Plumbing Board
c/o Department of Labor and Industry
443 Lafayette Road North
St. Paul, MN 55155-4344
www.dli.mn.gov
Email: DLI.ccldboards@state.mn.us

PB0176.RFA.City of St. Paul.Appendix M.Rec'd 8.16.2024.Rev with letter of support 10.28.2024

Plumbing Board
Request for Action

PRINT IN INK or TYPE

NAME OF SUBMITTER	PURPOSE OF REQUEST (check all that apply):			
Tom Zangs			X	New Code
		Code Amendment		Repeal of an existing Rule

The Minnesota Plumbing Code (MN Rules, Chapter 4714) is available at https://epubs.iapmo.org/2020/MPC/

Specify the purpose of the proposal: If recommendation for code change for appurtenance or method (check all that apply)

	Appurtenance (e.g., water conditioning equipment)		Test Method
X	Other (describe) Request the adoption of 2024 UPC Appendix M		

Does your submission contain a Trade Secret? [ ] Yes [X] No

If Yes, mark **"TRADE SECRET"** prominently on each page of your submission that you believe contains trade secret information. Minnesota Statutes, section 13.37, subdivision 1(b), defines "trade secret" as follows:

> "Trade secret information" means government data, including a formula, pattern, compilation, program, device, method, technique or process (1) that was supplied by the affected individual or organization, (2) that is the subject of efforts by the individual or organization that are reasonable under the circumstances to maintain its secrecy, and (3) that derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.

Note that, although "trade secret" information is generally not public, the Board and its committees may disclose "trade secret" information at a public meeting of the Board or committee if reasonably necessary for the Board or committee to conduct the business or agenda item before it (such as your request.) The record of the meeting will be public.

Describe the proposed change. The Minnesota Plumbing Code (Minnesota Rules Chapter 4714) is available here: https://epubs.iapmo.org/2020/MPC/

NOTE:
- Please review the Minnesota Plumbing Code and include all parts of the Code that require revision to accomplish your purpose.
- The proposed change, including suggested rule language, should be *specific*. If modifying existing rule language, underline new words and ~~strike through deleted words~~.

Please list all areas of the Minnesota Plumbing Code that would be affected.

TABLE OF CONTENTS

[…]

610.5 Sizing Per Appendices A, ~~and~~ C, and M …….. 58

CHAPTER 6
WATER SUPPLY AND DISTRIBUTION

[…]

Section 610.5 Sizing Per Appendices A, ~~and~~ C, and M. Except as provided in Section 610.4, the size of each water piping system shall be determined in accordance with the procedure set forth in Appendix A. For alternate methods of sizing water supply systems, see Appendix C or Appendix M.

APPENDIX A
RECOMMENDED RULES FOR SIZING THE WATER SUPPLY SYSTEM

[…]

A 103.1 Supply Demand. Estimate the supply demand for the building main, the principal branches and risers of the system by totaling the fixture units on each, Table A 103.1, and then by reading the corresponding ordinate from Chart A 103.1(1) or Chart A 103.1(2), whichever is applicable.

Exception: For the applicable fixtures, the supply demand flow rate values calculated using Appendix M may be substituted for the flow rates calculated using the fixture units in Table A 103.1 and Chart A 103.1(1) or Chart A 103.1(2),

whichever is applicable.

APPENDICES

APPENDIX M

PEAK WATER DEMAND CALCULATOR

M 101.0 General.

M 101.1 Applicability. This appendix provides an alternative method for estimating the supply demand load for the building water supply, ~~and~~ principal branches, and risers for single- and multi-family dwellings with water-conserving plumbing fixtures, fixture fittings, and appliances.

For Office/Committee Use Only Proposal received completed? ☐ Yes ☐ No			
Date Proposer notified of gaps:	Mode of notification (e.g., e-mail)	Date returned to Proposer:	Date materials re-received:
Office Use Only			
RFA File No. PB0176	Date Received by DLI 8/16/2024	Dated Received by Committee 9/4/2024	Date of Forwarded to Board
Title of RFA PB0176.RFA.City of St. Paul.Appendix M.Rec'd 8.16.2024		:By	
Committee Recommendation to the Board: ☐ Accept ☐ Reject ☐ Abstain			
Board approved as submitted: ☐ Yes ☐ No		Board approved as modified: ☐ Yes ☐ No	

Need and Reasons For the Change. Thoroughly explain the need and why you believe it is reasonable to make this change. During a rulemaking process, the need and reasonableness of all proposed rule changes must be justified; therefore, a detailed explanation is necessary to ensure the Board thoroughly considers all aspects of the proposal.

