



WaterSense® and ENERGY STAR® Stakeholder Meeting Summary: Encouraging Strategic Water Management in the Commercial Sector

Meeting Time and Location

Tuesday, 2 October 2012, 1:00 to 4:45 PM
South Point Hotel and Conference Center, Las Vegas, Nevada

Meeting Participants and Organizations

Doug Bennett, Southern Nevada Water Authority (SNWA)
Bob Best, Jones Lang LaSalle
Veronica Blette, U.S. Environmental Protection Agency's (EPA's) WaterSense program
Brian Boyle, Water Savers, LLC
Dave Bracciano, Tampa Bay Water
Chris Brown, California Urban Water Conservation Council (CUWCC)
Holly Cannon, Eastern Research Group, Inc. (ERG)
Bill Christiansen, Alliance for Water Efficiency (AWE)
Deborah Hamlin, Irrigation Association)
Richard Harris, East Bay Municipal Utility District (EBMUD)
Bill Hoffman, Bill Hoffman & Associates
Jill Hoyenga, Eugene Water and Electric Board
Cindy Jacobs, EPA ENERGY STAR
Jeff Kiefer, Hazen and Sawyer
John Koeller, Koeller and Company, MaP Testing Program
Peter Mayer, Aquacraft, Inc.
Cary McElhinney, EPA Region 5
Ed Osann, Natural Resources Defense Council (NRDC)
Mathew Ridout, Water Management, Inc.
Roy Sieber, ERG
Stephanie Tanner, EPA's WaterSense program
Marla Thalheimer, Liberty Property Trust
Francis Wheeler, Water Savers, LLC
Rob Zimmerman, Kohler Co.
Eve Uhing, Boston Market

Meeting Summary

Welcome and Housekeeping

WaterSense's Ms. Veronica Blette welcomed participants and thanked them for traveling to Las Vegas for this meeting a day before the WaterSmart Innovations conference. She noted her

excitement about WaterSense and ENERGY STAR's new cooperation on reducing commercial and institutional (C&I) water use. ENERGY STAR has been working with the C&I sector to reduce energy use for a long time, and WaterSense is looking forward to learning from and working with its team. This meeting gathered a small group of people interested in water use in C&I buildings to begin discussions on how to move forward.

ENERGY STAR's Ms. Cindy Jacobs echoed Ms. Blette's sentiments—she is also excited about the collaboration between WaterSense and ENERGY STAR. She especially thanked the participants of this meeting who are involved on the energy side of commercial buildings, since they may not be attending the WaterSmart Innovations conference, and it may have taken some extra effort to get there. She noted her hope to improve water and energy efficiency in the commercial building sector.

ERG's Mr. Roy Sieber reviewed the objectives of the meeting:

- Update stakeholders on WaterSense and ENERGY STAR collaborations to improve water efficiency in the C&I building sector.
- Present recent efforts to develop tools and data on water use for the C&I sector.
- Develop a common understanding of potential paths forward using water-efficiency benchmarks.

He reminded the group that this meeting is not a meeting of an advisory group developing a consensus output, clarifying that it is a meeting of ENERGY STAR and WaterSense stakeholders to solicit input on benchmarking water use in the C&I sector. Mr. Sieber noted that there were to be three presentations. At the end of each, there was to be an opportunity to list topics for further discussion to help frame the second part of the meeting.

WaterSense Presentation

WaterSense's Ms. Stephanie Tanner presented on the topic of water use and opportunities in the C&I sector. She noted that WaterSense develops specifications to label products that use less water and perform well. These products are certified by third parties. WaterSense recently released its revised new home specification, which includes criteria for multi-family buildings. She noted that WaterSense collaborates with ENERGY STAR to identify water factors for water-using products that are being considered by the ENERGY STAR program.

The WaterSense program is small, but it has a big impact on the marketplace. WaterSense labeled products have saved 280 billion gallons of water and 38 billion kilowatt-hours of energy nationwide. WaterSense develops tools for utilities and consumers to help them use water efficiently in homes. People feel a personal connection to their water source, which is a little different than energy, and this personal connection drives WaterSense's outreach campaign. Campaigns focus on simple choices and small personal actions. WaterSense began the program focusing on residential water use, but is now moving into the C&I water use sector.

