APPENDIX 22.2

WATER SUPPLY ASSESSMENT (WSA)

EAST BAY
MUNICIPAL UTILITY DISTRICT

December 17, 2009

Lisa Hammon, Assistant City Manager
City of Hercules
111 Civic Drive
Hercules, CA 94547

Re: Notice of Preparation of a Draft Environmental Impact Report – Hercules Bayfront Project

Dear Ms. Hammon:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report (EIR) for the Hercules Bayfront Project located in the City of Hercules (City). EBMUD has the following comments.

WATER SERVICE

In March 2008, EBMUD received a request from the City of Hercules for a Water Supply Assessment (WSA) for the subject project. Pursuant to Sections 10910-10915 (SB-610) of the California Water Code, EBMUD approved the WSA and provided the City of Hercules a written response to the WSA in June 2008 (see enclosure). As stated in the Notice of Preparation for the Hercules Bayfront Project, the project usage types for residential, office, and retail use have increased over what was originally supplied in the WSA request. The increase of project usage will result in an overall project demand increase of approximately twelve percent. The demand increase is minor and is similar to demands analyzed in the WSA. The EBMUD approved WSA is still valid and a second WSA is not required.

EBMUD's Maloney Pressure Zone, with a service elevation between 0 and 200 feet, will serve the project area. Main extensions, at the project sponsor's expense, will be required to serve any proposed development. Off-site pipeline improvements, also at the project sponsor's expense, may be required to meet domestic demands and fire flow requirements set by the local fire department. Off-site pipeline improvements include, but are not limited to, replacement of existing water mains to the project site. When the development plans are finalized, the project sponsor(s) should contact EBMUD's New Business Office and request a water service estimate to determine costs and conditions for providing water service to the proposed development. Engineering and installation of water mains and services requires substantial lead-time, which should be provided for the project sponsor's development schedule.

WATER CONSERVATION

The proposed project presents an opportunity to incorporate water conservation measures. EBMUD would request that the City include in its conditions of approval a requirement that the project sponsor comply with Assembly Bill 325, Model Water Efficient Landscape Ordinance (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). The project sponsor should be aware that Section 31 of EBMUD's Water Service Regulations requires that water service shall not be furnished for new or expanded service unless all the applicable water-efficiency measures described in the regulation are installed at the project sponsor's expense. EBMUD staff would appreciate the opportunity to meet with the project sponsor to discuss water conservation programs and best management practices applicable to such projects. A key objective of these discussions will be to explore timely opportunities to expand water conservation via early consideration of EBMUD's conservation programs, including its Section 31 requirements in the EBMUD Regulations governing water service and best management practices applicable to the project.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, Water Service Planning at (510) 287-1365.

Sincerely,

William R. Kirkpatrick
Manager of Water Distribution Planning

WRK:OAH:sb
sb09_253.doc

Enclosure

EAST BAY
MUNICIPAL UTILITY DISTRICT

June 10, 2008

Dennis Tagashira
Planning Manager
City of Hercules
111 Civic Drive
Hercules, CA 94547

Re: Water Supply Assessment – Hercules Bayfront Mixed Use Project

Dear Mr. Tagashira:

This letter responds to your request of March 24, 2008 for water agency consultation concerning updated water supply needs for the Hercules Bayfront Mixed Use Project (Enclosure 1) located in the City of Hercules. The East Bay Municipal Utility District (EBMUD) appreciates the opportunity to provide this response.

Pursuant to Sections 10910-10915 (SB-610) of the California Water Code, the project meets the threshold requirement for an assessment of water supply availability based on the amount of water this project would require, a mixed-use project that would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project.

Please note that this assessment addresses the issue of water supply only and is not a guarantee of service, and future water service is subject to rates and regulations in effect at the time.

Project Demand

The water demands for the Hercules Bayfront Mixed Use Project area are accounted for in EBMUD's water demand projections as published in EBMUD's 2005 Urban Water Management Plan (UWMP/Enclosure 2). EBMUD's water demand projections account for anticipated future water demands within EBMUD's service boundaries and for variations in demand-attributed changes in development patterns. The existing land use is vacant and there is no current water demand for the site. The estimated demand based on the projected water consumption by the applicant for the project area is about 236,000 gallons per day and is consistent with EBMUD's demand projections that indicate densification of these types of land uses.

