

# Memorandum

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**DATE:** April 29, 2013  
**TO:** Keith Rogal  
**FROM:** Wes Strickland  
**RE:** Summary of Water Supplies for Napa Pipe Project

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## 1. EXECUTIVE SUMMARY

This memorandum analyzes water supplies and demands for the Napa Pipe Project as set forth in the revised development application dated June 8, 2012 (“Project”), consisting of the County-recommended 63-acre development plus a Costco to be located on the southeastern portion of the site. This memorandum assumes that the Project will be provided water service by the City of Napa (“City”).

This memorandum analyzes City water supplies and demands based on detailed analysis contained in the *Revised Water Supply Assessment for the Napa Pipe Project, Napa County, California* (“Revised WSA”), the City’s *Urban Water Management Plan 2010 Update* (June 21, 2011), and the California Department of Water Resources’ *State Water Project Final Delivery Reliability Report 2011* (June 2012). Pursuant to that analysis, the City is expected to have sufficient water supplies to meet all demands of the Project in normal, single dry and multiple dry years for the first 20 years of the Project. The provision of water service to the Project would not affect the availability of water for existing or planned future customers of the City, including agricultural and manufacturing users.

## 2. PROJECT WATER DEMANDS

The proposed Project would redevelop the Napa Pipe brownfield site for mixed use consisting of 700 to 945 attached residential dwelling units, 150 senior housing units, 40,000 square feet of neighborhood-serving retail and restaurant space, 100,000 square feet of office space, various community facilities, a 150-room hotel, and a 154,000-square foot Costco retail center with a gas station. The Project would encompass 63 acres located between the Napa River and the existing railroad tracks on the site, and 21 acres located on the southeastern portion of the site. The remaining 70 acres east of the railroad tracks and in Zone D—the northeast quadrant of the site—would retain its existing “industrial” zoning designation and be developed with 75,000 square feet of light industrial or research and development space.

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The Project would have potable water demands equal to approximately 300 acre-feet per year (“AFY”), as shown in Table 1. The estimated water demands of the Project include water for indoor residential, commercial and community facility uses, a relatively small amount for irrigation of rear yards, and 10 percent for unaccounted-for water. Those demands will need to be met with potable water and cannot be satisfied by the use of recycled water. Estimates for Costco facilities are taken from prior water demand estimates contained in environmental impact reports for Costco retail facilities of similar size. Non-potable water demands of the Project are expected to be 150 AFY, for irrigation of landscaping, parks and community gardens with recycled water.<sup>1</sup>

<b>Table 1. Projected Potable Water Demands for the Napa Pipe Project</b>				
<b>Land Use</b>	<b>Quantity</b>	<b>Water Use Factor</b>	<b>Water Use (gpd)</b>	<b>Water Use (AFY)</b>
<b>Residential</b>				
Multi-Story Residential	945 units	165 gpu	155,900	175
Senior Housing Units	150 units	113 gpu	16,900	19
<b>Commercial</b>				
Retail and Restaurant	40,000 ft <sup>2</sup>	0.1 gpd/ft <sup>2</sup>	4,000	4
Community Facilities	15,600 ft <sup>2</sup>	0.1 gpd/ft <sup>2</sup>	1,600	2
Offices	100,000 ft <sup>2</sup>	0.1 gpd/ft <sup>2</sup>	10,000	11
R&D/Light Industrial	75,000 ft <sup>2</sup>	0.1 gpd/ft <sup>2</sup>	7,500	8
Hotel	150 rooms	150 gpd/room	22,500	25
Costco	154,000 ft <sup>2</sup>	0.1 gpd/ft <sup>2</sup>	15,400	17
Community Pool	1 unit	1,200 gpu	1,200	1
<b>Irrigated Areas</b>				
Rear Yards	2.3 acres	3,125 gpd/acre	7,200	8
Total Potable Water Demands			242,200	270
Total Potable Water Demands with 10% Unaccounted-For Water			266,400	300

### 3. CITY OF NAPA WATER SUPPLIES

City water supplies include local surface water from Lake Hennessey and Milliken Reservoir and imported water from the State Water Project (“SWP”). SWP supplies are based on several provisions in the various contracts between California Department of Water Resources, Napa County Flood Control and Water Conservation District and the City, and include Table A

<sup>1</sup> This projection is based on current acreage for the Project and water factors identified in HydroScience Engineers, Inc., *Napa Pipe Project Water and Wastewater Feasibility Study*, at 37-39 (January 2011). It differs from that contained in RMC Water and Environment, *Napa Pipe Recycled Water Impact Analysis*, at 5-6 (December 2011), primarily because of changes in acreage for the Project as proposed. In addition, HydroScience established water factors using data from the California Department of Water Resources, whereas RMC relied on data from Napa Sanitation District; thus, the two studies contain water factors that are different, but in the same range. The HydroScience factors are more cautious from a planning perspective.

entitlements, carry-over water, Article 21 water, Turn-Back Pool water and water based on dry year supplemental water programs. The reliable quantities of water from Lake Hennessey, Milliken Reservoir and SWP Table A entitlements are shown in Table 2.

