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Office of the City Administrator

PUBLIC WELFARE COMMITTEE

Tuesday, August 10, 2021

6:00 PM

Lower Conference Room

Agenda

1) Call to Order

2) Minutes

a. Minutes

3) Ordinances

Action requested: review and recommend approval

a. Chapter II and Article IV - Administration of City Operations

4) Discussion Items

Action requested: discuss and take action as needed

a. Electronic Meetings for Common Council and Planning Commission

b. **RESOLUTION 3875** Informational Item Related to Home Irrigation Systems

c. Composting Plan

5) Information Items

a. Work Calendar

Dated: August 10, 2021

/s/ Mark Gierl, Chair

Notice is hereby given that a quorum of other governmental bodies may be present at this meeting to present, discuss and/or gather information about a subject over which they have decision-making responsibility, although they will not take formal action thereto at this meeting.

Persons with disabilities requiring accommodations for attendance at this meeting should contact the City Clerk's Office at 262-236-2914, twenty-four (24) hours in advance of the meeting.

Any questions regarding this agenda may be directed to the City Administrator's Office at 262-236-2941, Monday through Friday, 8:00 AM – 4:30 PM



See Agenda Packet for
Login and Complete Packet Details
Mequon, WI 53092
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Office of the City Administrator

PUBLIC WELFARE COMMITTEE

Tuesday, July 13, 2021

6:00 PM

Virtual Meeting

Minutes

1) Call to Order, Roll Call

Present:

Chair Mark Gierl
Alderman Glenn Bushee
Alderman Kathleen Schneider

2) Approval of Meeting Minutes

a. June Meeting Minutes

RESULT: **Approved by Voice Acclamation [Unanimous]**

MOVED BY: Alderman Bushee

SECONDED BY: Alderman Schneider

AYES: Gierl, Bushee, Schneider

b. June Meeting Minutes

RESULT: **Approved by Voice Acclamation [Unanimous]**

MOVED BY: Alderman Bushee

SECONDED BY: Alderman Schneider

AYES: Gierl, Bushee, Schneider

3) Ordinances

Action requested: review and recommend approval

1. An Ordinance Amending Chapter II Article II – Administration

RESULT: **Approved by Voice Acclamation [Unanimous]**

MOVED BY: Alderman Schneider

SECONDED BY: Alderman Bushee

AYES: Gierl, Bushee, Schneider

2. A Charter Ordinance Amending the Provisions of the Mequon Code of Ordinances,
Establish Terms of Office for Elected Officials

Attachment: Public Welfare Meeting Minutes 07 13 21 (6525 : Minutes)

After discussion, the committee voted to approve after amending the language to not include a mid-term appointment as part of the term limits by adding “full terms” to the ordinance.

RESULT: **Approved with Amendments [Unanimous]**

MOVED BY: Alderman Schneider

SECONDED BY: Alderman Bushee

AYES:	Gierl, Bushee, Schneider
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4) Discussion Items

a. Tree Trimming & Wood Retention

A resident was upset that the City cut down a tree on his property and did not leave the wood for him. City Forester Gies explained that the tree was on the City's property and all wood is available for residents to pick up at the brush site. This is a blanket policy to avoid custom cutting logwood for people and it would create liability if wood was left in the right away.

b. Composting Plan

Alderman Gierl suggested that residents be offered a third bin for composting in addition to the 2 bins they already get for trash and recycling. What other communities do and the added cost were brought up as areas to explore. Alderman Gierl encouraged everyone to watch the Netflix "Kiss The Ground" Documentary before the next meeting to further discuss this topic.

c. Home Irrigation Systems

Alderman Gierl was concerned that homes with wells would run dry if their irrigation systems are not regulated. It was questioned how that would be enforced. Assistant City Administrator Schoenemann would ask Community Development to research and discuss at the next meeting.

5) Information Items

a. Work Calendar

1. Chapter II Article IV
2. Composting Plan
3. Home Irrigation Systems
4. Architectural Board Structure

6) Adjourn

A motion to adjourn was made at 6:39 PM by Alderwoman Schneider and seconded by Alderman Gierl. All voted in favor by a voice vote.

Respectfully Submitted,

Carrie Enea



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Office of Administration

TO: Public Welfare Committee
FROM: Justin Schoenemann, Assistant City Administrator
DATE: August 3, 2021
SUBJECT: Chapter II and Article IV - Administration of City Operations

Background

At its July meeting, the Public Welfare Committee completed a review of Article II of Chapter II of the Mequon Municipal Code that governs the duties of the Mayor, Common Council, Standing Committees, and related procedures. Changes to the division of duties between the Mayor and the City Administrator positions were contemplated, but not included in the final recommendations as part of the Article II updates. However, Members of the Public Welfare Committee expressed interest in continuing the conversation about the duties of the City Administrator and ways in which the Common Council can share their feedback about City operations.

Analysis

Article IV established the framework for the Department of Administration, Department of Engineering, Department of Public Works, and legal services. Based on the Public Welfare Committee's discussion, it is anticipated the Committee will review Sec. 2-180. - Department of Administration, which establishes the City Administrator's Office and grants the position the authority to carry out all actions of the Council, oversees all staff, recommend disciplinary action to the Finance-Personnel Committee, serve as the City's chief financial officer, provide recommendations to the Common Council and keeps the Council informed of ongoing operations.

The remainder of Article IV dives into the establishment of other departments and governs legal services.

Fiscal Impact

None

Recommendation

Consider reviewing the current ordinances and suggesting amendments for staff to bring back at subsequent meetings.

TO: Public Welfare Committee
FROM: Brian Sajdak, City Attorney
DATE: August 5, 2021
SUBJECT: Electronic Meetings for Common Council and Planning Commission

Background and Discussion

During recent discussions related to the return to in person meetings, members of the Council and this Committee have suggested a desire to provide for some level of electronic meetings for the Council and Planning Commission meetings, the two primary bodies that Code does not currently allow to meet electronically. You have asked that I prepare a preliminary draft of a Code amendment for you to utilize as the basis of discussion.

The proposed Code amendment before you addresses electronic meetings in two ways. First, it creates exceptions to the general rule that meetings be held at City Hall. As it relates specifically to electronic meetings, Section 2-19(e)(2)d authorizes a fully virtual meeting where “the topic(s) of the meeting are anticipated to be of a perfunctory nature such that a fully virtual or electronic meeting would be more convenient for the attendees of the meeting.” Since this section would be amended as part of this process, I have also included other situations where the need to hold a meeting at other than City Hall may arise to the list of authorized exceptions to the general rule. For example, the City of Wauwatosa last summer held at least one Council meeting at the stadium in Hart Park to address concerns related to racism and police conduct. The proposed amendment would authorize meeting in such a location.

The second manner that the proposed amendment addresses electronic meetings is to adopt the provisions of Sec. 2-430 to apply to the Council. This section is the same provisions that apply to other boards and commissions, and has been attached for your review. Discussion points in this regard would be whether these provisions should be modified for the Council. Specifically:

- Are the reasons for appearing electronically, and the number of times allowed, as identified in (b), acceptable for Council members? An argument could be made that the public may expect Council members to be physically present at all times such that 3 electronic appearances may be excessive.
- Is the process identified in (c) appropriate?
- Are the specific rules in (d)-(f) sufficient to address any concerns that may exist? For example, the current code does not address the manner in which a member appears electronically. Should there be a rule that requires a Council member to have a camera? For additional ideas, I have attached a few pages from the most recent version of Robert's Rules which addresses electronic meetings for the first time.

It is anticipated that any rules relating to the Council would also apply to the Planning Commission. As such, I intended on simply amending the existing Planning Commission Charter

Ordinance to utilize the same language. Certainly one of the discussion points should be whether the rules should be the same.

Lastly, part of the discussion of electronic meetings, and the standards for them, is dependent on the availability of technology. Assistant Administrator Schoenemann has prepared some discussion points in this regard as well. With the input provided during the Committee meeting, we intend on preparing the appropriate revisions for your consideration next month.

Recommendation

Discuss and provide guidance to staff concerning direction for next month's meeting.

Attachments:

Ordinance re Council Electronic meetings (PDF)

Sec. 4-430 Electronic Meeting Attendance (PDF)

Robert's Rules Pages (PDF)

Audio and Video System Technology Upgrades Memo (PDF)

Sec. 2-19. Meetings, adjournments, quorum.

- (a) *Regular meetings.* Regular meetings of the common council shall be held on the 2nd Tuesday of each calendar month, at the hour of 7:30 p.m. Any regular meeting falling upon a legal holiday or election day shall be held on the next following secular day at the same hour and place. ~~All meetings of the common council shall be held in the city hall, including special and adjourned meetings.~~
- (b) *Special meetings.* Special meetings may be called by the mayor or any four aldermen upon written notice of the time and purpose thereof delivered to each personally or left at his usual place of abode at least six hours before the meeting. The clerk shall cause an affidavit of service of such notice to be filed in his office prior to the time fixed for such special meeting. A special meeting may be held without such notice when all aldermen are present in person, or consent in writing to the holding of such meeting. If written consent is obtained, it shall be filed with the clerk prior to the beginning of the meeting. Attendance by any alderman shall be deemed a waiver on his part of any defect of notice. Any special meeting attended by all aldermen shall be a regular meeting for the transaction of any business that may come before such meeting.
- (c) *Adjournments.* The council may, by a majority of vote of those present, but not less than three affirmative votes, adjourn from time to time to a specific date and hour.
- (d) *Quorum, what constitutes; compelling attendance.* No action shall be taken unless a quorum is present, which shall consist of two-thirds of the aldermen of the council. A lesser number may compel the attendance of absent members or may adjourn. The mayor shall not be counted in determining whether a quorum is present at a meeting.

(e) Location.

- (1) All meetings of the common council shall be held in city hall except as otherwise provided in this section.
- (2) A meeting of the common council may be held in a location other than city hall when, in the opinion of the mayor, an off-site location is necessary and appropriate because:
 - a. The interest in an agenda item is of significant interest to the community such that city hall will be unable to accommodate the anticipated attendance from members of the public;
 - b. There is a need for the council to be physically present in another location to assist the members in its understanding of an agenda item (e.g., a "site visit");
 - c. The council is meeting jointly with another governmental entity;
 - d. The topic(s) of the meeting are anticipated to be of a perfunctory nature such that a fully virtual or electronic meeting would be more convenient for the attendees of the meeting; or
 - e. A temporary location of government is authorized under Wis. Stat. § 323.52(1) during a state of emergency.

- (f) Attendance. The mayor and aldermen shall attend meetings of the common council in person except that a member may attend by electronic means consistent with the rules established in Sec. 2-430.

Sec. 2-430. Electronic meeting attendance.

- (a) *Electronic meeting attendance authorized.* Except as may otherwise be provided in this article IX, electronic meeting attendance may be allowed for any committee consisting of citizen members in accordance with the provisions of this section.
- (b) *Citizen member qualifications for electronic attendance.*
 - (1) A citizen member of a committee is qualified to attend a meeting of that committee electronically only if the member is physically prevented from attending the meeting by reasons of personal illness or disability, employment-related commitments, attending to business on behalf of the committee, or a family or other emergency.
 - (2) A member of a committee can attend meetings electronically up to three times a year.
- (c) *Procedure for authorizing electronic attendance of a member of a committee.*
 - (1) *Notice to the city clerk.* The member must notify the City Clerk in writing at least 24 hours prior to the meeting in which the member desires to attend electronically unless advance notice is impractical due to family or other emergency. The notice shall be submitted in writing and shall identify the reason the member cannot be physically present at the meeting in accordance with section 2-430(c)2. If the member is unable to give the required written notice prior to the meeting, the member shall notify the clerk by other means prior to the meeting and shall submit the required written notice as soon as practicable.
- (d) *Determination of authorization of electronic attendance.* Upon receipt of the notice, the clerk shall promptly forward the notice to the chair of the committee and primary staff liaison. After establishing that a majority of the committee is physically present at the meeting at which a member has requested to attend electronically, the chair shall state that (i) a notice was received by a member of the committee in accordance with this policy, and (ii) the member will be deemed authorized to attend the meeting electronically unless a motion objecting to the member's electronic attendance is adopted by two-thirds of the members of the committee physically present at the meeting. If no such motion is adopted, then the request by the member to attend the meeting electronically shall be deemed approved by the committee and the chair shall declare the requesting member present. After such a declaration by the chair, the question of a member's electronic attendance may not be reconsidered. The following provisions shall supplement all other applicable rules and procedures identified in this article IX, and are applicable for any meeting of a committee at which a member has been authorized to attend electronically. In the event of a conflict between rules, the provisions below shall control.
 - (1) *Roll call and quorum.* A majority of the committee must be physically present at the meeting. Following the call of the roll, and at the conclusion of the procedures set forth in section 2-430(c), the chair shall identify each member who is attending the meeting electronically.
 - (2) *Identification and recognition of electronic attendees.* Members attending electronically must identify themselves each time the member wishes to speak and must be recognized by the chair prior to addressing the committee.
 - (3) *Public access to meeting.* The speech of a member attending electronically shall be amplified in such a manner that it is generally audible to citizen members of the committee and the public who are physically present at the meeting. Any video image of a member attending electronically shall be projected in such a manner that the member's video image is generally visible and audible to citizen members of the committee and the public who are physically present at the meeting. Votes of any member of the committee attending electronically shall be audible and expressly acknowledged by the chair.

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- (4) *Minutes.* The minutes of each meeting of a committee shall identify which citizen members of the committee attended electronically. The minutes shall also reflect the reason for a member's attendance electronically and the means by which the member attended the meeting.
- (e) *Effect of electronic attendance.* A member attending a meeting of a committee electronically shall be considered present at the meeting, count towards the quorum requirement established in section 2-425, and entitled to vote on any matter before the committee as if the member were physically present at the meeting.
- (f) *Closed session exclusion.* A member attending a meeting electronically shall not be able to continue to participate in the meeting when the committee moves into closed session.
- (g) *Emergency and disaster situations.* The restrictions of this policy can be waived by the City of Mequon in the event of a bona fide disaster, as determined by the city or other governing body, such as the county, state, federal government.

(Ord. No. 2019-1554, § II, 12-10-2019)

III. TABLE OF RULES FOR COUNTING ELECTION BALLOTS

(See 45:31-36 and 46:33-34)

TYPE OF BALLOT	CREDITED TO CANDIDATE(S)	COUNTED TOWARD NUMBER OF VOTES CAST
Ballots That Indicate Preference, Cast by Member		
— if meaning of ballot is clear, and ballot indicates eligible candidate	Yes	Yes
— if ballot indicates ineligible candidate	No	Yes
— if meaning of ballot is unclear, but can't affect result	No	Yes
— if meaning of ballot is unclear, and may affect result	Submit to assembly for decision	Yes
— two or more filled-out ballots, folded together	No	Yes, but counted as one vote
— one filled-out ballot, folded together with one or more blank ballots	Yes	Yes
Blank Ballots, Ballots That Indicate No Preference	No	No
Ballots Cast by Nonmember	No	No ¹
Ballots for Multiple Positions on a Board or Committee		
— with votes for full number of positions to fill	Yes	Yes (one vote) ²
— with votes for less than full number	Yes	Yes (one vote) ²
— with votes for too many candidates	No	No

1. If there is evidence that any ballots were cast by persons not entitled to vote but those ballots cannot be identified, and if there is any possibility that such ballots might affect the result, the entire ballot vote is null and void and a new ballot vote must be taken.
2. When votes are cast in one section of the ballot for multiple positions on a board or committee, every ballot with a vote in that section for one or more candidates is counted as one vote cast.

SAMPLE RULES FOR ELECTRONIC MEETINGS

INTRODUCTION

As noted in the main text of this book, there is an increasing preference among some organizations to transact business at "electronic meetings," in which some or all of the members communicate through electronic means such as the Internet or by telephone. Regarding the proper authorization of such meetings, and their limitations, see *Electronic Meetings*, 9:30-36, wherein it is stated that when electronic meetings are authorized—which, in the case of a board or other assembly, always requires a bylaw provision—additional rules should be adopted to govern their conduct. Depending on the nature of the rules and the specific provisions of the bylaws, such additional rules may be placed in the bylaws, adopted as special rules of order or standing rules, or contained in instructions from a superior body.

The additional rules appropriate to a particular organization's electronic meetings may depend on many factors, such as the number of members in the organization, the nature and complexity of the business to be transacted, the organization's need for confidentiality in its proceedings, and the funds available. Four sets of sample rules for electronic meetings designed to meet various needs are provided here, along with bylaw provisions sufficient to authorize such meetings. These rules should, of course, be adapted as necessary for the particular circumstances of each group and the technology the organization finds most useful. It is therefore advisable to

APPENDIX

review all four sets of rules, as some particular rules from one set may prove appropriate for adaptation together with some or all of the rules from another. It is also worth noting that although the rules below are written on the assumption that they would be used by a board, electronic meetings could be authorized for another type of assembly or for a committee, and the sample rules could be adapted accordingly.

Consider an organization governed by bylaws whose relevant provisions are patterned directly on the Sample Bylaws in this book (56:58–67). Each of the four sets of sample rules below shows how the organization might amend Article VI of the bylaws to authorize the executive board to conduct business by a particular type of electronic meeting. In each case, the sample bylaw provisions are followed by a number of additional rules that may be helpful in governing the conduct of that type of meeting.

