	TBD	System Rate		2010	NA	Multiple	Yes (previously permitted)	Potential disturbance due to construction.	Temporary disturbance due to transmission line construction. Land required for plant construction/expansion	0	1	0	0	1	0	0									2	No	No
COH GRP	COH	Conversion of portions of COH service area to surface water	See inf. Cost	See inf. Cost		2010	NA	Multiple		Potential disturbance due to construction.	Temporary disturbance due to transmission line construction. Land required for plant construction/expansion	0	1	0	0	1	0	0										No	No
Missouri City GRP	Missouri City	Conversion of Missouri City and surrounding area to surface water. Also includes Aquifer Storage and Recovery.	\$51,260,500	System Rate		2020 (2013)	NA	Brazos, San Jacinto-Brazos	No	Potential disturbance due to construction.	Temporary disturbance due to transmission line construction. Land required for plant construction/expansion	0	1	0	0	1	0	0									2	No	No
Fort Bend County MUD 25 GRP	Fort Bend MUD 25	A combination of reuse and surface water to allow for groundwater reduction.	TBD	System Rate		2020 (2013)	589 (Reuse)	Brazos	No	Potential disturbance due to construction.	Temporary disturbance due to transmission line construction. Land required for plant construction/expansion	0	1	0	0	1	0	0									2	No	No



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											Cost	Yield	Location	Water Quality	Environment	Local Preference	Administrational Constraints	Operational Feasibility	Impact on Wetlands	Impact on Other Management Strategies						
Screening Factor Weight:											1	1	1	1	1	1	1	1	1	1						
Milliken-Burdick Reservoir	BRA	New reservoir in Brazos, Madison, Leon, and Robertson Counties	\$464,764,000	\$91.3	Y 2030	38,080	Brazos		Avoids Manning and Yegua lignite, avoids Kurten oil and gas field, avoids the Wilcox lignite in the upper river reaches and avoids significant bottomland hardwood population. Size of lake would be constrained by the Wilcox lignite, and inundation of marsh area upstream of Old San Antonio Road. Probable moderate to high environmental and instream flows impacts.	The inundation area impacts approximately 9,210 acres of mixed Bottomland Hardwood Forest, 4,086 acres of Grasses/Forbs, and 1,334 acres of Post Oak Woods.	-1	0	-1	0	-1	0	-1	-1	0	0	-5	No	No			
Reuse Strategies																										
Fulshear Reuse																										
Houston Indirect Wastewater Reuse	Houston	Reuse wastewater from all city WWTP's in lieu of Trinity Supply	TBD	System Rate	Y 2020	490,223	San Jacinto	No	Reduces return flows to Upper Galveston Bay, offset by reduced diversions from the Trinity Basin.	Size and location of diversion pump stations still TBD.	0	1	1	0	0	0	-1	-1	1	1	1	1	1	1	1	1
Montgomery County MUDs 8/9 Reuse	Montgomery MUDs 8/9	Reuse water from Montgomery County	TBD	System Rate	2020 (2015)	1120 (max)	San Jacinto-Brazos	No	No impact	none	1	1	0	1	1	0	-1	-1	0	0	3	No	No			
NHCRWA Indirect Wastewater Reuse	NHCRWA	Reuse wastewater from member WWTP's in lieu of purchasing additional supply.	TBD	TBD	Y 2010	157,000	San Jacinto	No	Reduces return flows to Upper Galveston Bay, offset by reduced diversions from the Trinity Basin.	Size and location of diversion pump stations still TBD.	0	1	1	0	0	0	-1	-1	1	1	1	1	1	1	1	
Wastewater Reclamation for Industry	Houston, Manufacturing	Deliver treated wastewater to industry for use in lieu of Trinity River supply.	\$315,913,802	\$87.2	Y 2010	67,200	San Jacinto	No	Minimal change in habitat	None	-1	1	1	1	0	1	0	1	1	1	5	Yes	Yes			