<b>Years</b>	<b>Condition</b>	<b>Milliken Reservoir</b>	<b>Lake Hennessey</b>	<b>SWP Table A</b>	<b>Total</b>
2010-2025	Normal	700	17,500	13,360	31,560
	Multiple Dry	733	11,717	7,670	20,120
	Single Dry	500	11,500	1,970	13,970
2030-2035	Normal	700	17,500	13,140	31,340
	Multiple Dry	733	11,717	6,570	19,020
	Single Dry	500	11,500	2,410	14,410

Based on the water supplies listed in Table 2, the City is projected to have a surplus of water in both normal and multiple dry years in all periods, either with or without the Project. The City would, however, experience a water supply deficit in single dry years before 2030, which are defined based on 1977 as the single driest year in the past century. Beginning in 2030, it is expected that City water supplies will once again be sufficient to meet all demands in single dry years, based solely on the water supplies shown in Table 2.

<b>Table 3. Impact of Carryover Water on City Water Supplies and Demands</b>									
			<b>No Project Demands</b>				<b>With Project Demands</b>		
	<b>Year</b>	<b>Condition</b>	<b>Total Supplies</b>	<b>Demands</b>	<b>Surplus (Deficit)</b>	<b>Supply as Percentage of Demands</b>	<b>Demands</b>	<b>Surplus (Deficit)</b>	<b>Supply as Percentage of Demands</b>
No Carryover	2015	Single Dry	13,970	14,400	-430	97%	14,700	-730	95%
	2020	Single Dry	13,970	13,800	170	101%	14,100	-130	99%
	2025	Single Dry	13,970	13,760	210	102%	14,060	-90	99%
Carryover	2015	Single Dry	15,940	14,400	1,540	111%	14,700	1,240	108%
	2020	Single Dry	15,940	13,800	2,140	116%	14,100	1,840	113%
	2025	Single Dry	15,940	13,760	2,180	116%	14,060	1,880	113%

As noted above, the City has access to water deliveries from the SWP that are not shown in Table 2. In particular, when projected deliveries of carry-over water are added to the quantities in Table 2, the resulting water supplies erase any projected water supply deficit and create a surplus of at least 8 percent, as shown in Table 3.

When total City water supplies are considered, the City is projected to have sufficient supplies to meet all water demands of the City, including the Project, in all normal, single dry and multiple dry years, for the first 20 years of the Project. Provision of water service to the Project by the City would not negatively affect the availability of water to serve existing and other planned future customers, including agricultural and manufacturing users.

#### 4. RECYCLED WATER SUPPLIES

Recycled water will be supplied to the Project by Napa Sanitation District (“NSD”). The supply of recycled water from NSD is projected to be significantly higher than the demands of the Project, based on analysis in the Revised WSA. That conclusion holds for each of several alternatives identified by NSD for its future delivery of recycled water in the Napa area. The magnitude of surplus supplies are shown in Table 4, and are clearly sufficient when considering the recycled water demands of the Project are projected to be 150 AFY.

Table 4. NSD Recycled Water Supplies and Demands								
	2005	2020 Alternatives						
		No MST Project	Stand-Alone MST Project			NBWRP		
			50/40 MST Project	100/100 MST Project	Expressed Interest MST Project	Alternative 1	Alternative 2	Alternative 3
Existing Service Area Demands	1,184	2,598	2,598	2,598	2,598	2,598	2,598	2,598
MST Service Area Demands	0	0	1,175	2,304	351	3,192	4,421	4,421
Total Projected Demands	1,184	2,598	3,773	4,902	2,949	5,590	7,019	7,019
Projected Supplies	3,590	9,800	9,800	9,800	9,800	9,800	9,800	9,800
Surplus Recycled Water	2,406	6,338	6,027	4,898	6,851	3,841	2,657	2,657

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