# **Deutsch Domestic Water Company, Inc**

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February 1, 2022

Ben Wade Water Supply Planning Colorado Water Conservation Board 1313 Sherman Street, Room 718 Denver, Colorado 80203

Re: Water Efficiency Grant – POGGI PDAA 2022-2322

Sub: 50% Progress Report

Ben.



DDWC has completed Tasks 3 & 4 of the Drought Management Plan and hereby submits the 50% Progress Report indicating the "essential" elements that have been completed:

# Task 3 - Drought Vulnerability Assessment

- 3.1 Water Supply Reliability and Drought Management Planning
  - 3.1.1 DDWC has attached the summary of water supply reliability documents.
    - 1978 Water Rights Decree Case No W3056
    - 2010 Augmentation Plan Case No 2010CW19
    - 2017 Updated Augmentation Plan Case No 2017CW3005
  - 3.1.2 DDWC has defined key terms used to define water supply reliability.
    - Absolute water right in the Saddle Mountain Seep
    - Young Ditch dry-up for augmentation purposes
    - Blue Mesa Reservoir for augmentation purposes
  - 3.1.3 DDWC has described how water supply reliability and efficiency are closely related to drought planning.
    - The efficient use of water supply resources can make a significant difference in water supply reliability during drought conditions.
    - DDWC will be exploring how best to use off-peak spillage to fill storage to help meet on-peak demands.