The sample rules in Scenarios A, B, C, and D below are designed for allowing the board to make use of the following types of electronic communication to conduct meetings, respectively:

- A. Full-featured Internet, or combination Internet/telephone, meeting services that integrate audio (and optionally video), text, and voting capabilities.
- B. Telephone meetings, with Internet services for conducting secret votes and sharing documents.
- C. A speakerphone in the meeting room to allow members who are not physically present to participate by telephone.
- D. Telephone meetings without Internet support (and without any central meeting room).

For Scenarios A and B, it is assumed that electronic meetings will be the usual method for conducting business, with in-person meetings held only when ordered by the board or all of its members. In Scenario C, it is assumed that a physical meeting space is designated for every meeting, but individual board members may participate by telephone. In Scenario D,

SAMPLE RULES FOR ELECTRONIC MEETINGS

in-person meetings are assumed as the norm, but telephone meetings may be ordered as needed.

SCENARIO A: USE OF FULL-FEATURED INTERNET MEETING SERVICES

In this scenario, the board makes use of Internet meeting services with integrated audio (and optionally video), text, and voting capabilities as the usual meeting method, with in-person meetings when ordered by the board or all of its members.

Internet meeting services adapted to the needs of deliberative assemblies vary somewhat in the names given to their features and in how they are set up and arranged. Typically, a full-featured Internet meeting is set up as follows:

Each participant, using his or her own computer or other device, can view the current list of all participants—with an indication of which member has the floor or which members are seeking recognition by the chair—and can seek recognition, submit motions in writing, view the text of pending motions, vote, and view the results of a vote. The sample rules given below require that anonymous voting be supported (in other words, that a member who is properly logged in to a meeting can cast an “electronic ballot” that does not identify that member’s vote as belonging to him or her), and they also assume that non-anonymous votes can be taken, as well.

Audio transmissions can be integrated directly via the Internet, so that participants listen and speak through microphones and speakers or headsets at their computers or other devices. Alternatively, there might be a conference call, with access codes for the participants, that is dialed into by ordinary telephone but is also linked to the Internet meeting interface, so that participants speak and listen by telephone, but use the Internet service (which remains aware of the identity of each caller) for all other features. If the participants have webcams for transmitting live video, a portion of the screen might show their faces, or else (perhaps depending on the total number of participants)

just those of the cha
Presenting a report

The organizers of the meeting also have access to a control panel for use by the chair, the Recording Secretary, and their assistants, which enables them to perform their duties during the meeting, such as ensuring that the text of the pending question is properly displayed, assigning the floor to a member, opening and closing the polls for taking a vote, and displaying camera view, etc.

Assuming an organization's bylaws are patterned directly on the Sample Bylaws in this book, the organization can authorize the board to meet by use of an Internet meeting service with features like those described above by adding the following sections to Article VI (56:64):

Sample Bylaw Provisions for a

Section 4.11.1: Occasio A

Section 4. Meetings Held Electronically. Except as otherwise provided in these bylaws, meetings of the Board shall be conducted through use of Internet meeting services designated by the President that support anonymous voting and support visible displays identifying those participating, identifying those seeking recognition to speak, showing (or permitting the retrieval of) the text of pending motions, and showing the results of votes. These electronic meetings of the Board shall be subject to all rules adopted by the Board, or by the Society, to govern them, which may include any reasonable limitations on, and requirements for, Board members' participation. Any such rules adopted by the Board shall supersede any conflicting rules in the parliamentary authority, but may not otherwise conflict with or alter any rule or decision of the Society. An anonymous vote conducted through the designated Internet meeting service shall be deemed a ballot vote fulfilling any requirement in the bylaws or rules that a vote be conducted by ballot.

Section 5. Meetings Held in Person. Some particular meetings of the Board shall be held in person either (a) when

Sample Rules for Electronic Meetings for Scenario A

The board may then find it helpful to adopt rules such as the following:

SAMPLE RULES 2

the President or First Vice-President has obtained written consent for this from every Board member, or (b) when ordered by the Board, by a two-thirds vote with previous notice of motion to do so having been given.¹

2. **Login time.** The Recording Secretary shall schedule Internet meeting service availability to begin at least 15 minutes before the start of each meeting.
3. **Signing in and out.** Members shall identify themselves as required to sign in to the Internet meeting service, and shall maintain Internet and audio access throughout the meeting whenever present, but shall sign out upon any departure before adjournment.
4. **Quorum calls.** The presence of a quorum shall be established by audible roll call at the beginning of the meeting. Thereafter, the continued presence of a quorum shall be determined by the online list of participating members, unless any member demands a quorum count by audible means.
1. **Compare this with Sample Bylaw Provisions for Scenario D**, which assume in-person meetings as the norm, but authorize electronic meetings when directed by the board or with the written consent of a majority of board members (or, in the case of a special meeting, when directed by those calling the meeting).

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SAMPLE RULES FOR ELECTRONIC MEETINGS

roll call. Such a demand may be made following any vote for which the announced totals add to less than a quorum.

5. **Technical requirements and malfunctions.** Each member is responsible for his or her audio and Internet connections; no action shall be invalidated on the grounds that the loss of, or poor quality of, a member's individual connection prevented participation in the meeting.
6. **Forced disconnections.** The chair may cause or direct the disconnection or muting of a member's connection if it is causing undue interference with the meeting. The chair's decision to do so, which is subject to an undebatable appeal that can be made by any member, shall be announced during the meeting and recorded in the minutes.
7. **Assignment of the floor.** To seek recognition by the chair, a member shall ... [specifying the exact method appropriate to the Internet meeting service being used]. Upon assigning the floor to a member, the chair shall clear the online queue of members who had been seeking recognition. To claim preference in recognition, another member who had been seeking recognition may promptly seek recognition again, and the chair shall recognize the member for the limited purpose of determining whether that member is entitled to preference in recognition.
8. **Interrupting a member.** A member who intends to make a motion or request that under the rules may interrupt a speaker shall use [the designated feature] for so indicating, and shall thereafter wait a reasonable time for the chair's instructions before attempting to interrupt the speaker by voice.
9. **Motions submitted in writing.** A member intending to make a main motion, to offer an amendment, or to propose instructions to a committee, shall, before or after being recognized, post the motion in writing to the online area designated
10. **Display of motions.** The Recording Secretary shall designate an online area exclusively for the display of the immediately pending question and other relevant pending questions (such as the main motion, or the pertinent part of the main motion, when an amendment to it is immediately pending); and, to the extent feasible, the Recording Secretary, or any assistants appointed by him or her for this purpose, shall cause such questions, or any other documents that are currently before the meeting for action or information, to be displayed therein until disposed of.
11. **Voting.** Votes shall be taken by the anonymous voting feature of the Internet meeting service, unless a different method is ordered by the Board or required by the rules. When required or ordered, other permissible methods of voting are by electronic roll call or by audible roll call. The chair's announcement of the voting result shall include the number of members voting on each side of the question and the number, if any, who explicitly respond to acknowledge their presence without casting a vote. Business may also be conducted by unanimous consent.
12. **Video display.** [For groups using video, but in which the number of participants is too large for all to be displayed simultaneously:] The chair, the Recording Secretary, or their assistants shall cause a video of the chair to be displayed throughout the meeting, and shall also cause display of the video of the member currently recognized to speak or report.

SCENARIO B: TELECONFERENCE WITH INTERNET VOTING AND DOCUMENT SHARING

Assuming an organization's bylaws are patterned on the Sample Bylaws in this book, the organization can authorize the board to meet by teleconference, using Internet services for conducting secret votes and sharing documents, by adding the following section to Article VI (56:64):

Sample Bylaw Provisions for Scenario B

Section 4. Meetings Held Electronically. Meetings of the Board shall be conducted by telephone, except that some (a) when the President or First Vice-President has obtained written consent for this from every Board member, or (b) when ordered by the Board, by a two-thirds vote with previous notice of a motion to do so having been given.² Telephone meetings of the Board shall be subject to all rules adopted by the Board, or by the Society, to govern such meetings, which may include any reasonable limitations on, and requirements for, Board members' participation, and which shall specify how motions may be submitted in writing via the Internet. Any such rules adopted by the Board shall supersede any conflicting rules in the parliamentary authority, but may not otherwise conflict with or alter any rule or decision of the Society. At telephone meetings, any ballot votes required under the rules or ordered by the Board shall be conducted electronically, using an Internet service that supports anonymous voting.

The board may then find it helpful to adopt rules such as the following to govern the conduct of telephone meetings. Note that the requirement in Rules 1 and 2 of a unique access code for each member provides greater assurance that only members

2. Compare this with Sample Bylaw Provisions for Scenario D, which assume in-person meetings as the norm, but authorize electronic meetings when directed by the board or with the written consent of a majority of board members (or, in the case of a special meeting, when directed by those calling the meeting).

and others specifically invited can participate than do the sample rules given for Scenarios C and D. (Cf. 9:36.)

Sample Rules for Electronic Meetings for Scenario B

1. **Login information.** The Corresponding Secretary shall send by e-mail to every member of the Board, at least [time] before each meeting, the time of the meeting, the phone number and unique access code that that member needs to connect to the telephone conference call, and the URLs and login information for the online survey tool and file-hosting service. The Corresponding Secretary shall also include a copy of, or a link to, these rules.
2. **Call-in time.** The Recording Secretary shall schedule a telephone conference call, using a free service that provides each user a unique access code, to begin 15 minutes before the start of each meeting. The Recording Secretary shall also establish accounts with a free online survey tool that supports anonymous surveys, and with a free file-hosting service.
3. **Technical requirements.** For the purposes of electronic ballot voting and file sharing, members shall maintain Internet access during the meeting.
4. **Arrival announcements.** Members shall announce themselves at the first opportunity after joining the telephone conference call, but may not interrupt a speaker to do so.
5. **Departure announcements.** Members who leave the telephone conference call before adjournment shall announce their departure, but may not interrupt a speaker to do so.
6. **Quorum calls.** The presence of a quorum shall be established by roll call at the beginning of the meeting and on the demand of any member. Such a demand may be made following the departure of any member, or following the taking of any vote for which the announced totals add to less than a quorum.

7. Obtaining the floor. To seek recognition by the chair, a member shall address the chair and state his or her own name.

8. Motions submitted in writing. Members may submit motions to the chair in writing by uploading them to the file-hosting service and notifying the chair of the URL or download link needed to access the file.

9. Voting. All votes shall be taken by roll call, unless required under the rules or ordered by the Board to be taken by ballot. When a vote is taken by roll call, only the number of votes on each side and the number of members present but not voting shall be entered in the minutes, unless the Board orders a fully recorded roll-call vote. Ballot votes shall be taken electronically, as follows: The Recording Secretary shall post the question using the online survey tool, and the chair shall then alert the members that the polls are open, providing any additional information that members need to cast their votes online. The polls shall be closed not less than two minutes after they have been opened by the chair. Business may also be conducted by unanimous consent.

10. Technical malfunctions. Each member is responsible for his or her connection to the telephone conference call and to the Internet; no action shall be invalidated on the grounds that the loss of, or poor quality of, a member's individual connection prevented participation in the meeting.

11. Forced disconnections. The chair may order the Recording Secretary to disconnect or mute a member's connection if it is causing undue interference with the telephone conference call. The chair's decision to do so, which is subject to an undebatable appeal that can be made by any member, shall be announced during the meeting and recorded in the minutes.

SCENARIO C: SOME MEMBERS PARTICIPATE BY SPEAKERPHONE IN OTHERWISE FACE-TO-FACE MEETING

An organization may wish to permit its board to hold meetings in which some members are physically present while others participate by telephone.

Assume an organization's bylaws are patterned directly on the Sample Bylaws in this book, and assume that no rule of the organization requires votes of the executive board to be taken by ballot. By adding the following provision to Section 3 of Article VI of the bylaws (56:64), the organization can grant board members the right to participate in meetings by telephone, subject to rules adopted by the board:

Sample Bylaw Provisions for Scenario C

Board meetings shall be held at a central location, but Board members who are not present in person shall have the right to participate by telephone, subject to any limitations established in rules adopted by the Board to govern such participation.

The board may then find it helpful to adopt rules such as the following:

Sample Rules for Electronic Meetings for Scenario C

1. Login information. The Corresponding Secretary shall send by e-mail to every member of the Board, at least [time] before each meeting, the time and location of the meeting and the phone number and any access code needed to connect to the telephone conference call. The Corresponding Secretary shall also include a copy of, or a link to, these rules.
2. Call-in time. The Recording Secretary shall schedule a telephone conference call, using equipment provided by the Society or a free service, to begin 15 minutes before the start of each meeting.

3. **Meeting-room equipment.** The society shall provide a speakerphone at each meeting, which the Recording Secretary shall connect to the telephone conference call at least 5 minutes before the start of the meeting.
4. **Location of chairman.** The chair of the meeting must be present in the meeting room.
5. **Arrival announcements.** Members who participate in the meeting by phone shall announce themselves at the first opportunity after joining the telephone conference call, but may not interrupt a speaker to do so.
6. **Departure announcements.** Members who leave the telephone conference call or the meeting room before adjournment shall announce their departure, but may not interrupt a speaker to do so.
7. **Quorum calls.** The presence of a quorum shall be established by roll call at the beginning of the meeting and on the demand of any member. Such a demand may be made following the departure of any member or following the taking of any vote for which the announced totals add to less than a quorum.
8. **Obtaining the floor.** To seek recognition by the chair, a member shall address the chair and state his or her own name.
9. **Motions submitted in writing.** Members who participate in the meeting by phone may not submit motions in writing during the meeting, but are entitled to make motions orally. Members may, however, submit motions in writing by sending them at least [time] before the meeting to the Corresponding Secretary, who shall send any such previously submitted motions by e-mail to all members in advance of the meeting and shall provide copies to the members present in person at the meeting.
10. **Voting methods.** All votes shall be taken by roll call. Under the Board orders a fully recorded roll-call vote, only the number of votes on each side and the number of members

SAMPLE RULES FOR ELECTRONIC MEETINGS

present but not voting (including members participating by phone) shall be entered in the minutes. Business may also be conducted by unanimous consent.

11. **Loss of meeting-room connection.** Any business transacted while the meeting-room speakerphone is disconnected from the telephone conference call is null and void, except that the members present in the meeting room at such a time may take those actions that are in order in the absence of a quorum.

12. **Other technical malfunctions and requirements.** Each member is responsible for his or her connection to the telephone conference call; no action shall be invalidated on the grounds that the loss of, or poor quality of, a member's individual connection prevented participation in the meeting.

13. **Forced disconnections.** The chair may order the Recording Secretary to disconnect or mute a member's connection if it is causing undue interference with the telephone conference call. The chair's decision to do so, which is subject to an undebatable appeal that can be made by any member, shall be announced during the meeting and recorded in the minutes.

SCENARIO D: TELEPHONE MEETING WITHOUT INTERNET SUPPORT

Assume an organization's bylaws are patterned directly on the Sample Bylaws in this book, and assume that no rule of the organization requires votes of the board to be taken by ballot. By adding the following section to Article VI of the bylaws (56:64), the organization can authorize the board to meet by telephone conference call when desired, without using Internet services.

Sample Bylaw Provisions for Scenario D

Section 4. *Meetings Held Electronically.* Meetings of the Board may be conducted by telephone (a) when the President

or First Vice-President has obtained written consent for this from a majority of the Board members; (b) when so directed by the Board; or (c) in the case of special meetings, when so directed by those calling the special meeting.³ Telephone meetings of the Board shall be subject to all rules adopted by the Board, or by the Society, to govern such meetings, which may include any reasonable limitations on, and requirements for, Board members' participation. Any such rules adopted by the Board shall supersede any conflicting rules in the parliamentary authority, but may not otherwise conflict with or alter any rule or decision of the Society.

The board may then find it helpful to adopt rules such as the following to govern the conduct of telephone meetings:

Sample Rules for Electronic Meetings for Scenario D

1. **Connection information.** The Corresponding Secretary shall send by e-mail to every member of the Board, at least [time] before each meeting, the time of the meeting and the phone number and access code needed to connect to the telephone conference call.
2. **Call-in time.** The Recording Secretary shall schedule a telephone conference call, using a free service, to begin 15 minutes before the start of each telephone meeting.
3. **Arrival announcements.** Members shall announce themselves at the first opportunity after joining the telephone conference call, but may not interrupt a speaker to do so.
4. **Departure announcements.** Members who leave the telephone conference call before adjournment shall announce their departure, but may not interrupt a speaker to do so.
5. **Quorum calls.** The presence of a quorum shall be established by roll call at the beginning of the meeting and on

3. Compare this with Sample Bylaw Provisions for Scenarios A and B, which assume electronic meetings and require a supermajority to order an in-person meeting.

the demand of any member. Such a demand may be made following the departure of any member, or following the taking of any vote for which the announced totals add to less than a quorum.

6. **Obtaining the floor.** To seek recognition by the chair, a member shall address the chair and state his or her own name.
7. **Motions submitted in writing.** Members may not submit motions in writing during the meeting, but are entitled to make motions orally. Members may, however, submit motions in writing by sending them at least [time] before the meeting to the Corresponding Secretary, who shall send any such pre-submitted motions by e-mail to all members in advance of the meeting.
8. **Voting methods.** All votes shall be taken by roll call. Unless the Board orders a fully recorded roll-call vote, only the number of votes on each side and the number of members present but not voting shall be entered in the minutes. Business may also be conducted by unanimous consent.
9. **Technical malfunctions and requirements.** Each member is responsible for his or her connection to the telephone conference call; no action shall be invalidated on the grounds that the loss of, or poor quality of, a member's individual connection prevented participation in the meeting.
10. **Forced disconnections.** The chair may order the Recording Secretary to disconnect or mute a member's connection if it is causing undue interference with the telephone conference call. The chair's decision to do so, which is subject to an undebatable appeal that can be made by any member, shall be announced during the meeting and recorded in the minutes.



