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RE: Responses to Recommendations Report to the Legislature on Landscape Water Use Efficiency

The responses below represent the position of the American Society of Irrigation Consultants. American Society of Irrigation Consultants was incorporated in 1971 in the State of California and represents irrigation design professionals across the United States, Canada, England, France and Australia.

The following responses to the Independent Technical Panel recommendations are of upmost interest to our membership. The preservation of water resources, especially outdoor water use, is an important commonality within the ASIC. We place high value in the implementation of proper and practical solutions that yield water savings during the design, installation, and long term management stages of a landscape.

Section 3: ITP Vision Statement

ASIC Discussion:

- ASIC is in complete agreement with the visionary statement that requiring sustainable urban landscapes is imperative to finding a solution water use in California. The goal of continuing to reduce potable water use from the current 25% reduction to a new goal of 50% is laudable and necessary. But we may differ on methods to achieve this goal.
- “Functional and attractive landscapes are essential to our quality of life, providing places to recreate and relax, cooling the environment around buildings, offering wildlife habitat, and creating places of beauty.” In many parts of California, reliance on irrigation to sustain functional and attractive landscaping is a reality and will continue to be so. Mitigating, but not eliminating that reality should be the primary focus in gaining public support.



- The report sufficiently addresses the need to embrace the use of native and low water use plantings in the landscape. But it should do more to stress good irrigation design, management and maintenance to optimize its efficiency and effectiveness.
- If a property owner adopts low water use plantings without also taking a comprehensive look at design, operation and maintenance of the irrigation system that is used to supplement natural rainfall, there may be very little water saved.

Recommendations:

1. Provide more direct, and not just ancillary, focus on the need for effective and highly efficient irrigation will likely result in more immediate and long term water use savings.
2. Alternate water sourcing for supplemental irrigation must be a priority. In addition, using alternate water sources in the most judicious way possible must also be equally important.

Section 4: Voluntary Turf Replacement

ASIC Discussion:

- There needs to be verification that turf removal alone results in significant and sustained water use savings.
- Researchers at the University of California, Riverside, Turfgrass Research Facility, have estimated that two-thirds of the water savings from municipal turf rebate programs is the result of upgraded and more efficient irrigation systems, while the remaining one-third is attributable to the switch from turf grass to Xeriscape™
- Turf Removal & Replacement, Lessons Learned California Urban Water Conservation Council, March 2015:
 - “...climate appropriate and native landscapes require different irrigation techniques, (but) they still use roughly the same quantity of water as efficiently-watered turf grasses upon installation.”
 - “Compared with other conservation strategies, an average lawn conversion rebate program, as it is valued now, is one of the most costly conservation and supply augmentation approaches that a water agency can undertake.”



- ASIC advocates for landscape conversions using site appropriate plants rather than simply removing turf.
- An expanded site appropriate plant palette, including some turf, will allow for functional, creative and aesthetically pleasing solutions that can meet the same goals.
- Methods must be developed to measure the success of implemented programs.
- A significant landscape conversion without a corresponding comprehensive irrigation conversion or replacement specifically tailored to the landscape conversion will not produce the desired goal of significant water savings.
- The public or property owners often lack the knowledge to make informed decisions regarding landscape conversions or irrigation decisions.

Recommendations:

1. Replace “Turf Replacement” with Landscape Conversion, using site appropriate plantings.
2. Create and disseminate educational materials to help the public / property owner develop educated decisions.
 - a. Landscape: Which plants are appropriate for various climate zones - including water use requirements
 - b. Irrigation: A simplified version of the IA/ASIC Best Management Practices for irrigation design, installation and management to help the end user understand which components will effectively affect irrigation efficiency and effectiveness.
3. Implement a system to verify water savings - both initial and over time.
4. Water audits should be conducted as a condition of participation.
5. Consider a tiered water rate to encourage voluntary participation and a cost effective reason to consider landscape and irrigation renovations.

Section 5.1: Improvements in Existing Landscapes/Home Inspections

ASIC Discussion:

- ASIC supports having irrigation included in a home inspection report.



- Although the report will be cursory, it does acknowledge that the irrigation system is an important component of the home's infrastructure.
- We hope this will grow into providing a more meaningful report with proper education, training tools and check lists provided to the inspectors.
- There is concern about the knowledge base required by a home inspector to make a detailed and meaningful assessment.

Recommendations:

1. ASIC offers to work with DWR and other agencies to help create a check list and other training tools for the inspectors to use as part of their report.
2. Inspectors that do not feel qualified to make an assessment are encouraged to consult the services of a qualified professional such as an Irrigation Association Certified Auditor, Designer or Contractor or a Professional member of ASIC.