EBMUD's demand projections indicate both densification and land use changes in all existing land use classifications, including commercial and industrial land use areas, thus increasing EBMUD's overall demand. EBMUD's 2005 UWMP projects water demands over time, accounting for estimated variations in demand usage less conservation and recycled supply sources as noted in Table 4.1 of the UWMP. For planning purposes, the demands are estimated in five-year increments, but it is recognized that actual incremental amounts may occur stepwise

in shorter time increments. An increase in usage by one customer in a particular customer class does not require a strict gallon-for-gallon increase in conservation by other customers in that class as, in actuality, the amount of potable demand, conservation and recycled water use EBMUD-wide will vary somewhat. Periodically, EBMUD updates the demand projections to reconcile these variations, and the UWMP is updated as appropriate at each five-year cycle.

Project Area

The Hercules Bayfront Mixed Use Project is bounded by the Union Pacific Railroad line to the north, Northshore Business Park to the east, residential neighborhoods to the south, and San Pablo Bay Regional Shoreline to the west. The project area consists of approximately 40 acres of residential and commercial uses. The Hercules Bayfront Mixed Use Project proposes 1,224 residential units; 134,000 square feet of flex space; 81,000 square feet of office space; and 42,000 square feet of retail space.

EBMUD Water Demand Projections

Water consumption within the EBMUD service area has remained relatively level in recent years in spite of population and account growth. Since the 1970s, water demand has ranged from 200 to 220 million gallons per day (mgd) in non-drought years. The 2030 water demand forecast of 281 mgd for the EBMUD service area can be reduced to 232 mgd with the successful implementation of water recycling and conservation programs, as outlined in the UWMP. The Hercules Bayfront Mixed Use Project will not change the EBMUD 2030 demand projection.

EBMUD Water Supply and Water Rights

EBMUD has water rights permits and licenses that allow for delivery of up to a maximum 325 mgd from the Mokelumne River, subject to the availability of Mokelumne River runoff and the senior water rights of other users. EBMUD's position in the hierarchy of Mokelumne River water users is determined by a variety of agreements between Mokelumne River water right holders, the appropriative water rights permits and licenses, which have been issued by the State, pre-1914 rights and riparian rights. Conditions that could, depending on hydrology, restrict EBMUD's ability to receive its full entitlement include:

- Upstream water use by prior right holders.
- Downstream water use by riparian and senior appropriators and other downstream obligations, including protection of public trust resources.
- Variability in rainfall and runoff.

During drought periods, the Mokelumne River can no longer meet EBMUD's projected customer demands. To address this, EBMUD has obtained and continues to seek supplemental supplies. EBMUD has a contract for water from the Central Valley Project (CVP), which is discussed

below in the Supplemental Water Supply and Demand Management section of this assessment. EBMUD studies indicate that by 2030, even with the additional dry-year water supply provided through the Freeport Regional Water Project (FRWP), deficiencies in supply of up to 37 percent could occur during multi-year drought periods.

EBMUD UWMP

The UWMP, adopted on November 22, 2005 by the EBMUD Board of Directors by Resolution No. 33508-05, is a long-range planning document that reports on EBMUD's current and projected water usage; water supply programs; and conservation and recycling programs. A summary of EBMUD's demand and supply projections, in 5-year increments for a 25-year planning horizon is provided in a table (Enclosure 3) from the UWMP. The data reflects the latest actual and forecast values.

EBMUD's evaluation of water supply availability accounts for the diversions of both upstream and downstream water right holders and fishery releases on the Mokelumne River. Fishery releases are based on the requirements of a 1998 Joint Settlement Agreement (JSA) between EBMUD, U.S. Fish and Wildlife Service, and the California Department of Fish and Game. The JSA requires EBMUD to make minimum flow releases from its reservoirs to the lower Mokelumne River to protect and enhance the fishery resources and ecosystem of the river. As this water is released downriver, it is, therefore, not available for use by EBMUD's customers.

The available supply shown in the attached table (Enclosure 3) was derived from EBMUD's hydrologic model with the following assumptions:

- EBMUD Drought Planning Sequence is used for 1976, 1977 and 1978.
- Total system storage is depleted by the end of the third year of the drought.
- EBMUD will implement its Drought Management Program when necessary.
- The diversions by Amador and Calaveras Counties upstream of Pardee Reservoir increase over time.
- Releases are made to meet the requirements of senior downstream water right holders and fishery releases are made according to the JSA.
- Dry-year supply of CVP water, through the FRWP, is available beginning in 2010.