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To: Public Welfare Committee
From: Justin Schoenemann, Assistant City Administrator
Date: August 5, 2021
RE: Audio and Video Upgrades to Support Electronic Meetings

Staff would recommend the following audio and video upgrades in the event the City continues the use of hybrid meetings on a regular basis. While many of these recommendations are not necessary, they would result in an improved experience for all meeting participants.

1. **Audio and Video System:** Over the last two years, the City of Mequon has upgraded the video recording and broadcasting equipment that has resulted in a much-improved final product. The audio system in the Common Council Chamber is over a decade old and past its optimal point. Replacement of the entire audio system would be highly suggested in order to ensure online participants can hear all conversations taking place in the Chambers.
2. **Presentation Laptop Connection:** Currently the presentation laptop only allows for video to be broadcasted. Upgrades to the wiring would be required to allow audio from videos to be heard both in the Common Council Chambers and online.
3. **Virtual Meeting Software:** The City has been using GoToMeeting since the beginning of the pandemic. At the time it was more secure and stable system than other competitors at the same price point. However, Zoom has increased its security, functionality, and stability. Switching to Zoom would allow for a better user experience while also providing with City with additional controls to manage the virtual portion of meetings.
4. **Stationary Wide-Angle Camera:** A stationary wide-angle camera added to the Common Council Chamber would allow for easier operation of the production equipment. Right now, the videographer relies on recognizing voices and verbal cues to know when to change camera angles. A wide-angle camera would also allow for easy display of the entire meeting area to virtual guests.
5. **Wi-Fi Configuration:** Earlier this year, the City upgraded the Wi-Fi access points in the Common Council Chambers to ensure better access and connectivity. However additional work is still needed to determine why the audio and video connection during meetings lags.



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Office of Inspections

TO: Public Welfare Committee
FROM: Kim Tollefson, Director of Community Development
DATE: August 10, 2021
SUBJECT: RESOLUTION 3875 Informational Item Related to Home Irrigation Systems

Background

In July, the Public Welfare Committee discussed home irrigation systems related to shared well systems and concerns over wasteful use of said private home irrigation systems and its impact on the aquifer. Based on this stated policy matter, staff reviewed information available and summarized below. Planning and Inspections staff will be present at the August 10th meeting to further discuss the information and policy objectives.

Analysis

Chapter 86, Utilities, provides regulatory standards for well operation permits. Well operation permits are for owners of wells on premises served by municipal water wishing to retain their wells for any use. Section 86-61(b) lists conditions that must be met for issuance or renewal of well operation permits (see attached). One condition states the following:

“The proposed use of the private well shall be approved by the utility and generally that use is for irrigation purposes that do not substantially effect the groundwater supply”.

The City of Mequon regulates well abandonment through Chapter 86. Well abandonment shall occur within 90 days from the date of connection to the municipal water system should an owner chose not to retain the well for use.

The Department of Natural Resources (DNR) authorizes permits for the installation of community and private wells and the City is not made aware of the various proposed uses of the well under such DNR permit. The DNR also authorizes a high capacity well permit for use over 69 gallons per minute from the aquifer. High capacity permits may be for irrigation or a high water use commercial operation. A typical private well for a single-family home is 15-25 gallons per minute. Neither the City of Mequon nor City Water Utility has jurisdiction associated with private wells or high capacity use of wells.

A landowner with a private well not located in the municipal water service area is not required to notify the City or the DNR of usage. Local regulations do not specify standards for home irrigation systems and there is no specific permit for home irrigation systems.

Department of Natural Resources (DNR) Input:

According to Jim Kasdorf, DNR Water Supply Specialist, there is a relatively unlimited supply of water in the aquifer for this region of the state. DNR Program Director, Marty Nessman, indicates that some Wisconsin communities have enacted local ordinances governing wells. One example is City of Madison. Based on staff review of the City of Madison's ordinance, well operation permits and well abandonment permits are regulated as they are in the City of Mequon, but the Madison ordinance does regulate outdoor water usage for all water users in the utility service area (see attached). The City of Madison does have a Water Conservation and Sustainability Plan (see attached).

The City of Waukesha prevents overuse of water resources to avoid substantial depletion of the water table through local ordinance (see attached) and administered and enforced by the Water Utility.

Known Issues / Constraints

The Department of Community Development and Mequon Water Utility are not aware of current issues concerning home irrigation systems or impacts on the aquifer. According to Water Utility staff, there were historic concerns and issues about the aquifer running dry that led to the City to pursue access to public water. Since approximately 1998 approximately 4500 homes have been removed from the aquifer in Mequon, Bayside and Thiensville area and has attributed to a positive impact on the local aquifer.

Potential Assessment

If there are specific locations within the City that are known concerns, the DNR noted that a sample water survey of certain targeted areas could be considered. While the DNR has experience with such surveys, this is an assessment the City would have to sponsor.

Staff Summary

At this time, it is difficult to assess the policy matter given the unknown extent of the issue, limited access to conclusive data and the limited local authority by the City. Dependent upon the Committee's discussion and direction, other City departments and regional agency input may be necessary to advance policy discussions and decision making.

Attachments:

Current and Example Ordinances and Guide (PDF)

COMMON COUNCIL
OF THE
CITY OF MEQUON

RESOLUTION 3875

Informational Item Related to Home Irrigation Systems

Resolution forthcoming at a subsequent meeting.

Approved by: John Wirth, Mayor

Date Approved: August 10, 2021

I certify that the foregoing Resolution was adopted by the Common Council of the City of Mequon, Wisconsin, at a meeting held on August 10, 2021.

Caroline Fochs, City Clerk



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INSPECTION DIVISION

When a property with an existing well connects to the public water system the owner is given the choice to either properly abandon the well or obtain a well operation permit within one year of connection to the municipal water system.

Abandonment of the Well

1. To properly abandon the well, the owner of the property must hire a licensed well or well pump contractor.
2. The licensed contractor will obtain an Abandonment Permit from the city. City Hall is open Monday through Friday, 8:00 a.m. to 4:30 p.m. or download the permit from www.ci.mequon.wi.us, (under Forms/Plumbing Permit), and mail it in with a check payable to the City of Mequon for \$ 61.00.
3. Complete the abandonment according to the procedures and methods of s. NR812.26, Wisconsin Administrative Code.
4. Call the City of Mequon's Plumbing Inspector at 262-236-2922 for an inspection of the well abandonment. Well pump and piping must be out of casing and visible to the inspector at the time of the inspection. The sealing process shall be in progress at the time of the inspection.
5. File an Abandonment Report Form, supplied by the Department of Natural Resources, with the D.N.R. and send a copy to the city within 30 days of the completion of the well abandonment.

Well Operation Permit

To apply for a well operation permit, the owner must submit an application for each well after connection to the municipal water system has been made. Upon completion of the following requirements and payment of the fee, a well operation permit will be issued. The well operation permit is good for a period of five (5) years and can be renewed after repeating the process every five (5) years. The following conditions are to be completed for issuance or renewal of the well operation permit:

1. The property owner should hire a qualified well contractor to inspect the well and certify in writing that:
 - a. The well and pump installation comply with Wisconsin Administrative Code described s. NR812.42 standards for existing installations.
 - b. The pump system is functional.
 - c. The pump is not interconnected with the water utility, or discharging to sewer utility drains unless properly metered and authorized by the Sewer Utility. (Commercial or Industrial accounts only at this time).

Well Operation Permit continued

2. The homeowner or the licensed contractor will obtain a Well Operating Permit from the city. City Hall is open Monday through Friday, 8:00 a.m. to 4:30 p.m. or download the permit from www.ci.mequon.wi.us, (under Forms/Plumbing Permit), and mail it in with a check payable to the City of Mequon for \$ 122.00.
3. The well and pump must have a history of producing safe water evidenced by one (1) coli form bacteria sample. In areas where the DNR has determined that groundwater aquifers are contaminated with substances other than bacteria, additional chemical tests may be required to evidence safety of the water. The well contractor must submit a water sample to a licensed lab and a copy of the report must be submitted with the Well Operation Permit.
4. The well has a functional pumping system and the proposed use of the well water is reasonable.
5. **The Homeowner should call the City of Mequon's Plumbing Inspector at 262-236-2922 for final inspection of the well.**

Penalties

Any well owner violating any provision of the Municipal Water Utility Code 28-05 shall upon conviction be punished by a fine of not less than \$1 or more than \$200 and the cost of prosecution. Each day of violation is a separate offense. If any person fails to comply with this ordinance for more than 30 days after receiving written notice of the violations, the municipality may impose a penalty and cause the well abandonment to be preformed. The expense will be assessed as a special tax against the property.

Permit Fees

Well Abandonment Permit	\$ 61.00
Well Operation Permit	\$122.00
Well Operation Renewal Permit	\$122.00

Sec. 86-61. - Well operation permit.

- (a) Owners of wells on premises served by the municipal water system wishing to retain their wells for any use shall make application for a well operation permit for each well at the time of utility meter installation. The city inspection department shall grant a permit to a well owner to operate a well for a period not to exceed five years providing all conditions of this section are met. A well operation permit may be renewed by submitting an application verifying that the conditions of this section are met. The city shall require inspections and water quality tests to be conducted at the applicant's expense to obtain or verify information necessary for consideration of a permit application or renewal. Permit applications and renewals shall be made on forms provided by the inspection department. All initial and renewal applications must be accompanied by the appropriate fee from the adopted schedule.
- (b) The following conditions must be met for issuance or renewal of a well operation permit:
- (1) The well and pump installation shall meet the Standards for Existing Installations described in s. NR 812.42, Wisconsin Administrative Code.
 - (2) The well and pump shall have a history of producing safe water evidenced by at least one coliform bacteria sample. In areas where the Department of Natural Resources has determined that groundwater aquifers are contaminated with substances other than bacteria, additional chemical tests may be required to document the safety of the water.
 - (3) There shall be no cross-connections between the well's pump installation or distribution piping and the municipal water system.
 - (4) The water from the private well shall not discharge into a drain leading directly to a public sewer utility unless properly metered and authorized by the sewer utility.
 - (5) The private well shall have a functional pumping system.
 - (6) The proposed use of the private well shall be approved by the utility and generally that use is for irrigation purposes that do not substantially effect the groundwater supply.

(Ord. No. 2010-1341, § I, 1-11-2011)

13.04 - OUTDOOR WATER USAGE RESTRICTIONS.

(1) The Water Utility General Manager may impose voluntary or mandatory outdoor water usage restrictions on all water users in the Utility's service area under the criteria set forth below in order to avoid undue stress upon the resources and reserve capacity of the Water Utility. The restrictions may apply to all properties or to alternate sides of the street as the Water Utility General Manager deems necessary. Alternate side restrictions would apply to odd numbered sides of the street on even numbered calendar days and even numbered sides of the street on odd numbered calendar days, respectively. Restrictions may be for all day or for specified times each day. Voluntary restrictions shall not apply to new lawns - either sodded or seeded. Notice of said restrictions shall be provided through major news media outlets in the City. (Am. by Ord. 9656, 12-30-88)

(2) (a) Criteria For Voluntary Restrictions.

1. To maintain pumpage below a preset daily total amount, or
2. To comply with any electrical utility request for voluntary cutback in peak load electrical usage.

(b) Criteria For Mandatory Restrictions.

1. To avoid sustained low pressure (less than 20 pounds per square inch (PSI) to any customer), or
2. To maintain reservoir levels above preset fire reserve limits, or
3. To compensate for loss of one or more major wells due to mechanical failure.

(3) Penalty. Any person who violates any mandatory restriction on water usage issued pursuant to this section or fails to comply with any of its requirements shall upon conviction thereof, be subject to a forfeiture of not less than twenty dollars (\$20) nor more than one thousand dollars (\$1,000). Each day such violation continues shall be considered a separate offense.

(Sec. 13.04 Cr. by Ord. 5569, 8-13-76; Am. by Ord. 12,357, Adopted 3-16-99; Ord. 13,500, 1-23-04)

City of Madison
Water Utility
Water Conservation and
Sustainability
Plan



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“When the well’s dry, we know the worth of water.”

—Benjamin Franklin

Water is absolutely critical to successful, growing communities where residents can enjoy a high quality of life. Madison and Dane County are fortunate to have abundant supplies of water that if protected and used in a sustainable manner will last long into the future. Recent news about the water shortages in Atlanta, Georgia and elsewhere in the southeast, continuing concerns about the ability of communities in the southwestern United States to grow when water supplies are scarce, and the uncertainty caused by climate change, drive home the point that communities are not necessarily guaranteed a water supply. With proper management, planning and conservation now, Madison can help ensure clean and abundant water supplies far into the future.

It may seem counterintuitive for a utility that derives its income from selling water to plan for conservation, as more water sold means more income for the utility, on a unit by unit basis. But if the utility has to meet rising customer demand every year, it has to continually increase its pumping and delivery capacity, and it may eventually have to find additional sources of water if its primary source is overwhelmed. Each increase in capacity and supply costs the utility money to develop and operate, and it is actually cheaper for both the utility and its customers to invest in water efficiency rather than increased supply. Additional benefits of water conservation include improved water quality; a reduced burden on surface water quality, as less wastewater is generated; reduced greenhouse gas emissions due to reduced energy spent on water pumping; and increased spring, stream, and river flows, as less of the groundwater that feeds them is withdrawn.

Conservation Goal

Maintain the current annual rate of groundwater pumping, based on an average of five years (2002-2006), while reducing residential per capita water use by 20% below current levels by the year 2020.

BACKGROUND

GROUNDWATER RESOURCES

Below Wisconsin’s surface is an estimated 1.2 *quadrillion* (1,200,000,000,000,000) gallons of groundwater which, if above ground, would flood the entire state to 100 feet deep. That fact may beg the question of why water resources are a concern at all in our state (Kassulke & Chern, 2006). A key point to understand initially is that groundwater moves much more slowly than surface water. This fact makes planning for drinking water quantity and quality a challenge. When water is not replaced or recharged at the same rate at which it is pumped out of the ground, shortages can occur. Though we receive about 32 inches of rainfall each year, only 18-30% of that soaks into the ground. The rest either

runs off to the nearest water body or evaporates (UW-ASC, 2007). The amount of infiltration is controlled by a number of factors, including the intensity of each rain event and the soil type, but one of the primary influences in an urban area such as Madison is the ground cover. While natural areas, such as forests and prairies usually have high infiltration rates, urban surfaces, such as roofs and pavement, allow almost no infiltration at all. Thus, maintaining a sustainable infiltration rate in an urban area poses a particularly difficult challenge.

An additional challenge in maintaining quality groundwater for drinking water supply is preventing contamination. Industrial and other potential groundwater contaminants are abundant in urban areas, and keeping them out of the aquifer requires widespread acceptance of water quality protection plans. When groundwater becomes contaminated, it can become unusable as a drinking water source for many years. With over 70% of Wisconsinites using groundwater for their water supply and various industries relying on it for their livelihood, it is imperative that we keep this resource plentiful and free of anthropogenic contaminants (GCC, 2006).

Dane County sits atop two aquifers that are separated by an aquitard (collectively called the Cambrian Eau Claire Formation). The aquitard, a mostly-impermeable shale layer, occurs at around 200 feet below the surface and is up to 60 feet thick in some areas. The upper aquifer is a source of water for many private wells, while the lower aquifer, called the Mount Simon Formation, is the main water source for all Dane County municipalities, and is up to 700 feet thick (Bradbury et al., 2007). The 23 Madison municipal wells range from 500 feet to 1,175 feet deep. Figure 1 below shows a cross-section of the major aquifers in southern Wisconsin. Figure 2 is a profile of Dane County's aquifer formations.

