Appendix K
Water Supply Assessment
WATER SUPPLY ASSESSMENT

for the
Downtown Lancaster Specific Plan Project

November 6, 2007

Prepared by:

Los Angeles County Waterworks District No. 40, Antelope Valley
SUMMARY

The District's State Water Project (SWP) water contractor, the Antelope Valley East Kern Water Agency (AVEK), is unable to assure the District of the availability of State Water Project supplies to meet the requirements of Water Code §10910, et seq.. Based on said uncertainty, the District is currently unable to conclude if sufficient future water supplies are available for this Project.

INTRODUCTION

This report is a Water Supply Assessment (Assessment) prepared by the Los Angeles County Waterworks District No. 40, Antelope Valley (District), at the request of the City of Lancaster for the proposed Downtown Lancaster Specific Plan Project (Project). Pursuant to California Water Code §10910, et seq., the District has been identified as the public water system that may supply water to the Project. In connection with the City of Lancaster's environmental assessment of the Project and pursuant to the requirements of California Water Code, the City requested the District to prepare this Assessment to determine whether the District's projected supply will meet the demands for the Project in addition to existing and future planned water uses in the District.

An Assessment is required for any “project” that is subject to the California Environmental Quality Act (CEQA) and proposes commercial development of more than 250,000-square-feet of floor space, a retail center with more than 500,000-square-feet of floor space, or more than 500 dwelling units. The Project is a qualifying project under this definition. No Assessment has been previously prepared for the Project that complies with the requirements of California Water Code §10910, et seq.

A. Project Description

The proposed Project is located in the area generally bounded by Kettering Street, the Union Pacific Railroad line, Milling Street, and 10th Street West in the City of Lancaster. The proposed Project site is currently developed and served by the District. The estimated current annual water demand for the Project site is 250 acre-feet per year (af/yr). Based on information provided, the 140-acre Project site will be redeveloped and, when complete, consist of 925,000-square-feet of commercial retail uses, 974,000-square-foot of general office uses, and 3,526 single and multi-family dwelling units. Upon completion, the estimated total water demand for the Project site will be approximately 2,240 af/yr based on the information provided by the City of Lancaster, or an increase of approximately 1,990 af/yr.

B. Purpose of the Assessment

The purpose of this Assessment is to provide an analysis to the City of Lancaster of whether the District’s water system has sufficient projected water supplies to
meet the projected demands of the Project. Specifically, this Assessment evaluates whether the total projected water supply for normal, single-dry, and multiple-dry water years over the next 20 years will meet the projected water demand associated with the Project in addition to the District’s existing and planned water uses, including any agricultural and manufacturing uses. If the water supply is determined to be insufficient, the Assessment must provide plans and measures that are being undertaken for acquiring and developing additional water supplies. This Assessment is required by the California Water Code §10910, et seq., to be included in the Environmental Impact Report prepared for the Project pursuant to CEQA.

C. Description of the District

The District is a public water agency that serves portions of the Cities of Lancaster and Palmdale and several small communities in the eastern portion of the Antelope Valley located in Los Angeles County. The District’s water sources are derived from local groundwater and the State Water Project (SWP) water from Northern California. SWP water is treated and delivered to the District by the Antelope Valley-East Kern Water Agency (AVEK).

D. Supporting Information

Information from the following documentation has been used in the preparation of this Assessment. The referenced documents are incorporated into this Assessment as if fully set forth herein. Most of these documents are available on the District’s website (www.lacwaterworks.org) or can be reproduced by the District for a nominal fee.

- 2005 Integrated Urban Water Management Plan for the Antelope Valley, Los Angeles County Waterworks District No. 40, Rosamond Community Services District, Quartz Hill Water District, County Sanitation Districts of Los Angeles County, December 2005.
- Final Facilities Planning Report, North Los Angeles County Recycled Water Project, Los Angeles County Waterworks Districts, March 2006.
WATER SUPPLY ASSESSMENT

