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IAPMO Publishes Water Demand Calculator™ as Standalone Document

Ontario, Calif. (June 23, 2022) — The International Association of Plumbing and Mechanical Officials (IAPMO®) has published IAPMO/UPC/Appendix M-2021, *Peak Water Demand Calculator*, as a standalone document. This document is a direct extract from Appendix M of the 2021 *Uniform Plumbing Code (UPC®)*, which was developed via an ANSI-accredited development process. All references to other sections of the *UPC* have also been extracted to avoid dependence of additional documents. The IAPMO/UPC/Appendix M-2021 is a document that can be readily utilized and adopted by any jurisdiction for water and energy conservation, to improve housing affordability, and to improve water quality.

A copy of IAPMO/UPC/Appendix M-2021 can be purchased here:
<https://iapmomembership.org/store/2021-upc-appendix-m-ebook/1175/>

The Water Demand Calculator™ (WDC) is the first significant update for water pipe sizing in buildings since the development of Hunter’s Curve more than 80 years ago. It is the result of a multiyear, IAPMO-led effort to develop a new statistically based pipe sizing method stemming from a need to address profound water safety and wasted water and energy concerns due to oversized water supply pipes in homes and buildings. Plumbing systems in new home construction are routinely overbuilt, increasing housing costs because the most commonly used pipe sizing formula is almost 90 years old; developed well before today’s innovative low-flow fixtures and appliances came on the scene.

The WDC 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. It provides examples for determining flow rate, which can then be used to size the plumbing supply piping. The IAPMO WDC accurately predicts peak water demand in single-family homes and apartment buildings, reducing the carbon footprint of the structure and saving consumers on both their water and water heating-related energy utility bills for the entire life of the plumbing system.

Builders who use this document for residential projects can achieve significant savings due to its improved methods for determining proper pipe sizing, a third-party engineering firm’s study has found. The results from the two studies show the total average savings for a typical 2,379 square foot single family home in a high-cost labor market can exceed \$2,000 and can be as high as \$5,000, depending on location. For multi-family apartment buildings, the potential savings are even higher and can exceed \$100,000 on a 45-unit multi-family building, especially where utility meter connection fees are high due to water scarcity. The two studies can be found at <https://www.uniformcodes.org/water-demand-calculator/>.

The WDC is a powerful and much needed tool to bring pipe-sizing methodology into the 21st century. The primary benefits of applying the WDC pertain to addressing water quality concerns associated with water aging in oversized plumbing systems and providing for water and energy efficiency. However, the WDC also provides for significant construction cost efficiencies and works to increase homeowner satisfaction when using modern, efficient plumbing products, making applying the WDC attractive to builders, as well.

For questions on the WDC, please contact Dan Cole at (708) 995- 3009 or dan.cole@iapmo.org.

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Sponsor of the Uniform Codes, IAPMO® — The International Association of Plumbing and Mechanical Officials — works in concert with government and industry for safe, sanitary, and resilient plumbing and mechanical systems. Learn more about IAPMO at www.iapmo.org.