Section 5.2: Improvements in Existing Landscapes/Over one acre

ASIC Discussion:

- ASIC encourages expanding MWELo to include existing landscapes. One acre threshold is an appropriate level to start, but we encourage expanding this to sites ½ acre or larger.
- Larger sites are often better managed and maintained. Significant water inefficiencies are most often observed in residential settings or smaller commercial sites.
- The recommendation as presented requires tremendous resources and effort. Without reinforcement and consequences, results will not be realized.

Recommendations:

1. If the report requirement is to proceed, American Society of Irrigation Consultants (ASIC) and the Irrigation Association (IA) should partner with the California Urban Water Conservation Council in creating the necessary templates and report forms (Section D)
2. A tiered water rate that penalizes water overuse can achieve similar water savings with significantly less bureaucracy with reporting and collecting data.



Section 5.3: State Owned Facilities

ASIC Discussion

- ASIC agrees with the overall concept.
- An exception is “Said compliance should include mandatory, rainwater and/or stormwater capture where site conditions permit.”
 - Who will determine when site conditions permit?
 - Is this practical in many areas of the state or specific sites?

Recommendations:

1. Section 4: The word “mandatory” should be removed.
2. Section 5: The educational material should be based on the IA/ASIC Best Management Practices and the DWR should collaborate with both organizations to develop this educational material.
3. Section 6: Professional members of ASIC and individuals holding certifications from the IA should be given preference as being highly qualified bidders.

Section 6: (MWELo) Future Revisions/Updates

ASIC Discussion - Applicability

- In the 2015 update, the landscape renovation area trigger was reduced to 2,500 sq. ft. These smaller landscape renovations for small businesses and homeowners require the costly consultation of an industry expert in understanding the MWELo and its required provision of calculations and documentation. We have evidence of multiple builders, businesses, apartment sites, homeowners and small commercial property owners that simply avoid or abandon landscape and irrigation upgrades due to the expense and prescriptive nature of the MWELo. Many of our clients pursued the option of simple and effective landscape and irrigation renovation only to abandon the attempt after navigating the complexity of the Landscape Document Package. The result is a choice to avoid reduction in water demand rather than attempt to change planting, remove turf and upgrade irrigation to more efficient methods. Lowering the trigger to 500 sq. ft. is not beneficial.



- Adding the requirement for renovation of a landscape to meet a MWELo requirement due to a building improvement will have extreme cost consequences to the owner. Building improvements are often initiated for improvement with regard to health and safety, energy efficiency and structural integrity. Adding landscape and irrigation improvements in addition to the soft design costs required to meet the MWELo requirements detracts from the original budgeting and intention of the architectural improvements.

Recommendations

1. Do not change the threshold for applicability. Further research is required on reporting of water savings with respect to renovated landscapes larger than 2,500 sq. ft. prior to decreasing to smaller areas.
2. Building improvements should have no requirement to address water irrigation efficiency; they are not related with a price trigger.
3. Provision of a penalty for overuse will better initiate immediate alteration of existing planting and irrigation methods in addition to sustaining maintenance improvements and responsibilities.

ASIC Discussion - ETAF for SLA reduced to 0.8

- The purpose of increasing the ETAF to 1.0 for special landscape areas was to promote their unique, active and beneficial function for public use.
- Active play areas are normally turfgrass, a well-tested and suitable choice of plant material for foot traffic. Many varieties of turf have a yearly average landscape coefficient of 0.8. With an irrigation efficiency of .75, the ETAF is required to be 1.07. This does not include a leaching requirement. Warm season turf grasses, often a choice for active sports turf, has a yearly average landscape coefficient of 0.6. With an efficiency of 0.75, the ETAF is required to be 0.80. This again, does not include a leaching requirement.
- Recycled water use areas will require leaching of salts to maintain healthy and viable landscapes. The leaching factor is a function of soil salinity and water salinity. The leaching requirement is defined as: $LR = EC_{iw}/EC_{dw}$ (Soils 6th Edition, Raymond W. Miller / Roy Donahue, p 324) Whereas:
 - LR = Leaching Requirement,
 - EC_{iw} = Electroconductivity of the irrigation water
 - EC_{dw} = Electroconductivity of a soil saturation extract of a 50% decrease in yield



- A common leaching requirement ranges from 10 – 15% to promote healthier and productive landscapes. Grey water is an additional resource encouraged by the State for irrigation use, yet also requires study into leaching requirements.

Recommendation:

1. Keep the ETAF for Special landscape areas at 1.0 for recycled or alternate water resources until further study is done regarding the effects of leaching requirement with recycled water.

ASIC Discussion - Special Landscape Areas

- We support the addition of greywater and collected rain water for the designation of Special Landscape Area. In some areas of the State, there is not sufficient rainwater to sustain even a low water use landscape without the supplement of potable water. Although these collection systems will offset the need for potable water and reduce demand, they cannot be self-sufficient.