A 1995 U.S. Geological Survey (USGS) report collected data on C&I water use, but data have not been collected at that level since. These data are starting to age, and better information is needed. At the utility level, utilities collect information on their customers. The American Water Works Association (AWWA) has also surveyed utility customers. This information can indicate how water use varies by building type and sector. End uses of water can be very sector-specific. These are the best sets of data on water use in the C&I sector at this point in time.

The U.S. Energy Information Administration (EIA) collects a plethora of information on energy through its Commercial Buildings Energy Consumption Survey (CBECS). EIA collects energy data from different types of buildings and data on specific technologies. Historically, EIA has not collected this data for water. In addition, utilities do not have a standard way to classify C&I sectors. Some utilities group hotels and restaurants into a hospitality category, while others group them separately. In order to group data, some assumptions must be made. Overall, not much water data are available nationally. Much of it is old, and sample sizes from the data sets available are small.

WaterSense began looking at reducing water use in the C&I sector in 2009. It held a small stakeholder meeting to seek input on how to focus efforts. Several recommendations came from that meeting. Since, WaterSense has released specifications for two commercial products and is working with ENERGY STAR on a specification for pre-rinse spray valves. Additional irrigation products may be labeled that can be used in the C&I sector.

In November, WaterSense released a comprehensive C&I best management practices for water efficiency guidebook, called *WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities*. The guidebook will help facility managers and building owners learn how to reduce water use. It consists of 36 best management practices and case studies. Along with its release are associated sector-specific fact sheets.

In addition, WaterSense has also been working with ENERGY STAR on water benchmarking and other efforts. Building owners and managers enter data into ENERGY STAR's Portfolio Manager tool in order to track and benchmark their energy use, and some also enter water data. EIA will collect water data in its current CBECS survey that could allow development of water benchmarks. ENERGY STAR third annual national building competition this year includes participation of over 3,300 buildings, 850 of which are also tracking water use. ENERGY STAR will also be marketing WaterSense labeled pre-rinse spray valves to its commercial kitchen partners when those products are available on the market.

- Mr. Francis Wheeler (Water Savers, LLC) commented that energy benchmarking data are closely tied to square footage, while benchmarking water use is much more difficult. He asked for clarification on how WaterSense ensures that labeled products use 20 percent less water than standard models. Ms. Tanner responded that each product's performance is confirmed by a third-party certification body. Manufacturers must declare the water use and the certification body confirms testing results. . WaterSense has an ongoing surveillance mechanism to ensure products are continuing to meet the specification over time.
- Mr. Bob Best (Jones Long LaSalle) asked why USGS hasn't done another detailed study. Ms. Tanner responded that funding dictates the level of detail included in USGS's surveys.
- Ms. Marla Thalheimer (Liberty Property Trust) asked what the timeline is to develop a specification. Ms. Tanner indicated new products are added to the pipeline all the time, but it takes a few years for a final specification to be developed. The pipeline is a list of 60 to 70 products that may be eligible for the label, but WaterSense is limited by budget constraints. The more information WaterSense receives from manufacturers, building

- owners, and other stakeholders, the less data that has to be collected by WaterSense, and the faster WaterSense can move through the specification process for each product.
- Mr. John Koeller (Koeller and Company, MaP Testing Program) asked what would be done with water use data if it were provided. He noted the difficulty in modeling water use without baseline data. Models should be developed through the standards development process when data are available.
 - Mr. Doug Bennett (SNWA) noted that the keynote speaker at the WaterSmart Innovations conference, who is from Circle of Blue, is putting the USGS data into a user-friendly database. He noted the data are not available now, and echoed the difficulty in using utility data because of the different customer classification systems. A standardized classification system that utilities can apply would help with data collection.
 - Mr. Dave Bracciano (Tampa Bay Water) asked if there will be any dual-labeled (WaterSense labeled and ENERGY STAR qualified) products. Ms. Tanner noted WaterSense and ENERGY STAR's product certification systems are similar, but different enough, to make jointly labeling products difficult and burdensome for manufacturers. Instead, the programs have agreed that when one program labels a product, the other will co-market and support that product in the marketplace. They will consult each other when products use both water and energy so that the goals of both programs are met. Homes can receive both labels separately, but a dual label is not available at this time. Ms. Deborah Hamlin (Irrigation Association) asked why ENERGY STAR qualified ice makers do not account for water use. Ms. Tanner responded that WaterSense did and continues to work with ENERGY STAR on water factors for ice makers. Clothes washers didn't originally have water factors but now do. Those products are also co-marketed. Mr. Ed Osann (NRDC) clarified that ENERGY STAR completed work on a second iteration of its specification for commercial dishwashers and ice makers, both of which account for water use.
 - Mr. Richard Harris (EBMUD) appreciated the response to the dual-labeling issue. He asked how water use information on ice makers and other products could be publicized since there is a wide range of water use within the category of ENERGY STAR qualified products. He asked to add the topic of co-marketing be added to the list of topics for later discussion.

