



Montara Water and Sanitary District

Water System Master Plan 2005 Addendum

**Prepared by SRT Consultants
April 2005**

*SRT Consultants
Service, Responsiveness, Teamwork*

Summary

In January 2004, the Board of Directors adopted the Montara Water and Sanitary District (District or MWSD) 2004 Water System Master Plan (2004 Master Plan) to address water supply issues for the District customers. The Master Plan assessed the existing water infrastructure, examined current and projected water demands, identified the Water System needs, and developed alternatives to address the near-term (to 2010) and long-term (to 2030) needs. The 2004 Master Plan focused on identifying deficiencies and developing solutions for the following immediate key issues for the Water System:

1. Addressing existing water supply and reliability to ensure adequate daily service and fire protection; and
2. Addressing system reliability and emergency response.

Addressing existing water supply and reliability includes two components: water quantity and water quality. Since the 2004 Master Plan completion in late 2003-early 2004, two new issues requiring the District to issue an Addendum to the 2004 Master Plan surfaced: water supply reliability at the existing Airport Wells and a potential new water supply source.

Airport Wells. Since the 2004 Master Plan completion, issues associated with the three groundwater wells located on the Half Moon Bay Airport property and commonly known as the Airport Wells caused re-evaluation of the District's existing reliable supply for the following reasons:

- Raw water quality from all three wells of the Airport Well field has further deteriorated with ever elevating nitrate concentrations in the water.
- The Airport Well Field reliability is further decreased due to the ownership of the water rights by the County of San Mateo (County). MWSD use of the water is stipulated in a Revocable Encroachment Permit to operate the Airport wells and can be terminated by the County at their discretion.
- Increasingly high cost of water extraction charged by the County may make this source cost-prohibitive in the near future.

These issues require that all three wells drawing water from the Airport Well Field be considered as a single water supply source with current capacity of 225 gallons per minute (GPM), making the Airport Wells facility the largest single water supply source for the District. In accordance with the California Department of Health Services (CA DHS) guidelines, the reliable capacity of a water system is calculated based on the largest water source out of service. This amounts to the current reliable capacity of the MWSD Water System estimated at 241 GPM.

Potential Water Supply Enhancements. During the 2004 Master Plan preparation in 2003, the District considered the possibility of water purchase from the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy Water System. Since the SFPUC system is currently oversubscribed and the potential for the District to become a SFPUC contractor was considered extremely low and cost-prohibitive, this alternative was not included as a viable option in the final 2004 Master Plan document. New developments, however, may make this alternative more

**Montara Water and Sanitary District
Water System Master Plan
2005 Addendum**

viable to the District. With the construction of a reclaimed water treatment facility by the North Coast County Water District (NCCWD) and the Devil's Slide Tunnel by Caltrans, negotiations are underway that, if successful, may allow NCCWD to sell SFPUC water to MWSD.

These two major new developments have triggered the need for the District to issue this 2005 Addendum to its 2004 Master Plan.

Existing Water Supply and Demands

MWSD currently withdraws water from one surface source and several groundwater wells:

- Montara Creek provides the surface water source. MWSD diverts water from the creek at a diversion point north of Montara. The water is conveyed from the diversion point to the Alta Vista Water Treatment Plant (AVWTP). This source maximum capacity is limited to 70 gpm rated capacity of the treatment plant in accordance with the CA DHS Permit.
- Groundwater is currently extracted at several locations, including:

- *The Airport Well Facility*, including the North Airport Well, South Airport Well, and Airport Well 3 all located within 800 feet of each other on the Half Moon Bay Airport property. Water from the three Airport Wells demonstrated elevated levels of nitrate, corrosivity, manganese, and 1,2,3-trichloropropane (TCP). Currently, the District utilizes water blending operation to ensure that the water delivered to customers complies with drinking water standards. However, due to rising levels of nitrate in the last two years and promulgation of more stringent drinking water regulations (e.g., Lead and Copper Rule), it became apparent that the blending operation may no longer be adequate in the near future.

The increased likelihood of this entire facility's shutdown for water quality reasons and due to the water rights ownership issues, requires development of immediate alternate solutions, including but not limited to new water sources to replace the 225 GPM production of the Airport Wells and/or installation of a centralized treatment facility to address all water quality issues and to ensure water supply reliability for the District.

- Drake Well, Portola Estates Wells I, III, and IV, and Wagner Well.
- Park and Portola Estates II; which are out-of-service due to higher-than-acceptable iron and manganese levels and have not contributed to system production in the last seven years. Park and Portola Estates II wells are permitted as standby by the CA DHS.

**Montara Water and Sanitary District
Water System Master Plan
2005 Addendum**

Table 1 provides a summary of the existing District water supply sources' capacity and presents the reliable capacity calculation.

Table 1 MWSD Supply Capacity

Water Supply Source	Capacity, gallons per minute
Airport Wells Facility	225
Five other groundwater wells	171
Surface water	70
Total Supply Capacity ^a	466
<i>Total reliable capacity with the largest single source out of service ^b</i>	<i>241</i>

Notes:

- (a) With all sources in service at maximum capacity
- (b) Airport Wells Facility out of service

Table 2 provides a summary of current water demands.

Table 2 Current Customer Demands ^a

Demand Category	Water Use, gallons per minute
Average Daily (2000-2004)	271
Maximum Daily	423
Maximum Hour	700
Minimum Fire (2 hours)	2,000

Note: (a) Based on daily production data documented in the 2004 Master Plan

As demonstrated by the calculation presented in Table 1, the existing reliable water supply is about 241 gpm, which places the current supply shortage at:

$$241 \text{ GPM [Existing Reliable Supply]} - 423 \text{ GPM [Maximum Day Demand]} =$$

$$182 \text{ GPM [SHORTAGE]}$$

Potential Water Supply Enhancements

Water resources can be developed from surface and groundwater sources, and from alternate sources such as seawater and/or brackish water desalination. Several previous studies have evaluated alternative water supply and water quality enhancement options for the District service area. The studies concluded that groundwater represents the least costly, most readily available water supply. However, due to limited groundwater availability in the region, the District continues exploring all available potential supply enhancement alternatives.

The District has previously examined the possibility of water purchase and water wheeling from neighboring agencies, and received documentation from the Bay Area Water Supply and Conservation Agency (BAWSCA) stating that due to the prescriptive nature of existing water rights for the SFPUC water supply and oversubscription of the Hetch Hetchy system water allocation, no water could be made available to MWSD.

Several new developments may have a significant impact on the Hetch Hetchy supply availability. These are associated with potential use of reclaimed water for large water customers currently using Hetch Hetchy water for irrigation, e.g., parks and golf courses. Negotiations are underway between NCCWD and SFPUC regarding the reclaimed water use for irrigation within the NCCWD service area. If successful, these negotiations will result in significant decrease of NCCWD use of Hetch Hetchy supply. With construction of a reclaimed water treatment facility by NCCWD and the Devil's Slide Tunnel by Caltrans, negotiations are underway that, if successful, may allow NCCWD to sell SFPUC water to MWSD. This alternative now becomes a viable option for the District provided grant funding can be obtained to build the infrastructure.