

Preliminary COA Drought Response Decision Matrix

Subject to Change

Updated:

11-Jun-14

Category	Cost	Water Supply Yield	Ease of Implementation	Environmental Recommendation	Total Score (Out of 12)	Option Description	Annual HL Benefit at 95th Pctl (ac-ft)		Cumulative Demand Reduction (multi-year) (ac-ft)	Water Rights/ Supply Contract Req'd?	Coordinating Entities	Land Purchase Req'd?	Timing	Discharge Permit Req'd?	Drought Only Supply	Cost Basis Supply Quantity (ac-ft/yr)	Est. Capital Cost	Est. Annual Cost	Est. Unit Cost (Supply Basis) at 95th Pctl (\$/kgal)	Est. Unit Cost at 95th Pctl (\$/ac-ft)
							Low	High												
							Column1	Column4												
Demand-side Management	3	3	3	3	12	Drought Response Stage 3**	17,000	19,000		N	N/A	N	If needed - is in DCP	N	Y	* (see footnote below)	\$0	* (see footnote below)	* (see footnote below)	* (see footnote below)
	3	3	3	3	12	Interim Drought Response - Hand-watering only**	33,000	36,000		N	N/A	N	Directors Authority	N	Y	* (see footnote below)	\$0	* (see footnote below)	* (see footnote below)	* (see footnote below)
	3	3	3	3	12	Emergency Drought Stage 4**	42,000	45,000		N	N/A	N	If needed - is in DCP	N	Y	* (see footnote below)	\$0	* (see footnote below)	* (see footnote below)	* (see footnote below)
	2	2	2	3	10	Mandatory Toilet Retrofit on Resale	128	128	1,280	N	RECA, BOR, BOMA	N	3-10 yrs	N	N	128	\$0	\$75,000	\$2.39	\$780
	2	2	2	3	10	Limit irrigated area in new residential development	178	178	1,246	N	HBA, RECA	N	3-5 yrs	N	N	178	\$0	\$150,000	\$2.57	\$840
	1	1	2	3	7	Require new facilities to capture A/C condensate for reuse	31	31	310	N	WPD	N	10 yrs	N	N	31	\$0	\$75,000	\$7.50	\$2,400
	2	1	2	3	8	Require retrofit of existing cooling towers to meet efficiency standards	73	73	292	N	RECA, BOMA	N	4 yrs	N	N	73	\$0	\$75,000	\$3.15	\$1,027
	1	1	2	3	7	Require home audits at time of sale	589	589	589	N	RECA, BOR, AE	N	10 yrs	N	N	589	\$0	\$75,000	\$3.91	\$1,270
	3	1	2	3	9	Mandatory irrigation audits for high users	371	371	742	N	N/A	N	2 yrs	N	N	371	\$0	\$150,000	\$1.24	\$404
	1	2	2	3	8	Implement smart meters for residential customers	986	986	4,928	N	AE	N	5 yrs	N	N	986	\$95,500,000	\$300,000	\$6.04	\$19,683
	2	1	3	3	9	Additional staff for marketing reclaimed water program	78	78	390	N	N/A	N	5 yrs	N	N	78	\$0	\$75,000	\$2.95	\$961
	3	2	3	3	11	Water budget rates (applied to irrigation-only meters)	1,000	1,000	2,000	N	AE, BOMA, RECA	N	2 yrs	N	N	1,000	\$0	N/A	N/A	N/A
	3	1	3	3	10	Hot water on demand incentives	6	6	59	N	N/A	N	10 yrs	N	N	6	\$0	\$55,000	\$29.00	\$9,322
	3	1	3	3	10	Provide rebates for 0.8gpf toilets	29	29	145	N	N/A	N	1 yr	N	N	29	\$0	\$50,000	\$52.00	\$17,000
				3	3	?	Direct Reuse - Completing the Core	TBD	TBD		N	N/A	N	5-7 yrs	N	N	TBD	\$41,395,000	\$1,275,000	TBD
Operational Improvements	3	2	3	3	11	Operate Longhorn Dam Lift Gates	2,000	4,000		N	LCRA, AE	N	<6 Mos.	N	Y	3,000	\$0	\$25,000	\$0.03	\$8
	3	2	3	2	10	Reduced Lake Evaporation (Long & LBL)	800	1,200		N	TCEQ, TPWD	N	<6 Mos.	N	Y	1,000	\$0	\$275,000	\$0.84	\$275
	3	2	2	2	9	Walter Long Off-Channel Storage (Existing Capacity)	1,000	4,000		??	LCRA, AE, TCEQ	N	<6 Mos.	N	Y	2,500	\$0	\$160,000	\$0.20	\$64
	3	1	3	2	9	Relocate SAR Discharge Above Austin Gauge - Existing Reclaimed System	0	1,000		N	TCEQ, LCRA	N	1-2 yrs	Y	Y	500	\$294,000	\$57,000	\$0.35	\$114
	3	2	3	3	11	Lake Austin Operation	0	5,000		N	LCRA	N	<6 Mos.	N	Y	2,500	\$0	\$25,000	\$0.03	\$10
Enhanced Operations	3	2	3	3	11	Automate Longhorn Dam Gates	4,000	7,000		N	LCRA, AE	N	1-2 yrs	N	N	5,500	\$750,000	\$80,000	\$0.04	\$15
	3	3	1	1	8	Walter Long Off-Channel Storage (Enhanced Capacity)	8,000	20,000		??	LCRA, AE, TCEQ	N	1-2 yrs	Y	Y	14,000	\$22,340,000	\$2,561,000	\$0.56	\$183
	3	2	2	2	9	Capture Local Inflows in Lady Bird Lake	1,000	3,000		N	N/A	N	1-2 yrs	N	Y	2,000	\$1,743,000	\$669,000	\$1.03	\$334