Using the UPC Appendix M to calculate peak water demand for the building supply and principal branches then subsequently using these peak demand values in the UPC Appendix A when sizing water pipes provides the following benefits:

- Construction cost savings due to
  - Smaller diameter pipes and fittings, valves, pumps, and other equipment,
  - Smaller inside diameter pipe insulation, and
  - Smaller water service entrance size, resulting in smaller water meter size with lower connection fees.
- Ongoing cost savings due to
  - Water savings from faster hot water delivery times, resulting in smaller monthly water service charges and lower associated volumetric sewer charges,
  - Energy savings due to decreased heat loss in hot water distribution system, particularly in multifamily buildings with a recirculation system, and
  - Embedded energy savings for the water and wastewater utilities due to customer indoor water savings.
- Reduced public health and safety risk and improved water quality due to shorter water dwell times within plumbing systems. Each floor plan determines the distance between the mechanical room and the fixtures. UPC Appendix M does not change the length of the pipe, only the diameter. With the pipe diameter on each segment reduced, the pipe volume will be reduced.
- Reduced carbon emissions due to material savings and energy reductions.

2024 UPC Appendix M (also known as the Water Demand Calculator or the WDC) provides a method for estimating the demand load for the building water supply, principal branches, and risers for single family and multifamily dwellings. Three clauses from the UPC Appendix M provide context for this code proposal:

> M101.1 Applicability. This appendix provides a method for estimating the demand load for the building water supply and principal branches for single- and multi-family dwellings with water-conserving plumbing fixtures, fixture fittings, and appliances.
>
> M 102.2 Water Demand Calculator. The estimated design flow rate for the building supply and principal branches and risers shall be determined by the IAPMO Water Demand Calculator available for download at https://www.iapmo.org/water-demand-calculator/
>
> M 102.7 Size of Water Piping per Appendix A. Except as provided in Section M 102.0 for estimating the demand load for single- and multi-family dwellings, the size of each water piping system shall be determined in accordance with the procedure set forth in Appendix A. After determining the permissible friction loss per 100 feet (30 480 mm) of pipe in accordance with Section A 104.0 and the demand flow in accordance with the Water Demand Calculator, the diameter of the building supply pipe, branches and risers shall be obtained from Chart A 105.1(1) through Chart A 105.1(7), whichever is applicable, in accordance with Section A 105.0 and Section A 106.0.
> Velocities shall be in accordance with Section A 107.0. Appendix I (IS 31), Figure 3 and Figure 4 shall be permitted when sizing PEX systems.

Following the procedures in the UPC Appendix M, the estimated design flow rates for single family and multifamily dwellings are determined using the WDC. These flow rates (instead of those estimated using the Water Supply Fixture Unit (WSFU) method) are then incorporated into the pipe size selection method contained in the UPC Appendix A.

The adoption of the UPC Appendix M into the MN Plumbing Code would enable the voluntary use of Appendix M for residential occupancies. Statewide adoption would make it equally convenient to use the MN Plumbing Code Appendix A and UPC Appendix M.

If your product/method standard(s) is not currently listed in a national code, your Request For Action will not be considered by the Board or its committees, however, you are welcome to present at any Board meeting during the Open Forum section of the Agenda.

The proposal must be accompanied by copies of any published standards, the results of testing, and copies of any product listings, as documentation of the health, sanitation and safety performance of any materials, methods, fixtures, and/or appurtenances. If none are available, please explain:

The figure below shows how the current design method (using WSFU) drastically overestimates the peak water demand in multifamily buildings. The WDC design method is a closer match to the actual peak water use observed in 22 multifamily buildings.

The analysis compared the WSFU and WDC design predictions to actual data for hot water flow rates in 22 multifamily buildings, which range in size from 8 to 384 apartments. The analyzed actual data was mostly for hot water flow rates because hot water data was readily available from data collection efforts serving energy efficiency projects not related to water pipe sizing.

The design estimates calculated using the WSFU method (red markers) are 5 to 27 times larger than the observed peak flow rates. Overestimating peak water flow rates results in pipe diameters that are much larger than needed for modern buildings. The last four red markers are off the chart, predicting peak water use of over 140 gallons per minute.

The design estimates calculated using the WDC (blue markers) are between 2 and 6 times the observed peak flow rates. The WDC can be used to more accurately, but still conservatively, calculate peak water flow rates in residential occupancies.

