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Madison Water Utility

**Engineering Services for
East Side Water Supply
Planning and Project Development**

**East Side Water Supply CAP
Meeting**

January 24, 2011

**Bolz Room A
Goodman Community Center
149 Waubesa Street
Madison, WI 53704**

Report

This report is a compilation of meeting notes prepared by CAP member Mark M^cColloch

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Meeting notes prepared by Mark McColloch
Edits and revision by:

Welcome and Check In – Several handouts available for CAP members.

- [2009 Annual Drinking Water Quality Report](#)
- [Water Conservation and Sustainability Report](#)
- 2011-1-10 CAP Meeting Minutes
- 3-Page Scoping Document (from December 13, 2010 CAP meeting)
- Summary of Existing and Forthcoming Technical Reports (see attachment)
- US EPA Grant Application (download from:
www.cityofmadison.com/water/plans/documents/1_2009_12_04USEPAGrantApp.pdf)
- Madison Water Utility 2011-2025 Capital Improvement Report

Agenda Repair

Agenda distributed (see attachment). Agenda items added:

1. Request for volunteers to serve on committees
2. Any additional documents for CAP review?

Meeting Discussion Items

Mary Jo assigned volunteers to lead review of the following documents:

1. Water quality technical memorandum prepared by MARS;
2. Level of Service and Iron & Manganese Treatment technology memos;
3. Larry Nelson's pumping doctrine memo;
4. Scoping document; and
5. B&V power point presentation from December 13, 2010 CAP meeting.

Discussion:

Larry Nelson began discussion by presenting the following summary of information contained in technical memos distributed at January 10, 2010 CAP:

Analysis of Water Quality Memo (draft memo dated December 6, 2010)

- Summarizes east site geologic and hydro-geologic conditions
- Discusses naturally occurring (iron and manganese) and manmade contaminants (chloride and volatile organic contaminants –VOCs) impacting groundwater quality
- Ken Bradbury's presentation scheduled for the January 29, 2010 work shop will be an expansion of these topics

Level of Service Memo (draft memo dated January 10, 2011)

- Level of service memo describes design parameters for Madison Water Utility
- Design criteria are based on Wisconsin Department of Natural Resources (WDNR) and USEPA regulations, standard engineering practices, and design criteria.

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- Design criteria will be critical demand requirements for this study, which will determine infrastructure requirements
- Design criteria also related to water conservation, well/system redundancy, and structure of water system.

Unit Well Nos. 7 & 8 Iron and Manganese Treatment Technology Evaluation (draft memo dated December 21, 2010)

- Evaluation required by EPA grant
- Unit 29 treatment system for iron and manganese is current and appropriate

Q&A — Point & Response (P&R)

Analysis of Water Quality Memo (draft memo dated December 6, 2010)

Marty C no questions

Twink:

Q: What is meant by redundancy?

A: Al explained that redundancy is a back up well that can be used in the event an operating well malfunctions.

Bob:

Q: Why was there no mention of iron bacteria study results?

A: Al explained that a pilot study was completed at UW8, and concluded that treatment did not work.

Cassandra:

Q: Was similar pilot test performed at other wells? Were test results influenced by proximity of UW8 to Lake?

A: Al explained that a pilot study was not completed at other wells.

Mary Jo:

Q: What is meant by 'open hole'? The report references a '6 month' and '12 month' average. Which is it?

A: Several CAP members and WU staff described how the upper 100 to 200+ feet of each unit well is cased (with pipe) and borehole advanced to basement rock is left open. Groundwater flows into the well through the uncased open section and is pumped to the surface.

Jenny:

Q: Why is the memo focus limited to four wells and not entire east side?

Why is the pumping rate at UW15 is so high?

A: Al explained that EPA grant is specific to four East Side wells (UW3, UW7, UW8, and UW15). UW15 is pumping at high capacity because there are no other wells in this section of the City.

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Mary Jo:

Q: Is there contamination at other east-side wells?

Q: What is meant by reducing condition?

Q: What is chloride in drinking water from?

- A:
- Al explained that VOCs have also been detected at UW09, UW11, UW23, and UW-25, and all well have iron and manganese.
 - Tom explained that 'reducing' conditions refer to a chemical reaction (adding electrons) and is opposite of oxidizing conditions (removing electrons). Lakes and organic material in aquifer can result in reducing conditions, and under reducing conditions iron and manganese become soluble in groundwater.
 - Chloride is from road salt, and is an indication of surface infiltration. Nitrates are also an indicator of infiltration; nitrates are a regional contaminant mostly from agricultural land use.

Peng: No questions.