	2	2	1	1	6	Aquifer Storage and Recovery - Northern Edwards	4,000	4,000		N	TCEQ	Y	3-5 yrs	N	N	4,000	\$130,000,000	\$4,000,000	\$3.07	\$1,000
	3	3	1	1	8	Indirect Potable Reuse - SAR to Lady Bird Lake ²	20,000	20,000		??	TCEQ, LCRA	N	2-3 yrs	Y	Y	20,000	\$30,485,000	\$3,794,000	\$0.58	\$190
Alternative Groundwater Supplies	2	3	2	1	8	BlueWater Lake Pflugerville Pipeline	11,000	12,000		Y	BlueWater; Pflugerville	N	N	N		11,500	\$7,034,000	\$17,039,000	\$4.55	\$1,482
		3	2	1	??	Forestar ¹	10,000	10,000		Y	Forestar	N	2-3 yrs	N	Y/N	???	???	???	???	???
	3	2	2	1	8	Northern Edwards Wellfield ¹	1,000	1,500		N	N/A	Y	2 yrs	N	N	1,200	\$7,624,000	\$517,000	\$1.32	\$431
		3	2	1	??	Vista Ridge ¹	50,000	50,000		Y	SAWS	N	3 yrs	N	Y	???	???	???	???	???
		3	2	2	??	HCPUA ¹	25,000	25,000		Y	HCPUA	N	2-3 yrs	N	Y	25,000	???	???	???	???
Other Mid- and Long-term Supplies	1	2	2	2	7	Down Dip Brackish Edwards ¹	5,000	10,000		Y	TCEQ, BSEACD	Y	5 - 10 yrs	Y	Y/N	7,500	\$90,000,000	\$13,000,000	\$5.32	\$1,733
	2	3	3	2	10	Reclaimed Water Infiltration	20,000	40,000		N	TCEQ	N	5 - 10 yrs	??	N	30,000	\$110,000,000	\$20,000,000	\$2.05	\$667
	2	3	2	2	9	Colorado Bed and Banks Permit ¹	40,000	70,000		Y	LCRA, TCEQ	Y	10 - 15 yrs	N	N	55,000	\$310,000,000	\$38,000,000	\$2.12	\$691

¹ These alternatives represent a treated water supply and would not incur the water treatment costs the other alternatives would require

² Yield and unit cost calculation assumes extremely reduced downstream environmental flow requirements

* Drought Contingency Plan (DCP) Stage 3 and 4 implementation costs are included in the current Austin Water O&M budget. However, these costs do not address the community costs/impacts of additional restrictions.

** Estimated reductions are for total reductions off of the estimated demand under Stage 2.

Explanation of Scores Above				
	Cost	Water Supply Yield	Ease of Implementation	Environmental Recommendation
Criteria Considered:	Estimated Unit Cost at 95th Pctl (\$/ac-ft)	Average Estimate for Annual HL Benefit at 95th Pctl. Takes into account demand reduction.	Includes: land acquisition, required external adoption, timing of implementation, regulatory approval, political opposition, sustainability, and public acceptance.	Includes: Impacts on other water supplies, Instream Flow, Species Impact, Wetlands, Water Quality
3	\$0 - \$450 ac-ft	10,000+ ac-ft	A majority of these factors are met: <ul style="list-style-type: none"> Minimal coordination with other partners or organizations Not labor intensive Likelihood for high public support Simple time-table Little or no land acquisition High sustainability 	A majority of these factors are met: <ul style="list-style-type: none"> Negligible or no negative impact on existing freshwater/saltwater ecosystems Improves water conservation Beneficial impact on on instream flows and groundwater recharge areas Benefit to endangered/threatened species Reduces pollution and energy use
2	\$451 - \$1,500 ac-ft	1,000 - 9,999 ac-ft	A majority of these factors are met: <ul style="list-style-type: none"> Some coordination with other partners or organizations Moderately labor intensive Likelihood for some political opposition Long time-table Some land acquisition Moderate sustainability 	A majority of these factors are met: <ul style="list-style-type: none"> May have a mix of some positive and negative impact on existing freshwater/saltwater ecosystems Full impact of effects may be unknown Some loss of environmental flows may occur during extreme weather events
1	\$1,501+ ac-ft	0 - 999 ac-ft	A majority of these factors are met: <ul style="list-style-type: none"> Requires extensive coordination with other partners or organizations Very labor intensive Likelihood for high political opposition or low public support Complex time-table Requires large land acquisitions Low sustainability 	A majority of these factors are met: <ul style="list-style-type: none"> Projected negative impact on existing freshwater/saltwater ecosystems or wells Adversely effects threatened/ endangered species Excess withdrawals would have severe negative impacts to wells or instream flows Negatively affects water quality