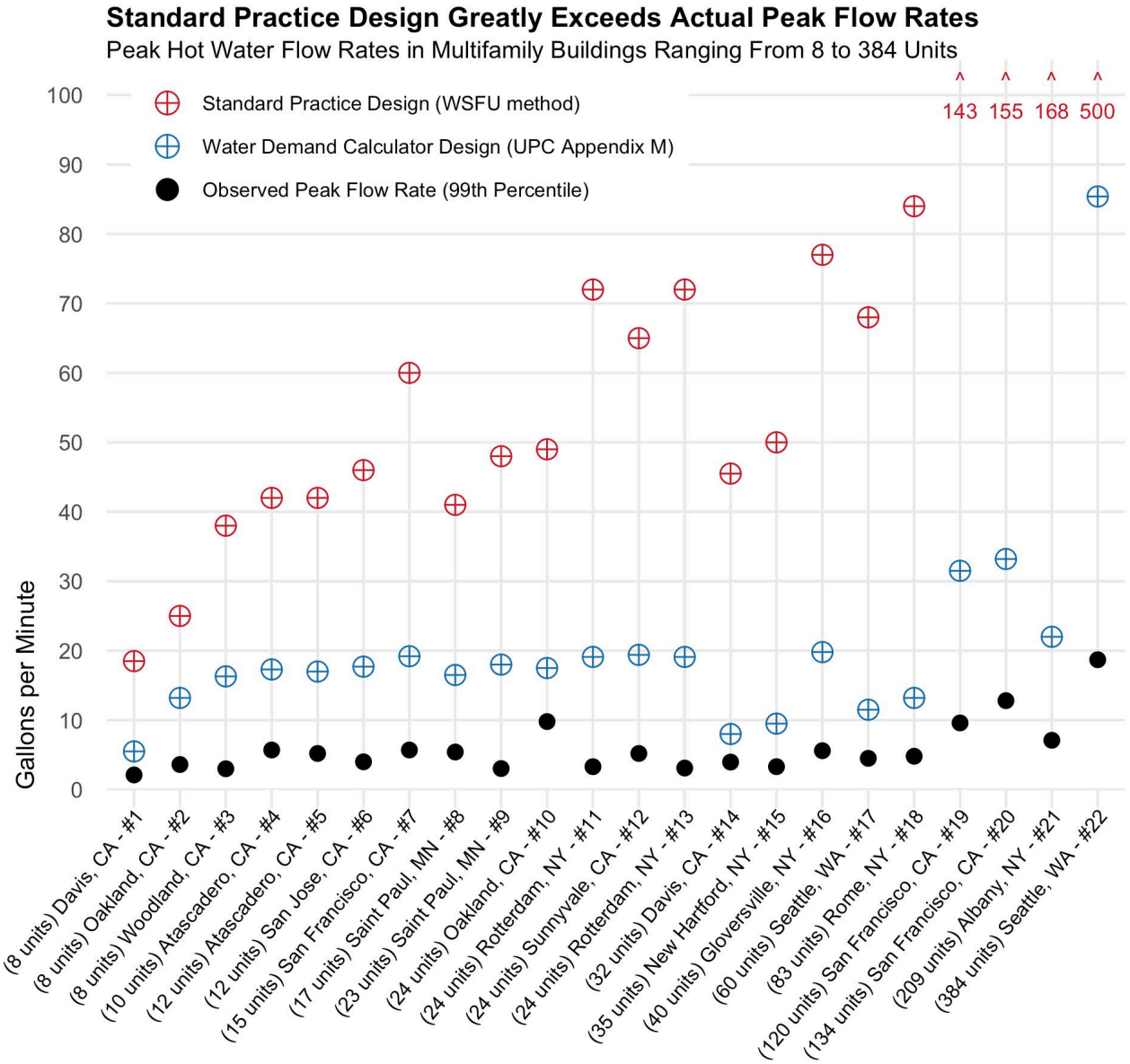


Figure 1 Comparison of Design to Actual Peak Flow Rates in Multifamily Buildings.

Credits: Observed peak flow rate data was collected and provided by the Association for Energy Affordability, Center for Energy and Environment, E2G Solar, Ecotope, Frontier Energy, and the University of California Davis Western Cooling Efficiency Center. This project was supported in part by a grant from the Minnesota Department of Commerce, Division of Energy Resources through the Conservation Applied Research and Development (CARD) program.

Notes: Data was collected during the period of 2019 to 2022; monitoring period ranged from 9 days to over 2 years, and logging interval ranged from 1 to 60 seconds. The buildings are ordered by Standard Practice Design (WSFU method) value. Standard Practice Design values for last four buildings on the left exceeded 100 gallons per minute and are not included in this figure. Observed peak flow rate is the 99th percentile of non-zero flow rates observed over each study's duration. For buildings with central laundry (11 out of 22), the WDC design values include the shared clothes washers without modification of the default flow rate or probability of use. For buildings with fixtures in utility areas (e.g., custodial sinks), the Standard Practice and WDC design values exclude those fixtures. This approach for accounting for central laundry and fixtures in utility areas results in smaller design values. The monitoring data includes water use by central laundry and fixtures in utility areas. In other words, the safety factor between the actual and design peak flow rates may be larger for some of the buildings in the dataset.

