City of Carlsbad

Office of the City Manager

February 20, 2008

Michael Monasmith
Project Manager, Siting Division
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Clarification to California Energy Commission on Carlsbad Municipal Water District Projected Reclaimed Water Supply (07-AFC-6)

Dear Mr. Monosmith:

There has been significant discussion regarding the availability of reclaimed water to support the proposed Carlsbad Energy Center Project (07-AFC-6), which is currently under review.

The City of Carlsbad would like to submit the following overview of Carlsbad's reclaimed water supply for the Commission's information. All units of water are shown in either million gallons per day (mgd) or acre feet per month (afm). An operational factor of 95% peak capacity was applied in calculating the estimated gross afm production.

Water Supply

The City of Carlsbad currently has three sources of reclaimed water, which are:

- Carlsbad Water Recycling Facility (CWRF)
- Meadowlark Water Reclamation Facility (MWRF)
- Gaffner Water Reclamation Facility (GWRF)

CWRF

The CWRF is the only City-owned facility and represents the bulk of production capacity. The CWRF was constructed as part of the City's desire to increase its recycled water capacity. This $45 million expansion has been ongoing since 2000 and is expected to achieve full production by 2012. CWRF has a peak production capacity of 4 mgd, or approximately 350 afm.

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MWRF

The MWRF is owned and operated by Vallecitos Water District. MWRF is currently being expanded and, when operational (expected online date summer 2008), the City will increase its peak contracted capacity from 2 mgd (174 afm) to 3 mgd (261 afm). The contract between the City and Vallecitos terminates in 2025. Water from the MWRF helps supply the entire Carlsbad reclaimed water system.

GWRF

The City contracts with the Leucadia Wastewater District to receive approximately 750,000 gallons per day (70 afm). Water from GWRF is used solely to supply the La Costa Golf Course's south course through a separate delivery system. It should be noted that the City is unable to use this water in the larger system, as there does not exist a direct connection between Carlsbad and GWRF. The contract is set to expire in 2011, and the City is not anticipating its renewal at this time.

Overall Supply Picture

The City of Carlsbad currently has 6.75 mgd of peak production capacity (594 afm) with an anticipated increase to 7.75 mgd (681 afm) once improvements to MWRF are complete. With the expiration of the GWRF contract in 2011, system capacity is projected to be reduced back to 7 mgd (611 afm). The chart below outlines the City's projected reclaimed water supply in available acre feet per month, based on 95% peak production capacity.

Source of Supply	**Quantity of Supply**		
	2007	2010	2012
CWRF	350 afm	350 afm	350 afm
MWRF	174 afm*	261 afm	261 afm
GWRF	70 afm	70 afm	_
Total Supply	**594 afm**	**681 afm**	**611 afm**

*Reclaimed water not available due to construction

Water Demand

The City of Carlsbad currently has approximately 215 recycled water customers who receive water through more than 430 metered connections. Recycled water demand, as consistent with potable water demand, is seasonal in nature. Although the City currently has capacity to meet existing customer needs, the projected peak demand (790 afm) will begin to exceed supply by 2009. This increased demand is projected to grow through 2014 and will result in the City being unable to meet its full reclaimed water needs during peak months (May-September) with existing supply and storage infrastructure (the City has use of a 54-million gallon reservoir to help meet peak demand).

The attached spreadsheet outlines the City's supply and demand projections through 2014. Months where demand exceeds supply are shown in red. Included in the attached spreadsheet is the projected impact of supplying the proposed Carlsbad Energy Center Project.

Summary

The City of Carlsbad has been actively developing its reclaimed water system for the past decade. These system improvements are anticipated to be fully realized over the next several years, at which time, peak demand for reclaimed water is predicted to exceed monthly production capacity.

Should you have any questions regarding the City's reclaimed water system, please contact me at (760) 434-2820 or jgaru@ci.carlsbad.ca.us.

