Speaker



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Concentrated Leadership. Respected Energy

- *Designed plumbing systems for healthcare, laboratory, hospitality, sports, and university projects*
- *Reputation as a results-oriented expert*
- *Strategic planning initiatives for improved overall effectiveness*
- *Find long-term, holistic solutions in water and plumbing.*
- *Vice President of Strategic Initiatives for IAPMO is to identify long term, high impact projects, developing a business case for them, bring resources to bear, and executing them for maximum results*
- *Concentrated focus in honing his personal and organization's strategy on possible breakthrough points which has led to improved effectiveness and growth*
- *Professional activities include leadership in multiple volunteer associations*
- *ASPE Phoenix Chapter, ASPE Society, ASPE Legionella Working Group, ASHRAE Committees, PIPE Trust of Arizona, IAPMO's Safe Building Reopening Best Practices*

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Plumbing Resiliency. Water Demand Calculator.



Data of the Results

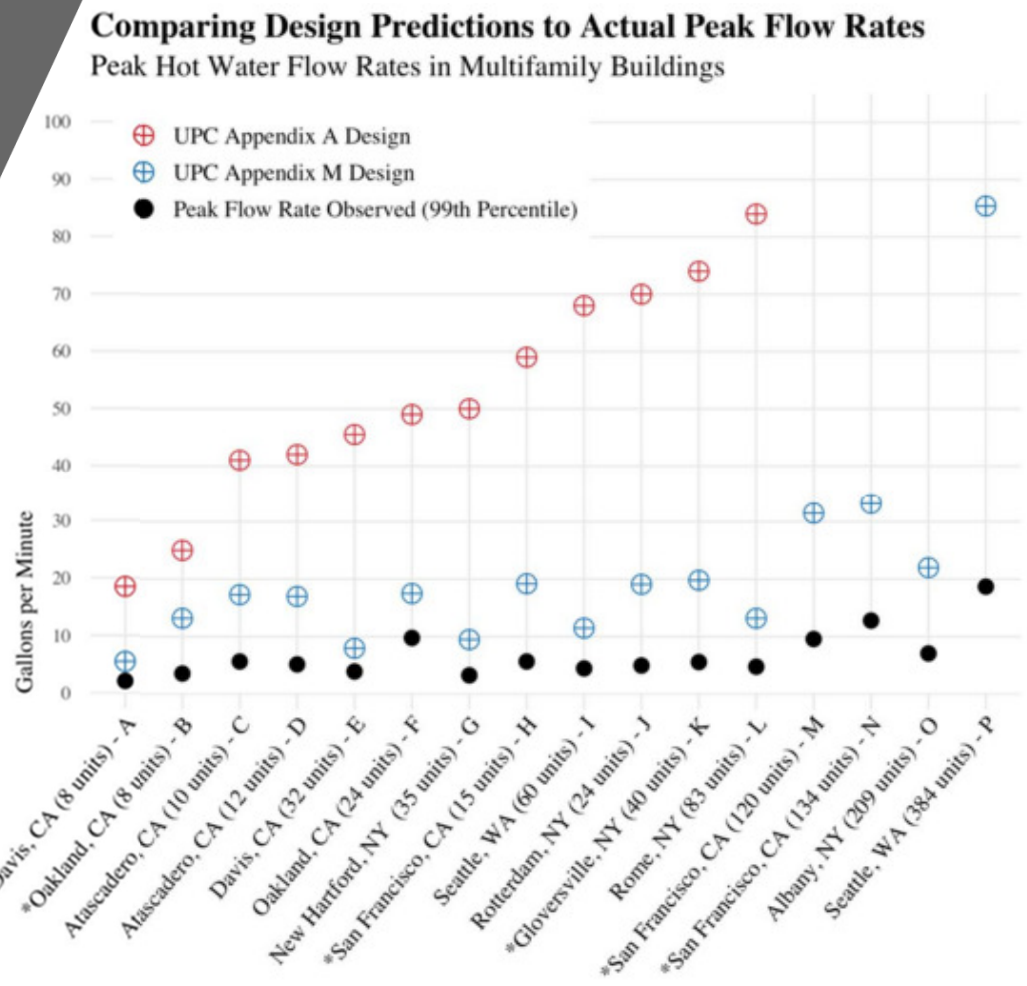


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A Review of Connection Fees and Service Charges by Meter Size

Alliance for Water Efficiency

Cost Savings

IAPMO's Water Demar… Calculator Will Save You… Water and Labor Costs.