						D	Deutsch Do	mestic Pip	eline							
					Wate	r Balance	at Full Bui	ld-out, Rev	ised Janua	ary 2017						
							(values	in gallons)								
D	emand															
-			_					_				_		_		
Н	Iomes	Number	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Precer
	Iomes	150	1.627.500	1,470,000	1,627,500	1,575,000	1.627.500	1,575,000	1.627.500	1.627.500	1.575,000	1,627,500	1,575,000	1.627.500	19.162.500	90.0%
-	Commercial	130	15,500	14,000	15,500	15,000	15,500	15,000	15,500	15,500	15,000	15,500	15,000	15,500	182,500	0.9%
+	ubtotals		1,643,000	1,484,000	1,643,000	1,590,000	1,643,000	1,590,000	1,643,000	1,643,000	1,590,000	1,643,000	1,590,000	1,643,000	19,345,000	90.9%
			36.81		36.81			, , , ,		36.81		36.81				90.9%
A	verage Demand	gpm		36.81		36.81	36.81	36.81	36.81		36.81		36.81	36.81	36.81	
,	awn (acres)	cfs 1.72	0.082	0.082	0.082	0.082 65.947	0.082 197.840	0.082 309.950	0.082 329.734	0.082 250,598	0.082 151.678	0.082 85,731	0.082	0.082	1,391,478	6.5%
-	tock - Irrigation Season	50	-	-	-	03,947	8,250	16,500	17,050	17,050	16,500	85,/31	-	-	83,925	
	tock - Irrigation Season tock - Nonirrigation Season	200	68,200	61,600	68,200	66,000	34,100	10,500	17,050	17,050	10,500	34,100	66,000	68.200	1,475,403	6.9%
-	ubtotals	200	68,200	61,600	68,200	131,947	240,190	326,450	346,784	267,648	168,178	128,356	66,000	68,200	1,941,753	
			1.53	, i		3.05	5.38	, ,			3.89	2.88	, ,			9.1%
A	verage Demand	gpm cfs	0.003	0.003	0.003	0.007	0.012	7.56 0.017	7.77 0.017	6.00 0.013	0,009	0,006	0.003	0.003	3.69 0.008	
т	otal Demand	cis	1,711,200	1,545,600	1,711,200	1,721,947	1,883,190	1,916,450	1,989,784	1,910,648	1,758,178	1,771,356	1,656,000	1,711,200	21,286,753	100.09
_	verage Demand		38,33	38,33	38,33	39.86	42.19	44.36	44.57	42.80	40,70	39,68	38,33	38.33	40.50	100.07
A	verage Demand	gpm cfs	0.085	0.085	0.085	0.089	0.094	0,099	0.099	0.095	0.091	0.088	0.085	0.085	0.090	
Ť																
t																
Ť																
Ŧ																
v	Vater Rights															
V	Vater Rights															
ļ	Vater Rights															
V	V-3056	gallons	1.803.223	1.628.718	1.803.223	1.745.055	1.803.223	1.745.055	1.803.223	1.803.223	1.745.055	1.803.223	1.745.055	1.803.223	21.231.502	93.5%
V	Ü	gallons	1,803,223	1,628,718	1,803,223	1,745,055	1,803,223	1,745,055	1,803,223	1,803,223	1,745,055	1,803,223	1,745,055	1,803,223	21,231,502	93.5%
V	V-3056	gpm	40.39	40.39	40.39	40.39	40.39	40.39	40.39	40.39	40.39	40.39	40.39	40.39	40.39	93.5%
V	V-3056 Homes & Commercial						,,		,,	,,						93.5%
2	V-3056 Homes & Commercial 017CW3005	gpm	40.39	40.39	40.39	40.39 0.090	40.39 0.090	40.39 0.090	40.39 0.090	40.39 0.090	40.39 0.090	40.39 0.090	40.39	40.39	40.39	93.5%
2	V-3056 Homes & Commercial	gpm cfs	40.39 0.090	40.39 0.090	40.39 0.090	40.39	40.39	40.39	40.39	40.39	40.39	40.39	40.39 0.090	40.39 0.090	40.39 0.090	93.5%
2	V-3056 Homes & Commercial 017CW3005 Lawn (acres)	gpm cfs	40.39 0.090	40.39 0.090	40.39 0.090	40.39 0.090	40.39 0.090 132,277	40.39 0.090 207,234	40.39 0.090 220,462	40.39 0.090 167,551	40.39 0.090 101,412	40.39 0.090 57,320	40.39 0.090	40.39 0.090	40.39 0.090 930,349	93.5%
2	V-3056  Homes & Commercial  017CW3005  Lawn (acres)  Stock - Irrigation Season  Stock - Nonirrigation Seasor	gpm cfs 1.15 50 200	40.39 0.090 -	40.39 0.090 -	40.39 0.090 -	40.39 0.090 44,092	132,277 8,250 34,100	40.39 0.090 207,234 16,500	40.39 0.090 220,462 17,050	40.39 0.090 167,551 17,050	101,412 16,500	40.39 0.090 57,320 8,525	40.39 0.090 - -	40.39 0.090 -	40.39 0.090 930,349 83,925 466,600	
2	V-3056  Homes & Commercial  017CW3005  Lawn (acres)  Stock - Irrigation Season	gpm cfs 1.15 50 200 gallons	40.39 0.090 - - 68,200	40.39 0.090 - - 61,600	40.39 0.090 - - 68,200	40.39 0.090 44,092 - 66,000	40.39 0.090 132,277 8,250	40.39 0.090 207,234 16,500	40.39 0.090 220,462 17,050	40.39 0.090 167,551 17,050	40.39 0.090 101,412 16,500	40.39 0.090 57,320 8,525 34,100	40.39 0.090 - - 66,000	40.39 0.090 - - - 68,200	930,349 83,925	
2	V-3056  Homes & Commercial  017CW3005  Lawn (acres)  Stock - Irrigation Season  Stock - Nonirrigation Seasor	gpm cfs 1.15 50 200 gallons gpm	40.39 0.090 - - - 68,200 68,200 1.53	40.39 0.090 - - - 61,600 61,600 1.53	40.39 0.090 - - - 68,200 68,200 1.53	40.39 0.090 44,092 - 66,000 110,092 2.55	40.39 0.090 132,277 8,250 34,100 174,627 3,91	207,234 16,500 - 223,734 5.18	220,462 17,050 - 237,512 5.32	40.39 0.090 167,551 17,050 - 184,601 4.14	101,412 16,500 - 117,912 2.73	40.39 0.090 57,320 8,525 34,100 99,945 2.24	- - - - - - - - - - - - - - - - - - -	40.39 0.090 - - - 68,200 68,200 1.53	40.39 0.090 930,349 83,925 466,600 1,480,874 2.82	
2	V-3056  Homes & Commercial  017CW3005  Lawn (acres)  Stock - Irrigation Season  Stock - Nonirrigation Seasor	gpm cfs 1.15 50 200 gallons	40.39 0.090 - - - 68.200 68,200	40.39 0.090 - - - 61,600 61,600	40.39 0.090 - - - 68,200 68,200	40.39 0.090 44,092 - 66,000 110,092	40.39 0.090 132,277 8,250 34,100 174,627	40.39 0.090 207,234 16,500 - 223,734	40.39 0.090 220,462 17,050 - 237,512	40.39 0.090 167,551 17,050 - 184,601	40.39 0.090 101,412 16,500 - 117,912	40.39 0.090 57,320 8,525 34,100 99,945	40.39 0.090 - - - 66,000 66,000	40.39 0.090 - - - 68,200 68,200	40.39 0.090 930,349 83,925 466,600 1,480,874	
2	V-3056  Homes & Commercial  017CW3005  Lawn (acres) Stock - Irrigation Season Stock - Nonirrigation Season Subtotal	gpm cfs 1.15 50 200 gallons gpm cfs	40.39 0.090 - - - - - - - - - - - - - - - - - -	40.39 0.090 - - - 61,600 61,600 1.53 0.003	40.39 0.090 - - - 68,200 68,200 1.53 0.003	40.39 0.090 44,092 - 66,000 110,092 2.55 0.006	132,277 8,250 34,100 174,627 3.91 0.009	207,234 16,500 - 223,734 5.18 0.012	220,462 17,050 - 237,512 5.32 0.012	167,551 17,050 	101,412 16,500 	40.39 0.090 57,320 8,525 34,100 99,945 2.24 0.005	40.39 0.090 - - - 66,000 66,000 1.53 0.003	40.39 0.090 - - - 68,200 68,200 1.53 0.003	40.39 0.090 930,349 83,925 466,600 1,480,874 2.82 0.006	6.5%
2	V-3056  Homes & Commercial  017CW3005  Lawn (acres)  Stock - Irrigation Season  Stock - Nonirrigation Seasor	gpm cfs 1.15 50 200 gallons gpm	40.39 0.090 - - - 68,200 68,200	40.39 0.090 - - - 61,600 61,600 1.53	40.39 0.090 - - - 68,200 68,200 1.53	40.39 0.090 44,092 - 66,000 110,092 2.55	40.39 0.090 132,277 8,250 34,100 174,627 3,91	207,234 16,500 - 223,734 5.18	220,462 17,050 - 237,512 5.32	40.39 0.090 167,551 17,050 - 184,601 4.14	101,412 16,500 - 117,912 2.73	40.39 0.090 57,320 8,525 34,100 99,945 2.24	- - - - - - - - - - - - - - - - - - -	40.39 0.090 - - - 68,200 68,200 1.53	40.39 0.090 930,349 83,925 466,600 1,480,874 2.82	93.5%

