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To: Participants in A1204019 GWR Workshop
From: John Farrow, on Behalf of LandWatch Monterey California
Re: Externalities And Resilience In Proposed GWR Criteria
Date: June 11, 2013

There is a consensus among a number of parties that a premium for GWR is justified, even though it may not be required if the GWR combination comes in cheaper than the all-desalination approach.

The May 20 draft of the GWR criteria expressly referenced the justification for this premium as the benefits of 1) the resilience inherent in the portfolio approach, 2) qualitative, quantitative, and monetized externalities, and 3) progress on schedule. One subsequent draft proposed to replace that enumeration with a capped premium expressed as a percentage of the cost of Desalination Infrastructure (capital assets at desalination plant site). The most recent proposal is that GWR should merely need to meet a specified cost per acre foot, without reference to the cost of desalination water.

Each of these proposals is intended to recognize that the GWR project would have positive externalities and more resilience than the desalination-only approach.

EXTERNALITIES: It is not clear that we have, or can develop, information to quantify externalities before the CPCN is scheduled to be issued or even before the Governance Committee's go/no go recommendation. Externalities will depend to some extent on actual designs of the GWR and desalination projects, since some externalities depend on comparing brine and carbon from the GWR and desalination projects.

However, these externalities are real benefits valued by the local community. For example, there are currently available estimates of the social cost of carbon ("SCC") that could be used as inputs to valuing the carbon externality. This data confirms and supports prior testimony that externalities should be taken into account.

The federal working group charged with estimating the social cost of carbon for regulatory impact analyses estimates that the social cost of CO_2 at \$32.8 per ton in 2030 and \$44.9 per ton in 2050 at a 3% discount rate (2007 dollars). See Interagency Working Group on Social Cost of Carbon, United States Government, *Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866,* available at http://www.epa.gov/otaq/climate/regulations/scc-tsd.pdf. This analysis provides an estimate of monetized damages associated with an incremental increase in carbon in a given year. The assessment is expressly intended to make it possible for agencies to incorporate social benefits of reducing CO_2 emissions into cost-benefit analyses of regulatory actions with small impacts on cumulative global emissions. The assessment presents a range of estimates for the years 2010 through 2050 based on

different discount rates (2.5%, 3%, and 5%), based on equal weighting of three integrated assessment models commonly used to estimate the social cost of carbon, the FUND, DICE, and PAGE models.

Another approach is taken by the International Energy Agency ("IEA"), an autonomous body established within the framework of the Organization for Economic Cooperation and Development to implement an international energy program. The IEA estimates that a price of $90 per ton of CO_2 in 2030 would be necessary to stabilize CO_2 at 550 ppm and a price of $180 per ton would be required to attain the more benign 450 ppm scenario. See IEA, World Energy Outlook 2008, pp. 47, 435, available at http://www.worldenergyoutlook.org/media/weowebsite/2008-1994/weo2008.pdf. This valuation represents the cap-and-trade price required in developed countries to realize the policy goal.

However, carbon reduction is valued, we believe that the criteria for the GWR project go/no go decision should reflect some benefit from the reduced carbon generation compared to the alternative of desalination-only.

RESILIENCE: The GWR criteria should also reflect the fact that obtaining the resilience value of the portfolio approach requires multiple capital projects, which in turn may require foregoing some economies of scale. For example, preliminary financial analysis and testimony have suggested that the marginal cost of the final 3.2 MGD increment of desalination water from a 9.6 MGD project will cost less per acre-foot than the initial 6.4 MGD desalination water due to scale economies. Thus, Cal-Am's application claims that the revenue requirement for the GWR plus desalination combination would be greater than for the desalination-only approach. However, an estimate also suggest that the average cost per acre-foot of GWR water may be less than desalination water. LandWatch has not determined whether these estimates are accurate or whether changes subsequently proposed in the projects and their financing would change this analysis. However, it appears that the primary reason the portfolio approach as a whole might cost more than the desalination-only approach is the loss of the scale economies of the capital-intensive desalination project.

It is somewhat arbitrary to require the GWR project's average cost to meet the marginal cost of the final increment of desalination water, rather than vice versa. Of course the short term rate impacts may be less without the benefits of a portfolio approach. However, we note that the GWR project may be able to realize its own scale economies in the future when additional water is required by the service area. From a long-term policy perspective, it would be undesirable to handicap the GWR project's viability by holding it to an unrealistic cost for its initial 3,500 acre foot increment.

Accordingly, we propose that the GWR criteria should not require that the cost of water from GWR plus a 6.4 MGD desalination project be less than or equal to the cost of water from a 9.6 MGD desalination project. As noted, this formulation of a cost criterion would force average GWR cost to meet marginal desalination cost. Instead, any criteria

should reflect the fact that obtaining the reliability benefits of the portfolio approach may depend on foregoing some scale economies and therefore permit the GWR project cost to be greater than the marginal cost of the last 3,500 acre feet of desalination water.