ENERGY STAR Presentation

ENERGY STAR's Ms. Jacobs presented an update of the program's accomplishments. ENERGY STAR has saved consumers \$230 billion, labeled 1.3 million homes and 60 products, and over 5 billion qualified products have been sold. The program is 20 years old. Ms. Jacobs informed the group she'd be discussing whole-building water and energy efficiency, not labeled products specifically.

She noted that studies claim 30 percent of energy use in buildings is wasted. Armed with this data, ENERGY STAR focuses on managing energy use by ensuring it is measured. The Portfolio Manager tool, released in 1999, helps facility owners and managers take actionable steps to reduce energy use. It's a whole-building energy and water use tracking tool, with the water use tracking feature added in 2006. Any user can track their building's energy and water use and compare them against other buildings in their portfolio. Portfolio Manager also helps users set and track goals.

Portfolio Manager users can track both site and source energy use, with source energy forming the basis for benchmarking. Site energy is the amount of heat and electricity consumed by a building as reflected in utility bills. Source energy represents the total amount of raw fuel that is required to operation the building, incorporating all transmission, delivery, and production losses. Use of source energy allows equitable assessment of the relative efficiency of buildings with different fuel mixes (i.e., natural gas or electricity)

Ms. Jacobs pointed out some interesting aspects of the data tracked in Portfolio Manager. She noted that there is a huge range of energy use per square foot, even within similar building types. Energy use isn't dictated by the age of the building or what technology is in place.

EPA offers an ENERGY STAR score for certain types of buildings that provides a standardized basis of comparison, regardless of business activity level. Those buildings can receive a 1 to 100 score, with 100 being the most energy-efficient. Eligible buildings with a score of 75 or higher can apply for the ENERGY STAR. There are 19,000 ENERGY STAR qualified buildings. Users can apply for the ENERGY STAR directly through the Portfolio Manager tool. New York City, Washington DC, Philadelphia, and several other jurisdictions require use of Portfolio Manager to benchmark and track energy use. Water tracking is required in some, but not all, cases.

ENERGY STAR recently published a series of documents highlighting the trends observed in the Portfolio Manager data, including an average energy use reduction of over 2 percent per year from 2008 through 2011 (www.energystar.gov/DataTrends). As many as 53,000 buildings are tracking water use in Portfolio Manager. The distribution of water use looks similar to the distribution of energy use, but there isn't enough water use data yet to do historical trending to see if efficiency has improved.

Recently, ENERGY STAR has been working with WaterSense to revise water tracking features for the June 2013 release of an updated Portfolio Manager. Water tracking will focus on metered sources instead of end uses.

- Mr. Wheeler asked if ENERGY STAR knows the ratio of private companies and government agencies using Portfolio Manager. Ms. Jacobs responded that it can be tracked to some extent, but it is not always clear—government agencies are not the majority. Mr. Wheeler noted he would like to see if the government agencies using Portfolio Manager are increasing in number because of the Executive Orders.
- Mr. Koeller asked how mixed-use properties, such as those that lease restaurant, office, and retail space within the same building, use Portfolio Manager. Ms. Jacobs indicated that Portfolio Manager categorizes those buildings based on the percentage of floor area that each space uses. There is also an “other” category for those spaces that are hard to categorize.
- Mr. Koeller also asked if hotels with onsite laundry facilities and those without could be differentiated. Ms. Jacobs noted that the presence of onsite laundry was not found to be statistically significant in the underlying data. She noted that sometimes things that people believe are important to total energy use either do not have as big an impact as expected or are captured by other factors that are significant. Portfolio Manager does allow hotel users to enter information on laundry facilities so that EPA may be able to evaluate its impact in the future.