Sincerely,

Joe Garuba
Municipal Projects Manager
City of Carlsbad

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Carlsbad Municipal Water District
Projected Reclaimed Water Supply vs. Demand

Month	Supply	Demand	Difference	CECP	Difference
July	420	418.0	2.0		
August	420	366.7	53.3		
September	420	397.8	22.2		
October	420	366.1	53.9		
November	420	280.1	139.9		
December	420	69.2	350.8		
January	420	67.9	352.1		
February	420	140.0	280.0		
March	420	160.0	260.0		
April	420	190.0	230.0		
May	420	250.0	170.0		
June	420	350.0	70.0		
FY 07/08 Total	**5040**	**3,055.80**			

Month	Supply	Demand	Difference	CECP	Difference
July	681	672.0	9.0		
August	681	563.0	118.0		
September	681	483.0	198.0		
October	681	348.0	333.0		
November	681	134.0	547.0		
December	681	147.0	534.0		
January	681	35.0	646.0		
February	681	51.0	630.0		
March	681	118.0	563.0		
April	681	262.0	419.0		
May	681	438.0	243.0		
June	681	585.0	96.0		
FY 08/09 Total	**8172**	**3,836.00**			

Month	Supply	Demand	Difference	CECP	Difference
July	681	790.0	(109.0)		
August	681	662.0	19.0		
September	681	568.0	113.0		
October	681	410.0	271.0		
November	681	158.0	523.0		
December	681	173.0	508.0		
January	681	41.0	640.0		
February	681	60.0	621.0		
March	681	139.0	542.0		
April	681	308.0	373.0		
May	681	515.0	166.0		
June	681	688.0	(7.0)		
FY 09/10 Total	**8172**	**4,512.00**	3660.0		

Month	Supply	Demand	Difference	CECP	Difference
July	681	920.0	(239.0)	93.3	(332.3)
August	681	771.0	(90.0)	93.3	(183.3)
September	681	661.0	20.0	93.3	(73.3)
October	681	477.0	204.0	0	204.0
November	681	184.0	497.0	0	497.0
December	681	201.0	480.0	0	480.0
January	681	48.0	633.0	0	633.0
February	681	70.0	611.0	0	611.0
March	681	162.0	519.0	0	519.0
April	611	359.0	252.0	0	252.0
May	611	600.0	11.0	93.3	(82.3)
June	611	801.0	(190.0)	93.3	(283.3)
FY 10/11 Total	**7962**	**5,254.00**	2708.0		

Month	Supply	Demand	Difference	CECP	Difference
July	611	962.0	(351.0)	93.3	(444.3)
August	611	806.0	(195.0)	93.3	(288.3)
September	611	691.0	(80.0)	93.3	(173.3)
October	611	499.0	112.0	0	112.0
November	611	192.0	419.0	0	419.0
December	611	210.0	401.0	0	401.0
January	611	50.0	561.0	0	561.0
February	611	73.0	538.0	0	538.0
March	611	169.0	442.0	0	442.0
April	611	375.0	236.0	0	236.0
May	611	627.0	(16.0)	93.3	(109.3)
June	611	838.0	(227.0)	93.3	(320.3)
FY 11/12 Total	**7332**	**5,492.00**	1840.0		

Month	Supply	Demand	Difference	CECP	Difference
July	611	1000.0	(389.0)	93.3	(482.3)
August	611	838.0	(227.0)	93.3	(320.3)
September	611	719.0	(108.0)	93.3	(201.3)
October	611	519.0	92.0	0	92.0
November	611	200.0	411.0	0	411.0
December	611	219.0	392.0	0	392.0
January	611	52.0	559.0	0	559.0
February	611	76.0	535.0	0	535.0
March	611	176.0	435.0	0	435.0
April	611	390.0	221.0	0	221.0
May	611	652.0	(41.0)	93.3	(134.3)
June	611	871.0	(260.0)	93.3	(353.3)
FY 12/13 Total	**7332**	**5,712.00**	1620.0		

Month	Supply	Demand	Difference	CECP	Difference
July	611	1046.0	(435.0)	93.3	(528.3)
August	611	877.0	(266.0)	93.3	(359.3)
September	611	752.0	(141.0)	93.3	(234.3)
October	611	542.0	69.0	0	69.0
November	611	209.0	402.0	0	402.0
December	611	229.0	382.0	0	382.0
January	611	55.0	556.0	0	556.0
February	611	80.0	531.0	0	531.0
March	611	184.0	427.0	0	427.0
April	611	408.0	203.0	0	203.0
May	611	682.0	(71.0)	93.3	(164.3)
June	611	912.0	(301.0)	93.3	(394.3)
FY 13/14 Total	**7332**	**5,976.00**	1356.0		

All quantities are in acre feet per month (AF/per month).
Supply is calculated on a 95% operational factor based on peak mgd capacity
93.3 AF/Per month = 1 million gallons per day (mgd)
700 gpm = 1 mgd
The CECP is projected at 700 gallons per minute (GPM) in peak months (May-September). This is = to 40% operating time
Projected CECP online date Summer 2010