
From: Kunysz,Kathy
Sent: Friday, July 10, 2015 11:30 AM
To: Ti,Mike N
Subject: FW: MWD IRP UPDATE: MAIN SAN GABRIEL BASIN GROUNDWATER HOMEWORK
Attachments: Main San Gabriel Basin.xlsx

From: Kevin Smead [<mailto:kevins@stetsonengineers.com>]
Sent: Monday, June 22, 2015 10:32 AM
To: Sumi,David H; Kunysz,Kathy; Hacker,Matthew D
Cc: 'Steve Johnson'; 'Shane Chapman'; 'Tony Zampielo'; 'Kelly Gardner'; 'Jenny Arevalo'
Subject: FW: MWD IRP UPDATE: MAIN SAN GABRIEL BASIN GROUNDWATER HOMEWORK

David,

In response to the data request from MWD staff dated June 9, 2015, attached is the modified spreadsheet. This information is provided at the request of Upper District and the Main Basin Watermaster. Corrections/assumptions and rationale are provided in RED as requested. Please feel to contact this office with any comments/requested clarifications.

Thank you

Kevin Smead
Stetson Engineers Inc
861 Village Oaks Drive, Suite 100
Covina, CA 91724
PH: 626-967-6202

From: Kunysz,Kathy [<mailto:kkunysz@mwdh2o.com>]
Sent: Tuesday, June 09, 2015 11:38 AM
To: Shane Chapman; Reymundo Trejo; mgarcia@TVMWD.com; garry.hofer@amwater.com; Tony Zampielo (tony@watermaster.org); Kelly Gardner (kelly@watermaster.org)
Cc: Kunysz,Kathy; Hacker,Matthew D; Sumi,David H; Nevills,Jennifer C
Subject: MWD IRP UPDATE: MAIN SAN GABRIEL BASIN 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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Main San Gabriel Basin Summary

Groundwater

Agency	Type	IMP/EXP	Basin/Reservoir	2009	2010	2011	2012	2013	Average 2009-2013	2014	2015	2020	2025	2030	2035	2040	2045	2050
Three Valleys	GW	OWN	Main San Gabriel Basin	15,339	17,140	19,912	20,563	19,996	18,590		18,600	18,600	18,600	18,600	18,600	18,600	18,600	18,600
Central Basin	GW	IMP	Main San Gabriel Basin	31,061	27,107	29,164	36,838	32,491	31,332		31,332	31,332	31,332	31,332	31,332	31,332	31,332	31,332
Upper San Gabriel	GW	OWN	Main San Gabriel Basin	162,074	132,822	137,652	142,949	155,475	146,194	1/	145,000	151,500	158,000	164,500	171,000	171,000	171,000	171,000
MWDOC	GW	IMP	San Gabriel Basin	12,028	11,808	12,278	12,779	13,753	12,529		12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500
San Marino	GW	OWN	Main San Gabriel Basin	2,122	2,731	3,807	2,529	2,308	2,699		2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700
Total				222,625	191,609	202,813	215,658	224,023	211,345		210,132	216,632	223,132	229,632	236,132	236,132	236,132	236,132

Active Recharge

Agency	Type	IMP/EXP	Basin/Reservoir	Notes	2014	2015	2020	2025	2030	2035	2040	2045	2050
Normal Year													
Upper San Gabriel	IMPORT	OWN	Main San Gabriel Basin	2/		42,000	48,500	55,000	61,500	68,000	68,000	68,000	68,000
Upper San Gabriel	STORM	OWN	Main San Gabriel Basin	Average 1986-2005 (includes Three Valleys area).	103,685	103,685	103,685	103,685	103,685	103,685	103,685	103,685	103,685
Upper San Gabriel	REC	OWN	Main San Gabriel Basin	No recycled water for Upper District	0	0	0	0	0	0	0	0	0
Three Valleys	IMPORT	OWN	Main San Gabriel Basin	3/	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600
Three Valleys	STORM	OWN	Main San Gabriel Basin	Stormwater data is captured in Upper District data.	0	0	0	0	0	0	0	0	0
Three Valleys	REC	OWN	Main San Gabriel Basin	No recycled water for Three Valleys	0	0	0	0	0	0	0	0	0
Total					149,285	155,785	162,285	168,785	175,285	175,285	175,285	175,285	175,285
Multiple Dry Year (actual 2012-2014)													
Upper San Gabriel	IMPORT	OWN	Main San Gabriel Basin	4/	65,900	72,400	78,900	85,400	91,900	91,900	91,900	91,900	91,900
Upper San Gabriel	STORM	OWN	Main San Gabriel Basin	5/	28,500	28,500	28,500	28,500	28,500	28,500	28,500	28,500	28,500
Upper San Gabriel	REC	OWN	Main San Gabriel Basin	No recycled water for Upper District	0	0	0	0	0	0	0	0	0
Three Valleys	IMPORT	OWN	Main San Gabriel Basin	6/	7,900	7,900	7,900	7,900	7,900	7,900	7,900	7,900	7,900
Three Valleys	STORM	OWN	Main San Gabriel Basin	7/	0	0	0	0	0	0	0	0	0
Three Valleys	REC	OWN	Main San Gabriel Basin	No recycled water for Three Valleys	0	0	0	0	0	0	0	0	0
Total					102,300	108,800	115,300	121,800	128,300	128,300	128,300	128,300	128,300

Notes:

- 1/ Upper District's revised projected total water demand for 2035 is 187,000 AF (from IRP). Subtracted 6,000 AF for Surface Water, 5,000 AF for Treated Imported Water and 5,000 AF for Recycled Water, for net of 171,000 AF.
- 2/ Main Basin's normal year is based on the set Operating Safe Yield of 190,000 AFY. Uper Distrct has about 81% of Basin over production (total is about 41,000 AF) or about 34,000 AF.
Stetson assumed an OSY of 190,000 AF and assumed 2015-16 production to be similar to 2014-15 production.
The Main Basin has adopted a Water Resource Development Assessment (RDA) to fund the purchase of additional Supplemental Water for the Supplemental Water Reliability Storage Program. For Upper District, this is about 8,000 AFY.
The future increase is similar to the water demand increase of 6,500 AFY through 2035 and constant there after.
- 3/ Stetson assumed an OSY of 190,000 AF and assumed 2015-16 production to be similar to 2014-15 production. The RDA for the Supplemental Water Reliability Storage Program for Three Valleys is 600 AFY.
- 4/ Main Basin's dry year is based on the set Operating Safe Yield of 150,000 AFY. Stetson assumed an OSY of 150,000 AF and assumed 2015-16 production to be similar to 2014-15 production.
The RDA for the Supplemental Water Reliability Storage Program for Upper District is 8,000 AFY.
The increase is similar to the water demand increase of 6,500 AFY through 2035 and constant there after.
- 5/ Based on the Main Basin's 15-16 OSY Report Table 4, the local runoff during fiscal year 11-12 through 13-14 are indicative of a dry year and averaged about 28,500 AFY.
- 6/ Stetson assumed an OSY of 150,000 AF and assumed 2015-16 production to be similar to 2014-15 production. The RDA for the Supplemental Water Reliability Storage Program for Three Valleys is 600 AFY.
- 7/ Local runoff benefits the entire Main Basin and it is difficult to separate between Upper District and Three Valleys District. Assumed local runoff is for both Upper District and Three Valleys District.