# 3.2 <u>Drought Impact Assessment</u>

- 3.2.1 DDWC has identified potential impacts that could occur during future droughts.
  - Not enough spring flow to meet non-essential outside uses
  - Not enough spring flow to meet essential inside uses
- 3.2.2 DDWC has shown the relative priority of potential impacts.
  - Highest priority for meeting essential inside uses

## Task 4 - Drought Mitigation and Resources Strategies

## 4.1 <u>Drought Mitigation Measures</u>

- 4.1.1 DDWC has developed a list of drought mitigation measures.
  - Developing more strategically placed storage
  - Using off-peak spillage to help meet on-peak demand
  - Limiting non-essential uses
- 4.1.2 DDWC has used Worksheets B & C in the Guidance Document to select and screen supply and demand-side response strategies. Worksheet A has been used to develop new mitigation action steps.
- 4.1.3 DDWC has described the criteria used to select the mitigation measures.

## 4.2 <u>Supply-Side Response Strategies</u>

- 4.2.1 DDWC has used Worksheet B to develop a list of supply-side response strategies and specific measures that will be employed.
- 4.2.2 DDWC has described the criteria used to select the mitigation measures.

# 4.3 <u>Demand-Side Response Strategies</u>

- 4.3.1 DDWC has used Worksheet C to develop a list of demand-side response strategies and specific measures that will be employed.
- 4.3.2 DDWC has described the criteria used to select the mitigation measures.

## 4.4 <u>Drought Public Information Campaign</u>

- 4.4.1 DDWC has used Worksheet D to outline the information for the public drought campaign such as: target audience, commination tools, and specific key information.
- 4.4.2 DDWC will develop scripted messages to be delivered to the public throughout the various stages of drought and has developed a website to make easier.

DDWC Projected Retail W	ater Deliverie	s over Next	5-Years (acre	-feet/yr)		Average	
years	2021	2022	2023	2024	2025	2021-2025	Percent
	(drought yr)						
Water Supply	45.0	65.3	65.3	65.3	65.3	61.3	100%
Customer Category							
Residential	26.5	31.0	32.5	34.1	35.7	31.9	52%
Commercial	0.6	0.6	0.6	0.6	0.6	0.6	1%
Irrigation	1.5	2.3	2.4	2.5	2.6	2.3	4%
Live Stock	1.8	2.0	2.0	2.0	2.0	2.0	3%
Total Deliveries	30.3	35.8	37.5	39.2	40.9	36.7	60%
Spillage	14.7	29.5	27.8	26.1	24.5	24.5	40%
GPCD							
Residential Taps						150	100%
Active Taps	75	79	83	87	91	83	55%
Population	263	277	291	305	319	291	
Residential GPCD	90.0	100.0	100.0	100.0	100.0	98.0	
Total GPCD	103.1	115.7	115.3	114.9	114.6	112.7	

