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**From:** Kunysz,Kathy  
**Sent:** Friday, July 10, 2015 11:31 AM  
**To:** Ti,Mike N  
**Subject:** FW: IRP Groundwater Update  
**Attachments:** Ground and Surface Water Data for the San Diego Region (2).xlsx

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**From:** Garrod, Michael [<mailto:mgarrod@sweetwater.org>]  
**Sent:** Thursday, June 18, 2015 8:40 AM  
**To:** 'Mariscal, Maria'  
**Cc:** Gebert, Paul; Sumi,David H; Kunysz,Kathy  
**Subject:** RE: IRP Groundwater Update

All,

Attached as requested. We have no corrections to the historical groundwater and surface water numbers.

Also, we have no corrections to the future groundwater numbers and have input the future surface water numbers.

Contact me if you have any questions.

Regards,

Michael Garrod, PE

Sweetwater Authority  
505 Garrett Avenue  
Chula Vista, CA 91910  
P.O. Box 2328  
Chula Vista, CA 91912  
619-409-6752

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**From:** Mariscal, Maria [<mailto:MMariscal@sdewa.org>]  
**Sent:** Wednesday, June 17, 2015 4:59 PM  
**To:** Cross, Gregory; Crocker, Cindy; Abutin, Larry; Wiborg, Lan; [asandvik@padre.org](mailto:asandvik@padre.org); [jslakeside@yahoo.com](mailto:jslakeside@yahoo.com); Mark Umphres; Adrian, George; Albert Lau; Brian Olney; Sanders, Brett; 'Jack Bebee'; Simpson, John; Garrod, Michael; Bill O'Donnell; 'Cor V. Shaffer'; Craig Whittemore; 'Don A. Smith ([dsmith@vid-h2o.org](mailto:dsmith@vid-h2o.org))'; 'Jim Anderson'; 'tzaragoza@ci.poway.ca.us'  
**Cc:** Gebert, Paul; Sumi,David H ([DSumi@mwdh2o.com](mailto:DSumi@mwdh2o.com)); Kathy Kunysz ([kkunysz@mwdh2o.com](mailto:kkunysz@mwdh2o.com)); Friehauf, Dana; Stadler, Mark; Chen, Amy  
**Subject:** IRP Groundwater Update

Dear Member Agency Managers and Staff,

Attached is an excel spreadsheet indicating agency draft projections for surface water, groundwater production, and projections of sources and amounts of groundwater recharge in normal and multiple-dry-year situations. This information will be used in Metropolitan's 2015 update of its Integrated Resources Plan (IRP). This update will help to

identify strategies and policies formulated to address potential regional deficits of groundwater recharge under multiple-dry-year scenarios.

Please review the spreadsheet carefully **and provide corrections to the production and recharge projections in RED font** for those basins/reservoirs under your jurisdiction beginning in calendar year 2014 on through 2050 (data is shown by calendar year). Also provide a brief explanation regarding your assumptions/rationale for any corrections in RED font as well.

**Please return the modified spreadsheets to the attention of Maria Mariscal AND Paul Gebert with a copy to David Sumi and Kathy Kunysz by Monday, June 29.** If you have questions, please call Kathy Kunysz, with MWD at (213) 217-6272. The adjusted projections will be discussed at an upcoming IRP workshop scheduled later this summer. Thank you.

Regards,

Maria Mariscal  
San Diego County Water Authority  
Senior Water Resources Specialist  
4677 Overland Avenue  
San Diego, CA 92123  
(858) 522-6746  
(858) 268-7881 Fax #  
[mmariscal@sdcwa.org](mailto:mmariscal@sdcwa.org)

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San Diego County Water Authority

