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November 24, 2009

Andrew Barnsdale
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Subject: FEIR for Coastal Water Project

Dear Mr. Barnsdale:

LandWatch has reviewed the FEIR for the Coastal Water Project and has the following comments:

- 1. Growth-Inducement.** The FEIR indicates that 859 afy is included in the demand number “to ensure adequate supplies during critically dry years (FEIR, p. 14.5-141).” The document also states that a 20 percent contingency factor is “to provide a measure of flexibility for jurisdictions to respond to unanticipated water needs” and “the relaxation of current conservation practices and water use restrictions when additional water supplies become available. (FEIR, p. 14.5-142)” While we appreciate the purpose of a drought reserve and the 20 percent contingency factor, **without binding assurances that limit water supplies to these uses**, the water above and beyond that is needed to meet regulatory requirements would be growth-inducing. This finding is based on the experience of the last 14 years where conserved water was used for growth and development rather than for drought reserve or to meet requirements of Order 95-10. The MPWMD should either provide written assurances that the excess water would not be used for new growth or the FEIR should be revised to address the growth-inducing impact of a drought reserve and the contingency factor.
- 2. Water Demand.** Water demand to meet regulatory requirements for the Monterey Peninsula is identified as 12,500 afy. Water produced under all CWP Alternatives should be reduced to account for projects identified in the September 16, 2009 SWRCB order. Water reductions that would be permanent include a total of 879 afy -- 549 afy from pipeline replacement (p. 42) and 330 afy from retrofitting properties (p. 43). Without a comparable reduction in water produced by CWP alternatives, Phase I of all the alternatives would be growth inducing and could accommodate over 3,660 new residential units (0.24 afy/unit).
- 3. Impacts to North County of the Regional Project.** The FEIR fails to adequately analyze and mitigate impacts to North County’s up-gradient aquifers caused by pumping approximately 22,000 to 25,000 acre-feet of brackish water from the 180-foot aquifer of

the Salinas Basin.

The FEIR states (p. 13.6-1), “Project effects on the SVGB from extraction of coastal area desalination feedwater were adequately addressed in the Draft EIR. Therefore, this master response is intended to clarify and enhance information brought to light in the Draft EIR regarding the quantity, use of, and replacement of water that would be drawn from the SVGB and used by the proposed project.”

This statement couldn't be further from the truth. In fact, the DEIR failed to adequately address the impacts of brackish water extraction from the 180-foot aquifer of the Salinas Valley Groundwater Basin. None of the wells upon which projected ground water elevations were modeled are located in the up-gradient subareas of North County – Highlands and Granite Ridge. This makes the projected groundwater contours, at best, guesstimates. [Well Hydrographs, Figure 2 of the North Marina Groundwater Model (Appendix A of Appendix Q) include no wells located in Highlands North, Highlands South or Granite Ridge. No well locations in those subareas are identified in RMC's Impacts of Salinas Valley Ground Water Basin from the Monterey Regional Water Supply Project (Appendix B of Appendix Q), Focused View of Ground Water Elevations, figure 4.]

The FEIR (p. 13.6-9) admits the current modeling is inadequate, and in violation of CEQA, it proposes an analysis of the impacts *after* project approval. “If the Regional project was approved, the existing groundwater monitoring program would need to be augmented in order to assess the aquifer response to groundwater extraction. An augmented monitoring well network and monitoring plan would be developed to provide information that could accurately represent the groundwater elevations in both the 180-foot Aquifer and associated strata near Marina *and in the North County area*. [Emphasis added] Data collected from the monitoring program would be used to evaluate the Regional Project and compare its effects to the basin management objectives.” “*Aquifer response to groundwater extraction*” *must be analyzed prior to project approval. Groundwater elevations need to be “accurately represented” now not later.*

Furthermore, no meaningful, measurable or enforceable mitigations are proposed if and when negative impacts result. “Findings from the program would assist decisions-makers with policy decisions or actions regarding the basin's response to the Regional Project. Objectives for the groundwater monitoring network would be to determine effects of the Regional Project on groundwater quality and quantity and to provide data for development of additional basin management solutions.” The residents of North Monterey County are already paying for a “basin management solution” in the form of the yet-to-be-completed Salinas Valley Water Project. Who are the EIR preparers proposing pay for development and implementation of “additional basin management solutions” should impacts of the Regional Plan make those additional solutions necessary?

While the EIR fails to provide any meaningful analysis of further reducing water pressure in the 180-foot aquifer, there is significant information in the public record that the results of doing so would have serious negative consequences. According to the North Monterey County Hydrogeologic Study: Volume 1, Water Resources, Fugro West, Inc., (p. 57), ground water movement is a significant aspect of managing North County's diminishing water resources. “Ground water movement is controlled by differences in

water elevations or pressure. Water at higher pressure or elevation moves to areas of lesser pressure or elevation. In the study area, ground water moves generally westerly, northerly, and southerly from the Granite Ridge area into the Highlands South, Highlands North, and Salinas Valley respectively.”

