



Comments on the

April 2006 Draft Specifications

for

Certification Programs for Irrigation Professionals

Compiled on October 19, 2006



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

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Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Commenter: Andy Smith
Affiliation: Irrigation Association
Comment Date: 05/24/2006

In discussions various interests regarding the EPA's desire to recognize certification programs for irrigation practitioners, it has become apparent that certain limitations should be considered regarding the attributes of organizations that are allowed to apply for approval of their certification programs. Listed below are some enhancements to consider:

Qualifications for Organization Offering Irrigation Certification

The organization should be a college, university, trade school, vocational school, or trade association. Any entity wishing to apply for approval shall have a minimum of ten years experience in providing comprehensive irrigation industry certifications with widespread government, industry and market acceptance. The organization making application must be nationally recognized as a credible resource for certification offerings. Said certification offerings must not be tied to specific products or manufacturers. The organization should have a full time staff and regular business hours to assist with administrative issues. The organization should have the ability to offer testing within 90 days notice. The organization should have a systematic means to provide, document and publish continuing education requirements for registrants over time. The organization should have a web based directory to provide consumers with means to verify certification.

References

The organization should document at least 10 irrigation industry references in writing. The references should include contact information for the reference as well as any supporting documentation deemed appropriate for determining the organization's credentials. The references should include at least one of each of the following:

- A federal agency
- A state agency
- A municipal/local government agency
- A manufacturer of irrigation products
- A distributor of irrigation products
- An irrigation contractor
- An end user of an irrigation system
- An academic institution
- A student of their current program
- An authorized instructor of the currently offered curriculum

Some of the above items are lofty goals. They should be discussed as I truly feel EPA wants this program to mean something.

Also, our current rules would not allow us to provide EPA with a sample exam as required. This would compromise the content of our exam and we would not want to let that happen. We will need a workaround solution.



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One other item for consideration is the timing of the proposed changes to the education program. I would like to consider the impact this activity may have on this program.

Andy Smith
State & Affiliate Relations Director
Irrigation Association

Commenter: Irrigation Association
Affiliation: Trade Association
Comment Date: 5/10/2006

The Irrigation Association (IA) strongly supports the Environmental Protection Agency's (EPA) commitment to water efficiency through the recognition of Irrigation Certificate Programs. Certificate holders in programs that are well organized and of high quality significantly improve the chances that an irrigation system will be not only efficient but effective.

The EPA is confronted with a classic dilemma of those choosing evaluation criteria – do you seek excellence or assume that a rising tide lifts all boats? The Irrigation Association counsels that, in a highly technical field such as irrigation, the under-trained or under-qualified cast doubt on the credibility of any program with which they are associated. For this reason, the EPA should initially set the highest achievable standards for its certification program to gain the public's acceptance and confidence.

The Irrigation Association suggests the following changes or modifications to the draft Criteria for the qualification of certification programs:

New Section: 1.1 Sponsoring Organization Qualifications

- a) Sponsoring organization may be an association, foundation, education institution, trade union, or incorporated private company;
- b) The sponsoring organization shall not be in the business of supplying irrigation products or services;
- c) A sponsoring organization shall have been incorporated for a minimum period of five (5) years;
- d) A sponsoring organization must post a roster of certification holders on a website by name, location, and certificate type.
- e) The sponsoring organization shall supply five (5) references of financial stability from its bankers, accountants or suppliers.

Section 2.1 Independent Oversight Committee

(All program drafts)

Second sentence: Increase the number of professionals on an oversight committee from three to six. An oversight committee must have a variety of backgrounds so that complex subject matter can be debated and resolved.

Third Sentence: Reduce the number of an organization's employees on the oversight committee from 1/2 to 1/3. This clause along with the expansion of the oversight committee itself will limit the number of paid employees actively engaged in the certification process thus reducing any incentive control the certification process,

Section 2.2 Experiential Agreement (Auditor Certification Draft)

The auditor program should train individuals to perform audits with both classroom and field training methods. Suggest modification of the wording to the following- "The certification must



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require that the applicant have proof that they have performed a field audit as part of a course of study or within a specified time period following the exam as established by the oversight committee.”

A separate auditing certification for golf courses should be considered.

Section 2.3 Exam Content (Auditor Certification Draft)

The subject of system maintenance would be more appropriately covered in the separate installer certification

Section 2.3.1 Exam Content (Designer Certification Draft)

Cost estimating and maintenance are items generally not relevant to proper irrigation design and should be dropped from the question pool in this certification.

Section 2.3.1 Exam Content (Installation Certification Draft)

It is recommended that a couple of items be added in this section to examine a candidate’s knowledge of OSHA rules and regulations. In addition, an understanding of electrical circuit operation is desirable.

Section 2.3.1 Exam Content (All Certification Drafts)

The last sentence in this section should be expanded with the addition of the following “Exams questions should be rotated periodically so that a random selection of questions from a question pool will be used. This will inhibit the sharing of answers from on examination to another.

Section 2.3.3 Quality Assurance / Quality Control (All Certification Drafts)

It is recommended that the second sentence of this section be changed to read “An independent academic institute or professional testing organization must grade each examination and report the results to the individual candidate and oversight committee. “This academic institute or professional testing organization shall maintain the question pool used for all exams.”

Section 3.3 Documentation of Independent Oversight Committee Responsibility

The last sentence should be modified to read as follows, “A copy of the oversight committees rules of conduct or the sponsoring organizations by-laws pertaining to the oversight committee should be submitted as documentation.”

The Irrigation Association looks forward to working with the EPA on all irrigation certification programs with the expectation that this activity will have a significant impact on the nation’s water use.