EXECUTIVE SUMMARY

Reacting to needs to address profound water quality and wasted water and energy concerns resulting from oversized water supply pipes in home and buildings, IAPMO led a research project to develop a new statistically based pipe sizing method. This multi-year effort resulted in the development of the Water Demand Calculator (WDC).

Along with addressing those concerns, applying the WDC also provides significant construction cost reductions resulting from the use of smaller water pipes, fittings and related components. This paper illustrates the potential economic benefits of applying the WDC over traditional pipe sizing methods.



April 2021

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AWE Study (One Meter Size)

Meter Downsize Example	Minimum Annual Water Service Charge Savings	Maximum Annual Water Service Charge Savings	Mean Annual Water Service Charge Savings	Median Annual Water Service Charge Savings	Number of Communities
3/4" to 5/8"	$0.00	$205.20	$28.41	$0.00	31
1" to 3/4"	($0.06)	$545.40	$106.11	$66.61	37
1.5" to 1"	$0.00	$1,025.76	$251.68	$181.53	46
2" to 1.5"	$0.00	$1,366.08	$319.04	$272.40	46
3" to 2"	$41.88	$4,228.08	$886.44	$658.44	44
4" to 3"	$0.00	$5,313.60	$1,002.13	$830.70	44
6" to 4"	$0.00	$17,686.56	$2,858.98	$2,015.04	45
8" to 6"	$0.00	$24,465.60	$3,484.28	$2,697.48	41
10" to 8"	$0.00	$35,026.20	$4,732.66	$3,808.68	36
12" to 10"	$0.00	$22,752.72	$6,345.49	$6,534.24	23

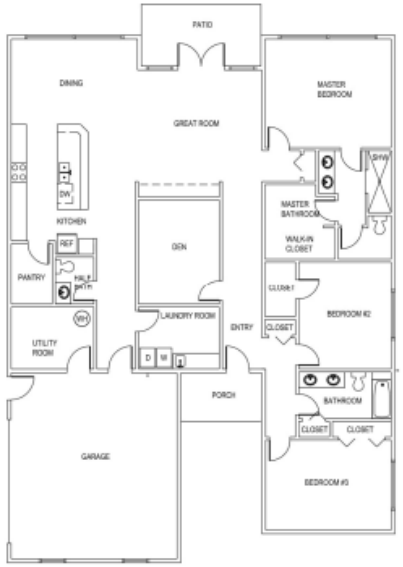
Table 5: Summary Statistics for Annual Water Service Charge Savings Related to Downsizing Meter Size by One Size, as of 2020

Meter Downsize Example	Minimum Connection Fee Savings	Maximum Connection Fee Savings	Mean Connection Fee Savings	Median Connection Fee Savings	Number of Communities
3/4" to 5/8"	($7.99)	$2,997.00	$421.62	$36.36	21
1" to 3/4"	$0.00	$17,564.00	$1,883.05	$887.00	35
1.5" to 1"	$100.00	$19,661.00	$3,699.98	$2,573.50	42
2" to 1.5"	$0.00	$33,571.00	$4,598.31	$2,812.00	42
3" to 2"	$520.00	$82,583.00	$18,512.13	$11,425.27	31
4" to 3"	$0.00	$148,649.00	$24,648.19	$12,357.00	30
6" to 4"	$208.08	$478,979.00	$52,718.44	$25,670.00	30
8" to 6"	$35.52	$210,000.00	$58,349.85	$33,899.65	27
10" to 8"	$65.98	$465,254.69	$97,056.65	$37,910.50	18
12" to 10"	$65.97	$580,272.00	$137,762.23	$45,900.00	13