Additional studies and resources on the WDC include:

- **2017 Study** on Peak Water Demand by S. Buchberger et al. (basis for the WDC) https://www.iapmo.org/media/3857/peak-water-demand-study-executive-summary.pdf
- **2020 Study** on the WDC by Stantec (the assessment of cost savings from applying the WDC) https://www.iapmo.org/group/update/stantec-wdc-savings-study
- **2021 Report** on Connection Fees and Service Charges by Meter Size by Alliance for Water Efficiency (the assessment of cost savings from downsizing meters) https://www.iapmo.org/media/25939/awe-meter-size-connection-fee-research.pdf
- **2023 Report** on Energy and Carbon Savings Opportunities by Arup (the assessment of water, energy, and carbon savings from applying the WDC) https://www.iapmo.org/media/31469/iapmo_energy_savings_arup_report.pdf
- **2024 Report** by 2050 Partners, Gary Klein and Associates, and the Association for Energy Affordability (summarizing the study on validating the WDC in 20 multifamily buildings; the assessment of water, energy, and cost savings) https://localenergycodes.com/download/1461/file_path/fieldList/2024%20CPC%20Appx%20M-Alternative%20Calc%20Water%20Demand.pdf
- **3-min Intro Video** by Towle Whitney https://vimeo.com/734711521/1874e812cd
- **1-hr Trainings** on How to Use the WDC https://youtu.be/TWKPfT1pu3U (Dan Cole, IAPMO, from 2017 IAPMO Annual Conference) https://www.youtube.com/watch?v=v7SyZ2azh6g&t=9s (Randy Lorge, IAPMO)

Please attach electronic scanned copies of any literature, standards and product approvals or listings. Printed or copyrighted materials, ***along with written permission from the publisher to distribute the materials at meetings***, and email to DLI.ccldboards@state.mn.us

Primary reason for change: (check only one)

☐ Protect public, health, safety, welfare, or security	☐ Mandated by legislature
☐ Lower construction costs	☐ Provide uniform application
☑ Encourage new methods and materials	☐ Clarify provisions
☐ Change made at national level	☐ Situation unique to Minnesota
☐ Other (describe)	

Anticipated benefits: (check all that apply)

☐ Save lives/reduce injuries	☑ Provide more affordable construction
☑ Improve uniform application	☐ Provide building property
☐ Improve health of indoor environment	☐ Drinking water quality protection
☑ Provide more construction alternatives	☐ Decrease cost of enforcement
☐ Reduce regulation ☐ Other (describe)	

The Following Information is Optional. This Information can Assist in Evaluating a Request for Action and in Rulemaking and Should be Provided if Known.

Economic impact: (explain all answers marked "yes")

1. Does the proposed change increase or decrease the cost of enforcement? ☐ Yes ☑ No If yes, explain

2. Does the proposed change increase or decrease the cost of compliance? ☑ Yes ☐ No If yes, explain
Include the estimated cost increase or decrease, and who will bear the cost increase or experience the cost decrease:

- Construction cost savings due to
  - Smaller diameter pipes and fittings, valves, pumps, and other equipment,
  - Smaller inside diameter pipe insulation, and
  - Smaller water service entrance size, resulting in smaller water meter size with lower connection fees.

- Ongoing cost savings due to
  - Water savings from faster hot water delivery times, resulting in smaller monthly water service charges and lower associated volumetric sewer charges,
  - Energy savings due to decreased heat loss in hot water distribution system, particularly in multifamily buildings with a recirculation system, and
  - Embedded energy savings for the water and wastewater utilities due to customer indoor water savings.

3. Are there less costly or intrusive methods to achieve the proposed change? ☐ Yes ☑ No If yes, explain

4. Were alternative methods considered? ☐ Yes ☐ No If no, why not? If yes, explain what alternative methods were considered and why they were rejected.

Not applicable

5. If there is a fiscal impact, try to explain any benefit that will offset the cost of the change. If there is no impact, mark "N/A."

Not applicable

6. Provide a description of the classes of persons affected by a proposed change, who will bear the cost, and who will benefit.

This is an opt-in measure

7. Does the proposed rule affect farming operations? (Agricultural buildings are exempt from the Minnesota Building Code under Minnesota Statutes, Section 326B.121.) ☐ Yes ☑ No If yes, explain

Are there any existing Federal Standards? ☐ Yes ☑ No If yes, list:

Are there any differences between the proposed change and existing federal regulations? ☐ Yes ☐ No
☑ Not applicable ☐ Unknown If yes, describe each difference & explain why each difference is needed & reasonable.