- Mr. Peter Mayer (Aquacraft, Inc.) asked if the data are normalized depending upon weather. Ms. Jacobs responded that all data that is entered is raw data, which is weather normalized in Portfolio Manager.
- Mr. Osann asked if hot water is separately tracked. Ms. Jacobs responded that it is not separately tracked since it is not separately metered.
- Ms. Jill Hoyenga (Eugene Water and Electric Board) referenced some data Ms. Jacobs showed on the water and energy use trends. She asked if the water and energy trends are similar because of the use of products which use both water and energy (e.g., ice makers). Ms. Jacobs reiterated that those graphs are based on the whole-building water and energy totals and don't reflect the use of specific technologies. She noted that this information could be interesting to extract, but can't be determined from the existing data. Ms. Hoyenga said this may help to target low- and middle-hanging fruit.
- Ms. Hoyenga also pointed out that some states require submetering on different energy uses, but there is often only one main water meter. She asked if there is a way to disaggregate the data to analyze water uses separately. Ms. Thalheimer pointed out that the whole building gets the ENERGY STAR score, not the separate areas, so even if areas within a building were submetered, it would all be summed in the whole-building approach. She mentioned the one exception to this is multi-tenant industrial spaces. She expressed the need for energy utilities to start providing whole-building data to make benchmarking easier. Ms. Hoyenga pointed out that energy utilities would need customer permission to do so. Ms. Thalheimer responded that even with tenant permission, it is sometimes difficult to get the data needed.
- Mr. Bracciano asked if energy and water data are collected through a common automatic metering reading (AMR) system. Ms. Jacobs commented that the data are monthly data and don't need to be collected on regular, short intervals the way AMR data are collected. With the Portfolio Manager upgrade, some AMR systems will be integrated for utilities that use them.
- Mr. Wheeler pointed out that WaterSense may be able to save more water by working with a utility with significant system water losses, instead of working with several utilities to reduce water use from their C&I customers. He suggested WaterSense consider labeling well-performing utilities. Ms. Blette responded that this idea has merit, but it is not within WaterSense's scope at this point in time. She mentioned some states are requiring utilities to report losses.
- Mr. Harris asked if access to water and energy data within Portfolio Manager is difficult. Ms. Jacobs responded that anyone can enter water and energy data into a new, password-protected Portfolio Manager account. Anyone can share data within whomever they choose. The energy data in the system are not verified unless the building is striving for the ENERGY STAR label. To become ENERGY STAR qualified, the building's application must be certified by a Professional Engineer or Licensed Architect. Water data are not verified and do not factor into the label. WaterSense would have to create a label for buildings that score well on the water side. Mr. Sieber suggested adding a topic for the later discussion about how what data are currently available and how to leverage it.
- Mr. Osann asked how multi-family buildings are reported in the system. Ms. Jacobs responded that multi-family buildings can track water and energy use, but they are not eligible for ENERGY STAR qualification at this time. ENERGY STAR is working with Fannie Mae on a housing survey that may provide a good data set to benchmark against for multi-family buildings.

Water Benchmarking—WaterSense

Ms. Tanner provided a presentation about water benchmarking. She explained that there has been high praise for the ENERGY STAR system, and stakeholders are looking to WaterSense to form a similar system for water. However, WaterSense has found that there isn't enough data yet to develop a benchmark for the average building. In 2007, WaterSense started working with EIA and ENERGY STAR to begin developing a benchmarking mechanism.

Water use is somewhat different than energy use in that there may be many difference sources of water use at a facility, some of which may not be metered. It is sometimes difficult to get a holistic picture in order to compare one facility to another.

It is also difficult to determine what specifically drives water use in a building. Is it the type of building, the location of the building, or its end uses? If there were a large enough data set, it may be easy to extract this information.

In addition, water utility costs can be confusing and/or inconsistent across the country. Therefore, it's difficult to determine payback periods and the return on investment (ROI) for water-reduction opportunities, as the cost of water itself and its associated fees are not consistent regionally or nationally.

