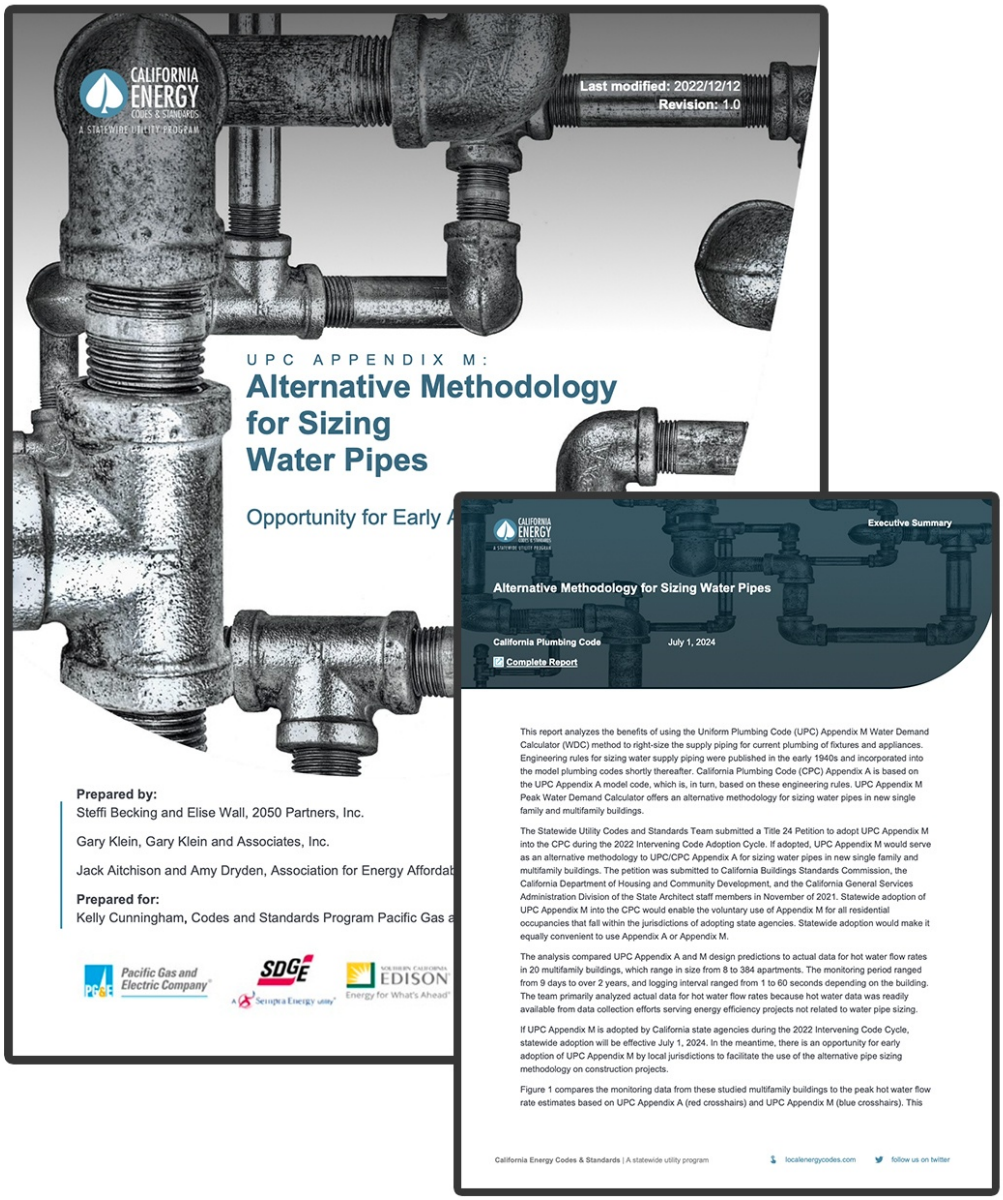
REACH CODE NEWS BRIEF: JANUARY 2023

NEW REPORT AVAILABLE ON ALTERNATIVE PIPE SIZING METHODOLOGY



The statewide reach codes team has published a new report on water pipe sizing for residential occupancies, which explores the benefits of using more contemporary methodologies than the methods used in the California Plumbing Code (CPC) Appendix A. The existing sizing approach is based on the Uniform

Plumbing Code (UPC) Appendix A model code that was developed in the 1940s, which does not take into account modern materials or current plumbing fixtures and appliances.

As an alternative to the conventional approach, design flow rates can be estimated by following the Water Demand Calculation (WDC) procedure in UPC Appendix M. This report provides analysis comparing UPC Appendix A and M design predictions to actual data for hot water flow rates in 20 multifamily buildings, ranging in size from 8 to 384 apartments.

The monitoring period ranged from nine days to over two years, and logging interval ranged from one to 60 seconds depending on the building. The team primarily analyzed actual data 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.

Using the UPC Appendix M WDC provides upfront and ongoing cost savings as identified:

Construction cost savings:

- Smaller diameter pipes and fittings, valves, pumps, and other equipment
- Smaller inside diameter pipe insulation
- Smaller water service entrance size, which allows smaller water meter size with lower connection fees.

The reduction in construction costs is in the range of $600-$1,200 per apartment for multi-family buildings.

Operational cost savings:

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

The Report and Executive Summary are available at localenergycodes.com for no cost.