Minnesota Statutes, section 14.127, requires the Board to determine if the cost of complying with proposed rule changes in the first year after the changes take effect will exceed $25,000 for any small business or small city. A small business is defined as a business (either for profit or nonprofit) with less than 50 full-time employees and a small city is defined as a city with less than ten full-time employees.

During the first year after the proposed changes go into effect, will it cost more than $25,000 for any small business or small city of comply with the change? ☐ Yes ☑ No If yes, identify by name the small business(es or small city(ies).

Will this proposed plumbing code amendment require any local government to adopt or amend an ordinance or other regulation in order to comply with the proposed plumbing code amendment? Yes ☑ No, If yes, identify by name the government(s) and ordinances(s) that will need to be amended in order to comply with the proposed plumbing code amendment.

Additional supporting documentation may also be attached to this form. Are there any additional comments you feel the Committee/Board may need to consider? If so, please state them here:

Information regarding submitting this form:

- Submissions are received and heard by the Committee on an "as received" basis. **Any missing documentation will delay the process, and your proposal will be listed as the date it was received "Complete."**
- **Submit any supporting documentation to be considered,** such as manufacturer's literature, approvals by other states, and engineering data electronically to DLI.CCLDBOARDS@state.mn.us. Once your Request For Action form has been received, it will be assigned a file number. Please reference this file number on any correspondence and supplemental submissions.
- For copyrighted materials that must be purchased from publishers, such as published standards, product approvals or testing data, listings by agencies (IAPMO, ASSE, ASTM, etc.,) you may send (or email) two copies, *along with written permission from the publisher to distribute the materials at meetings*, via U.S. Mail to: Plumbing Board, c/o Department of Labor and Industry, 443 Lafayette Road No., St. Paul, MN 55155-4344.
- For materials that must be submitted by U.S. Mail, please include a copy of your "Request For Action" form originally submitted and reference your assigned RFA file number.

Information for presentation to the Committee and/or Board:

- Limit presentations to 5 minutes or less.
- Be prepared to answer questions regarding the proposal and any documentation.

Information regarding Committee and/or Board function:

- The Plumbing Board or designated Committee.

I understand that any action is a recommendation to the Plumbing Board and is not to be considered final action.

NAME	EMAIL ADDRESS	FIRM NAME
Tom Zangs	Tom.zangs@ci.stpaul.mn.us	Saint Paul Regional Water Services

NAME, PHONE NUMBER AND E-MAIL ADDRESS OF PRESENTER TO THE COMMITTEE (if different):

MAILING STREET ADDRESS	CITY	STATE	ZIP CODE
1900 Rice Street	St. Paul	MN	55113

PHONE	SIGNATURE (original or electronic)	DATE
651-266-6277		6/6/2024

For Assistance or questions on completing this form, contact Mike Westemeier, Department of Labor and Industry at michael.westemeier@state.mn.us or by phone 651-284-5898.

FACT SHEET

UPC Appendix M Peak Water Demand Calculator

The purpose of this fact sheet is to provide information about an alternative approach for sizing water pipes in new residential buildings using 2024 Uniform Plumbing Code (UPC) Appendix M "Peak Water Demand Calculator" (also referred to as the WDC).

Scope of 2024 UPC Appendix M

2024 UPC Appendix M (the WDC) provides a method for estimating the demand load for the building water supply, principal branches, and risers for single family and multifamily dwellings.

The WDC applies to new construction and can justify the use of existing premise plumbing for renovation or adaptive reuse projects.

Background

Key points about the WDC:

- First major, peer-reviewed update of peak water demand sizing in buildings in over 80 years in response to the increased prevalence of low-flow fixtures in the United States.
- Culmination of a multi-year project (2011- 2017) sponsored by the International Association of Plumbing and Mechanical Officials (IAPMO) in collaboration with the University of Cincinnati and the American Society of Plumbing Engineers (ASPE).
- Initial adoption as Appendix M in 2018 UPC.
- Available as an Excel-based tool.

Benefits

Using the WDC to size water pipes results in:

- Construction cost savings due to smaller diameter pipes and fittings, less pipe insulation material, and reduced water service entrance size.
- Ongoing cost savings to occupants and homeowners from water and energy savings.
- Faster delivery of hot water to occupants.
- Water and embedded energy savings due to faster hot water delivery times.
- Additional energy savings due to decreased heat loss in the hot water distribution system, particularly in multifamily buildings with a recirculation system.
- Reduced carbon emissions due to material savings and energy reductions.
- Reduced public health and safety risk and improved water quality due to shorter water dwell times in premise plumbing systems.

Adoption in Minnesota and Other States

- In late 2023, Minnesota Plumbing Board formed 2024 UPC Ad Hoc Rulemaking Committee that plans to propose recommendations on adoption of 2024 UPC to the Plumbing Board in April 2025. The Committee plans to review UPC Appendix M for possible adoption.
- Ten states have already adopted the WDC as an alternative water demand sizing method including California, Hawaii, Montana, Nevada, New Jersey, New Mexico, North Dakota, Oregon, Washington, and Wisconsin.