Respectfully submitted by

Thomas H Kimmell



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Executive Director
Irrigation Association



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Commenter: Laura Hodnett
Affiliation: Medford Water Commission
Comment Date: 4/24/2006

As a water utility employee who is responsible for conservation programs, I am thrilled to see this effort moving forward. Following are a few comments relative to the proposed exam content.

I see "water pressure and its affect on sprinkler performance" listed as exam content only for Irrigation Auditors. Perhaps this topic is intended to fall under "hydraulics and pumps" or some other category listed for Designers and Installers, but that is not clear. While we also see problems associated with inadequate pressure, it has been our experience that sprinkler systems that operate well above the pressure ranges specified by manufacturers is one of the most prevalent and wasteful practices associated with irrigation systems. As such, I believe it deserves a high level of attention in the certification process. It is important that pressure regulation be integrated into initial design, and that installation and maintenance personnel both understand its importance and recognize its symptoms. Not identifying excessive pressure until an audit is done is remedial, whereas it is better addressed at the time of installation.

While it is not proposed as a part of the current program, I'd personally like to see consideration of a product requirement that all standard spray sprinklers (non rotors) must be pressure compensating. Without that, even if the initial design included such sprinklers, there is not a high likelihood that the correct models will be supplied if/when sprinklers need to be replaced.

A couple other topics I'd also advocate covering are low head drainage (the need for check valves) and water waste associated with autodrain. Both of these situations result in water being drained from sprinkler lines after each cycle, which is both unnecessary and wasteful (especially when we advocate multi-cycling to obtain better absorption). It may be that these will be topics addressed under "impact of site conditions on equipment choices," but I am mentioning it anyway since that is not clear.

I also note that "maintenance" is a topic for the Designer and Auditor certifications, but not the Installation and Maintenance Professionals. This seems like an obvious content for the latter certification, and its omission seems odd.

Thanks for your consideration.

Laura Hodnett
Medford Water Commission
Medford, OR



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Commenter: Lorne Haveruk
Affiliation: DH Water Management Services Inc.
Comment Date: 05/13/2006

Hi Jane

It was a pleasure meeting with you in Denver. I found the meeting to be very informal and informative at the same time. It is not that often that so many irrigation experts get together and at the same time have one goal in mind.

I have taken some time to review everything and have only a few suggestions that will allow the program to have a broader reach than I am seeing indicated in the draft documents.

Version 1.0
EPA Water Efficiency Program 7 April 2006

2.1 Independent Oversight Committee

The certification process provided by an organization must be supervised by an independent oversight committee. The oversight committee must be established by the organization and be composed of at least three professionals who are recognized for their expertise in the irrigation field. Full time employees of the organization must hold less than half of the oversight committee positions. The committee must be able to exercise independent judgment and oversight to assure the integrity of the certification process.

This section limits smaller companies that could utilize the IA's established certification board and national training centre (CIT) for overseeing the certification process to meet the "supervised by an independent oversight committee" requirement. What I would suggest is rewording to **include corporations to partner with entities** that can fulfill this requirement. This will allow for some of the more creative, smaller, well established, quality irrigation training companies to participate and send their students through a nationally if not internationally recognized certification and examination process. This way we do not have to reinvent the wheel which is already rolling in the right direction – water efficiency.

What I would also, like to see is that any "**Instructor delivering training must be certified in that field**" prior to teaching a class.

I do not see any other concerns from an independent training organizations point of view. However, I would like to stress that in no way does the IA become the sole body designated to be established for the creation, delivery, and examination of irrigation training programs.

Lorne Haveruk, CID, CIC, CLIA, WCP
DH Water Management Services Inc.



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Commenter: Mike Grundvig
Affiliation: Contractor
Comment Date: 4/17/2006

As a contractor and consumer, I am pleased with the EPA's efforts to improve the efficiency of our water use. There is so much we can do to improve/reduce our water use.

Thank you,
Mike Grundvig



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Commenter: Rex Winn
Affiliation: Idaho Power
Comment Date: 04/28/2006

I think this concept is very timely, perhaps even behind the curve because of the water issues facing our nation today. I look forward to seeing progress. I believe education, correct design and operation run hand in hand in this regard. With a new as well as existing customers it should start with education so that they understand just how important it is that they be a part of the benefits (to be realized by all) of Environmentally Safe Water Practices. This now takes them to a Good System Design, because without a good irrigation design, being environmentally conscience in belief and practice won't happen. Understanding the correct operation of a well designed irrigation system is paramount to being a good steward of our limited water supply. Every water user needs to understand their impact on the local, national and perhaps the global setting of good Environmentally Safe Water use and Practices.

This is very important information that the whole nation needs. However there may be hot spots that should be the focal point of immediate need. To increase interest and participation in Environmentally Safe Water Practices, perhaps a State and/or Federal tax credit could be offered. This tax credit being based upon the attendance at educational seminars, installation and operation of well designed irrigation systems plus on an individual, corporate or State level some type of commitment to partnering in Environmentally Safe Water Practices, with follow-up to insure continued success of the program. I believe that the marketing of this concept would be essential to the level of success to be achieved. My thoughts and I wish you the best in this worthy project.

Rex Winn, CID
Idaho Power Company



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Commenter: Tim Wilson
Affiliation: The Irrigation Water Management Society
Comment Date: 5/10/2006

Jane,

I look forward to the call. Here are my thoughts on the meeting in Denver:

1. Great job. I heard from our rep. Brent Mecham that it went well.
2. I am concerned about any recommendations that would favor older well established organizations and hinder the participation of smaller newer groups that might have good innovative ideas and programs. Requirements such as history and financial resources tend to favor the older established groups and exclude others. (Country club mentality)
3. There seems to have been a lot of talk about the importance of water management qualifications. I would ask you to keep in mind that we have a great water management certification that is established and in use. It is in demand and recognized as a very timely and beneficial program.
4. I support the idea of getting started with something now so as to get the ball rolling.
5. I would advise you all to include Planet in these discussions since they have a good certification program.