Table 4: Summary Statistics for Connection Fee Savings Related to Downsizing Meter Size by One Size, as of 2020

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Stantec Report

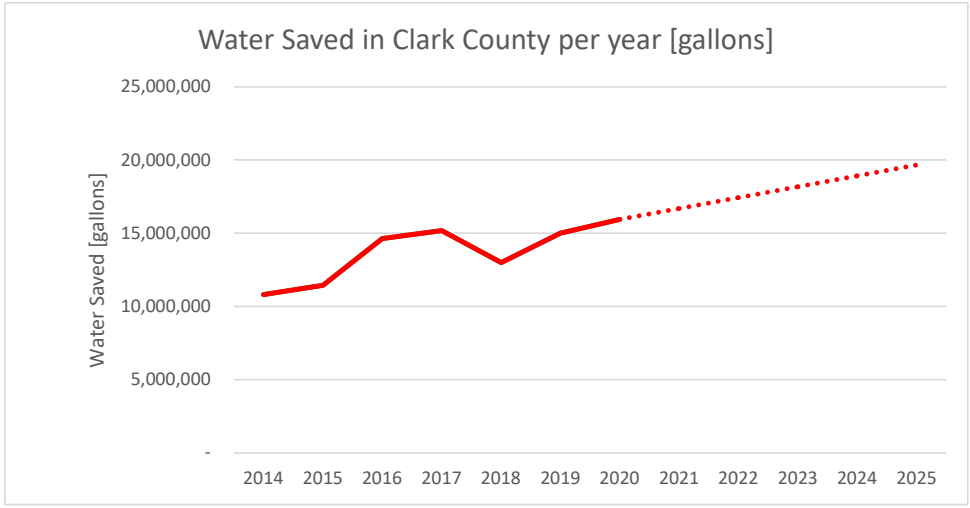


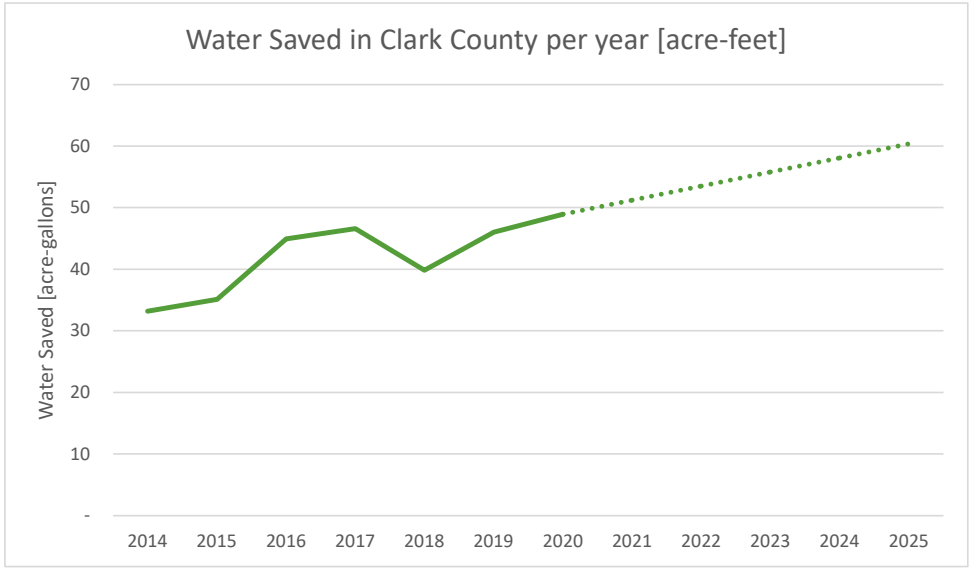
OKLAHOMA CITY Single-Family Home Savings $ / %		
Savings vs.	Copper	PEX
UPC ($)	$277	$287
UPC (%)	2%	3%
IRC ($)	$804	$74
IRC (%)	7%	1%