More Information

- **2024 UPC, Appendix M "Peak Water Demand Calculator"**
  https://epubs.iapmo.org/2024/UPC/#p=466
  https://www.iapmo.org/water-demand-calculator/
- **2017 Study on Peak Water Demand** by S. Buchberger et al. (basis for the WDC)
  www.iapmo.org/media/3857/peak-water-demand-study-executive-summary.pdf
- **2020 Study on the WDC** by Stantec (assessment of cost savings from applying the WDC)
  www.iapmo.org/group/update/stantec-wdc-savings-study
- **2021 Report** on Connection Fees and Service Charges by Meter Size by Alliance for Water Efficiency (assessment of cost savings from downsizing meters)
  www.iapmo.org/media/25939/awe-meter-size-connection-fee-research.pdf
- **2023 Report** on Energy and Carbon Savings Opportunities by Arup (assessment of water, energy, and carbon savings from applying the WDC
  www.iapmo.org/media/31469/iapmo_energy_savings_arup_report.pdf
- **3-min Intro Video** by Towle Whitney
  https://vimeo.com/734711521/1874e812cd
- **1-hr Training** on How to Use the WDC from 2017 IAPMO Annual Conference
  https://youtu.be/TWKPfT1pu3U

What's wrong with the current method?

The figure below shows how the current design method (using Water Supply Fixture Units or WSFU) drastically overestimates the peak water demand in multifamily buildings. The WDC design method is a closer match to the actual peak water use observed in 20 multifamily buildings.[i]

The design estimates calculated using the WSFU method (red markers) are 5 to 27 times larger than the observed peak flow rates. Overestimating peak water flow rates results in pipe diameters that are much larger than needed for modern buildings. The last four red markers are literally off the chart, predicting peak water use of over 140 gallons per minute.

The design estimates calculated using the WDC (blue markers) are between 2 and 6 times the observed peak flow rates. The WDC can be used to more accurately, but still conservatively, calculate peak water flow rates in residential occupancies.