ENERGY STAR has had success using CBECS data to help with benchmarking. In 2005 WaterSense started working with ENERGY STAR to include water use questions in the CBECS data set. CBECS is a survey done every four to five years by the EIA. A statistically relevant sample of commercial buildings in the United States is surveyed and asked a number of questions about energy. EIA was unsure if survey participants would be able to provide useful information on their water use. WaterSense therefore paid to include water use questions in the 2007 survey.

Many survey participants had information on water and water cost data, and the survey proved the concept. Unfortunately, the survey was partially invalid due to a new method of collecting data that proved to not offer a statistically significant sample—. Although most data weren't valid, 5,000 buildings provided water use data. Many hospitals responded with water use data, and the data from that part of the survey was usable. WaterSense and ENERGY STAR have been working with CBECS to develop a limited set of water questions for the 2012 survey to be included at no cost to WaterSense. The questions are not as detailed as we might want because EIA has limits on the length of the survey imposed by Federal law.

In the meantime, while EIA is working to collect its 2012 data set, WaterSense is working with ENERGY STAR to consider how to use the hospital data. It may be possible to benchmark certain sectors right now, and going through this exercise may give some insight on how to do this in the future with different building types.

Energy and Water Benchmarking—ENERGY STAR

Ms. Jacobs built on Ms. Tanner's discussion on potentially available data and discussed how the ENERGY STAR score is developed. There are 53,000 buildings with logged water data, but that data cannot be used to develop a benchmark because it is not a representative sample of buildings nationwide.

Portfolio Manager develops a benchmark based on whole-building energy use. Data from CBECS or other industry surveys that meet specific criteria are used to develop regression models. The regression models predict a building's expected energy consumption based upon many of the building's operating characteristics (e.g., building size, operating hours, number of employees, number of hospital beds, number of computers, etc.). The ratio of predicted to actual energy use is mapped across the population for each building type, forming the basis for a 1-100 scale. The underlying data used—CBECS in many cases—must be representative nationwide and must meet other criteria in order to be used by ENERGY STAR. During the last CBECS survey, CBECS found that the sample frames from which they drew the survey participants were insufficient for a statistically valid survey.

ENERGY STAR has a Memorandum of Understanding with Fannie Mae to conduct a survey on multi-family homes to collect energy and water data. Currently, there isn't an ENERGY STAR score for multi-family homes, so this industry survey could make this possible.

Questions and Open Discussion

Mr. Harris asked if Portfolio Manager allows users to provide feedback on future upgrades and suggestions on how to develop a water benchmark. Ms. Jacobs noted that users can always provide feedback. A new version of Portfolio Manager, which improves functionality, changes how water is tracked, and improves the user experience, is being developed now and is scheduled to be released in summer 2013. During the upgrade process, ENERGY STAR held user groups, webinars, and other feedback sessions to ensure there was stakeholder input. The underlying models used to benchmark are not being updated. They are only updated when new survey results (e.g., a new CBECS) become available.

Mr. Wheeler noted that energy service companies gather at least three years of energy and water use baseline data when entering a performance contract with a client. Thousands of buildings have provided this information. With coordination, this data could be collected and/or entered into Portfolio Manager. Especially for federal clients, entering this data could be a first step in a performance contract. Pulling together existing data may be a first step in water benchmarking. Mr. Wheeler also mentioned that reclaimed water should not be counted separately than potable water in Portfolio Manager because it is still pumped, moved, and treated by the utility. It provides some cost savings when compared to potable water, but it is still a consumptive use of water. Ms. Holly Cannon (ERG) pointed out that the Portfolio Manager water data interface was developed so that water sources that may be metered separately are entered separately. Since reclaimed water and potable water would never be metered together, it is appropriate to have a designated category for each so that neither type of water use is overlooked. In the end, both may be merged together as the total water use of the building.

Mr. Osann asked if the ENERGY STAR's score of 1 to 100 indicated a building's performance percentage category. Ms. Jacobs confirmed that the score does indicate if a building ranks in the top 10 percent, top 20 percent, top 90 percent, and so on, depending upon the building's numeric score.