Tim Wilson
The Irrigation Water Management Society

Commenter: Tom A. Reynolds, CID, CLIA, TSP-USDA/NRCS, CSWP
Affiliation: Water Balance, LLC
Comment Date: 4/14/2006

The scope of knowledge, as laid forth in 2.3.1 of "...System Designers..." may be too broad. My concern would be that important study and challenging problem exercises time and focus would be diluted by time and effort studying Plumbing and Electrical Code, along with Grading and Drainage. But EPA did not qualify their intentions, with respect to depth of knowledge required, or proportions of these areas (percentage/weight) to the whole Study Outline. I would strongly encourage all of this time be spent in a deeper study of soils and plant nutrition. Drainage engineers, plumbers and electricians will thank us.

There is another concern. I haven't conducted the study, but it seems reasonable that more direct delivery of water to "confined" rootzones of shrubs and trees using micro-irrigation technologies is increasing, while whole area sprinkler irrigation of the same plant layout/design is on the decline. Many contend that confined active rootzones are more efficient, while many insist that roots need to expand way beyond their "drip lines." The debate continues.

Higher root densities may promote higher soil organism concentrations due to the proximity and concentration of root exudates. Confined root zones are more dense, and may be viewed therefore as more efficient. The point here is that there are profound differences between irrigation design for mixed species sharing common drip irrigation valves and an over-head system water a mono-culture of grass. I discourage any glossing over this fact. Let us also keep a close on that trend towards precision rootzone management, as enabled though thoughtful micro-irrigation design and intelligent management strategies.

I would carry it one step further. I would sub-divide the training to let those who will design sprinkler systems get certified for that, while those whose focus is micro-irrigation, let them get certification in that. They are definitely that different.

Other than these comments, words can not express my gratitude for your clearly enlightened efforts towards nothing less than the single most urgent ecological matter facing humans.

Tom A. Reynolds, CID, CLIA, TSP-USDA/NRCS, CSWP
Water Balance, LLC



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Commenter: Tony Gregg
Affiliation: Austin Water Utility
Comment Date: 05/26/2006

My first comment has to do with process. Since municipal conservation professionals have very limited budgets to attend workshops on proposed specification, to the extent possible, the workshops should be held in the same City on the same date if they are half day workshops or on consecutive dates if they are full day workshops. I have heard that attendance was very low at the workshop in Denver and it was primarily for this very reason. It is not clear to me why this workshop was not held in the afternoon, after the HET spec workshop in DC on 4/28/06. I hope in the future you will schedule workshops to be more convenient and less costly for the participants.

As to the Certification for Irrigation Professionals, my comments apply to two of the proposed certification programs. I do not believe that having a certification program for an Installation and Maintenance Professional or an Irrigation Designer without an independent rater will be of substantial value and will potentially devaluing the brand of this program. In Texas, we have had for many years a licensing program for irrigators and there is no assurance that you will get a quality system by hiring a licensed irrigator primarily because there is no required independent inspection or rating system. I would not like to see EPA repeat this inadequate system on a national level.

I think the model that should be followed in the Energy Star Homes programs which now requires an independent rater to be available as the house is constructed rather than just after the fact. That way, problems are caught before it is too costly to remedy them. For irrigation systems, EPA could develop a set of high efficiency specifications and then require that a rater certify that they installed system meets this system. The rater would have to be able to see the design of the system before installation, be present during installation before it was backfilled, and test the system after installation. This is the only way to guarantee premium performance.

So at this time, I would recommend that EPA not go forward with a certification program for either a Installation and Maintenance Professional or an Irrigation Designer.

I do think there could be value in an certification program for Irrigation Auditors, though perhaps this certification should also be delayed so that EPA could consider whether the Irrigation Auditor Certification could be expanded to include the rating of new systems as I have described above.

I would be welcome the opportunity to work with EPA to develop the type of system I have described. I do think the time is right to address this issue. Thank you for the opportunity to comment.

Tony Gregg
Water Conservation Manager
Austin Water Utility
Austin, Texas



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

Commenter: Richard Harris
Affiliation: East Bay Municipal Utility District
Date of Comment: 6/23/2006

Thank you for the opportunity to comment on the draft specifications for irrigational professional certifications under EPA's Water Efficiency Program. We believe such a program has merit and want to comment in areas that we feel will be critical to achieving success and measurable water efficiency in landscape design, installation and maintenance.

The program appears to be administered by independent organizations and oversight committees, which could number a few or many. Recognizing there may be benefits of early adoption, co-funding where budgets may be limited, among others, we have some concern that having numerous individual organizations could create some discrepancies, different rule-making that might have varying levels of "deemed efficient practices" from one region to another or among different states. This may lead to market confusion among professionals, builders, consumers. We suggest a more universal setting of criteria and passing scores may prove more effective.

The requirements for continuing education credits, proficiency and certification renewals are good and will help to maintain efficiency levels, while keeping professionals and certification levels current with advances in practice and technology.

We have some concern over certification being based on one audit, three years of maintenance and three years of irrigation design only. We suggest more than one audit is necessary to become proficient, and would like other design and maintenance experience to be based on peer reviewed "water-efficient irrigation practices" specifically. Locally we have seen many poor and improper irrigation designs and maintenance practices from professionals with 5, 10, 15 years of experience. The program should consider certifications based on the majority or a select percent of professional work completed.