Groundwater			Revenue																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Agency	Type	IMP/EXP	Basin/Reservoir	2009	2010	2011	2012	2013	2009-2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
San Diego	GW	OWN	El Monte Basin	384	538	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	700	700	700	700	700	700	700	700	700	700	700	700	700	700																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
San Diego	GW	OWN	Pavona Basin	1,015	811	1,339	1,645	951	1,152	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	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	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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
San Diego	GW	OWN	San Diego Formation	1,999	2,133	2,115	1,830	2,048	2,025	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
San Diego	GW	OWN	Santa Margarita Basin	7,904	7,242	6,659	6,431	7,491	7,186	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	7,200	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	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
San Diego	GW	OWN	Santa Maria Basin	-	-	-	-	-	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	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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	700	700	700	700	700	700	700	700	700	700	700																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
San Diego	OWR	OWN	Mission Basin	1,678	2,813	4,458	4,028	7,408	4,077	5,401	5,509	5,646	5,724	5,832	5,939	6,047	6,154	6,262	6,370	6,477	6,585	6,692	6,800	6,908	7,015	7,123	7,230	7,338	7,446	7,553	7,661	7,768	7,876	7,984	8,092	8,200	8,308	8,416	8,524	8,632	8,740	8,848	8,956	9,064	9,172	9,280	9,388	9,496	9,604																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
San Diego	OWR	OWN	Lower Sweetwater River Basin	3,085	3,050	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	4,069	4,132	4,196	4,259	4,322	4,385	4,448	4,511	4,574	4,637	4,700	4,763	4,826	4,889	4,952	5,015	5,078	5,141	5,204	5,267	5,330	5,393	5,456	5,519	5,582	5,645	5,708	5,771	5,834	5,897	5,960	6,023	6,086	6,149	6,212	6,275	6,338	6,401	6,464	6,527	6,590	6,653	6,716	6,779	6,842	6,905	6,968	7,031	7,094	7,157	7,220	7,283	7,346	7,409	7,472	7,535	7,598	7,661	7,724	7,787	7,850	7,913	7,976	8,039	8,102	8,165	8,228	8,291	8,354	8,417	8,480	8,543	8,606	8,669	8,732	8,795	8,858	8,921	8,984	9,047	9,110	9,173	9,236	9,299	9,362	9,425	9,488	9,551	9,614	9,677	9,740	9,803	9,866	9,929	9,992	10,055	10,118	10,181	10,244	10,307	10,370	10,433	10,496	10,559	10,622	10,685	10,748	10,811	10,874	10,937	11,000	11,063	11,126	11,189	11,252	11,315	11,378	11,441	11,504	11,567	11,630	11,693	11,756	11,819	11,882	11,945	12,008	12,071	12,134	12,197	12,260	12,323	12,386	12,449	12,512	12,575	12,638	12,701	12,764	12,827	12,890	12,953	13,016	13,079	13,142	13,205	13,268	13,331	13,394	13,457	13,520	13,583	13,646	13,709	13,772	13,835	13,898	13,961	14,024	14,087	14,150	14,213	14,276	14,339	14,402	14,465	14,528	14,591	14,654	14,717	14,780	14,843	14,906	14,969	15,032	15,095	15,158	15,221	15,284	15,347	15,410	15,473	15,536	15,599	15,662	15,725	15,788	15,851	15,914	15,977	16,040	16,103	16,166	16,229	16,292	16,355	16,418	16,481	16,544	16,607	16,670	16,733	16,796	16,859	16,922	16,985	17,048	17,111	17,174	17,237	17,300	17,363	17,426	17,489	17,552	17,615	17,678	17,741	17,804	17,867	17,930	17,993	18,056	18,119	18,182	18,245	18,308	18,371	18,434	18,497	18,560	18,623	18,686	18,749	18,812	18,875	18,938	19,001	19,064	19,127	19,190	19,253	19,316	19,379	19,442	19,505	19,568	19,631	19,694	19,757	19,820	19,883	19,946	20,009	20,072	20,135	20,198	