As discussed under the Drought Management Program section in Chapter 3 of the UWMP, EBMUD's system storage generally allows it to continue serving its customers during dry-year events. EBMUD imposes rationing based on the projected storage available at the end of September. By imposing rationing in the first dry year of potential drought periods, EBMUD attempts to minimize rationing in subsequent years if a drought persists while continuing to meet its current and subsequent-year fishery flow release requirements and obligations to downstream agencies. Table 3-1 in the UWMP summarizes the Drought Management Program guidelines for consumer water reduction goals based on projected system storage.

In the table (Enclosure 3), "Single Dry Water Year" (or Year 1 of "Multiple Dry Water Years") is determined to be a year that EBMUD would implement Drought Management Program elements at the "moderate" stage with the goal of achieving a reduction between 0 to 15 percent in customer demand. Through the FRWP, the supplemental dry-year supply of CVP water will be used to reduce the rationing goal to 5 percent during the first year of a drought. Year 2 of Multiple Dry Years is determined to be a year that EBMUD would implement Drought Management Program elements at the "severe" stage with the goal of achieving between 15 to 25 percent reduction in customer demand. In Year 3 of the multiple-year drought, under current conditions (2005) and prior to the completion of the FRWP, EBMUD customers could experience deficiencies of up to 56 percent. After the completion of the FRWP, water supply deficiencies could range from about 26 percent in year 2010 to about 37 percent in year 2030. Therefore, a supplemental supply is needed, which is defined by EBMUD as the additional amount of water necessary to limit customer deficiency to 25 percent in a multiple-year drought while continuing to meet the requirements of senior downstream water right holders and the provisions of the 1998 JSA.

Supplemental Water Supply and Demand Management

The goals of meeting projected water needs and increased water reliability rely on three components: supplemental supply, water conservation and recycled water.

Chapter 2 of the UWMP describes EBMUD's supplemental water supply project alternatives to meet its long-term water demand. To address the need for a supplemental water supply during droughts, EBMUD signed a contract in 1970 with the Federal government for a supplemental supply from the CVP. In 2001, EBMUD certified the environmental documentation amending its CVP contract 14-06-200-5183A, reducing EBMUD's contract from 150,000 acre-feet (AF)/year to an entitlement not to exceed 133,000 AF in any one year or 165,000 AF over any three consecutive years. In 2001, EBMUD signed a Memorandum of Agreement with the City of Sacramento, the County of Sacramento and the U.S. Bureau of Reclamation to study a joint regional water project on the Sacramento River near Freeport.

The Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) of the FRWP identifies several regulatory permits and approvals required for the implementation of the project alternatives. These are listed in Table 2-6 of the FRWP Draft EIR/EIS, July 2003, and incorporated in the Final EIR/EIS for the project, which was certified in April 2004. The approvals for FRWP have been obtained. EBMUD will still face water supply shortages even with the additional dry-year supply provided by the FRWP; however, the frequency and severity of customer rationing during drought periods will be reduced.

Chapter 2 of the UWMP also describes other supplemental water projects, including the development of groundwater storage within EBMUD's service area. EBMUD is studying environmental impacts of these proposed projects. Specific capital outlay and financing information for these projects are included in EBMUD's FY06-07 Capital Improvement

Program and Five-Year Plan. The FRWP would also allow for a future groundwater conjunctive use component and, along with the proposed local groundwater projects, emergency interties and planned water recycling and conservation efforts, would ensure a reliable water supply to meet projected demands for current and future EBMUD customers within the current service area. Without a supplemental water supply source, beyond the FRWP, and despite continued conservation efforts and further use of recycled water, deficiencies in supply are projected as noted above.

The Hercules Bayfront Mixed Use Project presents an opportunity to incorporate water conservation measures. Conditions of approval for the implementation of the Hercules Bayfront Mixed Use Project should require that the project comply with the Assembly Bill 325, Model Water Efficient.Landscape Ordinance (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). EBMUD staff would appreciate the opportunity to meet with project sponsors to discuss water conservation programs and best management practices applicable to such projects. A key objective of these discussions will be to explore timely opportunities to expand water conservation via early consideration of EBMUD's conservation programs and best management practices applicable to the project.