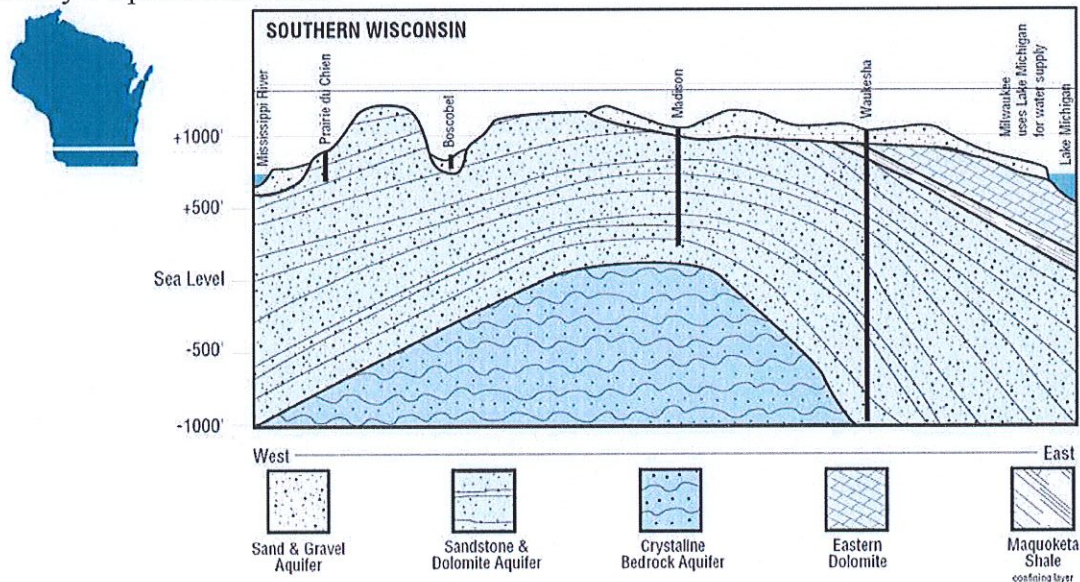


Figure 1: From Wisconsin's Buried Treasure: Groundwater Study Guide (WDNR, 2006)

GROUNDWATER LEVELS

The amount of available groundwater varies by season and region. Water flows slowly underground, its speed varying with the hydraulic conductivity of each type of bedrock material. When traveling through coarse sand, water can reach speeds of up to several feet per day. In very clay-rich areas water may only move inches in a year. Levels of groundwater can vary naturally throughout the year without human intervention. Some snowmelt will infiltrate each spring, allowing groundwater to rise. There is often a drop in levels during the summer months due to plant uptake, decreased rainfall, increased evaporation, and discharge to surface water bodies. When the plants become dormant in the fall, levels often rise again. When the ground is frozen in the winter, with little to no infiltration, the levels usually fall. From year to year, the level varies due to changes in precipitation (Hunt, 2003).

geology	lithology	hydrostratigraphy
Jordan Formation		upper aquifer, sandstone/dolomite, 0-60 m thick
St. Lawrence Formation		
Tunnel City Formation		
Wonewoc Formation		
Eau Claire Formation		Eau Claire aquitard, siltstone/shale, 0-18 m thick
Mount Simon Formation		Mount Simon aquifer, sandstone, 30-210 m thick

Figure 2: Cambrian stratigraphy of Dane County, Wisconsin (Bradbury et al., 2007)

[1 meter = 3.28 ft]

Human Impact

Madison citizens use, on average, about 73 gallons of water per day (based on the five-year average of 2002 to 2006). To supply these needs, the City of Madison pumps between 20 million and 54 million gallons per day (City of Madison Water Utility Data, 2007). Dane County pumps around 50 million gallons per day (Hunt et al., 2001), while the state pumps over a billion gallons each day to supply the drinking, industrial, commercial, livestock, irrigation, and other needs of its citizens.

With the introduction of high-efficiency toilets, low-flow showerheads, faucet aerators, and other conservation measures,

groundwater use per capita has generally stabilized nationwide (Hunt, 2003). However, an increasing population continues to create a demand for groundwater. In some areas around the state, such as the Fox River Valley, southeastern Wisconsin, and Dane County, the groundwater levels

have already been significantly drawn down (WGAC, 2006).

Pumping wells affect groundwater movement

The well causes a cone of depression

Well pumping can reduce flow to surface water

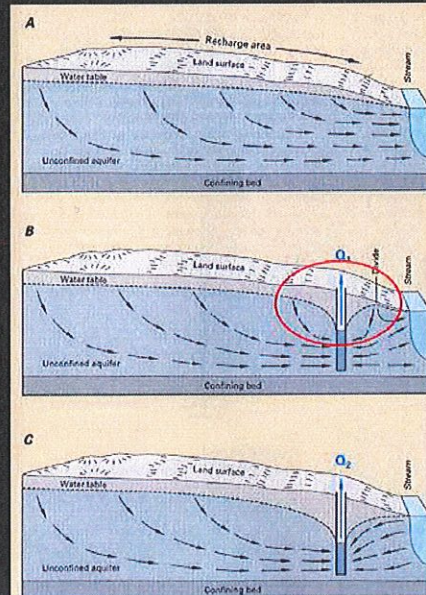


Figure 3: Groundwater Drawdown (from K. Bradbury presentation, September 14, 2006)

In addition to direct pumping of groundwater, humans have also impacted aquifers by decreasing the surface area available for recharge. Land development increases the amount of impervious surfaces, such as roofs and pavement, which causes more runoff and less infiltration of precipitation and snowmelt. In addition to the problems this trend causes for the aquifer, it can also contribute to flooding and surface water pollution, as stormwater carries dirt and oil from parking lots and streets to the nearest water body. In undeveloped areas, a higher percentage of rainwater stays where it lands, sinking into the ground and eventually becoming groundwater (WDNR, 1997).

GROUNDWATER DRAWDOWN

Because groundwater moves slowly, when a well is pumped for a long period of time, a cone of depression in the water table is formed surrounding that well (the water level is lowered significantly adjacent to the well, and less farther away, creating a cone shape). If pumping stops, the cone eventually disappears. When groundwater is pumped at a higher rate than it is recharged, drawdown occurs. When too many wells are placed near one another, their cones of depression merge and drawdown can be severe. Severe drawdown in a deep aquifer may pull water out of shallow aquifers, which in turn can affect springs and surface water bodies as well.

Streams, lakes, and wetlands can all be affected by groundwater drawdown. Some streams rely entirely on groundwater for their baseflow during dry periods, and without enough groundwater input they may run dry, compromising wildlife habitat. Many wetlands rely on groundwater for up to 70% of water input. Groundwater drawdown can greatly impact these sensitive areas (WDNR, 1997). In Dane County, there is a cone of depression of about 30 feet in the deep aquifer (Mount Simon Formation), caused by municipal water use. This drawdown affects the surface water by drawing down the shallow aquifer *at least* 40 feet in localized areas (Bradbury, 2006).

Because of this substantial drawdown, the Wisconsin Groundwater Advisory Committee has warned it could designate Dane County as a Groundwater Management Area. The governor and State Senate and Assembly leaders appointed the members of this committee. Their charge, as directed by 2003 Wisconsin Act 310, is to identify areas with groundwater quantity issues. Two areas of the state were immediately identified as Groundwater Management Areas: the southeast area (all or parts of the Milwaukee, Waukesha, Washington, Ozaukee, Walworth, Kenosha, and Racine counties) and the Lower Fox River Valley (all of Brown and parts of Calumet and Outagamie Counties). These two areas have experienced drawdown of more than 150 feet. Identifying locations as Groundwater Management Areas triggers a requirement to create a regional groundwater management plan with assistance from the Department of Natural Resources. It also gives the DNR more authority over the approval process for high capacity wells (WGAC, 2006).

In its 2006 report, the Groundwater Advisory Committee recommended that Dane County be listed as a Groundwater Attention Area, which is one step below a Groundwater Management Area. An Attention Area is considered a warning that the groundwater conditions are such that a coordinated management plan should be put into place to prevent further drawdown. General managers from Dane County water utilities have been meeting since early 2007 to discuss regional groundwater issues.

One cause of groundwater drawdown in the Dane County area is the fact that the Madison Metropolitan Sewerage District (MMSD) discharges most of its effluent to Badfish Creek, which is outside the originating watershed of the city's drinking water. The groundwater is

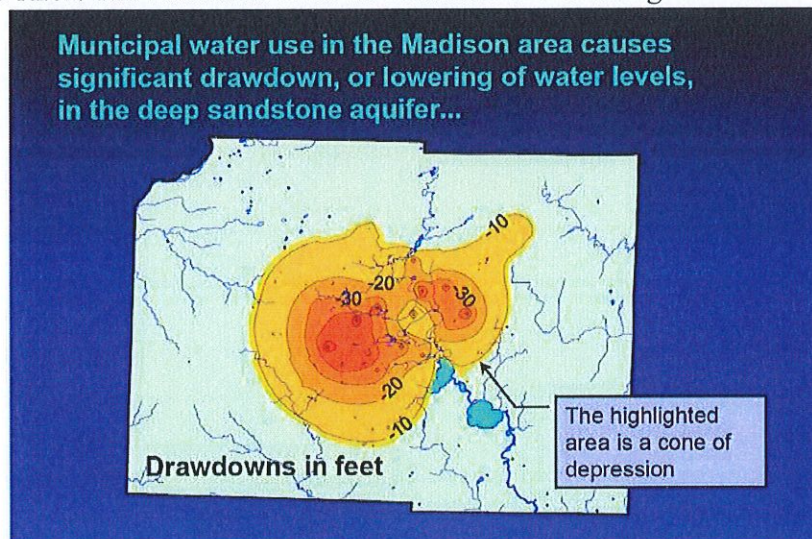


Figure 4: Groundwater Drawdown (from K. Bradbury presentation, September 14, 2006)

pumped from one watershed and discharged into another one. An exception to the MMSD's handling of wastewater is the case of the City of Verona, whose effluent is returned to its originating watershed in Badger Mill Creek. However, the effluent does not necessarily address groundwater recharge.

The drawdown has caused a decrease in baseflow for many of Madison's streams and shallow springs, especially around Starkweather Creek and Lake Wingra. Prior to groundwater pumping, it is believed that groundwater flowed into the Madison area lakes, but in some locations it now appears that this flow has reversed, drawing lake water into the groundwater (WDNR, 1997). Research by Baumann and colleagues (1974) indicated that at least 28 springs in the Lake Wingra watershed have dried up.

Concerns about the drawdown spurred a multi-departmental collaboration in 1992 called the Regional Hydrologic Modeling and Management Program to look more closely at groundwater issues. The group continues to update a regional groundwater-modeling program. The model is able to show current conditions as well as predicted conditions based on various pumping rates (DCRPC, 2004).

Mitigation Projects

Concerns about threats to groundwater quantity have spurred several area mitigation projects. One such project resulted from the construction of the new West Campus Cogeneration Facility on the UW campus. Since spring 2005, the facility has used water from Lake Mendota in its operations. While the amount withdrawn has minimal effects on the lake itself, it could potentially lead to problems downstream in the Yahara River during droughts. To mitigate any adverse effects from pumping, a group of public and governmental entities worked together to create a mitigation plan.

After about 20 site evaluations, the Odana Hills Golf Course was chosen as the best location to infiltrate treated stormwater. Stormwater draining to the Odana Ponds is treated onsite and pumped to an underground infiltration field located in the golf course. The water quality and quantity is monitored extensively before infiltration. Completed in 2006, the Ponds' infiltrated water will eventually feed shallow springs that flow into Lake Wingra, with minimal impacts to the existing pond. While it will take about 30 years for the infiltrated stormwater to reach the springs, an effect is likely to be seen much sooner, due to an increase in head pressure in the upper aquifer. The goal of this project is to infiltrate 80 million gallons per year. (MGE, 2007). See Figure 5 for a map of this project.

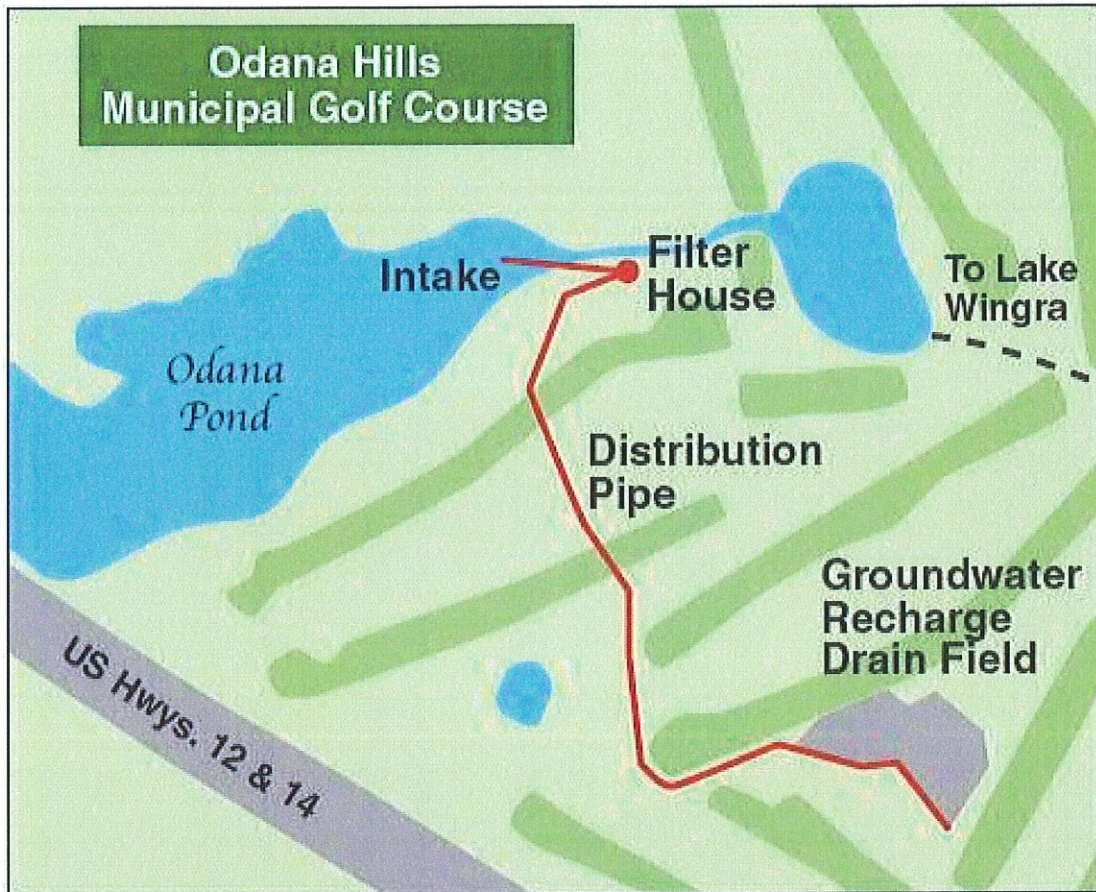


Figure 5: Map of the Odana Hills Golf Course stormwater infiltration project (MGE, 2007)

GROUNDWATER QUALITY

Certain areas around the state are fairly susceptible to groundwater contamination and shortages. For example, areas with bedrock very close to the surface have limited available water and are prone to contamination because percolating water receives only minimal filtration. Other areas have very sandy soils that allow water to flow through faster than it can be filtered and so are prone to problems with contamination from fertilizers and pesticides (WDNR, 1997). In southeastern Wisconsin and the Fox River Valley, increasing levels of radium are encountered due to groundwater drawdown. Some of these areas are now faced with the need for new water sources.

Because groundwater moves slowly relative to surface water, contamination below ground can have an impact for many, many years. Depending on soil conditions, residue from a spill might be detectable for hundreds or even thousands of years. The relatively slow movement of groundwater has significant implications for water quantity as well as quality (Bradbury et al, 1985; Alley et al, 1999).

Wellhead Protection Plans

In 1986, the federal government, through amendments to the federal Safe Drinking Water Act, required statewide wellhead protection programs. In 1993, the EPA approved a state program overseen by the Wisconsin Department of Natural Resources. In turn, the DNR requires a wellhead protection plan for any municipal well constructed after May 1992. There is a second, voluntary state program for wells developed prior to 1992. Wellhead protection is intended to protect public water supply wells from contaminants that could enter the public water supply by managing land use activities in areas that contribute water to the wells. Sixteen of the 34 Dane County municipal water systems have at least one wellhead protection plan in place. Fourteen systems have wellhead protection ordinances. The City of Madison has completed wellhead protection plans for 11 wells thus far and has a wellhead protection ordinance in place.

Madison's General Ordinance 28.107 established Wellhead Protection Districts. Each well district has two zones. Zone A is defined as "the area around the well in which it has been determined that groundwater and potential contaminants will take five (5) years or less to reach the pumping well." Zone B is the area in which it would take contaminants 100 years to reach the well or within 1,200 feet of the well. The Water Utility reviews proposed uses that fall within either of the zones before construction plans can be approved. Existing uses are allowed, but expansion of those uses must be approved. Proposed uses are considered on a case-by-case basis. The City of Madison's General Ordinance Chapter 13.22 Wellhead Protection states the following:

To prevent contamination of wells supplying municipal water systems, the Water Utility General Manager or his/her designee shall review all proposed uses on zoning lots in Zones A and B in Wellhead Protection Districts.

Review will be based on the presence, use, or storage on the lot of hazardous chemicals, as defined by the Environmental Protection Agency. Consideration will be given to factors including but not limited to the following: whether the zoning lot is in Zone A or Zone B, effective storage or containment of particular hazardous chemicals, and the magnitude and/or frequency of use of the hazardous chemicals. Approval of the use may be contingent on specific conditions being met. A current list of hazardous chemicals, as defined by the Environmental Protection Agency, shall be maintained.

Water Utility staff are currently working on creating a wellhead protection plan for each municipal well in the city by 2010. Changes to the ordinance are currently under consideration that would establish wellhead protection areas around each of the 23 wells, even before the wellhead protection plans are completed.

DRINKING WATER

In 1880, a petition to the Madison Common Council requested that a municipal water service be constructed for its 10,324 citizens. The Madison Water Utility now provides service to more than 62,000 locations in the City of Madison, Town of Madison,

Shorewood Hills, Maple Bluff, Blooming Grove, and Town of Burke. Despite being adjacent to Lakes Mendota and Monona, the City developed its water supply system using deep wells.

Overall, Wisconsin has high quality drinking water, though some areas are more susceptible to well contamination than others. In recent years, complaints of colored water, a result of elevated levels of Manganese (Mn) and Iron (Fe), have shaken public confidence in the safety of Madison's public water supply. While the colored water is not a public health problem, it is considered a water quality problem. The Water Utility has proposed to treat four wells that have had levels of Mn and Fe that exceed the EPA's Secondary Standards for water quality.