Mike: No questions.

Mark:

Q: Was a geophysical study performed at UW15 and what were the results?

A: Al explained geophysical study was complete, and confining unit was present, but not sure how deep.

Lynn:

Q: Can we have examples of watershed management and well-head protection plans referenced in report?

A: Al explained that water shed is really the 'capture zone,' which is the area surrounding a pumping well influenced by pumping. Well-head protection plans were completed from wells and are part of City ordinance. Well-head protection plan reports will be made available on line at WU website.

Larry:

P: Suggested that same units be used for manganese and iron results in report. Also suggested clarification that 'PCE' is same as 'tetrachloroethylene'. Also pointed out to group that report states that contamination of UW29 from nearby landfill remains a risk, but no recommendation for action if contaminants from landfill are detected at UW29. Larry then expanded on UW29 history; well is currently operated at half-capacity and filtration system installed for half-capacity operation (there is room in building to expand treatment system).

Level of Service Memo (draft memo dated January 10, 2011)

Larry:

P: Suggested that new column be added to tables in report to describe origin of design criteria. This will help distinguish regulatory requirements from standard engineering practices and what are recommendations presented by consultant.

R: • Al explained that primary source for design criteria is a detailed infrastructure report (includes more information describing selection of design criteria).

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- Group discussed selection of design criteria further, and inquired if there are other alternatives that may be used to satisfy same requirement (other than criteria listed in report). Perception is that design criteria are absolute and cannot be changed.
- If consultant has recommendations, they should be distinguishable from design criteria; consultant should also provide opinion if there is a viable alternative not currently listed as design criteria.

Mary Jo:

Q: Why does the storage area not include water towers?

A: Al explained that primary function of WU is to:

- 1) Provide safe water supply
- 2) Supply water from fire protection

Mike:

Q: Are new wells part of study? The design criteria includes specifications for new wells, but no new wells are planned.

A: Al explained that the design criteria for wells includes existing unit wells and any new well.

Unit Well Nos. 7 & 8 Iron and Manganese Treatment Technology Evaluation (draft memo dated December 21, 2010)

- Briefly discussed memo.
- Five treatment technologies evaluated as part of study; required for compliance with EPA grant.
- Al explained that 'greensand' is filtration media.

Pumping Doctrine Memo prepared by Larry Nelson and submitted to Madison Water Utility Board.

- Larry explained that memo was prepared to encourage operation of pumping wells to minimize mobilization of contaminants and energy conservation.
- Most wells have single speed motors; closing a valve is the only way to lower flow rate, which is not energy efficient.
- Variable speed pumps would allow energy efficient pumping at different rates.
- Case by case evaluation needed at each well to determine best way to operate pumps.
- Al also drew plan view and cross-section to show how higher pumping rate result in larger radius of influence and more drawdown in well.
- Groundwater modeling can be used to evaluate pumping rates at wells.

Other Documents Relevant to CAP

- Scoping Document
- Communication Plan
- Public Participation

Project Scope

- The scope of the East Side Water Project is described in the following documents:
 1. US EPA Grant Application pp. 24-49
 2. Original MWU RFP (RFP 8059-0-2010/SK) issued on 7 January 2010 (73 pages) (used to select Black & Veatch)
 3. Black & Veatch Statement of Project Understanding and Detailed Scope of Work dated 04 March 2010
 4. Brief Summary of Scope Paul Boersma handed out at the 13 December CAP meeting (3 pages plus the big fold out sheet with the multi-colored flow chart of the project)
- Larry recommended that the CAP use the 25-page “Project Work Plan” included in the EPA grant application (pp. 24-49) as the definitive project scope of work. This document dated, December 1, 2009, is part of the US EPA grant application available on line at:

www.cityofmadison.com/water/plans/documents/1_2009_12_04USEPAGrantApp.pdf
- Discussion on why UW15 was added to East Side study.
 - Al explained that the original focus of the East Side Water Supply project was for UW3, UW7, and UW8.
 - UW15 was added to the East side project due to increasing VOC concentrations. A CAP will be organized for UW15 in the future.
 - There is confusion over rising VOC concentrations and continued use of UW15.
 - Al explained that although contaminant concentrations are rising, concentrations are still below regulatory limits.
 - Mary Jo asked how the UW15 situation differs from the UW3 situation; what were contaminant levels at UW3?

CAP Committees

- Jill, Twink, Cassandra, Jenny, and Mary volunteered to serve on the public participation and communication planning committees. Bert suggested and he CAP agreed to fold the work of the recruiting committee into public participation and communication planning.
- The leadership committee will collect notes and prepare a summary after each CAP meeting. Mark S suggested that this committee pull together documents needed for the CAP. Bert suggested that leadership group continue to meet every other Monday (on non-CAP meeting Mondays). Lynn suggested that CAP talk more about the process it will use to review documents.