Would like to learn more about the data collection and reporting process and support functions under the program to assist in quantifying the success rate of program adoption and level of effective water efficiency.

Thank you and good luck.
Richard Harris
Manager of Water Conservation
East Bay Municipal Utility District
Oakland, CA



Commenter: PLANET
Affiliation: Landscape Association
Date of Comment: 9/11/2006

Professional Landcare Network Suggested Changes dated September 11, 2006

Version 1.0 EPA Water Efficiency Program 7 April 2006 ***Draft***

Draft Criteria for the Qualification of Certification Programs for Irrigation System

Installation and Maintenance Professionals under EPA's Water Efficiency Program

2.2 Experiential Requirement

The certification must require that the applicant have a minimum of at least three years of demonstrated experience in the field of irrigation installation and maintenance. In addition, the practitioner must provide evidence of a working understanding of all components (full comprehension of all system parts and the ability to disassemble, repair, and assemble each part). The oversight committee must have established the standard of proof for the experiential requirements.

Three years of demonstrated experience may deter practitioners from being certified. And the certification exam should evaluate proficiency. Therefore, evidence of a "working understanding of all components" is not necessary.

Suggested change:

The oversight committee must establish the standard of experiential requirements (which may be suggested requirements).

2.3.1 Exam Content

~~The exam process should be structured so that passing practitioners must have demonstrated proficient applied knowledge in the following subject areas:~~

- ~~• System design layout and equipment specifications particularly as they pertain to distribution uniformity and system efficiency~~
- ~~• Soil/water/plant relationships~~
- ~~• Precipitation rates and irrigation scheduling~~
- ~~• Impact of site conditions on equipment choice~~
- ~~• Hydraulics and pumps~~
- ~~• Blueprint reading and interpretation~~
- ~~• Recent innovations and technology developments~~

Suggested change:

The exam process should be structured so that passing practitioners must have demonstrated comprehensive, job-related knowledge related to irrigation systems and land care management.

Specific exam content and questions should be established or approved by the oversight committee.

2.3.3 Quality Assurance/Quality Control

The examination process must include the following QA/QC elements:

~~• The technical content of exam questions should be established or approved by, and periodically reviewed by the oversight committee to ensure that the exam meets the requirements specified in Section 2.3.1.~~

Suggested Change:

• The technical content of exam questions should be established or approved by, and periodically reviewed by the oversight committee to ensure that the exam meets the functional requirements of the job and tasks.

In addition, an independent academic institute or professional testing organization must review the exam questions to ensure that they accurately test the subject material. The exam question review process should be conducted at least once every two years, or more frequently as determined by the oversight committee.

Suggested Addition:

The examination and testing mechanism:

Shall utilize reliable testing mechanisms to evaluate individual competence that is objective, fair to all candidates, job-related, and based on the knowledge and skills needed to function in the discipline.

Shall implement a formal policy of periodic review of the testing mechanisms to ensure ongoing relevance to knowledge and skills needed in the discipline.

Shall utilize policies and procedures to assure that all test administration and development materials are secure and demonstrate that these policies and procedures are consistently implemented.

~~• Exams must be administered by an independent academic institute, a professional testing organization, or an irrigation professional certified in the subject matter.~~

~~• Exams must be graded by an independent academic institute, professional testing organization, or a certified irrigation professional not involved in the training or proctoring of the practitioner being examined.~~

• The security and integrity of the test questions and test processes must be protected at all times.

2.4 Renewal **Suggested Change: Recertification Process**

The certification must have a renewal process with a set periodicity.

2.4.1 Expiration

A certification must be recertified at least once every ~~two~~ **Suggested Change: three** years, or more frequently as established by the oversight committee.

2.4.2 Maintained Proficiency



Comments on the Draft Specifications for Certification Programs for Irrigation Professionals

One aspect of the ~~renewal~~ **Suggested Change: recertification** process must require the submission of documentation that the practitioner has maintained proficiency in the subject matter (e.g. continuing education units). The oversight committee should establish valid documentation requirements of maintained proficiency.

3.4 Documentation of Independent Oversight Committee Composition

For the current oversight committee, provide each committee member's name, committee position, professional affiliation, and a brief synopsis of irrigation ~~expertise~~ **Suggested Change: and land care management expertise.**



**EPA Water Efficiency Program
Draft Specifications for Certification Programs for Irrigation Professionals
Stakeholder Meeting
EPA Region 8 Building
Denver, Colorado
May 3, 2006
1:00 pm to 4:00 pm**

Participants:

Timothy Malooly, Irrigation by Design, Inc.
Andy Smith, Irrigation Association
Steve McCoon, Walla Walla Sprinkler Company
Dan Fuhrman, Irrigation Contractor
Dale Morehouse, Irrigation Designer
Lawrence Budd, Walla Walla
Kristen Tromly, NREL
Tom Kimmel, Irrigation Association
Lorne Haveruk, DH Water Management Services Inc.
Gene Reagan, Texas Turf Irrigation
Jodi Johnson, HydroPoint Data Systems
Karen Moore, VIT Products Inc.
Warren Gorowitz, Ewing Irrigation Products
Steven Smith, Aqua Engineering
Brent Mecham, Northern Colorado Water Conservancy District
Art Elmers, Netafim USA
Jane Anderson, Environmental Protection Agency
Joanna Kind, Eastern Research Group, Inc.
Christy Milstead, Eastern Research Group, Inc.

Program Overview

Jane Anderson thanked the participants for attending the meeting and indicated that the EPA is looking for comments on the draft specifications. The participants introduced themselves.