Economic and Environmental Costs of Water Use

In 2007 MWU pumped 11.392 billion gallons of water and used 22.287 million kilowatt hours (kWh) of electricity to pump that water. In 2007 it took an average of 1,956 kWh to pump 1 million gallons of water.

	Per Million Gallons of Water Pumped
2007 Electricity Usage	
Average kWh	1,956
Average kWh cost	.088
Electricity cost	\$172.10
2007 Chemical Usage	
Average cost of Chlorine	2.17
Average cost of Fluoride	13.51
Total Cost to Pump and Treat	\$187.79
CO2 produced @ 2.216 lbs per kWh	4,334.50 lbs
CO2 in tons	2.1673 tons

A Focus on Energy Report from May 2004 provides statewide emissions factors of 2.216 pounds of CO2 produced per kWh. That equates to 4,334.5 pounds of CO2 produced for every million gallons of water pumped. Madison Water Utility is enrolled in the Green Power Tomorrow program with MG&E and is purchasing 2,265,900 kWh of Green Power Tomorrow electricity. This purchase will offset electricity use at an annual cost of \$22,659. The annual offset of CO2 will be 5,021,234 pounds.

Conservation benefits attributed to this topic would be that for every 1million gallons of water that the utility avoids pumping, the result would be a savings of \$187.79 in 2007 dollars, and the prevention of 4,334.50 pounds of CO2 being put into the air.

WATER CONSERVATION PLAN

This plan has been compiled for the City of Madison Water Utility as a guidance document to **maintain the current annual rate of groundwater pumping**, excepting growth in new areas, provided that the recharge rates in new areas are sustainable. In the City of Madison, annual pumping has remained steady at about 11.3 billion gallons per year for the past 10 years. The introduction of water-saving appliances has assisted in conserving water at every level. The loss of high water demand industries has also contributed to the reduction in the growth of consumption. The University of Wisconsin and Oscar Mayer have also implemented aggressive conservation plans.

In order to maintain the current pumping level, however, certain measures will need to be put in place to further reduce the per capita use. Consequently, a secondary objective is to **reduce the residential per capita water use by 20% by the year 2020**. The current average for residential water use is about 73 gallons per day (5-year average, 2002-2006). In order to meet the 20% goal, each person would need to decrease their daily water use by about 15 gallons, which corresponds to a residential goal of **58 gallons per day**.

Because the Madison Water Utility has different types of customers who use water in very different ways, the conservation steps outlined in this plan are broken into sections corresponding to each of these groups. Included are sections for residential, commercial, industrial, and municipal/government accounts, as well as the University of Wisconsin.

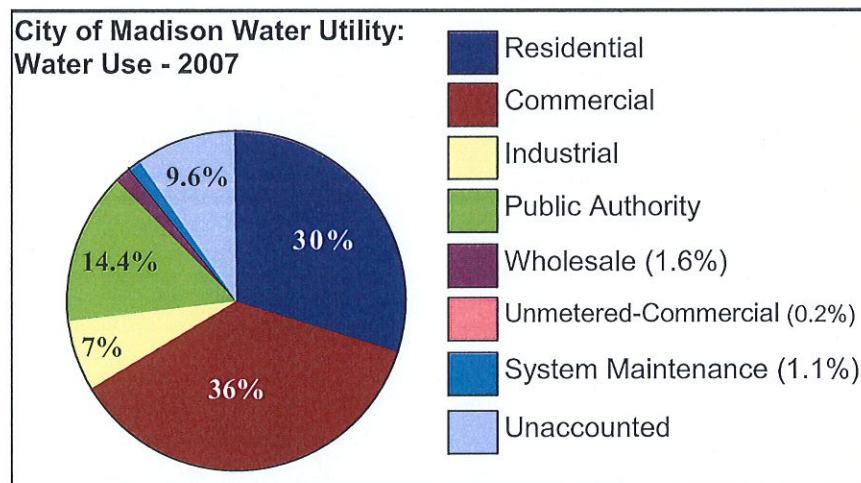


Figure 6: Percent Annual Water Use by Water Utility Customers, 2007

RESIDENTIAL

Goal: To reduce per capita residential use of water by 20% by 2020.

The 55,000 residential accounts in the City of Madison far exceed the number of commercial, industrial and municipal accounts, though representing only 41% of metered sales.

Water Use Statistics

Nationwide, daily **indoor** water use per capita is 69.3 gallons. By installing all high-efficiency fixtures, this daily use drops by about 35% to 45.3 gallons. The breakdown by activity follows:

Table 1: Indoor Water Use (Vickers, 2002)

Use	Gallons Per Capita Per Day– Typical	Gallons Per Capita Per Day-Conservation
Showers	11.6	8.8
Clothes Washers	15.0	10.0
Dishwashers	1.0	0.7
Toilets	18.5	8.2
Baths	1.2	1.2
Leaks	9.5	4.0
Faucets	10.9	10.8
Other Domestic Uses	1.6	1.6
TOTAL	69.3	45.3

In the City of Madison, the residential average daily use per capita (indoor and outdoor) is about 73 gallons per day. By 2020, the City of Madison is expected to have over 245,000 residents, assuming a growth rate of 1.1%. Reducing per capita residential water use by 20% by 2020 would keep total residential water usage approximately equal to, or perhaps slightly less than current rates. The daily average use would need to be about **58 gallons per person**. This is the foundation for being able to maintain the current annual pumping rates, which is the overall goal. Progress toward this goal shall be measured using a rolling 5-year average in order to minimize fluctuations due to weather variations.

Water Utility staff recently compared average water use of an established, older neighborhood and a new neighborhood to see if higher-efficient appliances/fixtures in the newer homes have an impact on average water use. Data was derived from a cross-section of 1,029 customers in seven different billing routes, some of which were in the older neighborhoods and some in newer. The results, surprisingly, indicated a near-identical water use between the two neighborhoods. It does not appear that the newer homes exhibit any greater water efficiency than the older homes. It is difficult to determine how much water use can be attributed to irrigation in the larger lot sizes (pervious area) because there seems to be a greater correlation with home size

(impervious area), which would no doubt relate to more people in the home consuming water for all household purposes.

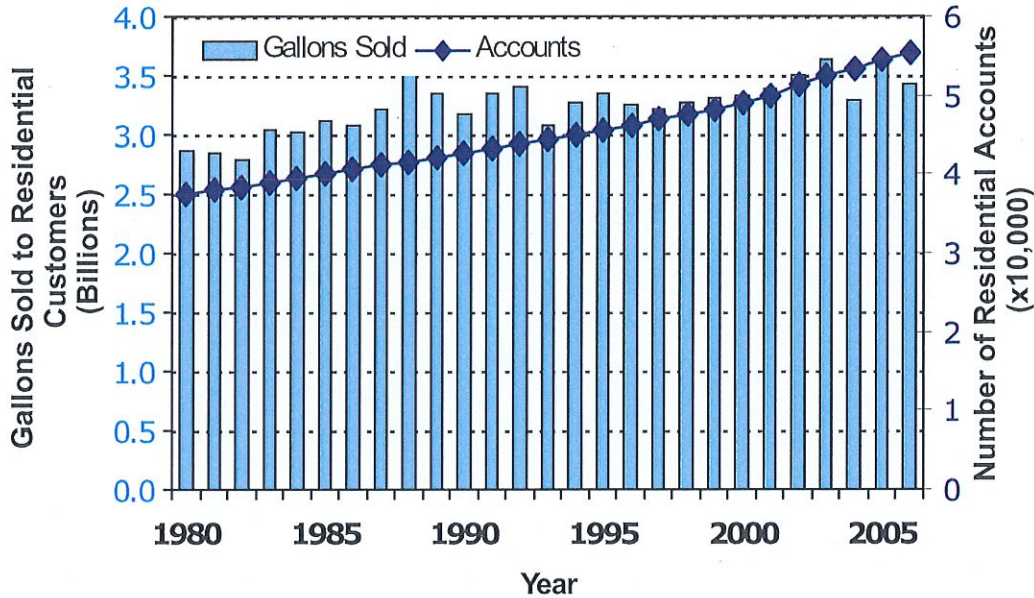


Figure 7: Gallons of water pumped by City of Madison Water Utility and the number of customers served (1980-2006) (data from Madison Water Utility)

Seasonal Water Use

For many residents, water use increases significantly in the summer due to outdoor activities such as car washing, lawn care, and swimming pool use. According to the EPA, lawn care makes up about $\frac{1}{3}$ of all outdoor water use nationwide. Also, when using a hose to wash off sidewalks and driveways, about 50 gallons of water is used every 5 minutes.

In some municipalities, ordinances related to outdoor use are put in place to control the increased demand for water in the summer. According to the University of Wisconsin Extension office, an established lawn requires only about 1 inch of water each week, and it is best to water just once per week to encourage vigorous root growth. In addition, watering during the middle of the day causes most of the water to be lost to evaporation before it has a chance to infiltrate. However, many homeowners can be seen watering their lawns nearly every day and often during the hottest time of the day.

While encouraging indoor water conservation will continue to be an important aspect of groundwater sustainability, water-efficient appliances make this a fairly easy step for many homeowners. Outdoor water conservation will likely have the biggest impact from

the residential sector. A recent analysis of one residential billing group showed a 25% increase in summer over winter use.

The Utility has a 6-month billing system, and residents fall into one of six billing cycles. This can make it difficult for the Utility to estimate monthly residential use as well as for homeowners to track their prior use. The amount of water *pumped* is tracked monthly, though this does not necessarily reflect the amount of water that is *sold* each month as the Utility needs to pump more water than it sells. Figure 9 shows the total monthly pumping rates in 2007 for all classes.

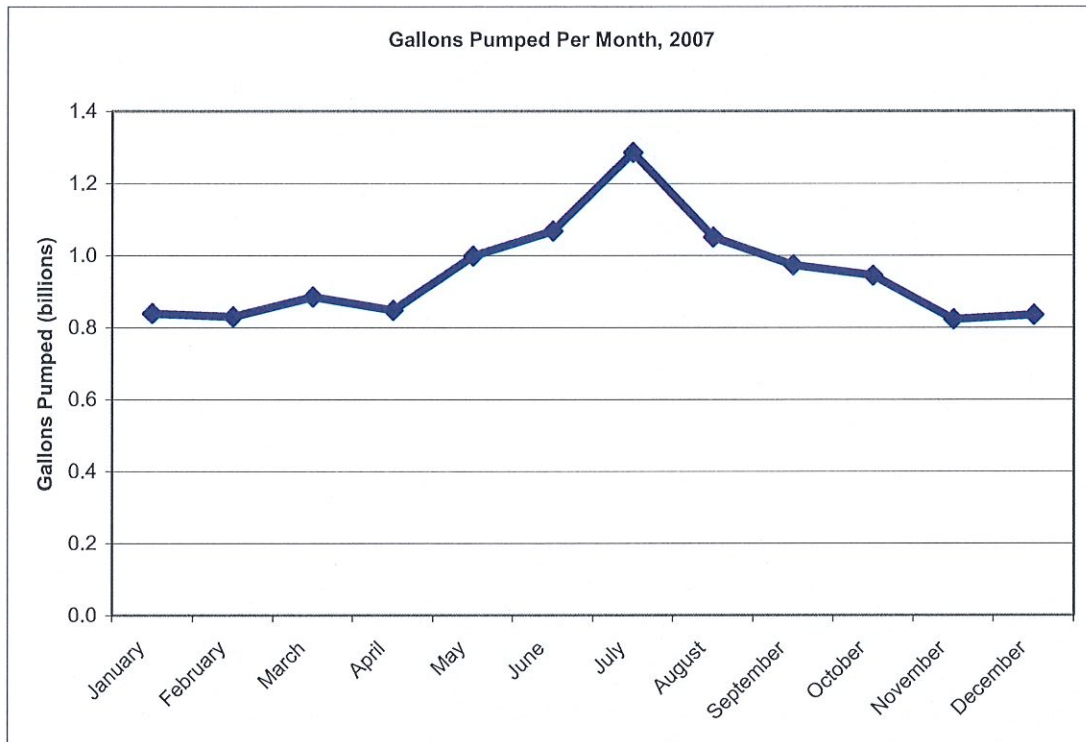


Figure 8: Gallons of water pumped per month by City of Madison Water Utility in 2007

Water Rates

Basic economic principles dictate that higher prices will decrease demand for nearly any good, and water is no exception. Conservation rate structures create a higher rate charge when water use exceeds a predetermined level. Rate structure may also have multiple tiers with increasing rate associated with each subsequent tier. Western Resource Advocates, a non-profit environmental law and policy organization, recently evaluated thirteen Colorado utilities on their water conservation strategies. One component of their analysis was the rate structure. Ten of the thirteen Colorado utilities employed an inclining block rate structure in which a higher per unit charge is imposed when a threshold is exceeded.

Moving to a system of rates that actively promotes conservation needs to be done carefully to minimize impacts on low-income residents while also maintaining an adequate revenue stream. Changes to billing frequency and incorporation of new software need to be addressed, both of which generate additional costs. Despite these added costs, communities across the country are implementing conservation rate structures. Madison Water Utility is committed to doing what is best for customers and the long-term sustainability of our water resources, and so shall analyze the costs and benefits of making such a switch.

Currently, the Water Utility uses a declining block rate structure for all classes of customers. Only the biggest water users benefit from the declining rate structure. The **average residential customer (a 2.5 person household) uses 45 CCF every six months or 184 gallons per day.** The Madison Water Utility should consider a conservation rate structure in its 2009 rate case.

Table 2 provides examples of inclining rates for Ann Arbor, MI, Boulder, CO, Tucson, AZ, and Waukesha, WI. Boulder and Tucson are arid, and water resources have been an historic issue. Waukesha has well contamination problems and is undertaking water conservation strategies to assist the City's interest in tapping Lake Michigan's surface water.

As indicated in Table 2, both Ann Arbor and Tucson have used a low rate price point around 15 CCF (61 gallons/day), which is similar to the City of Madison's 20th percentile ranking (20% of all residential customers use 15 CCF or less). This could be described as "subsistence water use level." Waukesha purports to have a conservation rate structure but has set its second rate step so high that few residential customers would be affected.

The staff of the Wisconsin Public Service Commission have informed the Water Utility that the commission has reservations about a conservation rate structure for communities that bill less frequently than four times per year. The Water Utility has projected in its 2010 and 2011 budget years funding for an automatic reading system (AMR) that would enable the utility to bill on a quarterly or monthly basis. This would then meet the PSC's requirement to implement a conservation rate structure.

With these issues in mind, a sustainable rate structure has been proposed in Table 2 for Madison. Inclining rates were calculated based on four different levels of water use. The lowest water users fall into the 20th percentile of current use rates, "the subsistence level." The next level is what a Madison family would use if the 20% reduction goal were met, "the conserving level." The third level is what the current average Madison family uses, the "median level," and the final level shows the 80th percentile of water use (highest water users).

Table 2 also proposes a rate structure for 2009 for illustrative purposes. (The actual rate structure proposed will be determined based upon the PSC procedures.) The proposed

rate structure would not increase for the lowest level of usage. To address the issue of the semi-annual bill, the Water Utility should point out that the cost differences at the various rate steps are reasonably in accord with the current rate structure and the fact that the City could bill quarterly in five to six years.

Table 2: Examples of Conservation Rate Structures

Municipality	Billing Cycle	Base Meter Rate - 6 Months	Rate Per CCF (748 Gallons)		Rate/CCF	20th Percentile		Semi-Annual Cost for Madison Residential Customer	
			Rate Steps			Conserving	Median	80th Percentile	
Semi-Annual Consumption (CCF)						15	36	45	55
Average Daily Use (Gallons)						61	148	184	225
Ann Arbor, MI	Quarterly	\$ 22.50	0.0	14.0	\$ 1.07				
			14.0	56.0	\$ 2.25	\$ 39.73	\$ 86.98	\$ 107.23	\$ 129.73
			56.0	90.0	\$ 3.61				
			>90.0		\$ 4.95				
Boulder, CO	Quarterly	\$ 51.30	0.0	33.7	\$ 1.41	\$ 72.45			
			33.7	56.2	\$ 1.87		\$ 103.12	\$ 119.95	\$ 138.65
			56.2	84.2	\$ 3.78				
			84.2	112.3	\$ 5.61				
			>112.3		\$ 9.35				
Tucson, AZ	Monthly	\$ 32.52	0.0	15.0	\$ 1.17	\$ 50.07			
			15.0	30.0	\$ 4.09				
			30.0	45.0	\$ 5.78		\$ 232.80	\$ 284.82	
			>45		\$ 8.03				\$ 365.12
Waukesha, WI	Quarterly	\$ 39.00	0.0	80.2	\$ 1.95	\$ 68.25	\$ 138.45	\$ 156.00	\$ 175.50
			80.2	107.0	\$ 2.20				
			>107		\$ 2.70				
Madison, WI	Semi-Annual	\$ 25.50	0.0	500.0	\$ 1.20	\$ 43.50	\$ 68.70	\$ 79.50	\$ 91.50
			>500		\$ 0.86				
Madison, WI A Proposed Sustainable Rate Structure for Residential Customers.	Semi-Annual	\$ 27.50	0.0	15.0	\$ 1.20	\$ 45.50			
			15.0	40.0	\$ 1.30		\$ 72.72		
			40.0	55.0	\$ 1.32			\$ 84.50	\$ 97.70
			>55		\$ 1.38				

Toilet rebate program

By federal law, manufacturers may not make a toilet that uses more than 1.6 gallons per flush (residential and commercial). A model that uses 1.6 gallons per flush (GPF) is considered a “low-flow” toilet, whereas a high-efficiency toilet (HET) uses no more than 1.28 GPF. The Water Utility proposes to create a new program that would offer incentives to replace old, inefficient toilets with high-efficiency models, similar to the lead pipe replacement program that the utility offered in past years. Pending Public Service Commission approval, the city would work with local plumbers and retail outlets to offer a rebate for the installation of a high-efficiency toilet. In order to receive the rebates, residents would have to prove that older toilets were actually replaced, and each household would be eligible for a rebate on only one toilet. Final details of the program are yet to be determined.