The 2005 Integrated Urban Water Management Plan for the Antelope Valley (IUWMP), is available on the District’s website at www.lacwaterworks.org. The additional water demand from the Project is consistent with the population and associated water demand projections for the District in the IUWMP. The IUWMP projects a population growth within the District between 2005 and 2020 of 86,300 people (28,200 customers) and a corresponding increase in overall yearly water demand in the District of 33,800 acre-feet. The estimated water demand associated with the Project was not specifically included in the IUWMP. Since the beginning of 2005, the District has committed to supply water to nearly 30,000 new customers representing a water demand of 36,000 af/yr. Table 2 below summarizes the status and increased water demand associated with these commitments in addition to the water demand associated with the Project.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Customers</th>
<th>Water Demand (af/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New customers Since January 2005</td>
<td>6,800</td>
<td>8,160</td>
</tr>
<tr>
<td>Developments scheduled for construction</td>
<td>3,500</td>
<td>4,200</td>
</tr>
<tr>
<td>Developments under construction</td>
<td>420</td>
<td>500</td>
</tr>
<tr>
<td>Planned developments accounted for in the IUWMP, but not yet under construction</td>
<td>15,600</td>
<td>18,800</td>
</tr>
<tr>
<td>Demand from developments with completed Water Supply Assessments</td>
<td>3,800</td>
<td>5,020</td>
</tr>
<tr>
<td>New water demand associated with Downtown Lancaster Specific Plan Project</td>
<td>N/A</td>
<td>1,990</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>30,120</strong></td>
<td><strong>38,670</strong></td>
</tr>
</tbody>
</table>

1 Although it appears from these numbers that the District is adding customers at a faster pace than what was projected in the IUWMP, many of the planned developments associated with these numbers will not be completed for several more years.

The IUWMP identifies groundwater and imported SWP water as the two existing sources of water to supply the demand for the District. Table 2 below shows the mix of water supplies in acre-feet that the District used to meet demands during the last five years and the District’s projected demand for the year 2027.

Table 2

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundwater</td>
<td>21,194</td>
<td>16,837</td>
<td>21,348</td>
<td>19,138</td>
<td>12,217</td>
<td>20,000</td>
</tr>
<tr>
<td>Imported Water</td>
<td>33,442</td>
<td>37,442</td>
<td>36,231</td>
<td>35,935</td>
<td>46,946</td>
<td>71,753*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>54,636</td>
<td>54,279</td>
<td>57,579</td>
<td>55,073</td>
<td>59,163</td>
<td>91,753</td>
</tr>
</tbody>
</table>

*This amount remains uncertain pending further verification of supplies by AVEK
A. Available Groundwater

The Antelope Valley Groundwater Basin (Basin) is the only local source of supply for the District and is comprised of two aquifers (commonly referred to as the deep aquifer and the principal aquifer). The excerpt from the State of California Department of Water Resources Bulletin 118 that describes the Basin is included as Attachment A.

Pumping of groundwater by all users, collectively, has significantly exceeded the natural recharge to the Basin. In the long term, the Basin cannot sustain current pumping levels. The State of California Department of Water Resources (DWR) has not identified the Basin as overdrafted or projected that the Basin will become overdrafted in its most current bulletin, DWR’s Bulletin 118.

The District currently operates 38 active groundwater wells in the Lancaster, Pearland, and Buttes sub-basins of the Basin. Although the Basin is not currently adjudicated, the IUWMP provides a goal for the District to limit pumping to an average of 20,000 af/yr based on an expected groundwater basin management program that would bring extractions back in line with the perennial yield of the Basin. The District pumped between 12,000 and 22,000 af/yr from the Basin in each of the last five years. The District also initiated a full-scale Aquifer Storage Recovery (ASR) project in 2005 to inject and store treated SWP water in the Basin for later use to supplement available water supplies. Since the initiation of this ASR project in 2005, the District has stored 3,000 acre-feet of SWP water in the Basin through the ASR project.

Through its rates paid to AVEK, the District has been contributing to the subsidy of the price of imported water for use by agriculture in-lieu of pumping groundwater. Said in-lieu subsidies are estimated by AVEK to have reduced groundwater extraction by agriculture from the Basin in excess of 400,000 acre-feet.

In 2004 the District filed an action to adjudicate the groundwater rights of the Basin. Within said action, the District has asserted its right to groundwater based on historical extractions. Notwithstanding any determination of water rights in the adjudication, the action is expected to institute a physical solution for groundwater management to prevent long-term overdraft conditions. The physical solution is expected to result in a management program that will include increases in imports of water from outside of the Basin, adoption of water conservation measures, and the increase in the use of recycled water.

B. Available Imported Surface Water

In addition to groundwater, the District must continue its use of imported SWP water purchased from AVEK as a water source for the project. AVEK is a SWP contractor with a Table A amount of 141,400 acre-feet. The Water Service
Agreement between the District and AVEK is included as Attachment B. The IUWMP projects that during average years, between 64,500 and 70,400 af/yr of imported water will be available to the District from AVEK between 2005 and 2030 based on the 2005 Delivery Reliability Report (DRR) published by the State of California Department of Water Resources for the SWP. This report estimates the percentage of Table A water that will be made available to SWP contractors during average, single-dry, and multiple-dry water years.