J. Anderson provided an overview of the EPA's Water Efficiency Program, which is a voluntary private-public partnership program that was initiated to protect the future of the nation's water supply through the promotion and enhancement of water efficient products and services. The mission of the Program is to change the way that Americans think about water. The EPA is looking to transform the marketplace through this program to make water efficient products, practices, and systems a preferred choice among consumers and businesses. The Program goals are to reduce water and wastewater infrastructure costs and to conserve water resources for future generations by raising awareness of the importance of water efficiency, ensuring product performance, assisting

with the differentiation of products and services, promotion of product development, and supporting state and local water efficiency efforts.

The Water Efficiency Program will label products based on their performance following testing at independent third party facilities. Water efficient service programs will also be labeled.

J. Anderson briefly explained the differences between the product and service components of the Program. The products that are labeled through the Program will be backed by the credibility of the EPA; will be promoted through partnerships with utilities, manufacturers, and retailers; will realize water savings on a national level; will be about 20% more water efficient than the average counterpart; will perform as well or better than less efficient counterparts; will achieve water efficiency through multiple technology options; will be effectively differentiated by a product label; will be independently verified; and will provide measurable results. The services in this program must demonstrate a higher level of efficiency requirements/achievements than their peers; provide quantifiable results in terms of water savings; be easy to find and use; and should not require end-user sacrifice in terms of convenience, comfort, hygiene, health or safety. Lastly, the professional certification program will have verified knowledge of water-efficient principles and procedures.

There are several key roles for the partner organizations in this Program, including the EPA, local utilities, manufacturers and service providers, and retailers. The EPA will strive to create the ethic of water efficiency through education and awareness; will build, monitor, and protect the program brand; will support the framework for certification applications; and will publish a web-based registry of certified products and services. Local utilities will promote the certified water-efficient products and services to customers and will promote the program brand by using materials developed by the EPA. The manufacturers and service providers will manufacture water efficient products or support services independently verified to meet the EPA criteria for efficiency and performance, and will label and promote those products and services. The retailers will stock, promote, and sell water efficient products.

J. Anderson indicated that the EPA has spoken with a number of stakeholders in developing the draft criteria. The public comment period provides an opportunity for broader participation. EPA has also developed draft criteria for High Efficiency Toilets (HETs). The Water Efficiency Program's first stakeholder meeting, to discuss the HET spec, was held on Friday, April 28, 2006.

Product and service categories planned for the Program include residential plumbing products, certification programs for irrigation professionals, irrigation products, commercial plumbing products, and new homes.

The EPA Water Efficiency Program approach to landscape irrigation is to address both the service aspects of irrigation systems as well as the component products. The purpose of the landscape irrigation product specifications will be to differentiate products in the marketplace based on their water efficiency and performance. Draft specifications will be developed for controllers and soil moisture sensors, with the intent to complete the specifications prior to the next irrigation season.

The purposes of the Irrigation Certification Program recognition are to promote training and certification among irrigation professionals and to encourage consumers to select irrigation professionals who have shown a commitment to water efficiency, by achieving certification through a recognized program. It was noted that the Program is not certifying individuals.

The Water Efficiency Program is taking a process oriented approach to qualifying programs. The recognition criteria include requirements for experience, an exam, and renewal of certification. The EPA criteria lay out broad content areas that must be covered, relying on an oversight committee to attest to the quality of the specific content covered by the certification program. Certification Programs wishing to earn EPA Water Efficiency Program recognition must also meet criteria for minimum acceptable experience for candidates, must have their certification exams reviewed periodically, and must include a process for candidates to demonstrate continued proficiency for renewal of their certification.

There are three categories of certification programs: Irrigation Designer, Irrigation Auditor, and Irrigation Installation and Maintenance Professional. J. Anderson described the specification development process and indicated that following this meeting the specifications will be finalized based on the comments received. The participants were informed that the meeting was being recorded and were asked to identify themselves when speaking.

Discussion of General Program Approach

The participants discussed the qualification of potential service providers. Gene Reagan suggested the development of specific criteria for service providers. Brent Mecham suggested that the certification program have one test standard (i.e. one set of tests), with multiple certification providers. G. Reagan expressed concern for the fact that there are no criteria developed indicating who may be a provider of recognized certification programs. G. Reagan recommended the development of specific criteria of the sponsoring organization. For example, the sponsoring organization should be in place for a specified number of years, have no conflict of interest, and should not be in the business of supplying products. He stated that it should be an educational institution, a foundation, or a private institution.

The participants discussed the different types of training programs in the industry. L. Haveruk indicated that there is a lot of training within the industry, although the

Irrigation Association is the main provider of training. However, a few suppliers and manufacturers also provide training. Tom Kimmell explained that once the EPA develops a certification program, an “industry” will develop to fill the niche (i.e. certifications), which may potentially lead to quality assurance issues. T. Kimmell stated that EPA should define who the provider can be and what criteria they should meet. G. Reagan provided information on the certification program in Texas, and explained the issues with training. Due to the fact that the program was run by a state agency, one particular service or product could not be endorsed, which created a conflict because many manufacturers provide training. Tim Malooly commented that one main motivation of manufacturers in providing training is the lack of comprehensive, organized, and consistent training of irrigation professionals. However, if good programs were to be developed through the EPA Water Efficiency Program, then manufacturers’ training programs may not be necessary anymore.

J. Anderson addressed the differences between training and certification programs, and explained that the EPA chose to focus on a certification program because of the complications involved with training. T. Kimmell indicated that in the IA there is only one certification that requires IA training, the auditor certification. Andy Smith commented that if individuals can demonstrate their capabilities through the attributes of certification program, then they should be certified. G. Reagan agreed, stating that the training will fall into place following the establishment of the certification programs and recommended that EPA look at training in the future.