Residential water audit

Most residents simply do not realize how much water they use at home or what they can do to reduce their consumption. The water utility could offer audits of home water use in which utility employees would analyze all water-using appliances and systems. The homeowners would be informed about cost effective ways to reduce their in-home water consumption. Given the staffing burden this could potentially pose to the utility, there would need to be a charge for the service, but it is anticipated that a rebate might be able to cover the cost of the audit if additional steps are taken as a result of the audit, such as replacing toilets, faucets, washers, etc.

Currently, if a customer has an unusually high water bill, water utility staff will send a letter and set up an in-home audit for leak detection. The Water Utility does about 150 audits each year.

Landscaping

Many non-native plants that are used for landscaping purposes require much more water than native species. Using native plants that are adapted to local climate conditions and can withstand seasonal droughts will be encouraged and promoted by the utility and other city departments.

Several cities across the U.S. have already created landscape ordinances for new development that encourage water efficiency. The City of Santa Cruz (CA) enacted a municipal ordinance to promote water conservation in order to control the peak summer water demand. They require a landscape and irrigation plan for new commercial, multi-family, and single-family lots over ½ acre as well as for current customers who are required to modify their landscape in conjunction with a land use approval process. A city water conservation office approves the plans. Requirements include a separate water

meter for irrigation purposes, a landscape water budget, and an irrigation /landscape design.

Education and outreach

The Water Utility will work with SustainDane to publicize and promote the water conservation kits and rain barrels that they provide. They will also continue to provide support and speakers as requested to schools and community organizations to promote education about the importance of water conservation. During times of high water use (hot, dry periods), the utility will continue to run public service announcements reminding residents of the importance of reducing water use and how to do so.

The Utility and City will actively promote the EPA's WaterSense labeling program for toilets, washers, showerheads and irrigation sprinkler systems and will lead by example by choosing WaterSense labeled products for city facilities.

The Water Utility is also getting involved and making a financial commitment to locally promoting 'GreenPlumbers'. This is a national accreditation program that educates plumbers on new, water-saving techniques and general water conservation. The program's goal is to reach 40,000 plumbers nationwide.

Bottom Line

The five most important actions residents can take to conserve water are:

1. Fix leaks
2. Replace old toilets (largest water user in the home)
3. Replace clothes washer (second largest water user)
4. Plant the right plants
5. Water only what lawn/gardens need

COMMERCIAL

Goal: Promote water conservation through rebate promotions and education

For billing purposes, commercial accounts refer to businesses as well as multi-family housing (more than 3 units). Conservation strategies for this customer class, including targeted rebates, education, ordinances, and a certification program, are briefly described below. The strategies described represent a suite of options available to the utility for consideration.

Multi-family/commercial property high-efficiency toilet rebate

Apartment property owners/managers could be eligible for a rebate for replacing a 3.5-gallons per flush (GPF) or higher toilets with a new, higher efficiency toilets that use 1.6 GPF or less. Other utilities offer rebates of \$25-\$250, where the size of the rebate depends on the efficiency of the replacement toilet.

Denver Water offers a \$25 rebate for replacement of an older toilet with a qualifying, low-flow unit that uses 1.6 GPF or less. Commercial customers are eligible for a \$125 rebate when they replace an older toilet with a high-efficiency model that uses 1 GPF or less. Denver also offers a rebate of \$200 per unit for the replacement of urinals with models that use 0.5 GPF or less. Similarly, Marin Municipal Water District (CA) offers a \$250 rebate and the Contra Costa Water District (CA) offers a \$175 rebate for the replacement of a 3.5-GPF toilet with one rated at 1.28-GPF or less.

Water utilities in the cities of Sioux Falls (SD), Seattle (WA), and Aurora (CO) offer owners of multifamily housing and commercial establishments rebates that range from \$50-\$100 for the replacement of older, less efficient toilets. Seattle offers a free high-efficiency toilet (rated at 1.28-GPF) or \$80 rebate to replace toilets installed before 1994. Some communities such as Boulder, CO, allow unlimited high-efficiency toilet rebates, while others impose a cap. The city of Aurora limits the rebate to \$10,000 per property.

There do not appear to be many programs offering rebates for installing high-efficiency toilets in newly constructed buildings, likely because new toilets are all 1.6 GPF or less. Most programs do not provide recycling or disposal of old toilets. The Santa Clara Valley Water District provides a list of toilet recyclers and their fees, for informational purposes.

The high-efficiency toilet rebate program could also include waterless urinals, which use no water and have no flush. They use a liquid-filled trap in the drain of the unit to allow liquids to flow through while blocking sewer odors. The Dedham-Westwood Water District (MA) offers rebates of \$100 for installation of waterless urinals in new construction and \$200 for the replacement of conventional urinals.

Commercial laundry equipment rebate

Commercial accounts would be eligible for a rebate, based on the number of gallons saved per year over the previous machine. Before implementing this rebate program, the

utility should survey existing laundry facilities to determine the extent to which these establishments are already using water-efficient washers. In addition, the utility would need to establish whether the rebate was dependent on the type of equipment replaced, i.e. coin-operated top/front loading equipment or larger industrial units used by linen/diaper service companies, hospitals, and hotels. Denver (CO) offers a \$150 rebate for each domestic-size, coin-operated laundry machine that replaces an older, inefficient one. Commercial accounts in Boulder (CO) are eligible for \$100 per machine rebates for qualifying water-efficient washing machines; there are no limits on the number of eligible rebates per account.

The Contra Costa Water District (CA) offers a rebate of up to \$220 for the purchase or lease of a high-efficiency commercial washer, coupled with a \$130 rebate from Pacific Gas and Electric Company. There is no requirement that the efficient washers replace older models. However, washers must be installed in commercial laundries or multifamily developments. Seattle (WA) offers rebates up to \$100 for the purchase of high-efficiency commercial or shared washing machines. The exact amount of the rebate depends on the efficiency of the machine.

Commercial dishwasher rebate

Commercial accounts could be eligible for a dishwasher rebate whose value is based on the number of gallons saved per year over the previous machine. For example, Marin Municipal Water District (CA) offers a rebate of up to \$500 for the five-year lease of a water-efficient commercial dishwasher.

Targeted education and outreach to promote water conservation

Specific commercial enterprises that could be targeted for education/outreach include the hospitality industry, nursing home/retirement communities, hospitals/medical centers, carwashes, business parks, laundromats/linen service, and landscaping. Specific educational materials would be provided in conjunction with any rebate or incentive program. Examples of some proposed outreach activities are provided below.

1. Encourage/provide incentives (rebates) for replacement of older, less-efficient washing machines in
 - Hospitality Industry
 - Laundromats
 - Linen/Diaper Service
 - Hospitals
 - Nursing Homes
2. Encourage/provide incentives (rebates) for replacement of 3.5-GPF or higher toilets with high efficiency toilets in all commercial and multi-family buildings.

3. Provide/promote use of “Request linen washing” cards to the hospitality industry.
4. Promote landscaping/xeriscaping with native plants that minimizes need for watering due to their natural suitability to the existing climate. Landscaping companies would be the primary audience; however, owners of all commercial properties including business parks, retirement communities, nursing homes, shopping centers, and medical clinics with extensive green spaces would also be targeted. In addition to promoting native landscaping, information on plant watering requirements, ideal times for watering, and water-conserving irrigation/watering systems will also be provided. Seminars or workshops on native landscaping also would be planned.
5. Recommend water audits or leak detection surveys to reduce water waste from leaky toilets, faucets, and showers in
 - Multi-family housing
 - Hotels/motels
 - Restaurants
 - Shopping centers/malls
 - Office/business parks
6. Provide best management practice information to car washes and provide certification to those car washes implementing water conservation techniques.

Proposed ordinances

New ordinances that should be considered for implementation are as follows

1. *Water sprinkling ordinance*
Many communities in water-scarce areas such as Southern California and the arid Southwest impose water-sprinkling restrictions that limit the times of day and/or days of the week when watering may occur. In 2006, Waukesha Water Utility imposed restrictions that limiting watering to two days per week. The ordinance also requires that watering takes place before 9 a.m. and after 5 p.m. The decision to impose water restrictions was driven by water quality issues at a number of city wells, specifically radium levels that exceeded federal drinking water guidelines.

Currently, the Madison Water Utility General Manager has the authority to impose mandatory or voluntary outdoor water use restrictions. This authority is described in Madison General Ordinance 13.04. Although the utility has the authority, it has not been exercised in the past. Previous general managers have preferred education and public service announcements promoting water

conservation rather than imposing mandatory restrictions. It is our goal to implement a sprinkling ordinance by 2010.

2. *Replacement of all 3.5-GPF or higher toilets*

Similar to the lead service replacement program for residential customers, all multi-family housing units and other commercial customers would be encouraged to replace all 3.5-GPF or higher toilets with a more efficient (1.6-GPF or less) toilet during a ten-year window. The City of Madison Water Utility would share the cost by offering a rebate available once it was shown that a less efficient toilet was actually replaced by a more efficient one.

3. *Landscape ordinance*

Examples of directives included in a landscape ordinance could include downspouts directed to turf instead of pavement and requiring a 'water-friendly' landscape plan with new or major reconstruction.

One component of LEED™ (Leadership in Energy and Environmental Design) certification is the use of water efficient landscaping. More communities are starting to require or encourage LEED™ certification, and so water efficiency will naturally become more important in building design.

4. *Car wash reclamation ordinance*

New automatic car washes or existing car washes that upgrade/enlarge their service facility must recycle at least 50% of the water used.

5. *Revise credit meter program and costs*

Currently, residential and commercial users frequently install 'sewer deduct' meters as there is no initial cost to install from the Water Utility. Installation cost charged by plumbers depends upon the complexity of the plumbing. Once installed, the meter base charge is determined by the size of the meter.

Certification program for businesses that are "water efficient"

Working with partners in the business community, the Water Utility would establish a program for certifying businesses that are "water-efficient." Water efficiency could be demonstrated by evaluation of historic water use at a facility, conservation/water efficiency practices/programs implemented, and the results of a water audit for the facility. Partners would collaborate with the Water Utility to establish the standards, a monitoring program, and promotion of the certification program. Alternatively, the business community could develop a certification program independent of the Water Utility, which could serve as a technical advisor to the program.

Water efficiency is already a part of the Wisconsin Department of Tourism's existing "Travel Green Wisconsin" program, which certifies businesses in the restaurant and hospitality industries on a voluntary basis. The standards do not contain many specific

targets, however; they simply ask businesses if they engage in water efficient practices. These standards could be updated with specific targets.

INDUSTRIAL

Goal: To have a water conservation plan in place for each industrial customer

There are 23 industrial customers in the City of Madison, and they account for 10% of the total water use. Although this is a small number of customers, the opportunity for water savings in this area is significant. Water conservation generally falls into three categories: reducing water usage, reducing water loss, and reusing water that is currently being discarded.

Industrial Customer Water Conservation Plan

Step one in preparing an individualized plan is to prepare and gather pertinent information from company and utility records. This information is gathered using a pre-audit checklist, which would include the following:

1. People who are familiar with the industrial customer's daily operations
2. Building and location information, facility floor plans, plumbing schematics and drawings, operating schedules, number of employees, location maps identifying each water supply meter, and all sub-meters
3. Inventory of plumbing fixtures and all water-using equipment
4. Outdoor water use data, utility records that show water and sewer use, and any prior water and energy audits

Step two would be to perform a site audit of each industrial customer. An initial onsite water audit of all water-using equipment and processes would be used to identify water use. This includes a detailed examination of where and how much water enters the system, and where and how much water leaves the system. Water system audits assess current water use, provide data needed to reduce water and revenue losses, and forecast future demand. With this information, system improvements can be identified where conservation efforts are most needed. Follow-up audits would be conducted twice per year to check on each customer's water conservation progress, inform industrial customers of new water conservation practices, answer customer questions, and educate employees. In order for a water conservation program to succeed, it is important that a good record-keeping system be established to monitor operation and maintenance costs, revenues, and water use.

Step three is preparing an audit report. After the completion of the physical inspection of the facility, in which each water-use area is carefully examined, and water-use data is recorded, it is important to develop a final audit report. This report will provide a baseline for water conservation efforts.

Step four is to identify water conservation opportunities and to develop a site-specific water conservation action plan for the industrial customer. Based on the information

gathered, potential opportunities for reducing water usage, reducing water loss, and reusing water are identified. The following systems should be evaluated for efficiency and water conservation opportunities: cooling towers, boilers, flow meters and sub meters, automated controls, landscaping, irrigation, single-pass cooling, gray water, and reverse osmosis or de-ionized water. In some cases, water-using equipment can be replaced. In other cases, retrofitting existing equipment will be appropriate.

Similarly, a review of opportunities for improvements in equipment maintenance and repair should be completed. The following areas should be reviewed: plumbing fixtures, recirculation pumps, leaks, reused or recycled water systems, proper cleaning and sanitation of equipment, instrumentation-pH meters, total dissolved solids measuring devices, monitoring equipment for correct rinsing process, flow valves, flow restrictors, shut-off valves, reducing valves, solenoid timers, and water meters. Procedural changes can often result in substantial water savings. Furthermore, water conservation measures often pay for themselves by reducing energy costs. Once water conservation opportunities have been identified, a water conservation action plan is developed.

Step five is educating employees and involving them in water conservation efforts. Employees can have a major effect on the success of a water conservation program. It is important to educate and train key employees to make conservation efforts the most effective. Employees must be informed about the program and be made an integral part of the water reduction effort. An important part of this process is the formation of a water conservation and energy team within the organization, though the facility's water conservation goals should be shared with all employees. Industrial customers should educate employees about costs for water, sewer and electrical. These costs should be logged periodically. It is important for the industrial customer to stress to employees that even small projects can produce large savings in water consumption and to publicize water conservation successes--internally and externally. The Water Utility would provide educational materials specific to each customer's need, based on the site audit and water conservation plan.

Water Conservation Award

The Water Utility should consider an awards program to reward and honor industrial customers for their water conservation successes. The Water Utility would present a suitable plaque or certificate of achievement to the chosen industrial customers.

Winners could be selected based on the results of their water conservation efforts in the following areas: landscape and irrigation, plumbing fixture retrofits, quality and effectiveness of the water conservation plan, water leak detection, water recycling or reuse, innovative water conservation measures and methods, overall reduction of water use, and implementation of public education and community relations programs.

Funding for Public Water Conservation Education Programs

In order to make the water conservation effort as successful as possible, a public water conservation education program is essential. Industrial customers may be willing to help fund educational materials for water conservation youth programs or retrofits in low-

income homes. They could also work with Focus On Energy to assist customers in attaining available rebates. Rebate information would be published as part of the educational materials in the public water conservation education program.

MUNICIPAL

Goal: Governmental buildings shall enact water saving programs that support the main goal of maintaining sustainable pumping levels

The municipal division comprises the governmental entities of the City of Madison, Dane County, State of Wisconsin, and Federal government. All buildings that are serviced by the City of Madison Water Utility of these government entities will be included in the Water Conservation Program.

City of Madison Water Utility

The most important section of the City of Madison is the Water Utility itself. The enacting of water conservation measures within the Water Utility can serve as a model for other governmental buildings as well as the public at large. Before conservation measures are implemented, an audit shall be performed of all Water Utility buildings, and toilets, showerheads, and sink aerators will be checked for compliance with current water conservation standards for new construction. The amount of water that is dumped from reservoirs into the storm drains will also be investigated. The flushing program implemented to reduce manganese from the water supply will be inspected. The placement of water meters at the wells and other peripheral buildings will be explored for feasibility. All new Water Utility buildings will be built with water conservation measures in mind.

The following are water saving programs that could be instituted at the Water Utility:

Emphasize and expand the leak detection program

Many leaks in the water distribution system go undetected. By purchasing more leak detection equipment and devoting work-hours, we can reduce leaks. Older pipes and those in areas prone to main leaks will be checked on a systematic basis. The El Paso Water Utility has enacted a leak detection program using devices called "loggers" placed on valves that in three years of use have saved 725 million gallons of water (Buehrer, 2008).

Install low-flush toilets, low-flow showerheads, and sink aerators

Following the internal audit, old toilets shall be replaced with high-efficiency models, showerheads changed to low-flow, and aerators placed on sinks without them.

Quantify water use by utility through better record keeping

Increase the amount of data gathered on Water Utility water use activities and centralize data for ease of accessibility and comparability. New data gathered includes amount of water used during hydrant flushing, amount of water lost when reservoirs are dumped, and amount of water lost from a main break. Gather data from the Fire Department about

amount of water used to extinguish a fire. This new data could be compared to the amounts of water that are unaccounted for when compiling the annual audit of water pumped. A new central computer system could be implemented to ease the ability of pulling up data and comparing water use against various variables.