Municipal Non-Potable Reuse	County/Other and Authorities in Brazoria, Fort Bend, Harris, and Montgomery Counties	Reuse for municipal irrigation	\$20,072,000	System Rate	2030	36,388 (in 2060)	Multiple	No	Reduces return flows to Upper Galveston Bay, offset by reduced diversions from the Trinity Basin.	None	0	1	1	0	1	0	-1	-1	0	0	2	No	No			
Permit Strategies																										
BRA System Operations Permit	BRA	Use peak flows, when available, and systems management to reduce the use of water stored under other permits.	\$5,895,000	System rate	Y 2020 (2015)	25,350 (Region H)	Brazos	No	Harvests peak flows through system management, positive affect on below-median flows.	New pump stations may be required.	1	1	1	0	0	1	-1	0	0	0	3	Yes	Yes			
Houston/SJRA RoR Permit**	Houston / SJRA	Use peak flows, when available, to reduce the use of water stored under other permits.	NA	System rate	NA	0	San Jacinto	No	Reduces flows below Lake Houston (tidal portion) and Upper Galveston Bay, offset by reduced diversions from the Trinity Basin	None (existing diversion points)	1	-1	1	0	0	1	0	0	0	2	Yes	Yes				
Houston Bayous Permit	Houston	Use peak flows, when available, to reduce the use of water stored under other permits.	NA	System rate	NA	0	San Jacinto	No	Reduces return flows to Upper Galveston Bay, offset by reduced diversions from the Trinity Basin.	Size and location of diversion pump stations still TBD.	1	-1	1	0	-1	1	-1	0	0	0	0	Yes	Yes			
Other Strategies																										
Brazoria County Interruptible Irrigation	GCWA	Use of interruptible portion of GCWA water right for irrigation			2010	84,000 (57,000 w/ GCWA off-channel)	San Jacinto-Brazos	No	Reduced flows in Brazos River due to increased diversion	None	1	1	1	0	0	0	0	-1	0	0	2	NA	NA			
BRA Voluntary Redistribution	BRA	Reallocate supply committed to long-term contracts	TBD - New pump stations may be req'd	System Rate	Y 2010	50,000	Brazos	No	Reduced streamflows due to use of currently unused supplies	None	1	1	1	0	0	1	1	0	0	5	Yes	No				
Brazos Salt Water Barrier	BRA / DOW	Prevent the seasonal migration of the saltwater wedge upstream to protect existing diversion points	\$39,693,000	NA	2030	NA	Brazos	No	Will influence flood plain response to major storms	New structure in river channel	0	-1	1	1	0	0	0	1	1	3	NA	Yes				
Freeport Desalination	BRA / DOW	Desalinate seawater for industrial and municipal use.	\$976,952,150 to \$1,257,220,100	\$1,730 to \$2,376	Y 2040	11,200	Brazos, San Jacinto-Brazos	No	Offsets some use of Brazos basin flows.	New facility may require some land clearing.	-1	1	1	1	0	0	0	0	0	2	No	Yes				
Houston to GCWA Transfer	GCWA / Houston	Move water from CWA-Bayport facility to Texas City Reservoir	\$107,999,549	\$53 to \$278	Y 2020	42,000	San Jacinto-Brazos	No	Potential introduction of invasive species	Unknown	-1	1	1	0	0	-1	0	1	0	1	1	Yes	Yes			
Montgomery County MUD 8/9 Brackish Desal	Montgomery County MUDs 8 and 9	Add usage types to existing permits to meet local demands	None	System rate	2010	0	Trinity	No	Reduced streamflows due to use of currently unused supplies	New pump stations may be required.	1	0	1	0	0	1	0	0	0	3	Yes	Yes				
Redesignation of Existing Permits	Multiple	Transfer existing supply from Toledo Bend Reservoir to Region H.	\$714,009,924	\$183	Y 2030	From 26,762 (2020) to 486,500 (2060)	Sabine to San Jacinto	Yes	Potential introduction of invasive species / Reduction of freshwater inflows to Sabine Lake	1398-acres	0	1	-1	0	-1	-1	-1	-1	1	-3	NA	No				
Galveston County Desal	GCWA		TBD	TBD			San Jacinto-Brazos			Unknown	-1	0	1	1	0	0	0	0	0	1	No	No				