Jane Anderson asked whether the program was starting at a good point, or if the certification program should begin at a more basic level. Art Elmers indicated that the market will create the necessary programs in order to certify individuals. B. Mecham explained that in Colorado, there are some certified irrigation professionals that are not necessarily competent, and thus the water utilities are not seeing any water savings. A. Elmers stressed the importance of having a mechanism to remove individuals’ certification if they are not practicing water efficient technologies as trained. A. Smith suggested continuing education approval as a possible solution and asked G. Reagan to explain the continuing education process in Texas. In the Texas program, the training provider must be approved to provide continuing education for licensing as well as have the training material approved by the state. However, the Texas program has lost integrity due to the fact that the criteria for approval of a training provider are not that stringent.

J. Anderson informed the group that this is addressed in the Independent Oversight Committee requirement in the specifications. The participants were asked if this requirement adequately addressed concerns or if the EPA should contract a group of irrigation professionals to review materials. A. Elmers noted that contracting a group of irrigation professionals would assist with standardization. T. Kimmell indicated that having the EPA perform this function would not really add value, rather add another layer to the process. L. Haveruk directed the participants to Section 2.1, the Independent Oversight Committee section of the draft criteria and indicated that the current wording

already addresses these issues. T. Kimmell suggested that the Independent Oversight Committee be composed of six professionals instead of three. T. Kimmell also suggested that full time employees hold less than one-third of the positions, rather than one-half.

Dale Morehouse raised the issue of certified individuals competing with individuals that are not certified and how those that are not certified can be expected to do the job correctly. J. Anderson explained that the EPA hopes that once the Program is in place, it will assist the certified individuals with obtaining business due to public recognition of the Water Efficiency label; however, those that are not certified cannot be stopped from selling their services. A. Elmers indicated that the EPA would drive the market to accept certified individuals, similar to the Energy Star program.

G. Reagan indicated that irrigators in Texas are really excited about the weight EPA's name will carry in the certification program because there is a need in Texas to raise the level of professionalism. L. Haveruk added that an individual that does not recognize the value of a system installed by a certified irrigation professional is not the target customer.

T. Malooly stressed the need for incentives and encouragement for those individuals that are practicing water efficiency and for those irrigation professionals that are installing water efficient systems. He stated that the EPA should create certification endorsements for programs that are rigorous and demanding, and keep a high educational standing in the programs. T. Malooly suggested that the EPA encourage state programs and water purveyors to support those professionals that are certified with incentives. A. Elmers suggested one such incentive, in which during drought conditions, individuals that do not have an irrigation system installed by certified irrigation professionals are restricted in their water use.

L. Haveruk provided a comment on Section 2.3, the Exam Requirement, and suggested the inclusion of a hands-on component to the exam. One example would be to require individuals to design and build an irrigation system to pass the test. A. Elmers stressed the need to include a mechanism to address recertification and elimination of certified individuals who are no longer competent. T. Malooly suggested the inclusion of hard evidence of the individual's proficiency in the renewal process of the program, for example, inclusion of pictures, documents signed by a local agency, etc. Warren Gorowitz asked if there are any other certification programs that the EPA could use as a model. J. Anderson indicated that the Energy Star did certify contractors for HVAC systems; however, the program was moving away from this.

W. Gorowitz indicated that Ewing offers training classes to customers free of charge and is interested in being able to offer a certification program to customers. The distribution companies have a strong reach to the contractors. Additionally, a number of Ewing employees have been through the IA certification program, and therefore want to ensure that these employees can be brought up to the same level. W. Gorowitz provided information on the C27 license process in California and the shortage of funds to enforce

those individuals practicing without the C27 license. A. Elmers suggested that public education of the EPA program may address this issue.

J. Anderson confirmed that the participants have expressed the need for enhancing the renewal process and for inclusion of practical hands on training in the certification programs.

B. Mecham mentioned that “maintenance” is not included in the testing subject material criteria for the Irrigation Installation and Maintenance professional specification; however, it is mentioned in the Irrigation Designer and Auditor specifications. He suggested that water management and maintenance should be combined and inserted into Section 2.3.1 of all specifications.

T. Malooly stated the differences between maintenance with respect to warranty and to water delivery adjustments should be clear. A. Smith suggested adding maintenance to the auditor program. Lawrence Budd suggested the addition of post installation inspections to auditing. T. Kimmell suggested adding a maintenance repair test, to ensure that the person being certified can go beyond identifying what is wrong in a text book situation, but can actually apply that knowledge in the field.

Dan Fuhrman suggested the addition of a fourth certification program, Landscape Water Management certification. J. Anderson indicated that other stakeholders have provided similar comments and that the EPA will look into this. J. Anderson asked the participants if this would be a substitute program or an add-on to the current three certification programs. The participants indicated that this program should be at a higher level, with prerequisites along with other elements to prove the individual has a high level of water efficiency knowledge.

T. Kimmel explained that each of the IA certification programs vary in their knowledge requirements and complexity. For example, the auditor is the “kindergarten” of the certifications. It is a one day course and exam, where the designer certification is multiple courses and years of experience. B. Mecham explained that the term ‘certification’ does not distinguish between levels of experience and testing, as in a trade. J. Anderson recognized this difficulty and asked if there were any suggestions for addressing this issue. T. Malooly indicated that in Minnesota, there are different terms used: accreditation, certification, and licenseship, each with corresponding elements.

