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Madison Water Utility

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

**Citizen Advisory Panel (CAP)
Meeting**

December 13, 2010

**Madison Water Utility Conference Room
119 East Olin Avenue
Madison, WI 53713**

Report

TABLE OF CONTENTS

Review Scope of Project 1

Project Description 1

Water Quality 2

Water Demand 3

Water Conservation & Sustainability Plan 4

Reflection Round..... 5

CAP List 5

Next meeting with the full CAP 6

Meeting Evaluation 6

Attachments

 1. List of Attendees 7

 2. Working Agenda / Work Plan 8

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Review Scope of Project

The presentation was made in three parts:

1. Description of the project scope (Paul Boersma)
2. Water Quality (Al Larson)
3. Water Demand (Paul Boersma)

Note: Go to www.cityofmadison.com/water/plans/eastWaterSupply.cfm to download PDF copies of a brief of the project scope ([Project Scoping Document](#)) and the Water Quality and Water Demand PowerPoint slides ([12/13/10 CAP Presentation](#)).

Project Description (Paul Boersma) (See the [Project Scoping Document](#))

- Water Quality
- Water Quantity
- Attachment A: Map
 - Focus on Unit Wells (UW) 7,8,15, & 29
- Overall project is broken into distinct tasks
- Attachment B: Project Flow Chart
 - Blue boxes = Technical analysis by Black & Veatch
 - Green boxes = CAP Work / Public Participation (Task 4)
 - Orange boxes = Water Utility Board Decision Points
- Most of the presentation tonight is information on Task 1.
- Paul asked for both technical and process feedback
- Take your time with reviewing the table and scoping document. It will take time to digest it all.

Q&A and Point and Response (P&R)

Q: When was the notice to proceed (NTP)?

A: End of July (23 July 2010)

Q: Isn't the public part of it from moment one?

A: Kickoff with Madison Water Utility was in late July. With summer vacations, we didn't get underway until September. We briefed the Water Utility Board on September 29th, and held our first meeting with the public on October 8th.

Q: We can bring issues to the project then?

A: Yes

P: You didn't say that in your broad intro

R: Yes, and there are lots of people clambering for info
(There is demand for input on the scope of the project too, e.g., to include UW 11 in the scope of work.)

P: There are no arrows running back from the green boxes (CAP and public participation Task) to the blue boxes (Technical Tasks)

R: That's an excellent point. We want that.

Q: What is NTP?

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A: Notice to proceed, the kickoff date for the project

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Water Quality (Al Larson) (See the 12/13/10 CAP Presentation)

- Al acknowledged that UW 11 is not in the project scope and the recent calls for attention to Well 11 water quality
- Wisconsin Department of Natural Resources (DNR) requires that all new wells in Madison be drilled through the Eau Claire Shale to protect the groundwater from surface contamination
- Acknowledge Larry Nelson's suggestion not to pump any well too hard and dispersing the demands on the wells to minimize over-pumping on any one well
- Primary & Secondary Maximum Contamination Levels (MCL)
 - Primary MCLs define standards for contaminants that are health risks, e.g. Volatile Organic Compounds (VOCs) such as perchloroethylen (PCE), which is also known as tetrachloroethylene
 - Secondary MCLs define standards for contaminants that are nuisances, e.g. discoloration and staining produced by iron (Fe) and manganese (Mn).
- The Madison Water Utility is currently filtering UW-29 for iron and manganese. It cost the utility \$2 million for the UW-29 filter, which treats up to (\leq) 3 million gallons per day.
- Can use tray-aeration (air strippers) for removing VOCs. These remove 99% of the VOCs in the water.
- US Environmental Protection Agency (EPA) requires treatment when water averages above 5 milligrams (μg) per liter (L) of VOCs over four calendar quarters

Q&A – P&R

P: We don't know the health risks for contamination of iron or manganese

R: Health advisory for levels of iron above 300 $\mu\text{g}/\text{L}$

P: These are 1000 times what is found in Madison water.

P: We don't know enough to know manganese is not a health risk

R: EPA studies don't indicate that manganese is health risk

P: There have not been many studies on the health effects of manganese, there's not a good sampling

P: We're talking about lifetimes of consumption. The EPA studies have caveats related to health effects on children and people with liver disorders

Q: What does 300 $\mu\text{g}/\text{L}$ mean?

A: The health advisory on the EPA Web site states that there is a health advisory for levels in drinking water of that amount or higher

P: All of these are manageable through treatment. We're filtering iron and manganese on Well 29. Technology is available to treat VOCs as well

Q: Is there more than one VOC?