Mr. Bennett asked if scores change depending upon the year, since the underlying data input into the model may change, as well as the "actual" energy use as buildings input more data. Ms. Jacobs noted that the baseline is from CBECS and other surveys, so the baseline changes when there is new CBECS (or other) data, and the score may change when this underlying data changes. The input of actual data will not affect everyone's score, but it will change each building's individual score. Ms. Blette asked if the underlying data has been updated in the past and, if so, whether it caused a significant shift in the scores. Ms. Jacobs noted that they have updated the underlying data since Portfolio Manager was released in 1999, and if there is a new piece of operating information collected by CBECS that was not collected prior, the underlying data can sometimes change.

Mr. Osann asked if underlying data are all updated at once or if it is updated for building groups as the data becomes available. Ms. Jacobs answered that it is updated when data becomes available.

Mr. Rob Zimmerman (Kohler Co.) asked if anyone has thought about how to normalize for precipitation outdoors when benchmarking water use. He noted that buildings that do and do not irrigate use very different quantities of water. Ms. Tanner responded that CBECS and Portfolio Manager are designed to account for what is inside a building, not necessarily what is used outdoors. CBECS was not able to add questions about landscapable area or other outdoor factors to its survey due to length and cost. They will ask if outdoor water use is separately metered. She noted this is a limitation and a discussion needs to take place about how to account for outdoor water. She commented that a benchmark may be able to be developed for indoor water use now, while it may take more time to account for outdoor water use. Once the 2012 CBECS results are available, the data can be reviewed to determine where to go in the future. Mr. Wheeler pointed out that some cities and utilities may know landscape size and impervious surface size for their customers.

Mr. Bennett asked if data are collected by Portfolio Manager and CBECS annually. Ms. Blette responded Portfolio Manager is monthly, and Ms. Tanner responded that CBECS is annual.

Mr. Matt Ridout (Water Management, Inc.) mentioned that factors other than just outdoor water use are affected by climate, such as cooling towers. Ms. Blette responded that in the regression models Ms. Jacobs discussed, the heating degree and cooling degree days are factored in. Climate information is accounted for in that way.

Mr. Harris suggested that, in these surveys, landscape water should not be accounted for separately from other outdoor water uses. Fountains, pools, and other features should also be accounted for in total outdoor water use.

Mr. Bennett suggested that water not be viewed as indoor or outdoor, but instead as consumptive or non-consumptive. Water use that is depleted from supply should be tracked. For example, in a cooling tower, evaporated water is lost and does not go back to sewer, so it

cannot be treated and provided to another customer. Consequently, some groups are pushing that rainwater that is collected and used is accounted for because it is not going directly to the supply system. He noted that some projects where water use is collected, treated, stored, and used on site use significant energy to do so, and data should be collected on these projects to see if they are cost-effective. Ms. Tanner responded that if an energy score and a water score both existed, a facility could look at trends to see if installing new technologies decreased one score but increased another, and they could realize that the project wasn't doing exactly what they thought it would do. Ms. Tanner reminded the group that CBECS is currently not collecting data on all technologies that are used and reuse systems in place at a facility, the data are intended to provide a general picture of water use.

Mr. Best asked how CBECS is collected and how many questions there are. He was curious if it is a mail, email, or in-person survey. Ms. Tanner responded that a surveyor travels to facilities and collects data on site. Ms. Jacobs pointed out that EIA has improved its collection process this year by letting facilities know ahead of time when they'll be coming so the right parties are there. She also responded that there are hundreds of questions, but some are prompted by the prior response. Mr. Best commented that the in-person approach would not work for him if the survey is lengthy, and Ms. Jacobs and Ms. Tanner assured him that EIA has evaluated the appropriate size of survey and length of time to ensure the best possible data collection.

Ms. Thalheimer suggested that water benchmarking be done in a phased approach over time. A first step could be to gather data that is available and use the most basic information to develop an average. Incremental progress can be made from there. She noted that if the industry can agree on a first step or place to start, it could take things one step at a time. She noted that she currently notices if her building's water use goes up and down over time, but she has no indication of what is good or bad, and this would be very helpful. Mr. Best echoed this sentiment.

Ms. Blette agreed that a step-wise approach may be best. For instance, a benchmark could be developed for one type of building with sufficient data. There isn't enough data for WaterSense to set a score similar to ENERGY STAR yet for any set of buildings, but collecting data and sharing it would be useful so facilities can begin to see how they stack up against their peers. Promoting the use of Portfolio Manager is a great way to continue collecting data. Within Portfolio Manager, groups of facilities can benchmark against each other. Ms. Blette asked Mr. Best and Ms. Thalheimer what value they see in benchmarking, how they use it, and if it's beneficial in the long run.