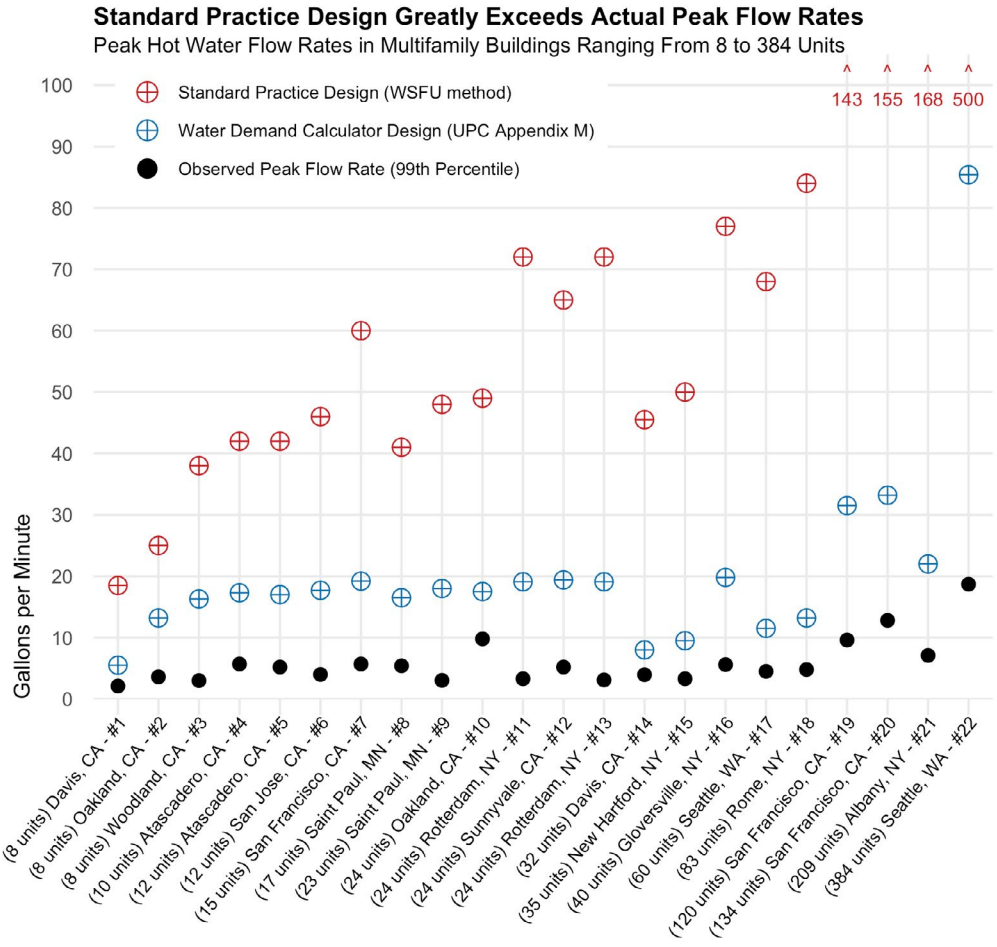
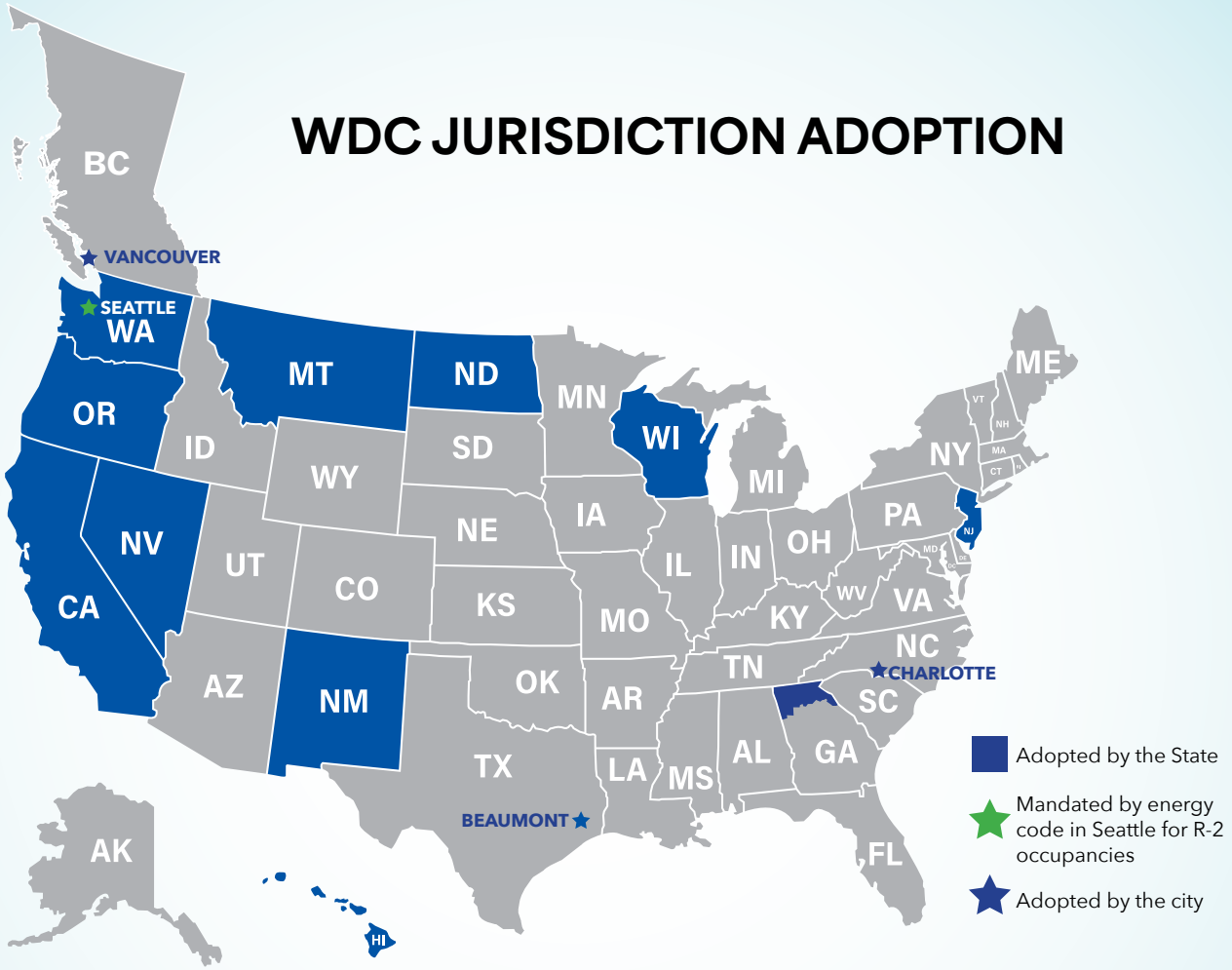


Figure 1 Comparison of Design to Actual Peak Flow Rates in Multifamily Buildings.

