

Iowa Public Building Benchmarking Program: Making the hidden, visible

By Katie Schmitt

Because building energy is often a large variable cost, cities stand to improve their budgets when they optimize building efficiency. Since you cannot manage what isn't measured, the first step is assessing building performance. The free Iowa Public Building Benchmarking Program, which is looking to recruit more buildings, helps cities track energy usage and prioritize buildings for improvement with a straightforward online platform.

Energy is a sort of elusive thing. We see our lights and appliances working and feel the comfortable, constant temperature of our building spaces, but can you sense energy waste? Water systems are transparent enough. You can hear the toilet continuing to run or see the drips from the faucet – both alert you to act. Without such sensory information for energy, inefficiency is hidden.

The Iowa Public Building Benchmarking Program strives to make energy use and building systems efficiency visible. Taking basic building information and monthly meter readings the benchmarking program shows energy consumption and runs analyses in an online application. When you can see and measure the energy usage, you can better manage it.

The program, offered in partnership with the Iowa Economic Development Authority, Iowa Energy Center, University of Northern Iowa and The Weidt Group, is inviting public organizations across Iowa to benchmark their buildings and make energy visible. Participation in the program for 150 new, qualified public facilities is available at no cost.

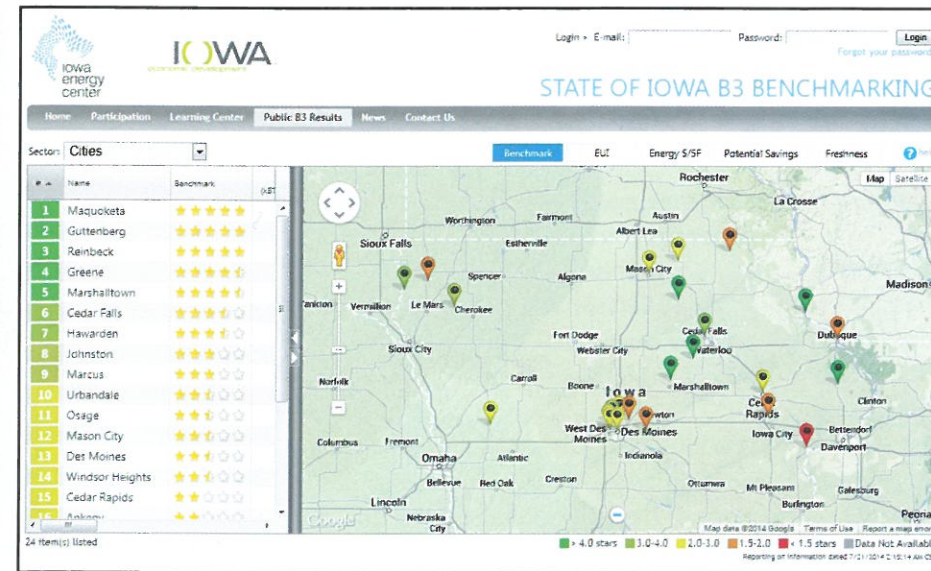
Why benchmark city buildings?

Every city leader wants to run the city more efficiently, and the first step is to know where inefficiencies exist. Benchmarking aggregates energy usage from all energy types, including electricity, propane and district steam among others, at a whole-building level. Cities can track progress and make comparisons on a tangible scale. The ability to rank buildings according to energy performance across various metrics helps identify which buildings would benefit most from improvements. This allows time and money resource investments to go further, faster. In fact, an investigation by The Weidt Group showed that using an approach that targets buildings based on benchmark results yields up to 55 times more energy savings than randomly choosing buildings for analysis.

Another benefit of benchmarking is easy verification to inform energy efficiency strategies and programs going forward. It has been shown that benchmarking simply works. Organizations reduce energy consumption as a result of measurement and analysis. An Environmental Protection Agency analysis of 36,000

benchmarked buildings found they averaged a 2.4 percent annual energy consumption decrease with a nearly 7 percent total reduction over a three-year period. Because of this, benchmarking is a growing trend nationally in both the public and private sectors.

Furthermore, knowledge and competition spur improvement. In Kentucky the Louisville Kilowatt Crackdown Challenge motivated participants to reduce electricity use, which collectively led to total reductions equivalent to 415 homes. Knowing that peer comparison is a powerful driver, the Iowa Benchmarking Program displays summary results for each organization publicly on their Web site.



How does the program work?

Cities and other public sector organizations can sign up to participate on the program's Web site, ia.b3benchmarking.com. Assistance for data entry and management is provided through the Iowa Energy Center, freeing time and money for public leaders to focus on achieving and measuring results.

Once building and meter data is in the online application, cities can access the information, view analyses and export results. At a city level buildings are ranked for each metric with worst performers on top to highlight the importance of prioritizing those buildings for investigation and improvement.