A: There is a big list of them, but we have detected only PCE and TCE (Trichloroethylene) in Madison wells.

P: Well 15 is one of the best producers in the city, it is a vital link

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Water Demand (Paul Boersma) (See the 12/13/10 CAP Presentation)

Pie Chart of Water Use by Customer Class

- 29% Single Family
- 26% Multi-Family
- 11% UW Madison
- 13% combination of large users like Oscar Mayer
- 10% Water Loss
- 2% Wholesale customers

Q&A

Q: How does this compare to other communities?

A: It's comparable

Q: In the future, can we get information about where larger water users are getting their water from?

Madison water users by service zone:

- Zones 6 East and 6 West are the biggest zones.
 - Zone 6 East provides 26% of the total water use in the city
 - Zone 6 West provides 39%
 - Zones 1-5 and 7-11 combined provide the rest (35%)

Madison Per-Capita Water Use and Rainfall

- Water use is declining. This is the trend across the country ... higher efficiency showers, toilets, & dishwashers are part of the explanation
- Rainfall affects water use (e.g. gardening) especially in the summer.
 - Wetter years correlate with lower water use (in large part because of less demand for watering lawns).
 - The timing of rain matters, no water in the summer means more outdoor use.

Q: What % of water use is outdoor use?

Peaking factors (to figure maximum use in water supply) are based on ratios

- Maximum (Max) Day : Average (Avg) Day
- Max 30 Days : Avg Day
- Max 90 Days : Avg Day

Q: Yeah, so? Is there enough water? Are pipes big enough for hot days? How does this inform your planning?

A: These ratios help predict future averages. Well capacity needs to accommodate high peak, usually 2X more. The system design needs to address maximums. Planning ahead, we consider not just the average use, but what infrastructure is needed to supply the maximum.

- DESIGN SYSTEM FOR ONE MAX DAY

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- A: The ratio can be applied to future projections of the average
P: Madison's peak capacities are lower than other communities (Mike)
A: We need to consider the maximum day in planning
- The bigger the system, the smaller the peaking factor (For a micro neighborhood the peaking factor may be higher vs. commercial)
 - Now we look at 10-day peak rather than 1-day peak
 - We pump 30-31 million gallons per day avg
 - We have capacity for 60 million gallons per day
- Q. Zone 6E – "Zone peak:" Should we look at that?
A. Yes, good question
P: We should be looking at Zone 6E peaking rather than the whole city.
R: We almost need to look at peaking by neighborhood or unit well because our distribution between well areas is limited.

Madison Service Area Population

City planning numbers are from US Census through 2010. The population number for 2030 is a projection

Q&A

- Q: For this project, are we looking for zone -specific projections?
A: Yes

Water Conservation & Sustainability Plan

Primary – Maintain current annual rate of pumping

Secondary – reduce residential use 20% by 2020

78 gpd

↓

~ 68 / 2009

58 gpd

Q&A

- Q: Can MWU provide measurements by neighborhood?
A: Not yet

P&R

- P. You can calculate home water use with the information provided on your water bill:
daily use per person (in gallons) = # gallons (on your water bill) ÷ # of days billed ÷ # people in your household
(Larry Nelson said that over the last years he has reduced daily use in his household to 35 gallons per day per person. He challenged the other CAP members to do the same.)

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Projected AD Water System Demands

- Historical
- Projections
 - High
 - Medium
 - Low
- 2006 Master Plan

Q&A

Q: Why the difference?

A: Madison is coming off of three years that have been very wet. Our projections are representing the average

P Larry Nelson: Data on retrofitting of toilets: 4,500 of 65,000 households so far. Using rebate to convert 2,500 toilets/yr

Reflection Round

Larry: Expected, conundrum, recent history, changing water uses / loss of industrial customer

Cassandra: General info, known

Twink: Maps help

Mary Jo: Didn't hear enough, not clear about conservation

Tim: Learned stuff about MU, Curious to learn more. Contradictions about services / roles

Tom: Energy about VOCs & cap water consumption, very general, need more specifics

Peng: Fe & Mn: should it be health concern? VOCs

Mary: General, tension/conflict not identified

Lynn: General, look forward to more.