20,261	20,324	20,387	20,450	20,513	20,576	20,639	20,702	20,765	20,828	20,891	20,954	21,017	21,080	21,143	21,206	21,269	21,332	21,395	21,458	21,521	21,584	21,647	21,710	21,773	21,836	21,899	21,962	22,025	22,088	22,151	22,214	22,277	22,340	22,403	22,466	22,529	22,592	22,655	22,718	22,781	22,844	22,907	22,970	23,033	23,096	23,159	23,222	23,285	23,348	23,411	23,474	23,537	23,600	23,663	23,726	23,789	23,852	23,915	23,978	24,041	24,104	24,167	24,230	24,293	24,356	24,419	24,482	24,545	24,608	24,671	24,734	24,797	24,860	24,923	24,986	25,049	25,112	25,175	25,238	25,301	25,364	25,427	25,490	25,553	25,616	25,679	25,742	25,805	25,868	25,931	25,994	26,057	26,120	26,183	26,246	26,309	26,372	26,435	26,498	26,561	26,624	26,687	26,750	26,813	26,876	26,939	27,002	27,065	27,128	27,191	27,254	27,317	27,380	27,443	27,506	27,569	27,632	27,695	27,758	27,821	27,884	27,947	28,010	28,073	28,136	28,199	28,262	28,325	28,388	28,451	28,514	28,577	28,640	28,703	28,766	28,829	28,892	28,955	29,018	29,081	29,144	29,207	29,270	29,333	29,396	29,459	29,522	29,585	29,648	29,711	29,774	29,837	29,900	29,963	30,026	30,089	30,152	30,215	30,278	30,341	30,404	30,467	30,530	30,593	30,656	30,719	30,782	30,845	30,908	30,971	31,034	31,097	31,160	31,223	31,286	31,349	31,412	31,475	31,538	31,601	31,664	31,727	31,790	31,853	31,916	31,979	32,042	32,105	32,168	32,231	32,294	32,357	32,420	32,483	32,546	32,609	32,672	32,735	32,798	32,861	32,924	32,987	33,050	33,113	33,176	33,239	33,302	33,365	33,428	33,491	33,554	33,617	33,680	33,743	33,806	33,869	33,932	33,995	34,058	34,121	34,184	34,247	34,310	34,373	34,436	34,499	34,562	34,625	34,688	34,751	34,814	34,877	34,940	35,003	35,066	35,129	35,192	35,255	35,318	35,381	35,444	35,507	35,570	35,633	35,696	35,759	35,822	35,885	35,948	36,011	36,074	36,137	36,200	36,263	36,326	36,389	36,452	36,515	36,578	36,641	36,704	36,767	36,830	36,893	36,956	37,019	37,082	37,145	37,208	37,271	37,334	37,397	37,460	37,523	37,586	37,649	37,712	37,775	37,838	37,901	37,964	38,027	38,090	38,153	38,216	38,279	38,342	38,405	38,468	38,531	38,594	38,657	38,720	38,783	38,846	38,909	38,972	39,035	39,098	39,161	39,224	39,287	39,350	39,413	39,476	39,539	39,602	39,665	39,728	39,791	39,854	39,917	39,980	40,043	40,106	40,169	40,232	40,295	40,358	40,421	40,484	40,547	40,610	40,673	40,736	40,799	40,862	40,925	40,988	41,051	41,114	41,177	41,240	41,303	41,366	41,429	41,492	41,555	41,618	41,681	41,744	41,807	41,870	41,933	41,996	42,059	42,122	42,185	42,248	42,311	42,374	42,437	42,500	42,563	42,626	42,689	42,752	42,815	42,878	42,941	43,004	43,067	43,130	43,193	43,256	43,319	43,382	43,445	43,508	43,571	43,634	43,697	43,760	43,823	43,886	43,949	44,012	44,075	44,138	44,201	44,264	44,327	44,390	44,453	44,516	44,579	44,642	44,705	44,768	44,831	44,894	44,957	45,020	45,083	45,146	45,209	45,272	45,335	45,398	45,461	45,524	45,587	45,650	45,713	45,776	45,839	45,902	45,965	46,028	46,091	46,154	46,217	46,280	46,343	46,406	46,469	46,532	46,595	46,658	46,721	46,784	46,847	46,910	46,973	47,036	47,099	47,162	47,225	47,288	47,351	47,414	47,477	47,540	47,603	47,666	47,729	47,792	47,855	47,918	47,981	48,044	48,107	48,170	48,233	48,296	48,359	48,422	48,485	48,548	48,611	48,674	48,737	48,800	48,863	48,926	48,989	49,052	49,115	49,178	49,241	49,304	49,367	49,430	49,493	49,556	49,619	49,682	49,745	49,808	49,871	49,934	49,997	50,060	50,123	50,186	50,249	50,312	50,375	50,438	50,501	50,564	50,627	50,690	50,753	50,816	50,879	50,942	51,005	51,068	51,131	51,194	51,257	51,320	51,383	51,446	51,509	51,572	51,635	51,698	51,761	51,824	51,887	51,950	52,013	52,076	52,139	52,202	52,265	52,328	52,391	52,454	52,517	52,580