Stack-rankings are found on the Benchmark, Peer Comparison, ENERGY STAR score and Baseline dashboards. The first analysis, the Benchmark, gives expected usage as it creates an energy model of the building using the most recent energy code. This expected, modeled use is compared to actual consumption in the form of a ratio – providing a metric for comparison of different building types. The second and third analyses, Peer Comparison and ENERGY STAR score, compare a selected building against similar buildings in the state and across the nation respectively. To track energy usage over time, the Baseline

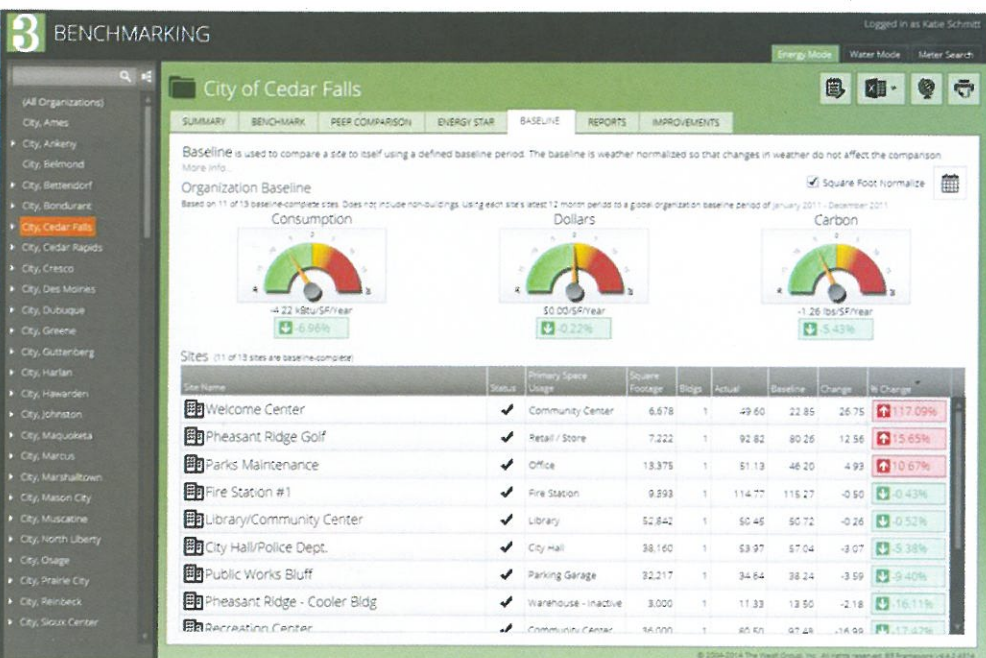
Summary of B3 Benchmarking Results for Cities in the Iowa Benchmarking Program

City	Actual To Benchmark Ratio	kBtu / SF	\$ / SF Spent	Potential Savings \$
Ankeny	1.1	108	\$1.24	\$95,000
Bondurant	1.4	135	\$1.53	\$2,000
Cedar Falls	0.7	46	\$0.78	\$25,000
Cedar Rapids	1.1	46	\$0.69	\$187,000
Cresco	1.5	112	\$1.36	\$69,000
Des Moines	1.1	98	\$0.90	\$94,000
Dubuque	1.7	146	\$2.19	\$76,000
Greene	0.5	44	\$0.56	\$1,000
Guttenberg	0.5	46	\$0.63	\$0
Harlan	1.2	90	\$0.97	\$21,000
Hawarden	0.7	64	\$0.77	\$3,000
Johnston	0.8	71	\$0.92	\$14,000
Maquoketa	0.3	28	\$0.82	\$0
Marcus	0.8	69	\$0.82	\$3,000
Marshalltown	0.6	43	\$0.71	\$0
Mason City	0.6	51	\$0.96	\$0
Muscatine	1.6	132	\$0.00	\$61,000
North Liberty	1.5	134	\$1.93	\$94,000
Osage	1.0	73	\$1.61	\$11,000
Prairie City	1.5	137	\$2.12	\$3,000
Reinbeck	0.5	45	\$0.90	\$0
Sioux Center	1.5	149	\$1.75	\$106,000
Urbandale	1.0	109	\$1.55	\$40,000
Windsor Heights	1.1	67	\$1.05	\$6,000

compares most recent consumption to that of a user-defined baseline year.

Based on benchmarking results, cities can take action to make improvements such as recommissioning systems, implementing behavior change campaigns and investing in new equipment. If assistance is needed in determining the next best steps, the Iowa Benchmarking Program partnership can direct cities to local energy assistance programs.

Katie Schmitt supports the Iowa Public Buildings Benchmarking Program at The Weidt Group and can be reached at (952) 938-1588 or iab3support@twgi.com. Learn more about the program or sign up to participate online at ia.b3benchmarking.com.



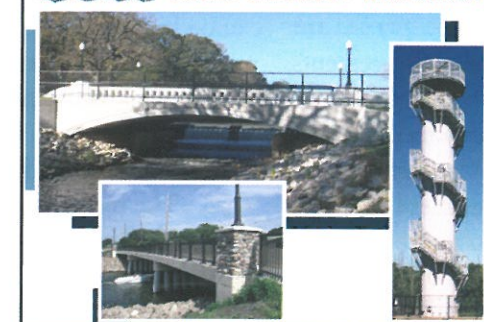
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