Installation of meters in wells

Water Utility wells currently do not have meters for the water that is used inside a well, i.e., for toilets and sinks. The feasibility of placing meters in the wells will be investigated. By having meters in the wells, the Water Utility can better monitor how much water is being used and if leaks occur.

Hydrant flushing

Historically, the Water Utility has employed conventional flushing twice a year to remove mineral sediment from water mains. Unidirectional flushing was begun in 2005 as a better technique to scour the water mains and remove sediment. The utility will continue to evaluate its flushing program to minimize the amount of water needed to clean the pipes. Ongoing research at the utility is expected to provide guidance on the frequency needed for flushing.

Well operation and maintenance

The operation and maintenance of a municipal well occasionally requires pumping the water to a sanitary or storm water sewer. The Water Utility should maintain better record keeping for how often these events occur and how much water is pumped to waste. Periodic review of this data should identify potential water conserving strategies for well operations and maintenance.

Use of rain barrels/ rain gardens

Rain barrels can be used at all Water Utility buildings to catch rainwater and reuse the water for lawn/flower watering. Rain gardens may be used to reduce runoff where appropriate. In the building of the new Operations Center, the use of rain barrels and rain gardens should be included.

Other Governmental Buildings (City, County, State, and Federal)

Audits will be performed of all other governmental buildings served by the Water Utility. Individuals in charge of the buildings may perform the audits. A questionnaire would be provided to assist individuals in auditing their own buildings, and further information will be provided to explain potential water saving programs. Ordinances and/or other legislation could be put in place to bring governmental buildings under a predetermined "Green" standard. Information about water saving programs will be made available on the Water Utility website.

Water conservation measures may include replacing old toilets, installing sink aerators, and installing rain gardens and rain barrels. The Madison Common Council recently adopted a Green Building Resolution proposed by Alder Satya Rhodes-Conway that will require any new or substantially renovated city-owned building to be certified under the

LEED® standard. This standard ensures new city buildings will be as energy- and water-efficient as possible.

UNIVERSITY OF WISCONSIN

The University started a water conservation program in 2002 (Dave Bonfield, UW Plumbing Shop Supervisor, Personal Communication). The plan included replacing old toilets with high-efficiency models and installing sink aerators and low-flow showerheads, and removing urinal flush tanks. Due to new construction and major remodeling, he estimates that 90% of the toilets on campus are now high-efficiency. While the showerheads have been accepted by users, the sink aerators were not very popular, and so some may have been altered. Since the inception of the water conservation program, daily water use has decreased by about 30%.

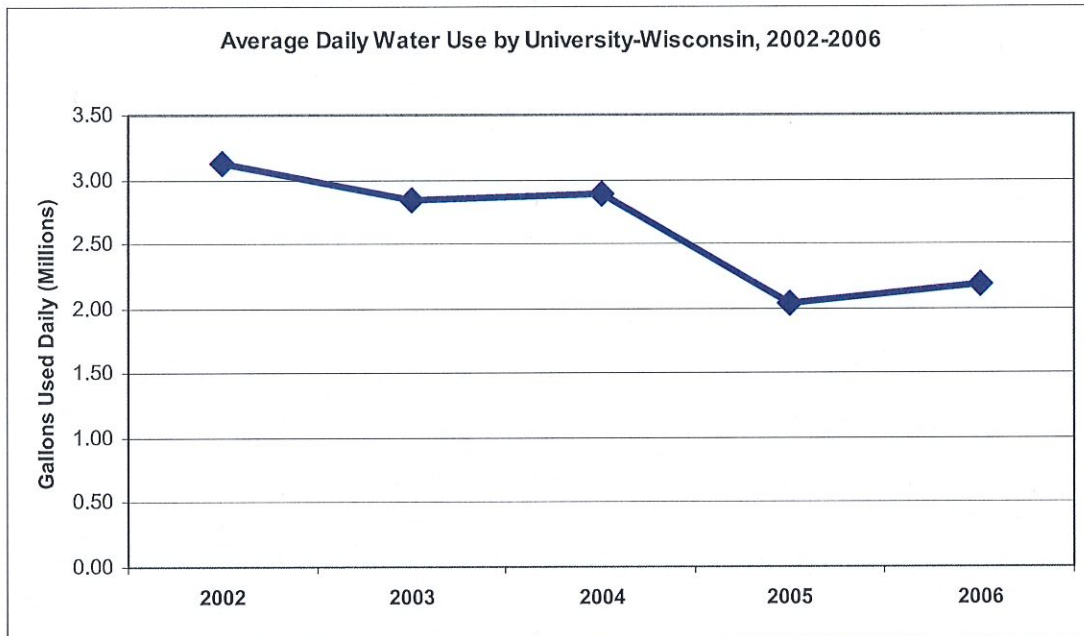


Figure 9: Average Daily Water Use at UW; data does not include dorms on Johnson Street or buildings south of University Ave or East of Randall Ave.

SUMMARY OF EDUCATIONAL COMPONENTS

RESIDENTIAL

- The promotion of the (future) **toilet-rebate program** will be an important educational opportunity for water conservation
- **Rain barrels** may be installed at some MWU facilities for demonstration purposes to allow the public to see their operational features. **Rain gardens** may

be used to reduce runoff where appropriate. MWU will incorporate the use of rain barrels and rain gardens in the renovation of the Operations Center Vehicle Maintenance Facility

- The Water Utility will continue to **provide support and speakers**, as requested, to schools and community organizations to promote education about the importance of water conservation.
- During times of high water use (hot, dry periods), the utility will continue to run **public service announcements** reminding residents of the importance of reducing water use and how to do so.
- The Utility and City will actively **promote the EPA's WaterSense** labeling program for toilets, washers, showerheads and irrigation sprinkler systems, and will lead by example by choosing WaterSense labeled products for city facilities.
- The Water Utility is getting involved in and will be making a financial commitment to locally promoting '**GreenPlumbers.**' This is a national accreditation program that educates plumbers on new, water-saving techniques and general water conservation. The program's goal is to reach 40,000 plumbers nationwide.

COMMERCIAL

- **Targeted education/outreach** to promote water conservation by commercial users is an important component of any educational program.
- **Offer educational information for clothes washers or dishwashers**, which would serve as an important educational component to several sectors of the commercial industry, specifically, the hospitality industry, nursing home/retirement communities, hospitals/medical centers, laundromats/linen service.
- Other incentive/rebate programs could include:
 - Commercial/multi-family **toilet rebate program**
 - Promotion of "**Request linen washing**" cards to the hospitality industry
 - Promotion of **xeriscaping**/landscaping with native plants that require minimal water once established
 - While landscaping companies would be the primary audience, owners of all commercial properties with extensive green spaces (business parks, retirement communities, nursing homes, shopping centers, and medical clinics) would also be targeted. In addition to promoting native landscaping, information on watering requirements, ideal times for watering, and water-conserving irrigation/watering systems will also be provided. Seminars or workshops on native landscaping could also be planned.
 - Recommendation of **water audits** or leak detection surveys to reduce water waste from leaky toilets, faucets, and showers in
 - Multi-family housing
 - Hotels/motels
 - Restaurants

- Shopping centers/malls
- Office/business parks
- Provide best management practice **information to car washes** and provide certification to those car washes implementing water conservation techniques.

INDUSTRIAL

After developing **individual facility plans**, the final step is educating employees and involving them in water conservation efforts. Employees can have a major effect on the success of a water conservation program. It is important to educate and train key employees to make conservation efforts the most effective. Employees must be informed about the program and be made an integral part of the water reduction effort. An important part of this process is the formation of a water conservation and energy team within the organization, though the facility's water conservation goals should be shared with all employees. Industrial customers should educate employees about costs for water, sewer and electrical. These costs should be logged periodically. It is important for the industrial customer to stress to employees that even small projects can produce large savings in water consumption and to publicize water conservation successes--internally and externally. The Water Utility would provide educational materials specific to each customer's need, based on the site audit and water conservation plan.

- The Water Utility should consider an **awards program** to reward and honor industrial customers for their water conservation successes. The Water Utility would present a suitable plaque or certificate of achievement to the chosen industrial customers.

SUMMARY OF CONSERVATION GOALS

The following list is a summary of recommendations put forth in this plan. The goals within each category are listed in order of suggested priority.

Objective: Maintain Current Pumping Levels			
	Recommendations	Implementation	Timeline
RESIDENTIAL	Reduce per capita water use by 20% by year 2020.	Concerted effort by customers, Water Board, Common Council, & Water Utility Staff	2020
	Establish a toilet rebate program. Using the figures of the AWWA, Table 1, high efficiency toilets could reduce the daily water use by 10.3 gallons per capita or about 2,301,000 gallons per day or about the output of one well. This represents two-thirds of goal to reduce residential water use by 20% by 2020. A rebate of \$100 per dwelling unit is considered a sufficient inducement to encourage the replacement of existing fixtures with high efficiency toilets. It is estimated that the total cost to the customer, using a licensed plumber would be approximately \$350 per fixture. It is anticipated that a number of residents would undertake the work themselves. The sum of \$250,000 representing 2,500 toilet replacements per year at \$100 per dwelling unit has been requested as a part of the annual rate structure. This rebate program would be administered in much the same manner as the Water Utility's successful lead service replacement program, which is drawing to a close. As in the lead service replacement program, the Water Utility proposes to partner with the plumbing construction firms to undertake the work. Consideration will be given to the aspect of recycling the metal from the replaced toilets. The ceramic portion of the fixtures may not lend itself to recycling. Other communities have adopted more ambitious rebate programs including rebates for dishwaters and washing machines. However, the actual reduction of water consumption is harder to document than toilets and not affordable for the Madison Water Utility, at this time.	Water Utility Staff with Assistance from the Recycling Coordinator of the Street Division.	October 2008 (Subject to Rate Structure Approval)
	Provide customers with current consumption data The Madison Water Utility issues its bills twice per year to its customers. This does pose a challenge to customers who wish to monitor their water use. However, each customer does have a remote register that measures water use. Generally these registers are located on the side of the dwelling unit and measure consumption in cubic feet. This initiative would provide instruction to customers to track their water use on a monthly basis. Each customer will be mailed a card stock form, which can be used to determine their water use and convert the usage to gallons. In addition, a digital water use tabulator shall be developed so that the customer can load their usage on their computer along with the date and number of residents. The water use tabulator can calculate usage and compare that usage with typical customers. The estimated cost should be on the magnitude of \$10,000, with programming. An additional \$15,000 would have to be expended for public information.	Water Utility Staff with Vendor Programming Assistance.	January 2009
			\$25,000

	Enact inclining rate structure A modest rate structure has been proposed to the PSC (Wisconsin Public Service Commission). The rate request was 18%, reflective of the Utility's strained financial situation. The concept of the proposed inclining rate structure was a rate structure for: 1. The lowest 20th percentile of usage at 61 gallons per day. 2. A Conserving Level at 148 gallons per day. 3. A median level at 184 gallons per day. 4. The 80th percentile at 225 gallons per day. A more aggressive rate structure may be proposed at such time as more frequent bills can be issued or that customers are able to track their usage with practice.	Water Utility Staff and Wisconsin Public Service Commission	October 2008 (Subject to Rate Structure Approval.)	
	Investigate the Conversion of Water Meters to Provide for Quarterly Billing and the Potential of Monthly Billing (To make a switch from semi-annual to quarterly billing using a non-AMR system would be \$417,000 in semi-annual operating costs.)	Water Utility Staff	2011	Capital cost of \$5,370,000 in 2010, \$5,370,000 in 2011.
	Enact Outdoor Water Usage Restrictions to Maintain Pumpage Below a Preset Daily Amount Section 13.04 of the Madison General Ordinances provides for Voluntary and Mandatory Restrictions for outdoor water usage, which is generally irrigation of turf areas. In 2007, there were 29 days where pumpage exceeded 40 MGD, 11 days in which pumpage exceeded 45 MGD, and 3 days where pumpage exceeded 50 MGD. This goal would provide that voluntary restrictions be imposed whenever pumpage exceeded 45 MGD for 3 continuous days and mandatory restrictions whenever pumpage exceeds 50 MGD for 2 continuous days. While not directly tied to water conservation, the enactment of water usage restrictions would save on electricity during high use days and inform the customer regarding the limitations of the system.	Water Utility Board, and Water Utility Staff	July 2008	\$0
	Expand residential water audits from the current high-bill leak detection to include individual requests for onsite inspection/ personalized recommendations	Customer Service/ PIO/ Conservation Manager	Long Term	

	Offer appliance upgrade program for washing machines/ dishwashers	PIO/ Conservation Manager	Long Term
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	Recommendations	Implementation	Timeline	Cost
COMMERCIAL	Target high-use customers with education/outreach to promote water conservation		Short Term	
	Enact landscaping ordinance for new development/major redevelopment	General Manager	Intermediate	
	Offer appliance upgrade program (e.g., for laundromats)	PIO/ Conservation Manager	Long Term	
	Enact a certification program for water-efficient buildings	PIO/ Conservation Manager	Long Term	
	Enact a car wash reclamation ordinance	General Manager	Long Term	
INDUSTRIAL	Perform individual audits for customers	PIO/ Conservation Manager	Short Term	
MUNICIPAL	Quantify water use by Water Utility with better record keeping	Supply/ Operations	Short Term	
	Continue to minimize reservoir dumping	Supply	Short Term	
	Emphasize and expand the leak-detection program Requires purchase of new equipment and devoted work-hours	Operations	Short Term	
	Upgrade Water Utility bill with new software	Customer Service	Short Term	
	Install use meters in well buildings	General Manager	Intermediate	
	Audit other government buildings for water use	PIO/ Conservation Manager/ Facilities Manager	Intermediate	
	Reduce hydrant flushing as well filters are installed (when appropriate)	Engineering	Intermediate	

REFERENCES

- Baumann, P.C., Kitchell, J.F., Magnuson, J.J., and Kayes, T.B. 1974. Lake Wingra, 1837-1973: A case history of human impact. *Transactions of the Wisconsin Academy of Sciences, Arts, and Letters*. 623: 57-97.
- Bradbury, K.R. 2006. *Groundwater and Surface Water Interactions in Dane County*. Nelson Institute – Community Environmental Forum September 14, 2006.
- Bradbury, K.R., Gotkowitz, M. B., and Hart, D.J. 2007 Presentation. Evaluation of a Bedrock Aquitard for Regional- and Local-Scale Groundwater Flow. *Wisconsin Geological and Natural History Survey*, UW-Extension Madison.
- Buehrer, J. 2008. El Paso leak-detection system surpasses expectations. *AWWA Main Stream*. Vol. 52(1). p. 7.
- Dane County Regional Planning Commission (DCRPC). The 2004 Modeling and Management Program: Dane County Regional Hydrologic Study. September 2004.
- Gebert, W. *et al.* 1997. Wisconsin Department of Natural Resources. Status of Groundwater Quantity in Wisconsin. PUBL-DG-043-097. April.
- Hunt, R. 2003. A water science primer. *Wisconsin Academy of Sciences, Arts and Letters Transactions*, v. 90, p. 11-21.
- Hunt, R.J., Bradbury, K.R., and Krohelski, J.T., 2001, The effects of large-scale pumping and diversion on the water resources of Dane County, Wisconsin. *U.S. Geological Survey Fact Sheet FS-127-01*, 4 p.
- Kassulke, N. and Chern, L. 2006. Groundwater, Our Buried Treasure. *Wisconsin Natural Resources Magazine*. Wisconsin Department of Natural Resources. PUBL-DG-055-06. April.
- Public Health – Madison and Dane County. September 2007 (revised). Madison and Dane County Environmental Report Card 2006.
- Madison Gas & Electric (MGE). 2007. Groundwater Recharge Project – Odana Hills Golf Course (PDF). Accessed on January 3, 2008, at http://www.mge.com/images/PDF/Cogen/Other/Cogen_Groundwater.pdf
- Masarik, K. Center for Watershed Science and E. Wisconsin's Groundwater Directory. September 2004, revised November 2006.

University of Wisconsin Aquatic Sciences Center. Wisconsin's Water Library: Water Facts. Accessed on December 20, 2007, at <http://aqua.wisc.edu/WaterLibrary/facts.asp>

Vickers, Amy. 2002. Handbook of Water Use and Conservation: Homes, Landscapes, Industries, Businesses, Farms.

Wisconsin Department of Natural Resources. 1997. Status of Groundwater Quantity in Wisconsin. PUBL-DG-043-97.

Wisconsin Department of Natural Resources. 2006. Groundwater, Wisconsin's Buried Treasure: Groundwater Study Guide. PUB-DG-076-2006.

Wisconsin Groundwater Advisory Committee (WGAC). 2006 Report to the Legislature on Groundwater Management Areas, December 2006.

Wisconsin Groundwater Coordinating Council. November 2006 (revised). Wisconsin's Groundwater Directory. <http://www.dnr.state.wi.us/org/water/dwg/gcc/gwinfo directory.pdf>.

Chapter 13
Public Health and Welfare

13.11 Water Conservation

(Cr. #20-06)

(1) **PURPOSE.** The purpose of this section is to prevent overuse of the City's water resources to avoid substantial depletion of the water table and to ensure sufficient water supply is available at all times including peak usage periods. The Common Council finds that ensuring the provision of water, especially in emergency situations, is essential to the public interest.

