From: Kunysz, Kathy

Sent: Friday, July 10, 2015 11:32 AM

To: Ti.Mike N

Subject: FW: MWD IRP UPDATE: ULARA GROUNDWATER HOMEWORK

Attachments: GW Projections (Glendale (06172015).xlsx; ULARA_Basins (06172015).xlsx

From: Takidin, Raja [mailto:RTakidin@GlendaleCA.GOV]

Sent: Wednesday, June 17, 2015 3:32 PM

To: Sumi, David H

Cc: De Ghetto, Michael; Kunysz, Kathy; Hacker, Matthew D; Chan, Leo Subject: RE: MWD IRP UPDATE: ULARA GROUNDWATER HOMEWORK

Hi David,

Attached are the modified spreadsheets for Glendale. Please let me know if you have a guestion or concern.

Regards,

Raja Takidin, P.E • City of Glendale • Glendale Water & Power 141 N. Glendale Ave. 4th Floor ● Glendale, CA 91206 ● (818) 548-3906 ● rtakidin@glendaleca.gov









From: Kunysz,Kathy [mailto:kkunysz@mwdh2o.com]

Sent: Tuesday, June 09, 2015 11:40 AM

To: Peter.Dugan@ladwp.com; Simon.Hsu@LADWP.com; delon.kwan@ladwp.com; Rafael.Viramontes@ladwp.com; David Pettijohn - LADWP (david.pettijohn@ladwp.com); Penny.Falcon@ladwp.com; Heather.Yegiazaryan@LADWP.com; greg.reed@ladwp.com; Sarah.Lacombe@ladwp.com; BDoxsee@burbankca.gov; AUmphenour@burbankca.gov; Takidin, Raja; CMarcarello@sfcity.org; TSalazar@sfcity.org

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

Dear Member Agency and Groundwater Managers and Staff,

Attached are the excel spreadsheets for your agency and groundwater basin 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 component of regional water supply reliability.

Where there are multiple member agencies overlying a groundwater basin, we have sent the spreadsheets to all overlying member agencies and to the groundwater basin manager. The intent is for a coordinated review. Please review your spreadsheet(s) 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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City of Glendale

Groundwa	ter								Average																																					
Agency	Type	IMP/EX	P Basin/Reservoir	2009	2010	2011	2012	2013	2009-2013																																					
Glendale	GW	OWN	Verdugo Basin	1,772	1,422	1,581	1,579	1,284	1,528	1,299	1,102	1,738	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566	2,566
Glendale	GWR	OWN	San Fernando Basin	6,799	7,839	6,618	7,526	6,780	7,112	5,992	6,936	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259	7,259
Glendale	GWR	OWN	Verdugo Basin	507	410	368	337	216	367			484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484
Groundwater F	roduction																																													
Projection																																														2050
Average										1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
New wells:																																														
Rockhaven	500gpm (e	expected or	nline 2016)									738	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807	807
										2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160

Recharge Recharge for Glendale is included in LA projection.

Page 1 GW Projections (Glendale (06172015).xlsx

ULARA Basin Summary

Groundwater									Average								
Agency	Type	IMP/EXP	Basin/Reservoir	2009	2010	2011	2012	2013 2	2009-2013	2015	2020	2025	2030	2035	2040	2045	2050
Burbank	GW	OWN	San Fernando Valley Basin	337	318	379	354	438	365	400	400	400	400	400	400	400	400
Burbank	GWR	OWN	San Fernando Valley Basin	6,998	10,202	9,917	10,138	10,462	9,544	10,793	12,650	14,506	14,517	14,517	14,517	14,517	14,517
Glendale	GWR	OWN	San Fernando Basin	6,799	7,839	6,618	7,526	6,780	7,112	6,936	7,259	7,259	7,259	8,469	8,469	8,469	8,469
Los Angeles	GW	OWN	San Fernando Valley Basin	54,651	59,054	44,268	50,479	57,523	53,195	51,119	51,619	52,580	52,045	52,272	52,305	52,273	53,087
Total San Fernando				69,268	76,375	62,405	67,589	75,949	70,317	68,631	71,674	75,177	75,339	75,658	75,691	75,659	76,473
Los Angeles	GW	OWN	Sylmar Basin	1,744	1,667	1,282	1,264	1,299	1,451	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
San Fernando	GW	OWN	Sylmar Basin	3,397	3,070	3,082	3,161	3,104	3,163	3,198	3,082	3,058	3,057	3,049	3,042	3,042	3,045
Total Sylmar				5,141	4,737	4,364	4,425	4,403	4,614	4,598	4,482	4,458	4,457	4,449	4,442	4,442	4,445
Glendale	GW	OWN	Verdugo Basin	1,772	1,422	1,581	1,579	1,284	1,528	1,102	2,566	2,566	2,566	2,160	2,160	2,160	2,160
Glendale	GWR	OWN	Verdugo Basin	507	410	368	337	216	367	0	484	484	484	484	484	484	484
Foothill	GW	OWN	Verdugo Basin	2,821	2,532	2,945	3,057	2,750	2,821	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800
Foothill	GWR	OWN	Verdugo Basin	621	403	448	539	530	508	492	552	612	672	731	791	851	911
Total Verdugo				5,893	4,839	5,396	5,544	4,906	5,316	5,600	5,660	5,720	5,780	5,839	5,899	5,959	6,019
Total ULARA				80,302	85,951	72,165	77,558	85,258	80,247	78,829	81,816	85,355	85,576	85,945	86,032	86,060	86,936

Active Recharge

Agangu	Type	IMP/EXP	Basin/Reservoir	Notes	2015	2020	2025	2030	2035	2040	2045	2050
Agency	туре	IIVIP/EXP	Basili/Reservoir	Notes	2015	2020	2025	2030	2035	2040	2045	2050
Normal Year												
Burbank	IMPORT	OWN	San Fernando Valley	Calculated as Total Groundwater Production-Demand*0.2	6,750	8,462	10,316	10,306	10,321	10,273	10,255	10,234
Burbank	STORM	OWN	San Fernando Valley	Stormwater included in LA's projection	0	0	0	0	0	0	0	0
Burbank	REC	OWN	San Fernando Valley	No recycled water recharge	0	0	0	0	0	0	0	0
Los Angeles	IMPORT	OWN	San Fernando Valley Ba	sin No imported water in San Fernando.	0	0	0	0	0	0	0	0
Los Angeles	STORM	OWN	San Fernando Valley Ba	sin Average 1986-2005	26,818	26,818	26,818	26,818	26,818	26,818	26,818	26,818
Total					33,568	35,280	37,134	37,124	37,139	37,091	37,073	37,052
Dry Year (actual	2012-2014)											
Burbank	IMPORT	OWN	San Fernando Valley	Calculated as Total Groundwater Production-Demand*0.2	6,837	6,837	6,837	6,837	6,837	6,837	6,837	6,837
Burbank	STORM	OWN	San Fernando Valley	Stormwater included in LA's projection	0	0	0	0	0	0	0	0
Burbank	REC	OWN	San Fernando Valley	No recycled water recharge	0	0	0	0	0	0	0	0
Los Angeles	IMPORT	OWN	San Fernando Valley Ba	sin No imported water in San Fernando.	0	0	0	0	0	0	0	0
Los Angeles	STORM	OWN	San Fernando Valley Ba	sin Average 2012-2014	12188	12188	12188	12188	12188	12188	12188	12188
Total					19,025	19,025	19,025	19,025	19,025	19,025	19,025	19,025