Ms. Thalheimer noted that benchmarking is hugely valuable to her and the industry. She tracks the score of her portfolio of buildings and has moved the energy score from 56 to 74. She noted that it was surprising to see which buildings ranked high and low. The scores provide a level of competition, accountability, and achievement. Qualifying for the ENERGY STAR label is a huge accomplishment. The score provides something to compare against and compete against. Just viewing a building's trend isn't always as helpful. It's more helpful to know where your building falls compared to others. The score helps her to prioritize capital and understand where to spend money across her portfolio.

Mr. Best commented that because energy cost is high, facilities view it as important. He noted it may be harder to convince folks that a water benchmark is important since the cost of water is

so low. Ms. Thalheimer commented that the benchmark may outweigh the economics because competition is also a driver. The ENERGY STAR Portfolio Manager score sparks competition.

Ms. Uhing pointed out that some other actions that facilities may take to address sustainability could have the effect of adding to water use. For example, recently, her facilities have changed from using disposable paper products to plates to reduce trash, but this now increases water use because the plates need to be washed.

Mr. Zimmerman asked facilities and performance contractors what quality of data they collect. He asked whether data are collected at the building level or submeter level. Mr. Wheeler responded that many of his federal clients only have one meter. Hospitals and Class A office space, on the other hand, may have five meters, including sewer deduction meters.

Mr. Chris Brown (CUWCC) commented that a set of guidelines for a study on landscape water use would be helpful. Information on how to collect data and what to ask for could help with data collection efforts. Ms. Blette noted that ENERGY STAR has a document that helps groups interested in planning surveys. Mr. Kiefer (Hazen & Sawyer) commented that a Water Research Foundation project is focusing on C&I water efficiency and may benefit from these guidelines.

Mr. Osann commented on the lack of meter accuracy and how estimating and measuring outdoor water use may be difficult. Ms. Blette agreed that it is unclear how to account for outdoor water use right now. Mr. Ridout commented that developing a score for indoor water use could take the teeth out of a program because a building may be significantly efficient inside, but not outside, and may earn a program label.

Mr. Brown expressed concern that CBECS cannot collect data on only indoor use because some buildings have mixed meters. He suggested that a building could benchmark indoors but may have to implement a set of best management practices or something else outdoors in order to earn a label. He pointed out that benchmarking may not be possible outdoors, but other programs could still promote efficiency outdoors.

Mr. Mayer commented that benchmarks help utilities focus on their most inefficient users. The benchmark can more clearly point out whose use is low or high and can help with cost structuring to promote efficiency among those high users. He mentioned that many utilities have significant data from their customers, and recommended collecting this data and combining it with the CBECS and other survey data to develop a benchmarking tool.

Mr. Hoffman commented that cooling towers are significant water users and should be separately metered. He commented that billing should be standardized. Mr. Wheeler mentioned that cooling towers are not as significant and important to call out as irrigation because other factors (e.g., square footage, region, weather) account for that.

Ms. Blette commented that moving toward a water benchmark for buildings could require a big change in thinking for the water industry because it has traditionally focused on the water use of individual products/technologies. She commented that, for the type of benchmarking done by ENERGY STAR, end uses shouldn't matter; only overall building water use should matter. If one facility scores low, it's up to the facility's owner or manager to determine why the facility scored low and which end use may be causing that in order to consider how to improve efficiency.

Ms. Uhing commented that a different label for indoor and outdoor would help her because she does not control outdoor water use of her facilities. In many cases, indoor and outdoor water uses are controlled by separate management companies. This tenant/landlord control issue was mentioned by other participants.

Mr. Harris stated he understood the landlord/tenant issue, but in his region, EBMUD would not want to put a label on a building unless water use was efficient indoors and out. He also commented that C&I customer classifications should be standardized and utility water data should be collected if the utility can get signed releases from their customers.

Following this discussion, WaterSense and ENERGY STAR offered closing statements.