Good comments about Fe & Mn, will help in future presentations

Mike: Good baseline

Joe: Water demand / water quality

Marsha: Interested in Zone Qs

CAP List

Cassandra Garcia

Lynn Williamson

Tim Wong

Marty Cieslik

Mary Anglim

Peng Her

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CAP List (continued)

Mary Jo Walters
Larry Nelson
Marsha Rummel
Madeline Gotkowitz
Twink Jan-McMahon
Mike Kakuska

Next meeting with the full CAP

- We will look at assumptions that differentiate high, medium, and low projections. Are the assumptions valid?
- When you ask how much is enough, you make assumptions.
- Historically, we are trending downwards (there's been lots of water lately due to increased rainfall)
- Less focus on PowerPoint conveying info
- Get materials in advance
- Field Trip
- CAP flow chart
- Data found (unfiltered & unpolished)
- PowerPoint in advance

Q. Mission Statement for CAP?

Meeting Evaluation

- Meeting went very well
- Real info
- Prepared to answer future Qs about water quality
- Helpful review – better prepare materials
- Good, but slow
- Read annual report
- Not sure why we're meeting still
- More science with acronyms explained
- Appreciate starting with real information
- Fine. Looking forward to the next meeting
- Looking forward to getting answers
- Appreciate suggestions on the next meeting and how to present data
- Agenda: some in gigantic needed in this agenda
- Appreciate presentation giving necessary detail and background
- Good meeting. Grateful to get through presentation
- Moving slow. Haven't learned anything new since Well 8. Want more science

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List of Attendees (Alphabetical by Last Name)

		CAP		
Name	Last Name	Member	E-mail	Telephone
Mary	Anglim	X	mtanglim@gmail.com	
Paul	Boersma		BoersmaPM@BV.com	
Marty	Cieslik	X	marty.cieslik@ci.verona.wi.us	(h) 244-8903 (w) 845-6695
Joe	Demorett		jdemorett@cityofmadison.com	
Cassandra	Garcia	X	olicato@gmail.com	358-7450
Joe	Grande		jgrande@cityofmadison.com	
Tom	Heikkinen		theikkinen@madisonwater.org	
Peng	Her	X	pengher@eastisthmus.org	204-0834
Twink	Jan-McMahon	X	twinkjm@gmail.com	
Mike	Kakuska	X	MikeK@CapitalAreaRPC.org	266-9111
Al	Larson		allarson@cityofmadison.com	266-4653
Larry	Nelson	X	ldnelson@chorus.net	630-6532
Marsha	Rummel	X	district6@cityofmadison.com	(w) 257-6050 (c) 772-4555
Mark	Stevens (facilitator)		stevens.markr@gmail.com	249-1531
Bert	Stitt (facilitator)		bert@bertstitt.com	219-0075
Mary Jo	Walters	X	mjleplae@gmail.com	241-0018
Tim	Wong	X	twong48@gmail.com	249-9964
Lynn	Williamson	X	lw.wades@gmail.com	

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Madison Water Utility Engineering Study for East Side Water Supply Planning and Project Development

Umbrella CAP (Citizen Advisory Panel)

AGENDA

**December 13, 2010
7:00 to 9:00 p.m.**

Madison Water Utility Conference Room

Primary Goals:

- Review and reflect on presentation of project scope
- Firm up CAP membership
- Establish regular meeting schedule for the Umbrella CAP meetings

Item	Lead	Process	Disposition	Time
I. Welcome and Meeting Logistics A. Time Keeper B. Process Monitor	Bert Stitt			7:00
II. Introductions A. Name B. A highpoint of your day C. Area of city where you reside D. Expectations for this meeting	Mark Stevens	Round		7:05
III. Review and Repair Agenda A. Goals B. Items	Bert	Discussion	Changes to meeting agenda	7:20
IV. Review Report of November 22 Meeting	Volunteer?	Round	Confirm understanding	7:25
V. Review Scope of Project A. Presentation B. Q & A C. Reflection	Al Larson & Paul Boersma Bert Mark	Presentation Q & A Focused Conversation Rounds	Clearer concept of project scope	7:35
VI. CAP Membership A. Confirm CAP Commitments B. Identify gaps in membership C. Recruit members to fill gaps	Bert		Clearer CAP makeup	8:25

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Item	Lead	Process	Disposition	Time
VII. Set up future CAP meetings	Bert		Solid next steps	8:35
A. Regular meeting schedule (Not 2 nd Monday of the month)				
B. Organizational Workshop				
1. Options for days & times				
2. Possible topics				
3. Set up subcommittee to flesh out workshop agenda				
VIII. Check Out / Meeting Evaluation	Volunteer?		Meeting assessment	8:50
A. Share any thoughts you have about this meeting				
B. How did you do as a participant?				
C. How did the group do?				
D. What worked well?				
E. What could we do to improve future meetings?				
IX. End			Move on	9:00