# 50% Progress Report

This Progress Report indicates the "essential" elements for Tasks 3 & 4 that have been completed, such as:

- 1. Defined potential impacts that could occur during future droughts
- 2. Created list of drought mitigation measures (worksheet A attached)
- 3. Created list of the selected supply-side response strategies (worksheet B attached)
- 4. Created list of the selected demand-side response strategies (worksheet C attached)
- 5. Created the general components of the public drought campaign (worksheet D attached)
- 6. Completed elements under Tasks 1 & 2 outlined in the 25% Progress report

Please let me know if you have questions and/or would like more information.

Thanks,

Austin R Hobbs President (907) 232-4409

# Historical Drought Impacts, Future Potential Impacts, and Mitigation

## WORKSHEET A - HISTORICAL IMPACTS, FUTURE POTENTIAL IMPACTS AND MITIGATION

#### Instructions:

- Instructions:

  [1] This column provides a list of drought related impacts. Add additional impacts identified during the planning process. The grouping of impacts (e.g., community, economic) may be modified.

  [2] Enter an "X" for all impacts experienced during historical droughts.

  [3] Enter "1" significant impact, "2" moderate impact, or "3" minor impact

  [4] List historical/existing mitigation and response strategies that were implemented to address specific impact

  [6] Add any additional comments worth noting for historical drought assessment.

  [7] Enter an "X" for all potential future impacts.

  [8] Enter "1" high priority, "2" medium priority, or "3" low priority

  [9] List mitigation actions and/or response strategies that may be taken to address identified potential impacts

		Hi Ranking of Drought	storical Drought Assessment	Vulnerability	Assessment Ranking of Potential			
Historical, Existing and Potential Drought Impacts [1]	Historical Impact [2]	Impact Severity [3]	Historical/Existing Mitigation & Response Strategies [4]	Comments [5]	Potential Future Impact [7]	Impact Severity [8]	Possible Mitigation & Response Strategies [9]	
Water Provider								
Loss of revenue from reduction in water sales	Х	2	Increased rates for excess use		Х	2	Restructuring rates	
Reduction in municipal well production	х	1	Nama		x	1	In atallian mana atauna	
Reduction in storage reserves Disruption of water supplies	-		None		^		Installing more storage	
Degraded water quality								
Higher water treatment costs								
Sediment and fire debris loading to reservoirs following a wildfire								
Increased costs and staff time to implement drought plan	Х	1	None		Х	1	Increasing rates	
Increased data/information needs to monitor and implement drought mitigation plan								
Costs to acquire/develop new water supplies/water rights transfers Costs to increase implement shortage response								
Public favorable/unfavorable perception of provider regarding drought response	х	1	Improved communications		х	1	Creating website	
Scarcity of equipment and other water related services (e.g., contractors to repair wells)	^	'	improved communications		^	'	Creating website	
List other provider related impacts								
Community and Societal								
Domestic landscaping stressed or killed								
Public landscaping stressed or killed								
Lower quality drinking water (e.g., poor taste and odor)					V			
Reduced firefighting capability	Х	1	None		Х	1	Adding more storage	
Cross-connection contamination as a result of lower pressures								
Increased pollutant concentrations								
Reduced quality of life Loss of human life (e.g., heat stress)	1							
Public safety from wildfires								
Reduction in fire fighting capabilities	х	1	None		X	1	Adding more storage	
Increased respiratory ailments	<del></del>	·	110110			•	/ tuaning more eterage	
Increased disease caused by wildlife concentrations								
Mental and physical stress								
Increased political conflict								
Reduction or modification of recreational activities								
Inequal distribution of drought response implementation								
Changes to population growth trends (more likely during a long-term drought)								
Heightened awareness about water conservation	X	3	None		X	1	Website & news letters	
Change in water use behavior to conserve water  Re-evaluation of social values (priorities, needs, rights)	Х		None		Х	1	Website & news letters	
List other community related impacts								
Elst other community related impacts								
Economic								
Decreased land prices								
Land subsidence as a result of groundwater depletions								
Income loss to farmers that indirectly affects municipal businesses								
Loss to recreation and tourist industry								
Reduction of economic development								
Increase in food prices	1	ļ	1		ļ		ļ	
Restrictions/limitations on landscaping harms landscaping companies	1							
Impacts to large scale commercial water users (e.g., golf courses)  Loss in hydropower energy	+	-			1			
List other economic related impacts	+							
	1	1			1			
Environmental and Recreational								
Increased risk of frequency and severity of wildfires								
Beetle kill								
Stress to surrounding natural environment								
Loss of wetlands	1				ļ			
Lower streamflows					ļ			
Lower lake/reservoir levels	1	1	+		1			
Increased susceptibility to plant disease Increased wind and water erosion	+	-			1			
Reduced flow from springs	х	1	Improvements		х	1	More improvements	
Air quality effects (e.g. dust and pollutants)	+ ^	<del>  '</del>	improvements		<del>  ^</del>	<u> </u>	more improvements	
Visual and landscape quality (e.g., dust, vegetative cover, etc.)	1	<b> </b>	+		1			
Stress to fish and other wildlife	1				İ			
Lower water quality in streams and/or lakes/reservoirs	1				i e			
Campfire bans								
Land subsidence								
List other environmental and recreational related impacts								
	1						1	