C. Capital Outlay Program, Permits, and required Regulatory Approvals

The District collects capital improvement and water supply reliability charges from all new developments to mitigate the impacts on the existing water system. These fees are collected upon issuance of a will-serve letter and/or water service. These funds are used to construct the necessary capital improvements to provide and deliver water to the development. The details of these fees and charges are described in Part 4 of the adopted Rules and Regulations for the District, which is included as Attachment C.

The State of California Department of Health Services and the City of Lancaster will issue permits and regulatory approvals for constructing the necessary improvements to supply and deliver water to the development.

D. Available Supply During An Average/Normal Year

Table 3 shows the past water supply for the District during a normal year.

<table>
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<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased from AVEK</td>
<td>21,232</td>
<td>21,692</td>
<td>34,655</td>
<td>35,935</td>
</tr>
<tr>
<td>Supplier produced groundwater</td>
<td>13,905</td>
<td>19,795</td>
<td>17,419</td>
<td>19,138</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>35,137</td>
<td>41,486</td>
<td>52,074</td>
<td>55,073</td>
</tr>
</tbody>
</table>

The projection for the amount of groundwater available to the District is based on the assumption that the District would continue to pump, on average, 20,000 af/yr from the groundwater basin. This assumption is highly dependent on the outcome of the adjudication process for the Antelope Valley Groundwater Basin.

The projected amount of imported water available to the District during average years was based on estimates made in the DRR that all SWP contractors will receive 77% of their Table A allocations from the SWP during average years. This estimate is subject to potential change as a result of a recent court decision and global climate change. In August 2007, a U.S. District Court rendered a decision to protect an endangered fish species, the Delta smelt. While state and local water agencies are still analyzing the court ruling, the decision might result in a significant reduction in water supplies from the SWP to AVEK and the other SWP contractors to ensure compliance with Endangered Species Act.
requirements. In light of this case, the District requested of AVEK to provide a firm determination of the available SWP water for the Project. Yet, AVEK was unable to do so.

As AVEK is currently unable to assure the District of the availability of SWP water supplies to meet the requirements of Water Code §10910, et seq., the District is unable to conclude that sufficient future water supplies are available for this Project.

In addition to obtaining the requisite assurances from AVEK of the needed supplies of SWP water for the Project, as shown in the tables included in Attachment D, the IUWMP projected that the existing supplies for the District during normal years are sufficient to meet projected increases in water demands through 2015. As shown in Table 1, the District is aware of and has already committed to provide water to planned developments that, combined, represent a total increase in water demand above the projections for 2015. The IUWMP indicates that in order to meet additional water demands, recycled water and other new water supplies must be acquired and utilized. Therefore, the following actions must be undertaken by the District and/or other Agencies to ensure a reliable water supply during normal years.

### Increased Treatment and Well Capacity

The current treatment plant capacity from the two AVEK water treatment plants that serve the District is 75-million-gallons per day (MGD). The District currently receives about 87 percent of the water produced by AVEK. However, during the hot summer months, the District receives, on average, 70 percent of the flow from AVEK’s Quartz Hill Treatment Plant and all of the flow from AVEK’s Eastside Treatment Plant representing a combined flow of 55 MGD. In addition, the District’s wells can produce a total capacity of 40 MGD. During the summer, the daily demand in the District is roughly twice the average day demand in the District. Therefore, by 2015, the daily summer demand in the District will approach 160 MGD. In order to supply this quantity of water during the summer, the District plans to construct additional wells and the capacity of AVEK’s treatment plants must be increased. Expansion of AVEK’s Quartz Hill Treatment Plant is currently underway and expected to be completed by March 2009. To fund the construction of the new wells, the District assesses a groundwater supply fee to all new developments.

### Recycled Water

In March 2006 the District, in cooperation with other agencies in the Antelope Valley, prepared a Facilities Planning Report for the North Los Angeles County Recycled Water Project. This Report identifies potential recycled water users and provides preliminary designs and cost
estimates to construct a recycled water backbone distribution system in the Antelope Valley to convey treated wastewater from the County Sanitation Districts’ of Los Angeles County treatment plants to customers. This Report is available on the District’s website. Based on this Report, approximately 13,600 acre-feet of recycled water per year can be used by the District’s existing and future customers. The District assesses a recycled water fee to all new developments that will fund the design and construction of this recycled water backbone distribution system. Phase 1A of this project has been funded cooperatively by the City of Lancaster and the District and will be constructed by 2008.

**Additional Imported Water Supply**

As indicated in the IUWMP, AVEK, as a SWP contractor, could also acquire new imported water supplies on behalf of the District, through direct transfers or by contributing to the construction of new desalination facilities in other areas in exchange for imported water.