UPCOMING EVENTS

February 1: Statewide Codes and Standards Enhancement (CASE) Team Stakeholder meeting for 2025 Code: Nonresidential Existing Buildings, Solar Pool Heating, and Industrial Insulation

February 2: Energy Code Ace training: 2022 Title 24, Part 6 Essentials — Single-family Standards: Mechanical Systems

February 6: Energy Code Ace training: 2022 Title 24, Part 6 Essentials — Nonresidential & Multifamily Standards: Solar & Battery Storage

February 7: 3C-REN training: 2022 Energy Code: Alterations and Additions for Single Family

February 8: BayREN C&S Training: 2022 Energy Code Changes – Single Family

February 9: 3C-REN webinar: Inflation Reduction Act Part 1: Funding Overview of Programs (Real Estate Focus)

February 9: Statewide Codes and Standards Enhancement (CASE) Team Stakeholder meeting for 2025 Code: Nonresidential HVAC Controls, HVAC Heat Pumps, Cooling Towers, Controlled Environmental Horticulture, and Kitchens

February 14: Statewide Codes and Standards Enhancement (CASE) Team Stakeholder meeting for 2025 Code: Envelope, Residential Buried Ducts, and Multifamily Compartmentalization & Balanced Ventilation

February 15: Energy Commission Monthly Business Meeting

February 15: Energy Code Ace training: 2022 Title 24, Part 6 Essentials — Single-family Compliance: EnergyPro Advanced

February 28: Energy Code Ace training: 2022 Title 24, Part 6 Essentials — Single-family Compliance: Modeling

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NEW THIS MONTH!

Q&A: THE POWER OF CODES AND COLLABORATION: A CONVERSATION WITH KELLY CUNNINGHAM

Kelly Cunningham currently serves as a program manager on Pacific Gas & Electric's Codes and Standards team. Her role includes managing the program responsible for the development of codes and standards enhancement proposals to advance California's Energy Code, leading the Local Energy Codes program for PG&E, and supporting the evolution of national building energy model codes.

Q: You've been involved with reach codes both at the local level as well as the statewide level. Tell us how these two activities differ?

A: The biggest difference is the scope of the activity. At the local level, PG&E supports jurisdictions through energy efficiency programs, such as the one that supports Local Energy Codes, incentive programs, Workforce Education & Training to support new technologies (like our induction loaner program), and other local government programs. Also, at PG&E we support jurisdictions by providing support letters, or in some cases, representation at public meetings to answer questions from Council members or stakeholders about concerns that arise when considering a reach code.

At the statewide level, the collaborative multi-utility team that includes Southern California Edison and SDG&E develops offerings that support all of California, regardless of what energy provider serves the community. This includes cost-effectiveness studies, model language, fact sheets, webinars, the Cost Effectiveness Explorer and more. We also collaborate with the RENs, CCAs, and other organizations to assure we understand local needs.

Given that we are just beginning a new cycle, I also want to mention the work of Energy Code Ace, which creates and manages a comprehensive offering of tools, training and resources for code compliance. The Energy Code Ace materials can be very helpful for jurisdictions in their reach code work as well.

Q: Are there specific benefits for statewide collaboration on codes and standards work?

A: I think so, very significant ones. First of all, a statewide effort results in a unified body of work that supports or underpins efforts from all corners of the state. While the energy needs of Humboldt County may be dramatically different from those in Imperial County, the existence of a unified library of research, resources and technical support offers a solid common foundation that can be refined to meet

unique local needs. Secondly, this foundation tends to encourage more regional collaborations, as we've seen in Santa Barbara County and elsewhere. Finally, it's important for every jurisdiction to realize that they can access this unified network, regardless of whether the community's energy needs are served by an investor-owned utility, a CCA, or a publicly owned utility.

Q: We're just entering a new code cycle, with the effective date of the 2022 Building Energy Code occurring this month. What do you see as the major trends in reach codes during this cycle over the next three years?

A: We're beginning to see more emphasis on extending reach codes to existing buildings. A modest number of jurisdictions have already adopted retrofit-focused reach codes, with a significant number exploring the feasibility and approaches for their communities in the upcoming cycle. Also, the passage of the federal Inflation Reduction Act last year offers local communities some new opportunities in the way of financial incentives that may provide additional leverage for these types of measures.

Electrification measures continue to be of significant interest. I hope that we see an uptick in the number of jurisdictions interested in energy efficiency measures, as the strongest package may be the one that reduces energy demand in addition to meeting decarbonization goals. In the area of building performance standards, there are some interesting developments, such as the recent announcement of a Federal Building Performance Standard by the Biden administration. It may be too soon to know whether these types of standards will be effective policy tools in the reach codes space.

Q: What advice would you give to local staff as the new year and new cycle gets off to start?

A: Just a few thoughts here, although there are many that I could mention!

Firstly, I'd encourage local staff to take advantage of their peer network, especially through the monthly meetings hosted by the Statewide Reach Codes team. For more information, email info@localenergycodes.com.

Secondly, our statewide collaboration is always interested in hearing from communities about additional resources or topic research that might be needed, such as resources related to EV infrastructure.

For staff located in areas served by PG&E, requests for letters or appearances in support of local reach code activity can be directed to electrification@pge.com.

This program is funded by California utility customers and administered by Pacific Gas and Electric Company, San Diego Gas & Electric Company (SDG&E®) and Southern California Edison Company under the auspices of the California Public Utilities Commission and in support of the California Energy Commission.

OTHER REACH CODE NEWS BRIEFS

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