
	PROJECT SCOPING DOCUMENT	Project Manager:	Dennis M. Cawley P.E.
		Project Information:	Near West Side Water Supply Augmentation
		Draft:	
Department: Madison Water Utility	Section: Engineering	Revised:	
		Approved:	

Project Scoping Document

Near West Side Water Supply Augmentation

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1. Project Description

A description of the project, including a map showing existing facilities, approximate location of proposed facilities, documented contaminated sites, the extent of the Eau Claire shale (if applicable) and the location of floodplain areas.

The Madison Water Utility desires to improve water supply in Utility Pressure Districts 7 (PZ7) and 8 (PZ8) on the City's west side. The leading alternative at this point in time is to construct a new unit well on the near west side on Utility owned property at 320 South Whitney Way. An aerial photograph of this site and a map showing existing wells serving PZ7 and PZ8 are included in Exhibit A.

A standard Madison unit well consists of a deep well capable of producing 3 MGD, an approximately 400,000 gallon reservoir, and a booster station. This booster station is expected to have multiple sets of booster pumps, as it will be designed to serve Pressure Zone 7(PZ7) and Pressure Zone 8 (PZ8). With the installation of 5000 feet of 16" water main it will also have the ability to serve Pressure Zone 6 (PZ6)

In order to determine if this site is appropriate for a unit well we propose to drill a test well first in order to verify that water quality and quantity make this an appropriate site.

2. Purpose

The purpose and necessity of the project, with supporting data including recent and anticipated water consumption data and hydraulic model summarizations.

The wells in PZ7 also supply water through a booster station to PZ9. The wells in PZ8 also serve PZ10 and PZ11 through booster stations. For purposes of this discussion demands listed in this section include the higher zone demands.


Presently PZ7 is served by Unit Wells 10, 12, & 20. The water quality problems of Well 10 have been well documented and the Water Utility has resorted to making this well an emergency use facility only. The combined capacity of Wells 12 & 20 is 6 MGD. Based on information gathered by Black & Veatch as part of the latest Master Plan update, the average day demand in PZ7 is 4.452 MGD. The maximum day demand is 9.589 MGD. Presently max day conditions are handled without Well 10 through a combination of depleting the storage in the 4.2MG reservoir on Prairie Road and transferring water from PZ6. Currently without Well 10 we lack our desired redundancy in PZ7.

PZ8 is presently served by Wells 16, 26, and 28 with a combined capacity of 9 MGD. The current average day demand is 3.117 MGD. The current max day demand is 6.963 MGD. When one well is out of service we have to deplete water in the 4MG reservoir on High Point Road to meet max day conditions.

This proposed project will impact the schedule of the Glenway Reservoir well project. Construction of a well on Whitney Way would delay the need for a well in the area of the Glenway Reservoir. Installing approximately 5000 ft. of pipe from the Whitney Way well at a cost of \$ 800,000 would allow water to be transferred to PZ6 through the Glenway Reservoir.

3. Projected Effect

The projected affect of the project on quality and reliability of service, and hydrologic impacts.

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This project would immediately increase supply in PZ7 and provide backup supply to PZ8. With the installation of approximately 5000 ft. of 16” water main on Whitney Way it would also delay the need to provide additional supply in PZ6.

4. Alternatives

A description of alternative projects or programs considered (This does not include specific site comparisons during early phases of the project).

This project is necessary because there is a water supply problem on the near west side. The only alternative solutions are to drill for additional supply or to transfer water from a different pressure zone that has excess supply.

If the drilling option is selected then this is the ideal site for a multi-zone well as the Water Utility already owns the site and it sits right on the border of PZ7 and PZ8. If for any reason this site were rejected then the Water Utility would work with the Citizens Advisory Panel to identify other potential sites.

If the option of transferring water from another zone were selected then an additional booster station would need to be constructed. Hydraulically the ideal location for this facility is at Reservoir Park on Glenway Street as it would be constructed adjacent to an existing 6 MG reservoir and the property sits right on the border of PZ6 and PZ7.

5. Photographic Examples

Photographic examples of similar facilities with discussion of possible variations.

The most recent similar projects are Unit Wells 28, 29, and 30. Photos of these wells are attached as Exhibit B for your viewing in order to give all parties an idea of the size and scope of the project.

6. Cost Estimate

The cost of the project by major plant accounts.