The North Monterey County Hydrogeologic Study: Volume 2 – Critical Issues Report and Interim Management Plan, (p. 3), reiterates, “The subareas, while displaying distinctive differences, are hydraulically connected with each other and the adjacent Pajaro and Salinas Valley areas. Because of this connection between these areas, *ground water conditions within the subareas and connected areas are interdependent.*” [Emphasis added]

Volume 1 of the hydrogeologic study, (p. 57-58), continues, “*Much discussion was focused on the importance, existence and volume of regional ground water flow from the study area into the adjacent Pajaro and Salinas Valleys. The existence of this regional flow has been identified on the basis of historical water level gradients between these areas.* [Emphasis added] While current water levels in the majority of the study area are still higher than the adjacent areas, this difference is decreasing, reducing the volume of recharge from these up-gradient areas.

“Consideration of the natural flow system in the study area and the adjacent areas raises the question of ground water flow direction between the study area and the adjacent areas prior to alteration of water level conditions resulting from ground water extractions. The large majority of the recharge in both the Pajaro and Salinas Valleys is derived from the respective river systems. In the study area, recharge is much less and limited to the infiltration of a minor portion of total precipitation. Prior to the onset of ground water extractions in the beginning of this century, both the Salinas and Pajaro Valleys contained many flowing (artesian) wells. *These data suggest that before extraction in the adjacent river valleys began, ground water from these valleys may have been tributary to the study area (rather than the current conditions).*” [Emphasis added]

The study further states (p. 78), “Comparison of the model calculated inflows and outflows for each of the subareas *reveal the interdependency of the subareas and the lack of any significant hydrogeologic boundaries.* [Emphasis added] The model confirms and quantifies the occurrence of subsurface flows between various subareas. Generally, ground water flows from the Granite Ridge subarea into the adjoining subareas of Highlands North, Highlands South, and the Eastside Area. *The model also confirms the flow from the Highlands South subarea into the Pressure Area of the Salinas Valley.*” [Emphasis added].

The study also states (p. 78), “...the sustainable yield estimates assume that current land use remains approximately static and that reduction in extractions occur in proportion to the current land use. *Changes in land use will affect return flows and may change the sustainable yield for a subarea. Additionally, MW estimates assume the maintenance of existing inflows and outflows between various subareas. The magnitude of these flows is a function of regional groundwater gradients. Changes in water use in various subareas or hydraulically adjacent areas not within the study area (Salinas Valley or north of Pajaro River) could change the magnitude of the subsurface flow between subareas.*” In other words, changes in water use in the Salinas Valley, such as pumping an additional 22,000 to 25,000 afy as proposed under the Regional Project, would change the

magnitude of the flow between the subareas, impacting the sustainable yield of the up-gradient subareas – Highlands and Granite Ridge.

Given the interdependency of the subareas and the lack of hydrogeologic boundaries between them, what is the impact on sustainable yield of extracting an additional 22,000 to 25,000 acre-feet from the Salinas Basin? The EIR preparers propose to evaluate impacts *after* project approval. However, the North Monterey County Hydrogeologic Study: Volume 1, Water Resources provides enough perspective to raise grave concern. In Table 11, (p.77), sustainable yield is identified for each North County subarea. Highlands South has a sustainable yield of no more than 4,390 afy. Granite Ridge has a sustainable yield of a mere 610 afy. Both of these sustainable yields pale by comparison to the amount of water the Regional Project proposes to extract from the 180-foot aquifer in the adjacent Salinas Valley.

Before project approval and certification of the Coastal Water Project EIR, the PUC is legally required to fully analyze impacts to North Monterey County's up-gradient aquifers. Furthermore, the water rights enjoyed by residents of North Monterey County require that the PUC *avoid* negative impacts to North County's water supplies.

4. **Seawater Intrusion.** The Regional Project would not arrest seawater intrusion. Rather, it would change the contours of the seawater intrusion front, inducing more intrusion into North County while decreasing it in the Salinas Valley.

According to the North Monterey County Hydrogeologic Study: Volume 1, Water Resources, (p. 79), "The volume of ground water in storage presented in Table 12 is all the ground water contained in the sediments. This volume can be misleading since the majority of this water is located below sea level. Alternatively, useable ground water in storage is defined as the volume of ground water above sea level. *This definition is useful in a coastal basin. When water levels decline below sea level, depleted ground water storage is replaced with sea water.*" [Emphasis added]

As of 1992, useable groundwater in storage according to Table 12 totaled 57,300 acre-feet. At the same time, overdraft was estimated at 8,550 afy [North Monterey County Hydrogeologic Study: Volume 1, Water Resources, page 108]. At 1992's rate of overdraft, North County's useable ground water in storage (groundwater stored above sea level) was exhausted seven years later – in 1999. [57,300 afy / 8,550 afy = 6.7 years]

Decreasing the pressure gradient in the adjacent Salinas Basin by 22,000 to 25,000 afy, would further deplete North County's groundwater below sea level. This would exacerbate seawater intrusion in North County's aquifers, even while purportedly reducing seawater intrusion in the Salinas Basin. This shift in the contours of the seawater intrusion front was not analyzed in the Coastal Water Project EIR. Nor are impacts mitigated.