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Thought Experiment: Water Savings in Clark County

NOTE: 1 FOOT-ACRE = 326,000 GALLONS

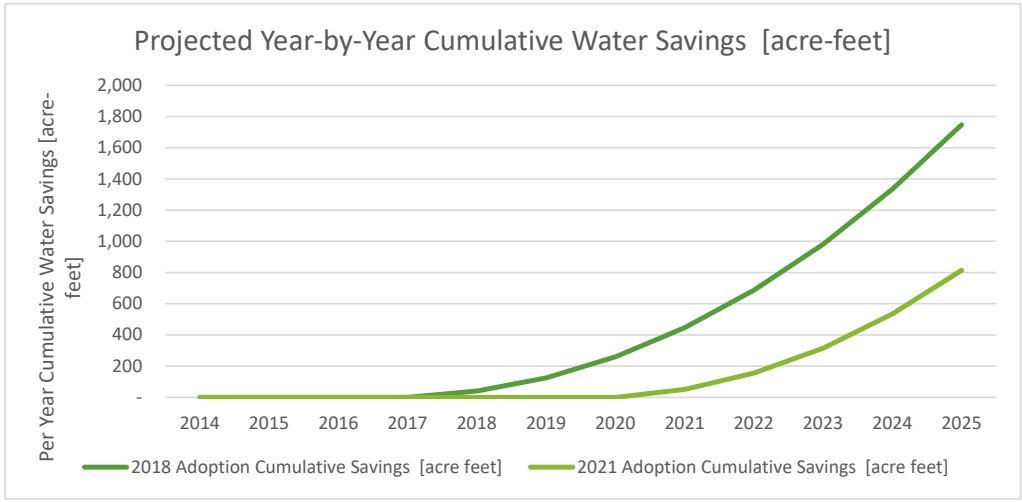


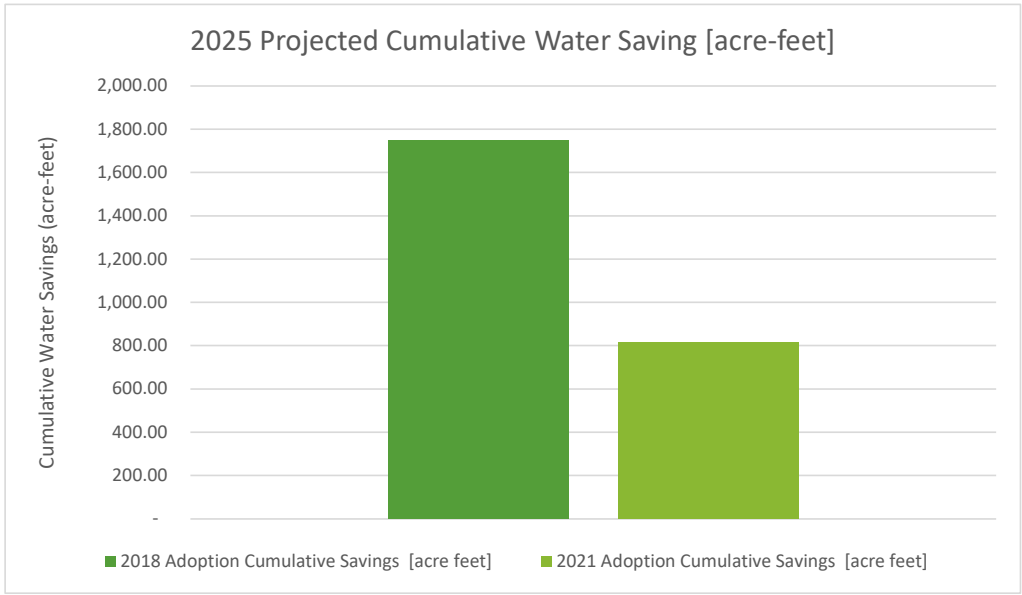


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