Recommendation:

1. Add greywater and collected rain water into the designation for Special landscape Area and all the offset of the alternate water resource to be removed from the Estimated Total Water Use to allow the benefit of its introduction and expense.

ASIC Discussion - Turfgrass slope limitations:

- Turf areas can be very functional at slopes greater than 10%. Amphitheatre and sloped turf areas are utilized in parks for stages, concerts, plays, etc. The functionality of these areas is a tribute to the ability of the designer and the user. Limitations on the creativity of outdoor environments and active use areas should not be limited by current understanding of water use efficiency.

Recommendation:

1. Do not change the turfgrass use on slopes to less than 25%.

ASIC Discussion - Irrigation Efficiency:

- The time, expense and lack of certified auditors to maintain pace with statewide construction and rehabilitation projects is exorbitant. In many instances, waiting for a



certification can hold up Certificates of Occupancy and delay commerce. A professional member of the American Society of Irrigation Consultants, Certified Irrigation Designer and Certified Landscape Irrigation Auditor and a Registered Landscape Architect are educated and competent to self-certify that an installation of their own design has no overspray and runoff.

Recommendations:

1. To continue with the spirit of reduction of water runoff, revise the requirement to allow a Professional member of American Society of Irrigation Consultants, Certified Irrigation Designer, Certified Irrigation Auditor or a Registered Landscape Architect be permitted to conduct an irrigation audit and verify no overspray or runoff occur.
2. Add a provision of a penalty for overuse will better initiate immediate alteration of existing irrigation methods in addition to sustaining maintenance improvements and responsibilities – including runoff and over spray

ASIC Discussion - State Facility Leadership

Recommendations:

1. The State should employ the latest irrigation technology and design expertise as well as California friendly landscaping into State owned projects.
2. Section 3.6 (d): Professional members of ASIC and those holding IA certifications should be considered in the bid approval process.

Section 7.2: Complimentary Policies and Regulations

ASIC Discussion

- We agree that oversight by the local agency needs to occur, but not in agreement a permit should be required. Not all local agencies have adopted the State MWELO requirements as written by the State, and thus would be problematic.
- Some agency don't have a process to permit or collect fees to plan check, inspect, and audit this type of installation work to existing sites unless trigger by a building permit in their codes.



Recommendations:

1. This is not a realistic proposal as local agencies don't have the manpower or budget to review plans, inspect, etc.
2. Enforce the current ordinances until you have a results based metric before adding additional layers of regulation and enforcement.
3. Permitting and added layer of soft costs may discourage positive water saving upgrades to landscapes and irrigation.

Section 7.7: Upgrades to CIMIS

ASIC Discussion

- We agree more CIMIS sites need to be installed through the State and especially in Southern California with many micro climates.
- All CIMIS sites should be fully funded to keep each site operational and maintained.
- Quick maintenance of sites when a problem arises should be a top priority, since more and more weather based controllers use this data in calculating schedules.
- We also agree that an easier interface dashboard approach to locating CIMIS sites and information should be incorporated into the system.

Section 8.1: Certification of Professionals

ASIC Discussion

- We agree that a certification program is needed for all businesses that design, install, manage, audit and repair landscape irrigation systems.
- Irrigation design, installation, management, audits and maintenance require unique skill sets and certification should be appropriate for the task. There should also be certification specific to irrigation and not as part of a broader certification such as landscape maintenance.



Recommendations:

1. The Irrigation Association (IA) currently has comprehensive irrigation certification programs available and should be utilized.
2. Section 8.1.4: add “irrigation professionals” to the solicitation list.
3. The ITP should include questions in the C-27 exam that address irrigation in a comprehensive way.

Section 9: Public Perceptions and Social Norms

ASIC Discussion

A checklist should be developed to ascertain where improvements can be made to improve irrigation system efficiency. We feel most owners will be receptive to making simple improvements or system adjustments if they have the knowledge to do so.

Recommendations:

1. Section 9.1 Add: “Irrigation systems in addition to horticultural services.”
2. Section 9.2(a) Add: “Irrigation Professionals”
3. Section 9.2(d) Identify a process to identify basic steps that can be taken to improve irrigation efficiency and effectiveness, such as a checklist.

Section 10: Research and Documentation Needs and Support

ASIC Discussion

We agree with the need for additional research and study to help quantify and study results of required increases in irrigation efficiencies and decreases in landscape water budgets. There should be an emphasis that the research be conducted on ornamental landscape plants. Large amounts of research on water conservation and drought tolerance in turf have already been conducted at the university level whereas fewer studies have been conducted on ornamentals.



Respectfully submitted,

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