(2) **DEFINITIONS.**

(a) Emergency Water Condition means a circumstance where any of the following conditions are met:

1. Water pressure to any customer cannot be sustained at a pressure greater than or equal to 20 pounds per square inch (PSI).
2. Water storage levels cannot be maintained above the preset fire reserve limits.
3. Water treatment capability cannot meet the demand placed on the system.
4. The City has declared a state of emergency pursuant to sections 5.06 (1) or (2) of the Code on the recommendation of the General Manager of the Water Utility or the General Manager's designee due to other circumstances which to a reasonable certainty shall result in a severe water shortage for the City if emergency measures are not taken.

(b) New Landscape means vegetation installed for no more than one (1) month which is: (1) installed at the time of construction of a new house, multi-family, industrial or commercial building; (2) installed as part of a governmental entity's capital improvement project; or (3) which alters more than one quarter of the area of an existing yard or which alters an area greater than 3000 square feet of an existing yard.

(c) Sprinkling means the act of applying water to outdoor vegetation for purposes of irrigating an area of land.

(3) **SPRINKLING RESTRICTED.** At all times between the first day of May and the first day of October, the following sprinkling restrictions shall be in

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effect.

(a) Properties having odd-numbered street addresses are prohibited from sprinkling lawns and gardens except on Tuesdays and Saturdays, at which time sprinkling is permitted at any time before 9:00 a.m. and after 5:00 p.m.

(b) Properties having even-numbered street addresses are prohibited from sprinkling lawns and gardens except on Thursdays and Sundays, at which time sprinkling is permitted at any time before 9:00 a.m. and after 5:00 p.m.

(c) Exceptions. Notwithstanding the prohibitions set forth in this section, the following activities are permitted at any time:

1. Sprinkling gardens, trees and shrubs through use of a hand-held watering can or other hand-held container or hose, provided, however, any such watering device must be utilized manually and cannot be left unattended.
2. Sprinkling or otherwise irrigating new landscape.
3. Sprinkling or otherwise irrigating outdoor sports complexes including but not limited to baseball diamonds.
4. Sprinkling activity conducted at cemeteries.
5. Any Sprinkling activity conducted pursuant to a Special Permit granted under sub. (5) of this section.

(4) EMERGENCY MEASURES. If an Emergency Water Condition is in effect, the General Manager of the Water Utility or a designee shall give notice to the public by posting a declaration in three (3) public places, the City website, Government Access cable channel, faxing the declaration to three area television news networks, and if possible by verbal announcement over the cable system. At the time the Water Utility Manager or a designee opines that the Emergency Water Condition has ended, the same notice procedure shall be followed to declare cessation of the emergency. During an Emergency Water Condition, the following emergency measures shall be in effect:

- (a) All outdoor sprinkling or other irrigation activity is prohibited.

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- (b) The washing of sidewalks, driveways, parking areas, tennis courts, patios or other paved areas by the use of a pressurized source is prohibited.
 - (c) The washing of motor vehicles, trailers, and other self-propelled devices is prohibited except at facilities equipped with wash water recirculation systems.
 - (d) Outdoor use of any water-based play apparatus connected to a pressurized water source is prohibited.
 - (e) The filling of swimming pools, fountains, spas or other exterior water features is prohibited except on residential properties not equipped with working central air conditioning systems or when necessary to alleviate an immediate threat to a person's health or safety. As used in this section, "an immediate threat to a person's health or safety" shall include, but is not limited to, infirmities of aging, developmental, mental or physical disabilities, or like infirmities incurred at any age, or the frailties associated with being very young.
 - (f) Operation of outdoor misting systems used to cool public areas is prohibited unless their use is necessary to alleviate an immediate threat to a person's health or safety.
 - (g) Water obtained by means of a fire hydrant shall not be used for cleaning equipment of any kind.
- (5) SPECIAL PERMIT. Any person may make an application for a Special Permit allowing Sprinkling during the hours prohibited by subs. (3)(a) and (3)(b) of this section.
- (a) The application shall be made on a form provided by the Water Utility. The application shall indicate the address covered by the request; the time period within which sprinkling activity is requested; the name, address and contact information of a responsible party; and the reasons for the request.
 - (b) A Special Permit shall only be granted if the Water Utility General Manager or a designee finds that the permit is necessary to avoid an emergency condition effecting health, sanitation or fire protection of the applicant or the public; or if failure to grant the permit would substantially deprive the applicant of the applicant's financial livelihood. Conditions which reasonably relate to the goal of minimizing depletion of

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the water table may be placed on the time or manner of Sprinkling to be conducted under a Special Permit.

(c) The Water Utility General Manager or a designee shall grant or deny an application no later than ten (10) business days after the completed application is filed with the Utility. If an application is denied, an agent of the Utility shall so advise the applicant in writing of the denial and the reasons thereof within the ten-day period.

(d) Any person aggrieved by a decision to grant or deny a Special Permit under this subsection may appeal the decision to the Water Utility Commission by filing a written notice of appeal with the Water Utility within twenty (20) days of receipt of notice of the decision. The Commission shall hold a hearing at its next meeting or at a reasonable time thereafter and permit the appellant to be heard and state his or her reasons for the need to overturn the decision of the Water Utility General Manager. The Commission shall then determine whether the decision of the General Manager was made consistent with the factors set forth in sub. (5)(b) and inform the appellant of its decision no later than thirty (30) days following the hearing. This hearing provision shall not be governed by the administrative review procedures provided for in Chapter 68, Wis. Stats.

(6) ENFORCEMENT AND PENALTY.

(a) Service of Notices. Whenever an employee or agent of the Water Utility determines there has been a violation or that there are reasonable grounds to believe there has been a violation of any provision of this section, said person or other Water Utility designee shall give written notice of such violation to the residents of the property by either: (1) affixing such notice onto or reasonably close to the front door of the property; or (2) depositing the notice in the U.S. Mail addressed to the person responsible for the property's water bill. Subsequent violation notices shall be served in the same manner if the violation persists for more than one (1) week. The Water Utility shall also deposit a copy or other facsimile of third and subsequent notices in the U.S. Mail addressed to the owner of the property as shown by the records on file with the Tax Assessor if the property owner is not responsible for the water bill.

(b) Referral to Police Department. If a violation of this section persists after three (3) or more violation notices have been served in the manner provided under sub. (5)(a) of this section, the Water Utility may refer the matter to the Police Department. If the Police Department

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determines there is sufficient evidence to proceed, a citation may be issued. Each day a violation continues constitutes a separate offense.

(c) Penalty. Any person subject to a penalty under this section shall be penalized as provided in §25.05 of this Municipal Code.

(d) Suspension of Service. The Water Utility may suspend water service to a property in violation of this section if all of the following conditions are met:

1. Five or more citations have been issued pursuant to sub. (5)(c) of this section.
2. The Water Utility Commission has adopted this ordinance as part of the Utility's rules and regulations.
3. The violation interferes with the water service of others.
4. No heat advisory, heat warning or heat emergency issued by the National Weather Service is in effect.
5. Suspension would otherwise not be prohibited by any rule of the Public Service Commission, including but not limited to Wis. Admin. Code PSC § 185.37.

WAUKESHA MUNICIPAL CODE 04/28/06

Chapter 19 **Plumbing**

19.175 Landscape Irrigation Systems (Cr. #21-15)

(1) Scope and Purpose.

- (a) This Section applies to the installation of new Landscape Irrigation Systems, and any material alteration or complete replacement of existing Landscape Irrigation Systems, occurring on or after January 1, 2016. Any irrigation system that is not installed, completely replaced, or materially altered on or after January 1, 2016, shall continue to be regulated by the ordinances in effect as of December 31, 2015.
- (b) This Section applies to Landscape Irrigation Systems on any real estate within the City of Waukesha, regardless of whether the real estate is used for residential, commercial, industrial, manufacturing, institutional, government, or any other purpose.
- (c) The purpose of this Section is to ensure that all Landscape Irrigation Systems in the City of Waukesha are designed, installed, maintained, altered, and operated in a manner that prevents the waste of water, promotes the most efficient usage of water, controls erosion, and apply the minimum amount of water required to maintain healthy individual plants, consistent with the City's water-conservation goals.

(2) Definitions. In this Section, capitalized terms have the following meanings:

- (a) **Contractor.** The installer of the System.
- (b) **DSPS.** The State of Wisconsin Department of Safety and Professional Services.
- (c) **Emission Device.** The final element of a System through which water passes before it is applied to plants or ground immediately adjacent to plants, including, but not limited to, spray nozzles, sprinkler heads, bubblers, drips, micro-sprays or misters.
- (d) **Impervious Surface.** Any surface, whether horizontal or vertical, which is made of a material impervious to the penetration of water, including, but not limited to, concrete, asphalt, tile, brick, block, wood, or paving stone set in mortar. Surfaces of brick, block or paving stones, not set in mortar, not set on an impervious base, and having sufficient permeable material between the surface elements may be determined not to be an Impervious Surface in the sole discretion of the Utility.
- (e) **Landscape Irrigation System, System.** Any system that distributes water for the purpose of providing water to outdoor plants; except systems that provide water to plants being raised for sale, in areas in which agriculture is a permitted use.

- (f) **Material Alteration.** A System is materially altered when the number of Emission Devices in the System is increased by 25% or more, when 25% or more of existing Emission Device locations are changed by a distance greater than the effective range of the Emission Device, or when 50% or more of the System, determined by linear measurement of System components, is relocated or replaced.
 - (g) **Owner.** The owner of the property on which the System is installed.
 - (h) **Department.** The City of Waukesha Department of Community Development.
- (3) **Permit and Fees Required.** A permit, issued to the Owner by the City, shall be required in advance for the installation, material alteration, or complete replacement of any Landscape Irrigation System within the City on or after January 1, 2016. An application fee, plan-inspection fee, and all other applicable fees as shown on the Fee Schedule maintained by the Department, shall be paid by the Owner before the permit is issued. All fees are non-refundable.
- (4) **Permit Application.** The Owner shall submit an application to the Department for a permit to install, alter, replace, repair or maintain a Landscape Irrigation System, on forms published and amended from time to time by the Department, and including all attachments and supplemental materials required by the Department. The permit application must provide all information required by the Department, and at a minimum must contain satisfactory proof that the proposed System will meet all of the system standards required by this Section and all other applicable ordinances, codes, and statutes. The application may be rejected if it is not complete, and if rejected, the Department shall inform the Owner of the reasons for the rejection. Applications may be corrected and re-filed by the Owner as many times as are necessary to comply with this Section.
- (5) **Irrigation Plan.** In addition to all other materials and information required to be submitted to the Department with the permit application, for all new installations or replacements of a System, the Owner shall submit two complete paper sets of an Irrigation Plan, and a digital copy in PDF or JPG format, that meets all of the following requirements:
- (a) Be drawn to scale and indicate the scale used.
 - (b) Include the name and dated signature of the designer.
 - (c) Show the location of the parcel.
 - (d) Show both the areas to be irrigated and not to be irrigated within the parcel.
 - (e) Show all major physical features and the boundaries of the area to be watered.
 - (f) Show zone flow measurements for each zone, and the design pressure.
 - (g) Show the location and type of each controller, moisture sensor, rain sensor, and electrical splice.
 - (h) Show the location, type, and size of each water source, backflow prevention device, Emission Device, couplers, valves, (including, but not limited to, zone valves, station

solenoid valves, automatic master valves and isolation valves), pressure-regulation components, mainlines and laterals.

- (6) **System Standards.** Owners are responsible for ensuring that new Systems, and Systems undergoing material alterations or complete replacements, on or after January 1, 2016, comply with all of the following standards:
- (a) **Compliance with Water-Conservation Ordinance.** All Systems shall be operated so as to comply strictly with City Municipal Code §13.11.
 - (b) **Controllers.**
 - (i) All Systems shall incorporate a controller that will, at a minimum, cease operation of the System when soil moisture content is adequate to support life of the plants in the landscape area, when rain is falling, and on dates when irrigation is prohibited by City ordinance, rule or regulation.
 - (ii) All controllers installed in Systems shall be EPA WaterSense approved and labeled, and shall be installed strictly according to the manufacturer's specifications.
 - (iii) Electrical power supplies to all controllers installed in Systems shall be surge-protected.
 - (c) **Irrigation Zones.** All Systems shall have separate zones as necessary to differentiate areas having different irrigation needs, according to plant types, topographic features, or soil conditions. The System shall apply into each zone only the minimum amount of water necessary to maintain the plants there. The System shall be designed so that the application rate of water is uniform within zones.
 - (d) **Water Pressure.** Emission Devices shall be installed and maintained to operate at no greater than the manufacturer's recommended water pressure. Provisions must be made for pressure control, including, but not limited to, flow-control valves, pressure regulators, or pressure-compensating spray heads.
 - (e) **Backflow Protection.** Backflow-prevention devices must be installed at all points at which Systems connect to a public or private potable water system. Backflow-prevention devices shall be approved by the DSPS, and installed in compliance with manufacturer instructions and all applicable codes. Backflow-prevention devices shall not be installed in public rights-of-way.
 - (f) **Valves.**
 - (i) Systems with more than one zone must include a master valve installed on the discharge side of the backflow-prevention device for each zone.
 - (ii) Systems must include an isolation valve between the water meter and the backflow-prevention device.

- (iii) Zone valves, station solenoid valves, automatic master valves, and isolation valves must be installed in approved valve boxes for accessibility, repair and service.
- (g) **Irrigation System Wiring.**
 - (i) All controllers installed in Systems shall be listed by Underwriters Laboratories as acceptable for direct underground burial and must be sized according to the manufacturer's recommendation. Electrical splice locations must be noted on the irrigation plan.
 - (ii) All supply wiring, low-voltage control wiring, and all electrical fixtures shall be installed in compliance with the National Electrical Code as adopted by the State of Wisconsin.
- (h) **Irrigation of Impervious Surfaces Prohibited.** Application of water by Systems onto Impervious Surfaces is prohibited. Emission Devices must direct water flow away from Impervious Surfaces, and shall not be installed nearer to Impervious Surfaces than 4 inches.
- (i) **Spacing.** The spacing between Emission Devices shall not be less than (i) twice the Emission Device manufacturer's specified radius or (ii) the manufacturers' recommended spacing of the Emission Devices.
- (j) **Small Landscape Areas.** Systems shall not use aboveground-spray Emission Devices in landscaped areas that are less than 60 inches in any horizontal dimension; except that such landscaped areas may be exempted, in the Department's sole discretion, if they are adjacent to impervious surfaces of no greater than 60 inches in any horizontal dimension and the runoff from which drains into a landscaped area.
- (k) **No Irrigation across Property Boundaries.** Systems shall not apply water across property boundaries, unless the parcels adjacent to the boundary both belong to the Owner.
- (l) **Misting to Be Minimized.** The use of misting Emission Devices shall be kept to a minimum.
- (m) **Septic Systems.** Systems shall not apply water to the drain fields, drain beds or mounds of private onsite wastewater treatment systems.
- (7) **Contractor Certificate.** Within 30 days of completion of the installation of the System, the Contractor shall complete and deliver to the Owner a signed and dated Contractor Certificate, on a form supplied by the Department of Community Development, certifying that the Contractor has:
 - (a) Installed the System in accordance with all applicable ordinances, statutes, codes, rules and regulations; confirmed the correct operation of the entire System; and confirmed that the System has been installed substantially according to the Irrigation Plan and all terms and conditions of the permit.

- (b) Provided the Owner with a copy of the Irrigation Plan indicating the actual System installation, and performed a final walk-through with the Owner to explain the operation of the System.
 - (c) Supplied the Owner with the manufacturers' manuals for the controller and other components of the System.
 - (d) Supplied the Owner with a list of System components that require maintenance, and the recommended frequency for maintenance.
 - (e) Informed the Owner of Owner's responsibility to drain the System before November 1st of each year.
 - (f) The certificate shall be signed by the Owner to acknowledge receipt, and a copy of the fully-signed certificate shall be delivered to the Department.
- (8) **Use of Private Wells.** Water from private wells may be used in Landscape Irrigation Systems. A System using well water shall not be directly connected to a potable water supply.
- (9) **Irrigation Water Is Non-Potable.** All water contained within a System is deemed non-potable.

WAUKESHA MUNICIPAL CODE 12/08/2015



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Office of Administration

TO: Public Welfare Committee
FROM: Justin Schoenemann, Assistant City Administrator
DATE: July 1, 2021
SUBJECT: Work Calendar

Month Agenda Topics

June	• Chapter II Review (Continued) • Term Limits • Home Irrigation Systems • Composting Plan • Tree Trimming & Wood Retention
July	• Hybrid Meetings Ordinance • Chapter II, Article IV Review (Continued) • Home Irrigation Systems (Continued) • Composting Plan (Continued)
August	• Hybrid Meetings (Continued) • Chapter II, Article IV Review (Continued) • Home Irrigation Systems (Continued) • Composting Plan (Continued)

Future Agenda Topics

• Architectural Board (Pending Study Results) • Adopt-A-Median Program • Community Outreach Initiatives • Home Program Review/Renewal	• Nuisance Ordinance Review • Logo Redesign/Branding • Redistricting (Fall)
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2021 Completed Items

• Chapter II Article II • Subdivision Ordinance Amendments • Political Signs Ordinance • Chickens Ordinance • Micro-Breweries & Micro-Wineries Ordinance • Storage of Outdoor Power Equipment Ordinance	• Bee City Designation • Bird City Designation • Hybrid Meeting Technology Update • Review of Protest Petition Process • Electronic Meetings Post COVID-19 • Review of Protest Petition Process
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