# **Supply-Side Mitigation and Response Strategies**

### WORKSHEET B - SUPPLY-SIDE MITIGATION AND RESPONSE STRATEGIES

- Instructions

  [1] This column provides a list of supply-side response strategies. List additional strategies identified using Worksheet A or alternative sources.

  [2] This column identifies long-term mitigation actions.

  [3] This column identifies short-term response strategies.

  [4] and [5] Preliminary Selection: Identify the mitigation and response strategies that meet the following:

  Enter "existing" for all mitigation and response strategies included in existing drought management plans that will continue to be used in the future.

  Enter "eliminated" for all existing mitigation and response strategies are to be considered for this drought management planning effort.

  Enter "eliminated" for all existing mitigation and response strategies that will no longer be used in the future.

  [6] Screening: Specify how well the selected mitigation and response measures meet the criteria to the right of these instructions by entering the following ranking value:

  Enter "1" for mitigation and response strategies that meet two of the five screening criteria.

  Enter "3" for mitigation and response strategies that meet two of the five screening criteria.

  Enter "4" for mitigation and response strategies that meet four of the five screening criteria.

  Enter "4" for mitigation and response strategies that meet four of the five screening criteria.

  Enter "4" for mitigation and response strategies that meet five of the five screening criteria.

  Enter "5" for mitigation and response strategies that meet five of the five screening criteria.

  Enter "6" for mitigation and response strategies that meet five of the five screening criteria.

  Enter "6" for mitigation and response strategies that meet five of the five screening criteria.

  Enter "6" for mitigation and response strategies that meet five of the five screening criteria.

  Enter "6" for mitigation and response strategies that meet five of the five screening criteria.

  Enter "6" for mitigation and response strategies that meet five of the five screening criteria.

