From: Kunysz,Kathy

Sent: Friday, July 10, 2015 11:36 AM

To: Ti,Mike N

Subject: FW: MWD IRP UPDATE: SDCWA GROUNDWATER HOMEWORK

From: Kunysz, Kathy

Sent: Tuesday, June 09, 2015 11:37 AM

To: staylor@sdcwa.org; mmariscal@sdcwa.org; aschnell@sdcwa.org; emendelson@sdcwa.org; dfriehauf@sdcwa.org;

Chen, Amy

Cc: Kunysz,Kathy; Hacker,Matthew D; Sumi,David H; Nevills,Jennifer C **Subject:** MWD IRP UPDATE: SDCWA GROUNDWATER HOMEWORK

Dear Member Agency Manager and Staff,

Attached is the excel spreadsheet for your agency showing draft projections for groundwater production and projections of sources and amounts of groundwater recharge in normal and multiple-dry-year situations. This information is being used in Metropolitan's 2015 update of its Integrated Resources Plan. Also attached is a slide from the IRP Member Agency Workshop #1 for Groundwater held on May 27. The slide shows a draft projection of the total regional deficit of groundwater recharge under the multiple-dry-year scenario. As part of this IRP Update, it is our objective to finalize this deficit amount with your input, and to identify strategies and policies to address it. Metropolitan is seeking to ensure that groundwater production is sustainable—groundwater is a significant element of regional water supply reliability.

Please review your spreadsheet carefully and provide corrections to the production and recharge projections in RED. Please also list the assumption/rationale for the correction in RED. When reviewing the groundwater production projections, please note that Metropolitan has assigned groundwater production within a Metropolitan member agency's service area to that member agency. Also, the data is shown by calendar year.

Please return the modified spreadsheets to David Sumi with copy to Kathy Kunysz and Matt Hacker by Monday, June 22. If you have questions, please call Kathy Kunysz (213-217-6272) or Matt Hacker (213-217-6756). We will report the adjusted projections at an IRP workshop later this summer.

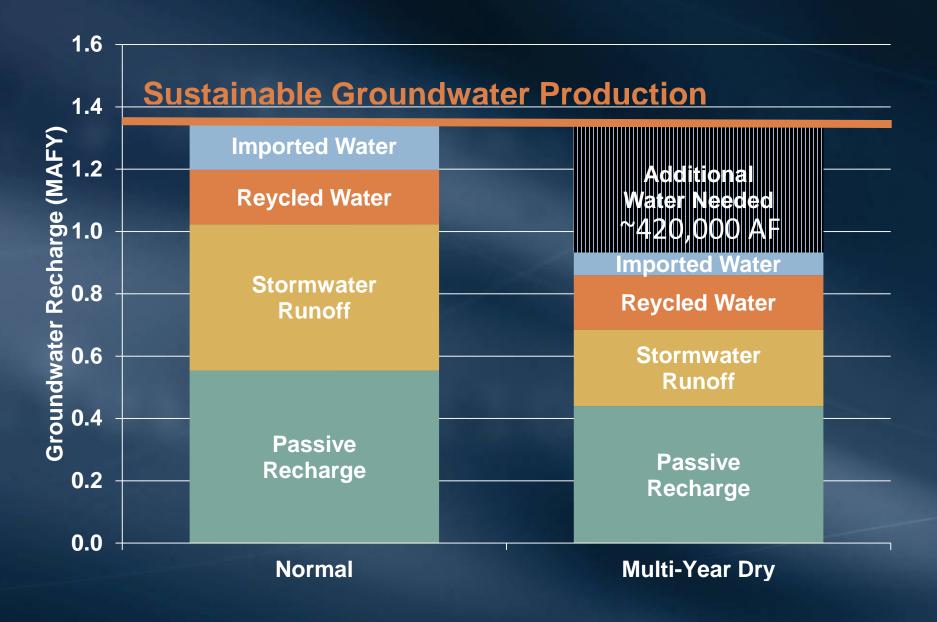
Thank you, Kathy Kunysz Program Manager, Groundwater Issues Metropolitan Water District of Southern California





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How to Address Multiple-Year Dry Cycle