W. Gorowitz expressed support of the proposed Water Management Certification and provided information on the California AB2717, which was looking at AB325. Water districts have expressed the need to get contractors more knowledgeable of water management, and one suggestion was for a water management certification program to be developed. However, this program was not developed because they were not sure it would meet the EPA certification criteria. B. Mecham indicated that the IA does have a water management component, but it needs to be revamped to meet EPA certification

criteria. T. Kimmell stated that the current certification programs are a starting point, and a Water Management Certification could be the next step. L. Budd indicated that there is a masters program in water conservation currently in development at CSU, and water management training could also be included in this program.

T. Malooly asked J. Anderson if the EPA had a timeline for measuring the effectiveness of the program. J. Anderson indicated that there is no set date at this point, and that the initial metrics will be the number of partners signed, with the goal of measuring water savings in the long run.

Steven McCoon stated that there needs to be a benefit to contractors practicing water efficiency. There are many rebates offered to homeowners for products that don't save water because they are not being properly managed. A contractor with a close relationship with the end user is where savings will occur. A. Smith brought up protection of the trade name and fraud prevention.

T. Kimmell asked whether the certification program falls under the EPA or the new Water Efficiency organization. J. Anderson informed the participants that it is the EPA Water Efficiency program. T. Malooly inquired if there was funding for a national advertisement campaign over a sustained period of time. J. Anderson indicated that print public service announcements (PSA's) are currently in development. The current program budget does not include broadcast PSA's.

G. Reagan inquired of EPA's limitations on enforcement. J. Anderson reminded the participants that this is a voluntary program and that EPA will not be the police, rather it is the responsibility of the certification program to ensure that the standards are being met. The EPA will monitor label use. T. Malooly suggested a requirement stating that a program must self enforce. The participants discussed this topic. T. Kimmell explained that certification means an individual has a level of understanding, and a certification cannot be removed. T. Malooly stated that the topic of enforcement should not be discussed at this point in time in order to allow the programs to continue.

T. Kimmell suggested the three certifications programs as the base. The Water Management Certification, once launched, would have more qualification requirements. B. Mecham indicated that the Best Management Practices had a financial incentive for participants; however, this program lacks any incentive. One suggestion would be for manufacturers or distributors to offer discounts to those irrigation professionals that were installing water efficient technologies. J. Anderson indicated partnerships will be planned with distributors, who will be asked to support the program.

The participants discussed the difficulty in getting irrigation contractors to install water efficient technology. W. Gorowitz indicated a financial incentive is needed for the contractor to get them to use these products. Currently, the incentives go to the individual paying the water bill, the homeowner. The homeowner gets excited for water savings; but

the contractor tells the customer that the products don't work. Therefore there is a need for some kind of incentive to the contractors. L. Budd suggested that the EPA recommend to cities and agencies the use of certified contractors, which would give certified contractors a better shot of getting jobs.

L. Haveruk suggested the separation of the Irrigation Installation and Irrigation Maintenance professionals. L. Haveruk also suggested the addition of scheduling to the Irrigation Designer exam requirements. The addition of water use budgeting was also discussed. However, G. Reagan indicated that there is the phrase 'site appropriate irrigation scheduling' in the Irrigation Designer and Installer requirements; therefore this is covered. J. Anderson asked if the language was clear enough and the participants agreed.

With respect to Section 2.4.1, L. Haveruk suggested that all three certification programs be renewed every year instead of every two years. J. Anderson explained the proposed grandfathering process at the renewal level of certification following implementation of the certification program.

A. Smith requested that the certification criteria be publicly available, and posted on a website for consumers to view, should they desire to. J. Anderson indicated that the criteria will be posted on the EPA website, and that partners could link to this website. A. Smith also suggested the maintenance of a real-time certification database that is readily accessible for the public to verify those that are truly certified. A link from the EPA website to a database of certified individuals was another suggestion.

T. Malooly suggested that the EPA review the certification programs every five years or upon demand.

B. Mecham raised a question of concern regarding the three programs: How will individuals be discouraged from getting the easiest certification just to be certified by the EPA. For example, why not just get the Auditor Certification and say you have an EPA recognized certification. J. Anderson indicated that this area is being explored. It was noted that the contractor is not getting certified, the program is getting certified.

J. Anderson indicated that a name for the EPA Water Efficiency Program has not been decided at this time. Participants were informed that controllers and sensors are currently being researched, and that if there is any interest in these areas, the process is informal until the draft specifications are released.

L. Haveruk recommended additional programs in the future to include certified water manager and certified irrigation technician.

Irrigation System Auditor Certification

L. Haveruk indicated that the term ‘auditor’ is much more encompassing than in previous years, and includes assessing, fixing, auditing, and retrofitting. The participants briefly discussed changing the name from Irrigation Systems Auditor; however, no decisions were made. The term ‘auditor’ is what is used in the industry and the terms ‘irrigation system auditor’ in the specification should address these concerns.

G. Reagan expressed concern with the lack of experience requirement for the Irrigation System Auditor certification, stating that in order to maintain the integrity of the auditing certification, there should be criteria for specified training or experience. J. Anderson confirmed with participants that a hands-on piece should be added to the auditor program. A. Elmers stated that there is a difference between auditors that simply make recommendations to those that also specify what areas need to be fixed. For example, there are auditors in NYC that audit for all types of water use, not specifically irrigation. B. Mecham suggested that potential auditors complete an apprenticeship prior to certification, for example, the completion of five audits with a certified auditor and submit those to demonstrate the individual’s knowledge and experience. J. Kind asked if an apprenticeship would burden the auditor and B. Mecham explained that it would be beneficial for both parties.