  Enter "6" for

- e) Environmental sensitivity and other extraneous impacts

						Post-Screening	
			Candidate	Canditate		Selection of	
	Long-term Mitigation	Short-term Response	Long-term Mitigation	Short-term Response	Screening	Mitigation and Response	
Supply-Side Mitigation and Response Strategies	Actions	Strategy	Actions	Strategy	Ranking Value	Strategies	Comments
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Water Supply Augmentation Establish drought reserves	X	ı	new	new	5	х	
Draw from drought reserves		x	new	new	5	X	
Increase groundwater pumpinç							
Deepen wells							
Develop supplemental groundwater/conjunctive us  Treat water normally used for non-potable irrigation for potable purpose	X	x	new	new	5 5	X X	
Reactivate abandoned wells		_ ^	iiew	new			
Flush existing wells to develop maximum flow rate							
Blend primary supply with water of lesser quality to increase supplies							
Rehabilitate operating wells Employ desalination of brackish groundwate	+						
Utilize poorer quality water that normally not used if can meet safety standard	1						
Increase use of recycled water							
Utilize ditch water or treated effluent for irrigating landscaping/parks	Х	х	new	new	4	X	
Build new facilities to enhance diversion or divert new supplic  Lower reservoir intake structure:	Х		new	new	4	Х	
Use reservoir dead storage	+				<del>                                     </del>		
Acquire additional storage	Х		new	new	5	X	
Build emergency dams	ļ						
Reactivate abandoned dams Cloud seeding		-			<del>                                     </del>		
List additional strategies identified using Worksheet A or alternative sources							
Water Supply Portfolio and Cooperative Agreements Call back water rights that others are allowed to use	1	ı	ı		1		
Purchase/lease water from other entities (e.g., neigboring cities							
Consider filing SWSP to temporarily use agricultural water rights if water is availab		Х	new	new	4	Х	
Lease irrigation rights from farmers	ļ						
Capitalize on new regional water supply opportunities that may result as a result of drought							
Lease private wells							
Cancel municipal leases of water to farmers							
Use irrigation decrees Invoke drought reservations that allow reduction in bypass requiremen	-	Х	new	new	4	Х	
Renegotiate contractually controlled supplie							
Develop water transfers with other entities	Х	Х	new	new	4	Х	
Develop water bank to facilitate water transfers in times of drough  Develop interconnects with other entitie							
Trade water supplies with other entities to increase yiel	+						
Increase water quality monitoring							
List additional strategies identified using Worksheet A or alternative sources							
Improve Water Distribution Efficiency							
Conduct distribution system water audi	X	Х	new	new	4	Х	
Repair leaks in distribution systen	Х	Х	new	new	4	Х	
Reduce distribution system pressure Replace inaccurate meters	X		new	new	4	х	
Calibrate all production, commercial, industrial, and zone meters			iiew	iie#			
Install meters at key distribution points to isolate areas of overuse and probable leakage	Х		new	new	4	Х	
Minimize reservoir spills	X	X	new	new	4	X	
Change operations to optimize efficiency and distribution of supplies  Change pattern of water storage and release operations to optimize efficienc	X	X	new	new	4	X X	
Reduce reservoir evaporation (e.g., reduce storage in reservoirs with high evaporation rate			new	new		^	
Reduce reservoir seepage (e.g., reduce storage in reservoirs with high seepage rate						_	
Recirculate wash water	Х		new	new	4	Х	
Enhance efficiency of water treatment facilitie:  List additional strategies identified using Worksheet A or alternative sources	X .	-	new	new	4	۸	
	1	·		i			
Emergency Response		X	new	new	4	Х	
Declare a drought/water shortage and appropriate stage Establish water hauling programs	1	_ ^	new	new	<del>  "  </del>	^	
Restrict/prohibit new taps		Х	new	new	2	X	
Identify state and federal assistance Provide emergency water to domestic well user:	Х	Х	new	new	4	Х	
List additional strategies identified using Worksheet A or alternative sources					<del>                                     </del>		
	1						
Public Education and Relations		Ų	nc	nc			
Establish a public advisory committee Implement Drought Public Education Campaign with long- and short-term strategies. (See	Х	Х	new	new	4	Х	
Worksheet D)	x	x	new	new	4	x	
	^		11044	11044			
Extend boat ramps and docks for recreational use when reservoirs are low  List additional strategies identified using Worksheet A or alternative sources	^	Ŷ	11044	1104		^	