San Diego County Water Authority

Groundw	rater								Average																																			
Agency	Type	IMP/EXE	P Basin/Reservoir			2011	2012	2013 2	009-2013	2014	2015		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028					33 2034			2037	2038	2039	2040	2041					2046 204			
San Diego	GW	OWN	El Monte Basin			1,257	656	928	753		700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700			700 700			700	700	700	700	700	700	700			700 70			700
San Diego	GW	OWN	Pauma Basin				1,645	951 2.048	1,152 2.025		1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200				200 1,2	200 1,200		1,200	1,200	1,200	1,200	1,200	1,200					,200 1,20		1,200	1,200
San Diego San Diego	GW	OWN	San Diego Formation Santa Margarita Basin				1,830 6.631	7.491	7.185		7 200	7 200	7 200	7 200	7 200	7,000	7 200	7 200	7 200	7,000	7 200	7 200	7 200	7,000					000 2,000 000 7,000		7,000	7,000	7 200	7 200	7 200	7 200				2,000 2,0 7,200 7;	,000 2,00	3 2,000	7,000	7 200
San Diego	GW	OWN	Santa Maria Basin		,242	0,039	0,031	7,491	7,103		7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200 7	0 7,	0 7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200 7,	0 0	0 7,20	0 7,200	7,200	7,200
San Diego	GW	OWN	Santee Basin	769	666	561	698	654	670		700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700 :	700 700	700	700	700	700	700	700	700	700	700	700	700	700 70	10 700	700	700
Total GW				12,070 1		11,931	11,461		11,785		11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800 1	1,800 1	1,800 11	800 11,1	300 11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800 1	11,800 1	1,800 11	1,800 11,	,800 11,80	0 11,800	11,800	11,800
San Diego	GWR	OWN	Mission Basin			4,458	4,028	7,408	4,077		5,401	5,509	5,616	5,724	5,832	5,939	6,047	6,154	6,262	6,370	6,477	6,585	6,692	6,800					338 7,446		7,661	7,768	7,800	7,800	7,800	7,800	7,800	7,800	7,800 7	7,800 7,	,800 7,80	.0 7,800	7,800	7,800
San Diego	GWR	OWN	Lower Sweetwater River E			3,440	3,518	2,924	3,323		3,181	3,245	3,308	3,372	3,435	3,498	3,562	3,625	3,689	3,752	3,815	3,879	3,942	4,005					320 4,320			4,320	4,320	4,320		4,320					,320 4,32			4,320
Total GWR				5,363	5,863	7,898	7,546	10,332	7,400		8,583	8,754	8,925	9,096	9,267	9,438	9,609	9,780	9,951	10,122	10,293	10,463	10,634	10,805	10,976 1	1,147 1	1,318 11	489 11,0	558 11,766	11,873	11,981	12,088	12,120	12,120	12,120	12,120	12,120 1	12,120 12	12,120 12,	2,120 12,1	,120 12,12	12,120	12,120	12,120
Total Ground	dwater			17,433 1	7,253	19,829	19,006	22,405	19,185		20,383	20,554	20,725	20,896	21,067	21,238	21,409	21,580	21,751	21,922	22,093	22,263	22,434	22,605	22,776 2	2,947 2	3,118 23	289 23,4	158 23,566	23,673	23,781	23,888	23,920	23,920	23,920	23,920	23,920 7	23,920 2	:3,920 23	3,920 23,	,920 23,92	:0 23,920	23,920	23,920
Groundwater	r Projection									2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031 2	032 20	33 2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045 2	2046 204	7 2048	2049	2050
Projection GV										11,800																		800 11,8													,800 11,80	00 11,800	11,800	11,800
Projection GV	WR										8,583	8,754	8,925	9,096	9,267	9,438	9,609	9,780	9,951	10,122	10,293	10,463	10,634	10,805	10,976 1	1,147 1	1,318 11	489 11,6	558 11,766	11,873	11,981	12,088	12,120	12,120	12,120	12,120	12,120 7	12,120 1	12,120 12	2,120 12,	,120 12,12	.0 12,120	12,120	12,120
Surface V																																												
			iel based on long-term average																																									
San Diego San Diego	SUR	OWN	City of Escondido Reservo City of Poway Reservoirs		7,319 671	8,287 237	3,550 70	2,039	4,807 254																																			
San Diego	SUR	OWN							18.739																																			
San Diego	SUR	OWN	National City Reservoirs				3.183	2.800	1.782																																			
San Diego	SUR	OWN	Ramona MWD Reservoirs		.,,,,,		3,103	2,000	0																																			
San Diego	SUR	OWN	San Dieguito WD Reservoi	4,375	,568	4,078	4,374	2,040	3,887																																			
San Diego	SUR	OWN	Santa Fe ID Reservoirs	6,111	5,507	4,408	5,475	1,566	4,613																																			
San Diego	SUR	OWN	South Bay ID Reservoirs	1,303	5,027	2,505	9,886	8,536	5,651																																			
San Diego	SUR	OWN	Vista ID Reservoir	3,859			3,468	2,077	4,579																																			
San Diego	SUR	OWN	Helix Water District Resen				6,438	508	5,689																																			
				37,235	5,264	67,253	59,743	40,515	50,002																																			
Recharge																																												
Normal Year																																												
San Diego	IMPOR			ssume 0.							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0 0		0	0	0	0	0	0	0	0	0		0 0	, 0		
San Diego San Diego	STORM	0WN	Lower Santa Margarita A None N	verage 1986-2 to recycled wa		CIMA				_	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676 3	676 3,6	576 3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676	3,676 3		0 3,67	0 3,676		3,676
san Diego	KEL	OWN	None N	o recycled wa	rei ior su	CWA					0)	0	0			0	U		0)		0				J	U	- Uj		0 0	, ,			U	0		0	J					2 0		
Multiple Dry	v Year (actu	al 2012-201	4)																																									
Pasadena		RT OWN		ssume 0.							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0 (3 0	0	0
Pasadena	STORM		Lower Santa Margarita A		014							3,312	3,312	3,312			3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	,312	3,312 3,	3,3	12 3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312 3	3,312 3	3,312 3,3	1,312 3,3	312 3,312	2 3,312	3,312	3,312
Pasadena	REC	OWN		o recycled wa		CWA					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0 0	0	0

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