Credits: Observed peak flow rate data was collected and provided by the Association for Energy Affordability, Center for Energy and Environment, E2G Solar, Ecotope, Frontier Energy, and the University of California Davis Western Cooling Efficiency Center. This project was supported in part by a grant from the Minnesota Department of Commerce, Division of Energy Resources through the Conservation Applied Research and Development (CARD) program.

[i] The analysis compared WSFU and WDC design predictions to actual data for hot water flow rates in 20 multifamily buildings, which range in size from 8 to 384 apartments. The analyzed actual data was mostly for hot water flow rates because hot water data was readily available from data collection efforts serving energy efficiency projects not related to water pipe sizing. Data was collected during the period of 2019 to 2022; monitoring period ranged from 9 days to over 2 years, and logging interval ranged from 1 to 60 seconds. Buildings are ordered by Standard Practice Design (WSFU method) value. Standard Practice Design values for last four buildings on the left exceeded 100 gallons per minute and are not included in this figure. Observed peak flow rate is the 99th percentile of non-zero flow rates observed over each study's duration. The report summarizing the study can be found at https://localenergycodes.com/content/reach-codes/energy-plus-water-1.

WDC JURISDICTION ADOPTION



Note: This list represents the best information of known adoptions based on information between Technical Services & Research department and Field Services department.

Foster CIty, CA https://www.codepublishing.com/CA/FosterCity/?FosterCity15/FosterCity1516.html&?f
San Jose, CA https://library.municode.com/ca/san_jose/codes/code_of_ordinances?nodeId=TIT24TECO_CH24.04PLCO_PT1ADCPPR
Charlotte, NC (Water Department) domestic-meter-selection-guidelines.pdf (charlottenc.gov)
Hawaii https://up.codes/viewer/hawaii/upc-2018/chapter/M/peak-water-demand-calculator#M%20101.0
Nevada https://up.codes/viewer/nevada/upc-2018/chapter/M/peak-water-demand-calculator#M
New Mexico https://www.rld.nm.gov/wp-content/uploads/2022/03/14.8.2_Integrated-003.pdf
North Dakota Section 62-03.1-01-01 - Conformance with the North Dakota Plumbing Code, N.D. Admin. Code 62-03.1-01-01 | Casetext Search + Citator
Oregon https://epubs.iapmo.org/2021/OPC/
Seattle, WA https://www.seattle.gov/Documents/Departments/SDCI/Codes/PlumbingCode/2018SeattlePlumbingCode.pdf
Wisconsin https://www.iapmo.org/media/29759/wisconsin_pp-031603529-ptoaa.pdf

WDC STANDARD ADOPTION LIST

STATE	REFERENCED	NOTES
WELL Building Institute	X	Standard for wellness, water section
FGI Healthcare Guidelines	X (2026)	Healthcare Code Appendix (Proposed)
Green Building Initiative	X	Standard for green buildings
AWWA M22	X	Standard for water meter sizing
Pacific Institute Water Use Advisory Group Proposed	X	Report, structural water savings
ASPE Engineering Methodologies to Reduce the Risk of Legionella in Premise Plumbing Systems	X	Guide, Legionella Risk Mitigation. Recommend using WDC to reduce water age.
ASPE Plumbing Engineering Design Handbook 2: Plumbing Systems 2022 - 2023	X	Guidance for water systems sizing, referenced as accepted engineering practice

MINNESOTA PLUMBING-HEATING-COOLING CONTRACTORS ASSOCIATION®
Best People. Best Practices.®

AUGUST 28, 2024

Lyndy Logan
MN Dept. of Labor and Industry
Plumbing Board
443 Lafayette Road North
St. Paul, MN 55115

Re: MN PHCC Supports Adoption of 2024 Uniform Plumbing Code Appendix M into the Minnesota Plumbing Code

Dear members of the 2024 UPC Ad Hoc Rulemaking Committee,

We are writing to share our support for the 2024 Uniform Plumbing Code (UPC) Appendix M "Peak Water Demand Calculator" and urge the Minnesota Department of Labor and Industry and the Plumbing Board to review and adopt the Appendix during the ongoing update code cycle for the Minnesota Plumbing Code (MN Rules, Chapter 4714).

UPC Appendix M is the first major, peer-reviewed update of peak water demand sizing in buildings in over 80 years in response to the increased prevalence of low-flow fixtures in the United States. Ten states have already adopted the WDC as an alternative water demand sizing method including California, Hawaii, Montana, Nevada, New Jersey, New Mexico, North Dakota, Oregon, Washington, and Wisconsin.

We recommend adoption of the 2024 UPC Appendix M "Peak Water Demand Calculator" into the Minnesota Plumbing Code.

Thank you for the opportunity to comment,

David Radziej IOM, CAE
Executive Vice President

1144 Waldon Place Arden Hills, MN 55112 | 612-590-8038 | david@mnphcc.com | www.mnphcc.com