# **Demand-Side Mitigation and Response Strategies**

### WORKSHEET C - DEMAND-SIDE MITIGATION AND RESPONSE STRATEGIES

					1	Post-Screening	
	Type of	Strategy	Candidate	Canditate		Selection of	
	Long-term	Short-term	Long-term	Short-term	Screening	Mitigation and	
	Mitigation	Response	Mitigation	Response	Ranking	Response	
Mitigation and Demand-Side Response Strategies	Actions	Strategy	Actions	Strategy	Value	Strategies	Comments
mingation and bemand-side Response Strategies [1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Provider/Municipality	[2]	[9]	[4]	[o]	[o]	L/I	[0]
Develop drought public education campaign with long-term and short-term demand management	1						
strategies	x	x	new	new	4	x	
Identify high water use customers and develop water saving targets	Х	Х	new	new	4	Х	
Implement conservation measures that also provide water saving benefits during drought periods							
(e.g., water fixture rebates)	x		new	new	4	х	
Restrict the issuance of new taps		Х	new	new	4	X	
Implement drought surcharges		Х	new	new	4	X	
Implement a modified rate structure for drought periods	Х	Х	new	new	4	X	
Conduct irrigation audits on provider/municipal parks and open spaces	Х	Х	new	new	4	Х	
Educate provider/municipal staff on how to save water	Х	Х	new	new	4	Х	
Provide instructional resources to business on developing an office/business specific drought							
mitigation and response plan	Х	X	new	new	4	Х	
Eliminate/reduce irrigation on provider/muncipal owned parks and landscaping	Х	X	new	new	4	X	
Limit outdoor watering to specific times of the day	Х	Х	new	new	4	Х	
Limit number of watering days per week	Х	Χ	new	new	4	Х	
Set time limit for watering	Х	Х	new	new	4	X	
Prohibit watering during fall, winter, and early spring	<b>—</b>	Х	new	new	4	X	
Convert sprinklers to low volume irrigation where appropriate	Х	-	new	new	4	Х	
Restrict outdoor misting devices	1	-					
Reduce street cleaning, sidewalk, and driveway washing	1						
Limit/prevent washing of provider/municipal fleet vehicles	1	- U				V	
Limit hydrant washing and flushing Limit use of water for fire training	1	Х	new	new	4	Х	
	<del>                                     </del>	Х	ne…	ne…	4	х	
Eliminate all fire hydrant uses except those required for public safety	<del>                                     </del>	_ ^	new	new	4	^	
Turn off ornamental fountains in buildings and parks Install water saving fixtures, toilets, and/or appliances in provider/municipal-owned buildings	<b>-</b>						
Install water saving fixtures, toilets, and/or appliances in provider/municipal-owned buildings  Conduct indoor water audits	<del>                                     </del>	<b> </b>					
List additional strategies identified using Worksheet A or alternative sources							
Residential							
Enforce landscape watering restrictions	X	l x	new	new		Х	
Limit outdoor watering to specific times of the day	X	X	new	new	4	X	
	X	x	new	new	4	x	
Limit number of watering days per week Set time limit for watering	X	X	new	new	4	X	
Prohibit lawn watering during fall, winter, and early spring	^	X	new	new	4	x	
Limit watering to hand-held hose or no-volume nonspray device		X	new	new	4	X	
	х	X			4	X	
Promote outdoor water audits  Convert sprinklers to low volume irrigation where appropriate	<del>Î</del>	X	new	new	4	X	
Limit/restrict outdoor misting devices	^	_ ^	new	new	-	^	
Limit/prohibit installation of new sod, seeding, and/or other landscaping	1						
Enforce policy guidelines/limitations for installation of new sod and/or other landscaping	+						
Enforce restrictions on spraying of impervious surfaces	-						
Prohibit/limit vehicle washing	-						
Prohibit/limit nonrecirculating fountains	+						
Prohibit/limit filling and use of swimming pools	+	x	new	new	4	X	
Enforce indoor water restrictions	+	x	new	new	4	x	
Promote indoor water restrictions	х	x	new	new	4	x	
Torrote mador water addits	_ ^	_ ^	11044	new	-	^	
Promote/require installation of water efficient appliances (e.g., dishwaters, clothes washer)	х	х	new	new	4	x	
Promote/require installation of water emicient appliances (e.g., dishwaters, clothes washer)	<del>  ^</del>		11644	11644	-	^	
Provide acoustical meters to assist customers in identifying leaks	1						
Require water efficient fixtures and/or appliances on house resale or remodeling	х	1	new	new	4	Х	
Provide historical monthly water usage on water bills	x	х	new	new	4	x	
Promote/enforce reduction of water-cooled air conditioning	<del>  ^</del>	<del>- ^ -</del>			·		
List additional strategies identified using Worksheet A or alternative sources	1	1					
and the second s	1	1					
Commercial and/or Industrial							
Prohibit/limit use of construction water							
Enforce policy guidelines/limitations for installation of new sod and/or other landscaping	Í						
Enforce outdoor landscape watering restrictions	Х	Х	new	new	4	Х	
Promote/require indoor and outdoor water audits where applicable	Х	Х	new	new	4	X	
Turn off indoor and outdoor ornamental fountains							
Prohibit/limit filling and use of swimming pools		Х	new	new	4	Х	
Promote/enforce installation of water efficient fixtures and appliances	Х	Х	new	new	4	Х	
Turn off public drinking fountains							
Promote reduction of water-cooled air conditioning							
Promote/require buildings with water-cooled air conditioning to raise the temperature modestly							
Prohibit/limit dealership washing of vehicles							
Enforce water use restrictions on commercial car washes							
Promote commercial car washes to install water recycling technology and/or other BMPs							
Promote service of water in restaurants only upon request							
Promote reduction in frequency of linen and towel washing in hotels							
	1						
Provide instructional resources on developing a business/office specific conservation plan							
Promote/require conversion of cooling towers and other industrial water using processes							

# **Drought Public Information Campaign**

### WORKSHEET D - PUBLIC INFORMATION CAMPAIGN

- Instructions:

  [1] Select the drought information to convey to the public prior to a drought (long-term mitigation), in response to declaration of a drought (long-term response), or for both scenarios. Enter "yes," "maybe," or "or "in each column.

  [2] Select the targeted audience and corresponding communication too(s) for each of the drought components selected in column [1] by entering the appropriate letter designation(s) for each of the applicable communication tools identified in the communications tools listed to the right.

  [3] Enter additional ideas.

  [4] Enter an "X" for all components where coordination with other entities is a likely possibility.