The following is the budget breakdown for this project:


2009 Drill Test Well Whitney Way	\$125,000
2009 Public Participation Plan	\$ 50,000
2010 Additional Water Quality and Analysis	\$ 75,000
2011 Drill Production Well	\$657,000
2012 Design Reservoir and Pumphouse	\$190,000
2013 Construct Reservoir and Pumphouse and Water Main Hydraulic Improvements	\$2,878,500

7. Financing

The proposed method of financing the project.

We propose to continue our practice of financing new construction through revenue bonds.

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8. Operational Costs		<i>The estimated annual operating costs of the project, by major expense accounts, to include possible fiscal effects of water treatment if anticipated.</i>	
<p>The following are average yearly operating costs for a typical well:</p> <p>Power \$ 80,000 to \$ 110,000 Building and Pumping equipment maintenance \$ 18,000 Chemicals \$ 7500 Chemical equipment maintenance \$5000 Sampling and testing \$ 13,000</p>			
9. Replacement Costs		<i>A description of and the original cost of any property being replaced, by major plant accounts.</i>	
<p>No Utility property is being replaced with this project.</p>			
10. Designation of Affected Parties, Notification List		<i>The designation of public utilities, alders, and other persons materially affected by the project and a list of those, which have been notified.</i>	
<p>A list of all property owners within 2000 feet of the potential site has been generated. The proposed site is in Aldermanic District 19 and the alder is Mark Clear. Portions of District 11 (Alder Tim Gruber) and District 20 (Alder Thuy Pham-Remmele) are also within 2000 feet of the site. This proposed site lies within the boundaries of the Faircrest Neighborhood which does not have an active neighborhood association. The Hill Farm Neighborhood Association and the Midvale Heights Neighborhood Association also represent property within the affected area. Representatives of these associations are included on the Stakeholders list. At the request of Commissioner Melton five “at-large” stakeholders have been added to the list. Other interested parties will be added as they identify themselves. The stakeholders are listed in Exhibit C.</p>			
11. RFP for Property Valuation Analysis		<i>A draft request for proposals (RFP) for the acquisition of services to determine the impact on values of adjoining properties.</i>	
<p>If requested the Madison Water Utility will prepare an RFP for the acquisition of services to determine the impact on values of adjoining properties.</p>			
12. Site Selection Criteria		<i>A description of the draft site selection criteria to be used in locating, evaluating, and ranking potential sites for the proposed facility. Site selection criteria categories will include regulatory requirements, groundwater quality and quantity, aesthetic impact, compatibility with existing neighborhood context, historic land use, existence of natural buffers, and environmental equity/justice considerations.</i>	
<p>When determining the permanent location for this well the following criteria will be considered: Quantity and quality of available water, land availability and cost, proximity to sources of contamination, proximity to large transmission mains, and neighborhood impact. Other criteria may be added by the Citizens</p>			

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Advisory Panel.

The property on Whitney Way was deeded at no cost to the Water Utility by the City of Madison in 1974 when the land became available due to the relocation of the Whitney Way right-of-way. Since then the Water Utility has paid \$ 20,604.07 in assessments on this parcel.

13. Project Timeline

The estimated project timeline, with identifies major project phases and decision points requiring an approved resolution from the Water Utility Board. Project phases requiring a resolution shall, at a minimum, include the establishment of the proposed project, the facility site selection, and the site plan selection.

The key dates in the project approval process are as follows:


February 17, 2009 – Present Public Participation Plan Scoping Document to Water Board for referral to January meeting.

Week of March 9th – Hold first public meeting, hold first public comment period open until March 20th.

April 28, 2009 – Water Board holds public hearing and acts on the Scoping Document.

If the Water Board approves proceeding with the project, staff will submit to the DNR detailed construction plans for the test well drilling operation in addition to a separate well site investigation report as required under NR 811.13(1)(b). At the same time Water Utility staff will seek approval of the Board of Public Works and Common Council to approve plans and advertise for bids to drill the test well. All approvals can be obtained within 90 days of authorization to proceed by the Water Board.

At the end of the drilling operation a report on water quality and quantity will be presented to the Water Board to allow the Board to determine whether to proceed to the permanent well drilling phase.

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14. Appendix

Documents referenced in the Scoping Document.

List of Exhibits

Aerial Photo and Existing Facilities Map	Exhibit A
Photos of Similar Projects	Exhibit B
Stakeholders List	Exhibit C