5. **North County Aquifers.** The drawdown of North County's aquifers caused by feedwater pumping for the Regional Project's desalination plant (22,000 to 25,000 afy) would significantly increase the difficulty of managing North County's scarce water resources.

The North Monterey County Hydrogeologic Study: Volume 1, Water Resources states (p.

101), “The chronic overdraft of the area has resulted in falling water levels and the degradation of ground water by seawater. Excessive nitrogen loading has rendered ground water non-potable in many areas. Supplemental water supplies for the area have been recommended since the 1950’s. However, the delivery of water to the area has always been judged to be too expensive....If imported water would become available; delivery of this water would be difficult. Because of the number and dispersed nature of the agricultural users and small water systems, delivery of imported water would require construction of an expensive distribution system to deliver the water. *Without a supplemental supply and distribution system, water supply problems in the area will need to be addressed by demand management.*” [Emphasis added]

According to the study (Table 11, “Sustainable Yield,” p. 77), without additional water supplies, demand management would require pumping reductions of 11,700 afy from 1992 levels. As explained above, outflow increases to adjacent areas reduce a subarea’s sustainable yield. When the sustainable yield of North County’s subareas is diminished, the burden of reducing pumping is increased well beyond the 11,700 acre-feet identified as necessary in the hydrogeologic study.

Furthermore, the drawdown caused by source water pumping for desalination also affects contaminant concentrations in North County’s aquifers. “Additionally, the volume of ground water in storage represents the volume of water available for dilution of contaminants.” [P. 78, the North Monterey County Hydrogeologic Study: Volume 1, Water Resources, Fugro West, Inc.]

The Coastal Water Project EIR fails to analyze, quantify or mitigate this increased burden of reducing pumping beyond the 11,700 acre-feet identified in the study. The Coastal Water Project EIR fails to analyze or mitigate increased concentrations of contaminants caused by reductions in groundwater storage that will result from pumping 22,000 to 25,000 afy from the adjacent Salinas Basin.

6. **15% Allocation.** The 15% allocation of product water which is to be returned to the Salinas Basin must increase over time.

The FEIR’s own modeling indicates that the seawater intrusion front will recede toward the coast as 22,000 afy is pumped from the 180-foot aquifer. “Continued pumping in this highly intruded zone along the coast would gradually pull the intruded groundwater seaward back towards the coast.” (Coastal Water Project FEIR, p. 13.6-2) If this modeling is accurate, then the 85%:15% ratio would necessarily shift as fresh water is drawn toward the coast.

There is no provision for monitoring this shift and adjusting the amount of water returned to the basin based upon increasing amounts of fresh water being used as feedwater for desalination. This is a major omission. Extracting more fresh water from the Salinas Basin than is returned to the Basin would have significant, unanalyzed and unmitigated impacts. Exporting that fresh water from the basin poses legal problems not addressed in the FEIR, i.e., desalinated water derived from the Salinas Basin rather than from ocean water must legally be retained in the Basin leaving a shortfall in water that can be exported to the Monterey Peninsula.

7. **Brackish Water.** Brackish water in the 180-foot aquifer is a valuable resource, the benefits of which will be permanently denied to residents of the Salinas Basin.

According to the FEIR, pumping of brackish feedwater in the 180-foot aquifer of the Salinas Basin would pull intruded groundwater back to the coast. It is a resource the Marina Coast Water District is eager to use, so one must infer that it is a valuable resource. The FEIR contains no analysis of impacts to communities in North County and the City of Salinas of exhausting the brackish water source when those communities may, in the future, need to rely on it and the same technology proposed in the EIR to provide potable water for their populations.

8. **Water to Meet Regulatory Requirements.** As revised, the Regional Project relies almost exclusively on a large, structural solution to meet the regulatory requirements imposed on the Monterey Peninsula. This places residents of the Monterey Peninsula at the mercy of assumptions regarding the ratio of SVWB water to ocean water and the shifting nature of that ratio as addressed above. The Regional Project should be revised to include smaller, incremental projects that have greater certainty of outcome, e.g., reclaimed water for landscaping on the Monterey Peninsula, continued retrofitting, pipeline replace, stormwater runoff and Ground Water Replenishment.

Thank you for the opportunity to review the FEIR.

Sincerely,



Amy L. White, Executive Director
LandWatch Monterey County

Attached:

North Monterey County Hydrogeologic Study by Fugro West. Volume I: Water Resources (October 1995) and Volume II: Critical Issues Report and Interim Management Plan (May 1996).