#### Communication Tools

WORKSHEET D - PUBLIC INFOI	RMATIO	N CAMP	AIGN								Commun Website			ind water	conservation tips			
[1] Select the drought information to convey to the prin response to declaration of a drought (long-term "maybe,"or "no" in each column.	n response), o	or for both sce	narios. Enter							b c d	Water bill Establish Newspap	(monthly drought h er articles	water use otline & tr	targets a	nd actual consumpti o operate hotline	on)		
[2] Select the targeted audience and corresponding drought components selected in column [1] by en											Television Outreach		releases	to genera	l media			
designation(s) for each of the applicable commun										g	Provider,	municipal	& county		modia			
communications tools listed to the right. [3] Enter additional ideas.											Water or Distribution							
[4] Enter an "X" for all components where coordinate	on with other	entities is a lil	cely possibility	y.						j	Seminars	special p	rograms					
											Broadly d School ou			programs	(field trips, speaker	s. curriculu	um)	
										m	Mail fliers						,	
											Public me Distribution		r conserva	ation tools	(rain meter, sink ae	rators, etc	;)	
										p	Booths at Billboards	special e						
											Social me							
											Email Meetings							
											Phone							
											Insert oth	er commu	nication to	ools [3]				
	Scree [	ening 1] I		I "	_	1	-	ı	Targete	d Audie	nce [2]	s	1	1	ı	1		Entities
			Decision makers/policy makers	ental ty departments ks, fire nt)	Community recreational facilities		Single-family residential	ily residential		Commercial business owners	Commercial business employees	cility managers	hildren	ndustrial businesses	Specific targeted businesses (local nurseries, landscape architects, health facilities)	Large water users (golf courses)	nsert other audience nembers [3]	Coordinate with Other [4]
	Long-term Mitigation	Short-term Reponse	acision akers	Governmental bodies/city de (e.g. parks, fir department)	ommun	Media	ngle-fa	Multi-family	HOAs	Commerc	Commerci: employees	School facility	School children	dustrial	pecific tusiness ocal nur ndscap	arge wa olf cou	sert oth	oordina ]
Public Information Campaign Components  Drought Information to Convey to the Public	Actions	Strategy	ΔË	9 2 9 9	l Ç ğ	ž	ΙÖ	ž	ΙΞ	ŏ δ	ŭ 5	ഗ്	ഗ്	Ē	मुब ुहु छ	ۇ تا	<u> </u>	ვ ₹
Drought awareness: status of current drought conditions, drought stage and associated water restrictions		yes	а				a			a						а		
Sustainability and vulnerabilites of water supply system	yes		а				а			а						а		
Where customers may access drought management plan	yes		a				а			а						а		
Measures and/or impacts that customers can expect if drought continues or intensifies		yes	а				а			а						а		
Factors that could influence water supply services and cost of services		yes	а				а			а						а		
Water provider's actions to save water and/or acquire new water - lead by example		yes	а				а			а						а	ļ.	
Policy recommendations, requirements, and		yes	а				а			а						а		
penalties Enforcement of drought policies and penalties for																		
violations		yes	a				a			a						a		<u> </u>
Explanation of rate increases/drought surcharge Increase advertisement of water saving incentives in	no	yes	а				а			а						а		
conservation and drought plans		no					ļ											
Water savings tips Landscaping tips during a drought (e.g., which	no	no															$\vdash$	
plants to convert to drip, which to save, which to let die)	no	no																
Post-drought landscape revival information  Use of gray water where legal and appropriate	no	no no					<u> </u>											$\vdash$
Promote existing xeriscape gardens	no	no																
Promote ways to clean sidewalks, driveways, and other hard surfaces without using hoses	no	no																
Promote ways to wash vehicles to minimize water waste	no	no																
Water saving targets and actual consumption by individual customer, city, sector, etc.	no	no	_															
Instruction to customers on how to set up a low water use plan for their homes or business	no	no																<u> </u>
Instructions on how to track water use within the home  Publicize efforts of individuals and businesses as	no	no															<u> </u>	<u> </u>
examples of how to reduce water use	no	no															<u> </u>	<u> </u>
Encourage intense public discussion and media involvement concerning ways to reduce water use while minimizing impacts (e.g., landscaping impacts)	no	no																
Do-it-yourself water waste reduction/water savings brochure	no	no																
Provide customers with a drought report card at the end of the year showing monthly/annual water use pre-drought and during the drought		yes	a				а			а						а		
Open burning restrictions to reduce wildfire or grass fires	no	no																
Restrictions on fishing to reduce stress on aquatic		1	· <u> </u>		1 7		1	1	1			_		1		1	1	1
species	no	no					<u>L</u>			<u> </u>								
	no	no																
species Restrictions on use of atheltic fields to minimize turf																		