**Water Conservation/Reduced Irrigation Demand**

Through conservation efforts of customers, the IUWMP estimates that by 2030, 10 percent of the overall demand in the District will be met through conservation efforts. The Project can include implementation of water conservation measures to reduce the overall demand to the District. In general, landscape irrigation can account for up to 70 percent of the water consumed at local residences. In order to reduce the water demand for this Project, specific measures could be included such as the use of xeriscaping, low water-use turf, or a synthetic grass substitute in landscaped areas to minimize or eliminate the irrigation demand from this Project. In addition, weather-sensitive irrigation timers could be installed to ensure all landscaping receives only the specific amount of water that it needs.

**E. Available Supply During a Single-Dry Year**

As shown in the tables included in Attachment D, a significant portion of the District’s water supply during single-dry years is projected to be met with water stored in groundwater banks. The District’s water supply reliability fee assessed to all new developments will be used to construct these groundwater banks or secure storage space in existing facilities and purchase available water during wet years to store in these banks or the local Basin for use in dry years.

**F. Available Supply During Multiple-Dry Years**

As shown in the tables included in Attachment D, the IUWMP projects a water supply portfolio for the District during multiple-dry years that is similar to the
available water supply during single-dry years including a combination of imported water, groundwater, recycled water, water stored in groundwater banks, and water stored as part of the District's ASR project.

**CONCLUSION/PLANS FOR CONSTRUCTING NEW FACILITIES**

As indicated in this Assessment, the District's existing water supplies are not sufficient to meet the demands associated with the Project in addition to the District's existing and planned water uses, including any agricultural and manufacturing uses. In order for the demands associated with this Project to be met during normal and dry years, new water supplies must be acquired and developed in the District's service area. The proposed recycled water backbone distribution system must be designed and constructed to convey recycled water from the County Sanitation Districts of Los Angeles County into the District's service area to supplement the District's potable water supply.

The Facilities Planning Study for the North Los Angeles County Recycled Water Project estimated the cost to design and construct the backbone recycled water distribution system for the District would be $120 million. To fund this project, the District assesses a fee of $1,289 per billing unit for each new development in the District. The District has also applied for grant funding from the State Water Resources Control Board and the State's infrastructure bank for this project. The District is currently preparing an Environmental Impact Report to meet CEQA requirements for this project and anticipates acquiring the necessary permits from the Regional Water Quality Control Board to operate the recycled water distribution system. Construction of Phase 1A of this project will be completed by January 2008. The Facilities Planning Study indicates that construction of the backbone recycled water distribution system could be completed by 2011.

In addition, sufficient facilities do not yet exist to ensure the reliability of the District's existing supplies. Specifically, a groundwater storage program must be developed and the capacity of AVEK's treatment plants must be increased in order to ensure a reliable supply of imported and stored water to the District.

The District has estimated the cost to establish a groundwater bank sufficient to maximize its available imported water supply from AVEK will be $68 million. To fund the design and construction of a bank, the District assesses a fee of $1,611 per billing unit for each new development in the District. The District has committed to work with the Antelope Valley State Water Project Contractors Association in establishing a groundwater banking program in the Antelope Valley. The District received Proposals in early 2007 to secure up to an additional 63,500 af/yr of water during dry water years through water banking programs. AVEK has indicated that it anticipates a permanent groundwater bank will be constructed in phases in the Antelope Valley between 2007 and 2025 as the storage and extraction capacity requirements increase with demand in the District's service area. In addition to funding the design and construction of a groundwater bank, the appropriate CEQA documentation must be prepared. If a groundwater bank is constructed in the Antelope Valley, a Waste Discharge Permit will
be required from the Lahontan Regional Water Quality Control Board, and additional
permits from the State Department of Water Resources, local landowners, and the local
jurisdictions must be acquired.

As indicated in the IUWMP, AVEK, as a SWP contractor, could also acquire new
imported water supplies on behalf of the District, through direct transfers or by
participating with other SWP contractors in water exchange programs.

In addition, in order to provide a reliable water supply during high-demand periods in the
event that groundwater is temporarily the only available supply of water, the District will
construct additional groundwater wells to increase its overall extraction capacity. The
District has estimated the cost to construct a well and all associated infrastructure to be
$2 million. To fund the construction of additional wells, the District assesses a fee of
$3,222 per billing unit for each new development in the District, which reflects the
proportionate cost to each new customer for constructing a well. The District is
currently in the process of designing 10 new wells to serve the District and expects to
have them online by June 2008.