

RECOMMENDED SOLUTIONS FOR BARRIERS TO SWAT IMPLEMENTATION

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BACKGROUND

Two special **Smart Water Application Technology (SWAT)** meetings held in 2008 at **WaterSmart Innovations** and at the **Irrigation Show**, focused discussion on barriers to SWAT product implementation. SWAT leaders decided a special task team was needed to review the barriers and, ultimately, recommend solutions that would enable SWAT to be more effective.

The **implementation barriers** generally relate to "smart" controllers that have gone through SWAT testing and to climatologically-based controllers

The team began by reviewing, compiling and categorizing the barriers from the two meetings, as well as adding to the list. With a long list of implementation barriers, the following were considerations for presenting the most workable solutions:

IF REMOVED AS A BARRIER, WOULD IT ADVANCE THE CAUSE? SOME WOULD BARELY MOVE THE NEEDLE, SOME COULD SUBSTANTIALLY MOVE IT.

INTRODUCTION

The group began its efforts by evaluating the comments and feedback from previous 2008 roundtable meetings at both the **WaterSmart Innovations Conference** and the **Irrigation Association Show**. These comments were divided into four categories of barriers to SWAT implementation:

[1]ECONOMIC, [2]EDUCATION/CERTIFICATION, [3]REGULATORY & [4]INFORMATION.

SWAT is working for **water conservation** in residential landscapes by developing testing protocols for water-efficient irrigation products while simultaneously developing education and marketing tools for water providers to use for their contractor and residential/light commercial customers. Additionally, a key SWAT role is encouraging partnerships between water providers, irrigation industry, government agencies and landscape professionals.

While discussing possible solutions to the barriers of SWAT implementation, the group repeatedly returned to the concept that for most of the solutions to be effective, **SWAT and IA need to strive for more collaboration and partnership among influential stakeholders involved in the implementation and/or education of landscape water management and conservation.**

WHAT FOLLOWS ARE SOME OF THE HIGHLIGHTS FROM EACH SECTION. FOR A COPY OF THE FULL REPORT, PLEASE CONTACT THE IRRIGATION ASSOCIATION.

SWAT PWG SUPPORT INITIATIVES TASK TEAM:

Following are team members who actively participated in the process:

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[1]ECONOMIC BARRIERS

[1] Rebates are generally not tied to performance and may not deliver the desired results to the water provider or the consumer.

[2] For contractors, smart controllers involve more time and expense to learn about numerous models, install, program and educate the homeowner, as well as make additional site visits to properly adjust the controller.

[3] Homeowners are not spending additional money in the current economic climate; the ROI on a smart controller can be limited depending upon the price of water or unless they plan to spend more than five years in the home; and if considering an upgrade, in their search for a low bid, homeowners aren't considering experience or qualifications.

[4] Homeowners are not generally aware of their water costs or "normal" water usage. Until they are better-educated or motivated to conserve water, especially outside of their home, it's not on their radar.

[5] Rebates, or incentives, are critical to encouraging homeowners to adopt new technology.



ECONOMIC BARRIERS SOLUTIONS

[1] SWAT compiles rebate development guidelines or program considerations for water providers. Present what has and has not worked for providers across the country. In addition to more stringently tying rebates to water savings, another major consideration is relating rebate to qualified contractors.

Example 1: Instead of paying rebate up front to homeowner, pay partial up-front and after one year of use and fine-tuning, the second payment would be based on actual savings achieved, i.e. performance-based rebates.

Example 2: Rebate to require evidence of certification or certificate program for the actual installer (vs. the company) in order for homeowner to qualify for the rebate.

[2] For water providers who offer or are considering rebate programs, the bureaucracy of rebate design can be a deterrent to consumer participation. The rebate needs to be simple to understand and administer, but have some teeth. If it's too complicated and/or time-consuming to complete, and especially if it involves a contractor, it simply isn't worth their time to submit.

[3] SWAT develops a web-based tool for water providers to use for end-users that would calculate the potential savings of a weather-based controller vs. a conventional irrigation controller. Input square footage of landscape, number of people in home, Dec. - Feb. water use to get basic water use and then apply balance to landscape. Determine potential savings.

[4] SWAT produces a template on the benefits and savings potential of weather-based controllers for residential and light commercial customers, primarily for use by water providers. Also make available to manufacturers, distributors and contractors.

[3]REGULATORY BARRIERS

In this section, "regulatory" barriers include local ordinances or restrictions, water district/regional or state regulations, water provider authority and standards being set by national groups, etc.

[1] The public is not aware of why they are being asked to make changes or why restrictions will be implemented or how to comply with restrictions.

[2] Watering restrictions can negatively affect the efficiency of smart technologies; restrictions and legislation being added to the books do not take into consideration advanced technologies.

[3] There are not enough public employees to verify code compliance, verify contractor education or certification, respond to consumer inquiries, etc.

[4] In some areas, multiple jurisdictions have numerous restrictions, which make it difficult for contractors to keep apprised and in compliance at various sites.

[5] The present rate structure for water needs review.

[6] "Crisis" legislation is often enacted; too often, integrated water management plans are not in development or effect.