J. Anderson asked the participants to focus on the draft certification criteria for the three irrigation programs for the remainder of the discussion. The participants discussed the Irrigation System Auditor certification. G. Reagan suggested the inclusion of prerequisites for auditor certification. T. Kimmell suggested that the Irrigation System Auditor certification be set up as an entry level program, with intent to teach people how an irrigation system is designed. In this program, an auditor would not be certified until the individual had completed a number of audits for submission to the Certification Board. B. Mecham recommended the use of the term ‘accredited auditor’ prior to certification. T. Kimmell suggested the term ‘practicing auditor.’ Jodi Johnston suggested that this requirement should be expanded to the maintenance certification as well due to the fact that there are newer products on the market every year. G. Reagan indicated that the Irrigation Designer and Irrigation Installer certification programs already have a three year requirement. J. Anderson asked if there was a need for specific documentation or demonstration of experience. L. Haveruk suggested an approach in which the auditor in training is responsible for a book, which has to be signed off by someone indicating the individual has completed the hands-on experience. S. Smith suggested this process be completed through sponsorship.

T. Kimmell indicated that in the exam content section, the auditor system maintenance is good to know, but is not a minimal level. A. Elmers suggested the insertion of ‘identification/recognition of system maintenance requirements’ to the exam content. G. Reagan suggested the addition of ‘knowledge of system components’ to the exam content. The participants discussed the responsibilities of an irrigation auditor. Due to the evolution of the responsibilities of irrigation auditors, T. Malooly suggested the creation of levels of auditing based on experience. For example, an accredited auditor level and a

higher level, but not quite at level of water management. The participants discussed the use of another term other than ‘auditor’ due to its negative connotation to the public. Other suggestions included assessor, evaluator, water conservation practitioner, and system evaluator. G. Reagan indicated that there is a lack of standardization among different cities of what water auditing entails. In some areas it also includes indoor plumbing. J. Anderson reminded participants that the full title is Irrigation System Auditor or Certified Irrigation Landscape Auditor. The inclusion of a ‘definition of terms’ to help clarify the definitions was suggested.

Irrigation Designer

A. Elmers suggested the addition of text in the Designer Specification Section 2.3.1 regarding reclaimed/recycled water use. J. Anderson asked if it would be applicable across all jurisdictions. L. Haveruk indicated that the addition of this text would demonstrate efficient irrigation. A. Elmers suggested addition of ‘evaluation of available water sources.’

G. Reagan commented on the Irrigation Designer exam content, and recommended that ‘hydraulics and pumps’ be changed to ‘system hydraulics’ and ‘system pumps’ as two separate bullets. T. Kimmell recommended the inclusion of OSHA rules and regulations and electrical circuit operations to the exam content. The participants discussed the inclusion of electrical circuitry inclusion and agreed that it should be added. J. Kind asked participants if there was consensus to add these two pieces, and the participants indicated that the electrical circuit operations should go to the Designer certification and OSHA to the Installer certification. L. Budd suggested the addition of water budgeting to the Irrigation Designer Specification under 2.3.1, the exam content. S. McCoon suggested the addition of filtration knowledge to the Irrigation Designer exam content requirement. A. Elmers suggested the addition of the phrase, ‘assessing water source and quality.’ J. Anderson reminded the participants that these were minimum requirements, and that programs could go above and beyond those listed in the specification. T. Malooly suggested using the text, ‘consider but not limited to’ for section 2.3.1, to highlight this.

It was suggested that the term ‘drainage’ in section 3.1 of the Irrigation Designer specification, be changed to ‘slope and runoff.’

With respect to Section 2.4.2, Maintained Proficiency, T. Malooly suggested having a methods and practice manual requirement for candidates to submit. For example, creation of a manual of processes that have been completed could be submitted.

In section 1.0, Scope and Objectives of the Irrigation Designer certification, T. Malooly suggested inserting ‘develop design and/or written specifications’ or ‘develop construction documents.’

T. Malooly recommended adding Errors and Omissions insurance as an Irrigation Designer requirement. A. Smith indicated that the Irrigation Designer program could

instead be marketed to the insurance company. L. Haveruk mentioned that this requirement might limit some people due to financial constraints. The participants reached consensus to discuss this requirement at a later date.

The Irrigation Designer draft certification criteria were discussed. With respect to section 2.3.3, G. Reagan commented on the independent testing organization, and indicated that this needs to be an individual that understands how to develop exam questions and write exam questions that are readily recognized, clear, and concise. J. Anderson indicated the draft language attempts to address this and asked participants for better wording. B. Mecham suggested a professional test writers group. J. Johnston suggested reviewing the exam every year rather than every two years due to the changing industry. T. Kimmell indicated that the IA reviews the exam internally twice a year and that there is no outside review of the exam. T. Kimmell provided input on having a university review test questions. J. Anderson informed the group that the intent is for an analysis of how well the question tests for knowledge. T. Kimmell briefly explained the process within IA. It was noted that a requirement for an annual review might be burdensome for some institutions financially. J. Anderson suggested splitting the requirements for internal and external review. For example, EPA could require an internal review every year and an external review once every three or 5 years. A. Elmers noted that the requirement already states that a periodic technical review is required, and this can be left to the specific program.

Irrigation Installation and Maintenance Professional

G. Reagan suggested that the Irrigation Installer certification specification include language stating that the installer must comply with local regulations/state regulations. J. Anderson asked how this process would be enforced in a certification program, due to geographic and state differences.

The participants discussed the Irrigation Installation/Maintenance Professional draft certification. It was noted that a previous comment was to separate the two. A. Elmers indicated that the language in section 1.0 is not consistent due to the use of 'irrigation practitioner' instead of 'irrigation professional.'

Closing Remarks

J. Anderson reviewed the timeline for completion and indicated the comment period is open until May 26, 2006. The specifications should be finalized in the June/July timeframe and qualification applications will be accepted shortly thereafter.