Meeting Evaluation: General Consensus that this was a good meeting.

Next Meetings:

- Work Shop: Saturday, January 29, 2011

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- Next CAP meeting will be Monday, February 7, 2011

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List of Attendees (by CAP Member & Alphabetical by Name)

Name	Last Name	CAP Member
Bob	Hugo	X
Cassandra	Garcia	X
Jenny	Bardeen	X
Jill	Patrick	X
Larry	Nelson	X
Lynn	Williamson	X
Mark	M ^c Colloch	X
Marsha	Rummel	X
Marty	Cieslik	X
Mary	Anglim	X
Mary Jo	Walters	X
Mike	Kakuska	X
Twink	Jan-McMahon	X
Al	Larson	
Maria	Powell	
Paul	Boersma	
Steve	Davis	
Bert	Stitt (facilitator)	
Mark	Stevens (facilitator)	

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**Summary Existing and Planned Draft Technical Reports
Madison East Side Water Supply Project
January 24, 2011**

Project Task (1)	Deliverable	Purpose	Date Draft is Given to CAP
Overall	Scoping Document	Five page summary of the project that provides high level project overall.	December 13, 2011
Overall	Project Scope	Detailed description of the project. Assigned as reading.	On web site
1	Level of Service Memo	Description of the basic WDNR and MWU requirements regarding service standards (flow, redundancy, pressure, ect.) that the water system needs to meet. (Will be discussed on 1/29.)	January 10, 2011
1	Demand Memo	Provides analysis to project future water use base on population growth and conservation. (Will be discussed on 1/29.)	January 25, 2011
2	Water Quality Memo	Explain area hydrogeology and contaminant trends in unit wells 7, 8, and 15 (Will be discussed on 1/29.)	January 10, 2011
2	Iron and Manganese Treatment Technology Evaluation	Provide a summary of current technologies used to removal iron and manganese from the groundwater. (Will be discussed in February.)	January 10, 2011
3	No current deliverables. Future deliverables will focus on the modeling of the water distribution system.		Expected February & March.
4	No current deliverables. Will need to completed public participation plan.		Expected February
5, 6, and 7	No current deliverables underway.		Expected Late Spring
8	Unit Well 15 Volatile Organic Compound (VOC) Mitigation Memo	Reviews applicable technologies and provides conceptual design for a VOC removal treatment system at UW-15. (Will be discussed in February)	Expected February 2011

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Project Task (1)	Deliverable	Purpose	Date Draft is Given to CAP
9, 10, 11, 12	No current deliverables underway		Expected Summer

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Draft agenda January 24, 2011

(Mary Jo sent the following to everyone on Monday, 18 January)

This is a rough draft. Please add items and times.

This meeting is held at the Goodman Center. 6:45-8:45

We will discuss the two of the three documents that were handed out to us. 1. scoping document, 2. Powerpoint Presentation 3. B and V Analysis of Water Quality Memo. (we can vote what order at the meeting on the 24th.)

Mark will give us our meeting notes from the last large group meeting, written by Mary, Mark and Mark. to be reviewed, if sent out in time for a pre-meeting review.

Paul will give us any new information or memos.

Here are the agenda items for the meeting: Review our reading homework. Ask questions of Paul, Al, Water Utility.

Mary are you the note taker for the meeting, or is this shared with Mark M.?

Peng, did you check to see what documents are on the website?

Agenda:

1. Update on recruitment update (5 minutes) (who will lead this?)
2. 2. Review B and V level Service Memo (30 mins) (Larry explains his comments 10 mins)
3. 3. Review Scoping document, most of us have a copy from the meeting that was held at the WU back in December, if you need a copy ask. (30 mins)
4. 4. Review Powerpoint presentation, look for information gaps.
5. Explain the agenda for the four-hour Water presentation that is Jan 29th at the Goodman Center. (10 mins.)

(sent Friday, 21 January)

PS. This is after some discussion with many CAP members, minus, Tim W and Marsha, Mark M, marty, and Madeline, and Peng. Here are some things to focus on for mondays meeting.

1. Skip how are we, get right to work! (next meeting more process)
2. Document review, led by Mary, Bob, and ? (till we are done)
3. Discussion and clarity on CAP leadership Committee, CAP governance
4. Call to action- PPP and Communication Plan subcommittee w/Bert and Mark
5. How did it all go--- reflection