REGULATORY BARRIERS SOLUTIONS

[1] Regional or local water restrictions can impede implementation of smart technologies. Consider the limitations of the technology when enacting restrictions (for example, even/odd day does not work when irrigating to ET) and that one of the biggest challenges is proper programming (tie to education/certification).

Example: In San Diego, still must follow day of week restrictions, but exempt from time restrictions. Physical addresses are kept in database so qualifying residences are not ticketed, or can appeal.

[2] SWAT and water providers encourage public education campaigns for conservation and irrigation restrictions. Give the public more credit and explain the water issue(s).

The goal is educate first and regulate second, except in catastrophic areas. Restrictions do work and have their place.

[3] The value and pricing of water is an important issue for IA to continue to explore and participate in talks, partnerships or other actions that might effect a change. Water pricing can stimulate a conservation mindset, and as a result, could increase the use of smart technologies.

[4] IA creates model landscape water ordinances in conjunction with other organizations such as AWE and CUWCC.

[5] SWAT-IA publishes case studies of effective water conservation programs, which value and incorporate landscape water management.

[2]EDUCATION/ CERTIFICATION BARRIERS

[1] Water providers cite a lack of proficiency for smart controller installations. Once installed, maintenance may be performed by someone with little or no smart controller training and little or no irrigation system training. Contractors, overall, haven't realized the value that smart controllers offer to homeowners and to their own businesses.

[2] Contractors maintain that there is not enough incentive or public recognition when they do attain certification or take education courses to recoup their investment.

[3] Product manuals provided by manufacturers are too complicated or too much is assumed about the knowledge of the installer, whether a contractor or homeowner.

[4] Homeowners are not aware of the product, which one is best for them, or the importance or value of hiring a well-qualified contractor. Even when inclined to purchase, they need resources to point them to easy-to-comprehend information provided by a trusted source.

It's imperative that any course on smart controllers or a specific technology emphasize that the component is only one part, dependent on others as well as numerous factors associated with the site, existing system, design, installation and maintenance.

[4]INFORMATION BARRIERS

[1] "Insufficient technical data and analyses to substantiate specific standards or labeling requirements ..." as specified by California Energy Commission in its "Committee Order Suspending The Proceeding For Landscape Irrigation Equipment Efficiency Performance Standards," July 29, 2009, http://www.energy.ca.gov/appliances/irrigation/notices/2009-07-29_order_suspending_proceeding.html, which specifically cited:

- Costs, actual performance and methods to verify savings is lacking
- Recent studies have shown smart controllers frequently increase water use and energy consumption
- Industry accepted test methods do not test for conservation, rather they measure efficiency of applying adequate amount of water to landscape
- Industry accepted test methods are not finalized for rain sensors or soil moisture sensors
- CEC needs to retain paid consultants to conduct study and analysis; currently no budget or manpower.

The lack of independent research for the irrigation industry, irrigated landscapes and specific product categories of efficient irrigation prevent SWAT and IA from being a more effective voice for the industry.

EDUCATION/CERTIFICATION BARRIERS SOLUTIONS

[1] SWAT and IA focus on dialogue and partnerships to create a centralized education/training program. Combine the efforts or requirements of WaterSense, LEED, CLCA, PLANET, US Green Building Council, AWE and CUWCC, etc. Consider combining online training with classroom training like **QWELtraining.com**, a WaterSense approved certification program.

[2] SWAT and IA compile suggestions for manufacturer consideration, including but not limited to: easier instruction manuals for contractors and customers, online installation specifics, more visual training (online video), customer leave-behind (in product packaging) for customer to learn about the smart controller and general system maintenance tips.

[3] SWAT and IAEF develop a generic online training program of basic installation principals for weather-based controllers for experienced contractors. Perhaps modify an existing course. One concept is for water providers to tie their smart controller rebates to only those who take the course. To incentivize participation:

[a] For a customer to get the rebate, their contractor must have taken the course, and

[b] IA-SWAT site would publish individual contractor names of those who have taken the online course.

[c] DIY homeowners would also need to take a programming course.

[4] IA explores the development of a new certification or certificate program on smart controller installation. The idea of certification or a certificate program needs more vetting by IA and key stakeholders. All agreed that the smart controller product category involves sophisticated technology and operating concepts that require specific competencies to achieve efficiency.

INFORMATION BARRIERS SOLUTIONS

[1] SWAT-IA sponsor independent research. Studies need to be broad-based and extend beyond California, Florida and Texas.

[2] When discussing smart controllers, SWAT, IA, IAEF, manufacturers, contractors and water providers should reinforce that they are only part of a system and the inherent complexity of landscape water management. If programmed properly, they will apply an appropriate amount of water.

[3] SWAT-IA independently research the efficiency of smart controllers when deficit irrigation is the norm, and/or establish baselines for settings when deficit irrigating. Current research suggests that where the majority of consumers practice deficit irrigation, water savings from smart technologies is minimal or in a worst case scenario, consumption can increase.

[4] SWAT currently does not test for conservation. SWAT, IA, AWE and research institutions should work together to establish protocols, including an acceptable baseline for landscape.

