

Internal Monitoring Report

Policy #: O-2A Water Quantity

Date: September 27, 2011

I certify that the following information is true.

Signed  General Manager

Policy Language:

The General Manager shall not cause or allow conditions, procedures, or decisions that prevent the Madison Water Utility from meeting its obligation to current and future generations of customers within the City of Madison and its authorized service areas to provide adequate supply that meets or exceeds industry-accepted levels of service for fire protection and pressure.

This includes:

1. Water delivered to hydrants at proper flow rates for fire protection.
2. Water delivered to the customer tap at a pressure that meets industry accepted low, high, and emergency operation criteria.
3. Water used for outdoor irrigation under drought-free conditions.

CEO's interpretation and its justification:

This Outcomes policy requires that the Utility budget for, fund, prioritize, plan for, and construct the necessary system improvements to provide adequate water quantity to all areas of the system. As part of the East Side Water Supply project, a Level of Service Memo was developed. This document establishes basic service levels and requirements for the system. Current system performance will be measured against these criteria. The memo is attached to this report for your information and use.

Data directly addressing the CEO'S interpretation:

1. *Assure that the system has sufficient capacity to meet or exceed established fire protection quantity requirements.*

Madison Water Utility has developed a Water Master Plan to aide in the budgeting, prioritizing, and planning for system renewal, replacement, expansion, and upgrading. The 2006 Water Master Plan identified system wide fire protection capacity on Figure 5-8 which is attached to this report. Two major areas of concern identified within that report include the Arbor Hills neighborhood and Pressure Zone 4 east of Stoughton Road in the southeast part of the system. Capital projects to address these fire capacity deficiencies have been developed and are scheduled for implementation.

Arbor Hills: Fire flow capacity will be augmented by the construction of a water transmission main from the Verona Road area of Pressure Zone 7 and the construction

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of Booster Pump Station 118. The water transmission main will be constructed in four (4) phases. The first two phases were completed in 2009 and 2010. Phase 3 and 4 are scheduled for 2012 and 2013. Booster Pump Station 118 is currently under construction and is expected to be in full operation by June 2012.

Pressure Zone 4: Fire flow capacity in Zone 4 will be augmented by the construction of Well 31. The Utility has identified a well location and will drill a test well in the fall of this year. Assuming that water quality at the test well meets or exceeds Utility requirements, a production well will be drilled and developed in the summer of 2012. The Unit Well will be designed and under construction in 2013. The well is expected to be fully operational in early 2014.

A second distribution system computer analysis was completed to evaluate the impact of these improvements. That result is attached for your information and use.

I report non-compliance with mitigation projects in progress and scheduled.

2. *Assure that the system has sufficient capacity to meet or exceed pressure requirements in all areas for low, high and emergency operation conditions.*

Pressure planning and design criteria for Madison Water Utility are established in Table 2 of the attached Level of Service Memo. A plot of the system pressure contours is also attached for information and use. Plots were developed for average day conditions and maximum day conditions.

A major area of chronic low pressure identified in the Water Master Plan on Madison's east side was moved from Zone 6 to Zone 3 in 2010. This raised the pressure in the area by approximately 24 pounds per square inch (psi). Average low pressures for the area are now in the 60 psi range which more than satisfies the pressure requirements for the system.

An area of low pressure exists within the system around the Bunker Hill Reservoir (Reservoir 115) in the area just west of East Towne Mall. A project that will convert this area from Pressure Zone 6 to Pressure Zone 3 has been identified in the Master Plan and is included in the Utility Capital Budget for the year 2013.

Other minor low pressure areas exist within the service area as noted on the attached drawings. These areas will be addressed as opportunity arises.

High pressure areas where pressures exceed the stated level of service criteria exist within the system are noted on the attached pressure contour maps. These areas are currently mitigated by the installation of point of use pressure reducing valves as needed. Projects to address high pressure will be evaluated as the opportunity arises.

I report non-compliance with mitigation projects in progress and scheduled.

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3. *Assure that the system has sufficient capacity to meet or exceed outdoor irrigation demands under drought-free conditions*

During the 2010-2011 reporting period, Madison Water Utility did not issue an irrigation restriction due to drought conditions or water supply limitations.

I report compliance.

Attachments

1. Draft Level of Service Memo – January 10, 2011
2. Fire Flow Capacity Map Figure 5-8, Master Plan
3. Projected Fire Flow Capacity Map
4. Pressure Contour Map – Average Day
5. Pressure Contour Map – Maximum Day