

**20X2020 WATER CONSERVATION PLAN
CALCULATION OF REGIONAL TARGETS
BACKGROUND INFORMATION**

May 2009

The attached spreadsheet is the basis for Table B-1, Regional Targets, in "20x2020 Water Conservation Plan," Draft, 30 April 2009 (http://www.waterboards.ca.gov/water_issues/hot_topics/20x2020/docs/comment043009/202020_final_report_draft.pdf). Step-by-step explanation of the calculations can be found in Appendix B of the draft plan.

During the development of the draft plan, a detailed analysis of establishing targets was presented in "Public Draft Technical Memorandum, Task 2 - Determining Conservation Targets" (http://www.waterboards.ca.gov/water_issues/hot_topics/20x2020/docs/targetsdrafttechnicalmemo.pdf). Based on internal and public review, the attached spreadsheet is a revision of the approach in the technical memorandum.

The data in the table are regional averages. There are variations between water suppliers within regions. The targets in the table do not represent gallons per capita per day (GPCD) or percent reduction targets for any individual water supplier.

Based on the statewide average baseline GPCD of 192 GPCD, a 20% reduction would result in 154 GPCD by 2020. Regions that already have an average below 154 GPCD, are expected to implement minimum conservation measures, "basic tools," but no more than a 20% reduction. The basic tools are the basic measures shown in Table 7 of the draft plan.

The targets for regions with existing average GPCD above the 154 GPCD target are calculated by proportioning the necessary conservation based on 1) the amount of population and 2) the remaining exceedance of GPCD over the 154 GPCD target after achieving a minimum 20% reduction. Note that Region 4 is the lone region for which average baseline consumption is above 192 GPCD and the average does not end up below 154 GPCD after basic tools, but which would end up well below 154 GPCD if 20% reduction is applied to the average. For purposes of calculating its target, Region 4 is grouped with Regions 5-10.

Rows 2 and 5 in the attached table were not used in the calculations of the targets and are omitted from Table B-1 in the draft plan. The reference to Table A-5 in row 2 is referring to the first Table A-5 in the Public Draft Technical Memorandum for Task 2.

20x2020 Agency Team

Public Draft Technical Memorandum, Task 2 - Determining Conservation Targets, 5 September 2008

Alternative Methodology for Calculation of Regional 2020 Conservation Targets

Andrew Chastain-Howley February, 2009. Initial concept worksheet developed by Rich Mills September 2008

Row	HR	1	2	3	4	5	6	7	8	9	10	Total
Alternative Methodology:												
1	GPCD Baseline 2005 (Table 4-1)	165	157	154	180	253	248	285	243	237	346	
2	GPCD State Target or Better (Table A-5)	135	143	133	144	146	153	150	149	151	150	
3	GPCD Reduction With Basic Tools Only	28	26	32	24	28	33	32	36	43	56	
4	GPCD Target If Use Basic Tools Only (Row 1-Row 3)	137	131	122	156	225	215	253	207	194	290	
5	GPCD Target if 20% Reduction	132	126	123	144	202	198	228	194	190	277	
6	GPCD Maximum Reduction Target (Row 1-Row 2)	30	14	21	36	107	95	135	94	86	196	
7	GPCD State Avg Target	154	154	154	154	154	154	154	154	154	154	
8	GPCD Exceedance from State Avg (Row 1-Row 7)	11	3	0	26	99	94	131	89	83	192	
9	2020 Population	763,296	7,037,805	1,719,563	22,537,558	3,631,063	2,795,598	2,961,357	119,832	1,376,567	1,193,284	
10	Baseline - Basic Tools (Row 4) or 20% reduction (Row 5), whichever is lower	137	131	123	156	225	215	253	207	194	290	
11	Water Use Below State Avg ((Row 7) - Row 10) * (Row 9 * 365/1000000))	4,736	59,082	19,331	N/A	N/A	N/A	N/A	N/A	N/A	N/A	83,150
12	If Code + Basic Tools is still > Statewide average, calculate 20% reduction (from Row 5)	N/A	N/A	N/A	144	202	198	228	194	190	277	
13	With 20% Reduction, GPCD amount above, or below (-) Statewide Target				-10	48	44	74	40	36	123	
14	20% reduction Exceedance from Statewide Reduction Target, MG (Row 13 x Row 9 x 365/1000000)				-82,262	64,146	45,305	79,986	1,767	17,887	53,485	180,316
15	Extra savings from high performing Regions to allow statewide 20% reduction MG (Total of Row 11/Total of Row 14 x Row 14)				-37,934	29,580	20,892	36,885	815	8,248	24,664	83,150
16	Net Reduction to reach State Avg Target, MG (Row 14 - Row 15)				-44,328	34,566	24,413	43,102	952	9,639	28,821	141,494
17	Net GPCD reduction to reach State Avg (Row 16/Row 9/365 x 1000000)				-5	26	24	40	22	19	66	
18	2020 GPCD Target HR 4-10 (Row 12 - Row 17)				149	176	174	188	173	170	211	
19	Recommended HR Targets for 2020:	137	131	123	149	176	174	188	173	170	211	
	% reduction	17.0%	16.6%	20.0%	17.0%	30.3%	29.6%	34.0%	29.0%	28.1%	39.1%	
	% reduction beyond code and basic	0.0%	0.0%	-1.0%	4.2%	21.6%	18.8%	25.6%	16.6%	12.2%	27.4%	

1 After review of basic tools and public comment it was realized that a change in the targets was needed.

The Stakeholder proposed approach: Evaluate baseline minus code and basic tools

2 Those below the state average should complete all the basic tools, unless this means they would conserve more than 20%

3 If they would conserve more than 20% with basic tools, then they are asked to reduce 20%

4 If the reduction using code and basic tools still means the Region is above the statewide goal, then all those Regions are treated the same and a weighted average is developed to determine the level of reduction required

5 The weighted average is determined by starting at the baseline minus 20% (the minimum needed if the Region is above the statewide average)