Summary and Next Steps

Ms. Blette noted that the discussion went differently than planned, but they chose to restructure the discussion during the meeting to be able to openly hear feedback. WaterSense's next steps include:

- Portfolio Manager water data is being reviewed to develop a fact sheet about available water data that will be shared with people (now available at www.energystar.gov/DataTrends). Ms. Blette noted it may make sense to share any data that are available even if it cannot be used for a benchmark yet.
- ENERGY STAR is having a partner meeting in mid-October and will provide its stakeholders an update on where ENERGY STAR and WaterSense are with water benchmarking.
- WaterSense will work with stakeholders to find and assess new data sets.
- WaterSense may follow up individually with participants to get information on the business case for saving water and water benchmarking. WaterSense would like to use this information to better educate stakeholders about its current work.

Ms. Blette asked the participants to respond to a few questions: What can WaterSense do to better manage water in the short term? What will be most valuable? How can WaterSense best use the data that is already available?

- Mr. Best commented that it would be most helpful to duplicate ENERGY STAR for water, so there is one score for a building. He added that one number is easy to understand.
- Ms. Thalheimer suggested figuring out some way to give facilities a better idea if their water use is good, bad, or average. She suggested working with organizations such as the Building Owners and Manager Association (BOMA) and Institute for Real Estate Management (IREM) to ensure building owners and facilities managers understand best management practices for metering, billing, indoor water use, outdoor water use, and other things they should do. Mr. Best expanded on this by noting that the BOMA Experience Exchange Report could provide an avenue for the collection of water use data.
- Mr. Bennett commented that WaterSense could put out a low-level target, indicating the best possible operation of specific facility types in gallons per square footage per year. Mr. Wheeler opposed this idea for fear that groups would incorporate these low-level

targets into standards and require them. Mr. Bennett noted that the targets should not be viewed as requirements, but a way for facilities to understand what is possible.

- Mr. Osann suggested identifying exemplary performance through an awards program, and building a database of information through data collected through the awards process. He noted that the database could supplement any information WaterSense gets from CBECS to aid in the benchmarking process. He also suggested beginning dialogue with trade organizations and other interested groups about how to benchmark outdoor water use. Mr. Bennett cautioned that it might be better to have validated data from a smaller number of sites than unvalidated data from thousands.
- Mr. Wheeler noted that finding information on what payback threshold or ROI businesses require would be helpful.
- Ms. Uhing noted that Boston Market has corporate water information, so if WaterSense developed a template to use, they could set their own benchmark. She is interested in seeing a template or tool for company-wide benchmarking.

To close the meeting, Ms. Blette, Ms. Tanner, and Ms. Jacobs thanked participants for attending the meeting and sharing their time.



Encouraging Strategic Water Management in the Commercial Sector

Tuesday 2 October 2012 1:00 to 4:45 PM

South Point Hotel and Conference Center, Room Napa A

Meeting Objectives:

- Update Stakeholders on WaterSense and ENERGY STAR collaborations to improve water efficiency in the commercial building sector
- Present recent efforts to develop tools and data on water use for CI sector
- Develop a common understanding of potential paths forward using water efficiency benchmarks

Time (Minutes)	Topic	Presenter
20	Introduction and Welcome <ul style="list-style-type: none"> • Introductions • Agenda Review • Meeting Ground Rules 	EPA/ERG/ALL
Part 1 – Efforts to Date		
30	Water Use and Opportunities in the Commercial and Institutional Sector <ul style="list-style-type: none"> • 2009 Meeting Recap • C&I Products • C&I Best Management Practices • Collaborating with ENERGY STAR 	WaterSense
30	ENERGY STAR Update <ul style="list-style-type: none"> • History – recognized not just technology, need energy management • Strategy • Portfolio Manager Tracking and Benchmarking <ul style="list-style-type: none"> ○ Energy ○ Water 	Energy Star
15	BREAK	
40	Project to Develop National Benchmarks for Water <ul style="list-style-type: none"> • Background on Energy Star Benchmark development • Data Requirements New Data on the Horizon <ul style="list-style-type: none"> • Fannie Mae Multi-family Survey • Commercial Building Energy Consumption Survey 	Energy Star and WaterSense
Part 2 – Path Forward		
80 (w/break)	<ul style="list-style-type: none"> • Open discussion on developing the potential paths forward 	ALL
10	Wrap up <ul style="list-style-type: none"> • Summarize Meeting • Action Items Review • Next Steps 	
4:45	Adjourn	