The Hercules Bayfront Mixed Use Project is not a potential candidate for recycled water. The project has a minimal irrigation demand, and providing recycled water for toilet flushing in the structures would be prohibitively expensive.

The project sponsor should contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365 for further information.

Sincerely,

John L. Rud for WRK

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:TRM:sb
sb08_136.doc

Enclosures: 1. Letter of Request for Water Supply Assessment dated March 24, 2008
2. EBMUD's 2005 Urban Water Management Plan
3. EBMUD's Demand and Supply Projections Table

cc: Board of Directors w/o Enclosure 2

Enclosure 3

EAST BAY MUNICIPAL UTILITY DISTRICT DEMAND AND SUPPLY PROJECTIONS
(Ref: Table 4-2, UWMP 2005 – EBMUD)

	2005	2010	2015	2020	2025	2030
PROJECTED DEMAND (MGD)						
Customer Demand(1)	241	258	267	277	279	281
Adjusted for Conservation(2)	(13)	(21)	(27)	(35)	(35)	(35)
Adjusted for Recycled Water(2)	(6)	(12)	(14)	(14)	(14)	(14)
Planning Level of Demand	**222**	**225**	**226**	**228**	**230**	**232**
PROJECTED AVAILABLE SUPPLY & NEED FOR SUPPLEMENTAL SUPPLY(3) (MGD)						
Normal Water Year	>222	>225	>226	>228	>230	>232
Supplemental Supply Need	0	0	0	0	0	0
Single Dry Water Year (Multiple Dry Years – Year 1)						
Available Supply	211	213	215	217	219	220
Deficiency (Goal is 5% maximum(4))	5%(5)	5%	5%	5%	5%	5%
Supplemental Supply Need (6)	69	0	0	0	0	0
Multiple Dry Water Years – Year 2						
Available Supply	167	168	170	171	173	174
Deficiency (Goal is 25% maximum(7))	25%	25%	25%	25%	25%	25%
Supplemental Supply Need (6)	40	0	0	0	0	0
Multiple Dry Water Years – Year 3						
Available Supply	43	167	166	153	151	147
Deficiency (Goal is 25% maximum(7))	56%	26%	27%	33%	34%	37%
Supplemental Supply Need (To limit deficiency to 25%(6))	15	1	4	18	22	27
Three-Year Drought						
Total Supplemental Supply Need (To limit deficiency to 25%(6))	**124** (8)	**1**	**4**	**18**	**22**	**27**

(1) Projected Demand derived from the 2000 Demand Study, which projects water demand based on land use in EBMUD's service area.
(2) Conservation and recycled water program savings reported are based on the 1993 Updated Water Supply Management Plan (WSMP). WSMP set a conservation program savings goal of 33 MGD and a recycled water program savings goal of 14 MGD for the year 2020. Since the adoption of the WSMP the conservation savings goal has increased to 35 MGD to offset demand from anticipated annexations to EBMUD's service area. Conservation and recycled water savings goals are to be upheld through 2030. Reference Chapter 5 and Chapter 6 for details.
(3) Projected Supply data includes dry-year supply deliveries from the Freeport Regional Water Project (FRWP) beginning in 2010. Without the FRWP supply 2020 deficiencies could be as high as 67%, as discussed in the UWMP 2000.
(4) Per 2003 FRWP EIR, rationing goal is set to 5% during the first year of all droughts.
(5) In 2005 and prior to the completion of the FRWP, EBMUD's water supply system is inadequate to supply 95% of demand, and may impose customer rationing up to 15% during the first year of a drought, resulting in a need for additional water.
(6) The supplemental supply need is based on EBMUDSIM model results. It is the amount of water needed to limit customer rationing to 5% during the first year of a three-year drought and 25% during the second and third year of a three-year drought; to implement all provisions of the 1998 Joint Settlement Agreement, and to offset additional water supply system losses created by a supplemental supply. The actual need will be dependent on antecedent conditions, the severity of the actual drought, and on how much supplemental supply is obtained during the first two years of the drought and added to storage for use in subsequent years.
(7) Assumed drought conditions, per Table 3-1 (Chapter 3).
(8) An additional 15 MGD is needed in the third year if a supplemental supply is obtained in year 1 and year 2. If a supplemental supply is not available during years 1 and 2 of the drought, total system storage could be drawn down to meet 95% of demand in the first year and 75% in the second year, creating a greater storage deficit and a greater supplemental supply need in the third year.