Limitations of the powers of a state of emergency mute the point of changing the permitting process.

This will be as brief and concise as one can make a complicated discussion of engineering and substantive due process. First, I'm not an active member of the bar but I describe myself by terms that irritate lawyers and make engineers smile. First, I have engineering degrees and a law degree which gives everyone two reason to hate me. Second, I am not lawyer but an engineer with a bar card. This statement cements lawyers into hating me too. This sums my actual legal advice into the Shakespearian misquote that there is something rotten in Denmark. This in **not** legal advice but notification to all that I suggest a more legalistic mind review the intersection of engineering as property and the substantive due process rights inherent in all property.

Governor executive order authorized a review of the model ordinance and to suggest updating the ordinance. The Governor cited only Government code section 8571.

> 8571. **During** a state of war emergency or **a state of emergency** the Governor **may suspend any regulatory statute**, or statute prescribing the procedure for conduct of state business, or the orders, rules, or regulations of any state agency, including subdivision (d) of Section 1253 of the Unemployment Insurance Code, where the Governor determines and declares that strict compliance with any statute, order, rule, or regulation would in any way prevent, **hinder, or delay the mitigation of the effects of the emergency.**

However, equally important is the time limit imposed.

> 8567. (b) Orders and **regulations**, or amendments or rescissions thereof **issued during a state of war emergency or state of emergency shall** be in writing and shall take effect immediately upon their issuance. Whenever the state of war emergency or state of **emergency has been terminated, the orders and regulations shall be of no further force or effect.**

The model ordinance is not an emergency measure. The ordinance serves as a permitting standard by in which the long term effect is to reduce the footprint of new and remodel construction project. This is a noble goal in which many engineers, architects and consulting professionals invested over 5 years of contributions and their lives to develop the best management practices.

This process serves as an end run around the professionals that obtained scientific knowledge thru combinations of educational programs and intensive practical experience. Groups, unhappy with the basic science of landscaping and irrigation, are attempting to abuse the emergency of the drought to

over throw the best and the brightest scientific minds for their own narrow minded purposes. Since the regulation created will have no further force or effect by law in a few months if the expected El Niño system continues as predicted through the winter and floods California, the question is raised.

Can changes to a permitting process even be considered? The changes can only affect the planning process. The construction timing of any landscape requiring a permit is measured in years. Thus, the scheduled actual construction and water savings regulation extend past the state of emergency. The regulations shall be of no further force or effect. While a single rain season will not refill the reserves, rain or better stated snow pack eliminates the state of emergency. The drought concerns remain into the foreseeable future but the state of emergency ends in March under most scenarios especially with the present El Niño system that has developed.

Second, the irrigation changes are scientifically flawed.

<u>IE .85 for residential and 0.92 for commercial</u>:

The irrigation has a design phase, an installation phase and, the biggest problem area, continuation maintenance. During the original process for the original model ordinance much time was spent on how to measure the irrigation efficiency. DWR proposed a formula that is widely considered to be questionable science. The formula required a near perfect design. Yet, inclusion of the overly demanding formula called for best possible IE, the 71% efficiency. Now, a mere 5 years later, DWR is going to ignore the highest possible IE by their formula and demand 20% increase in the IE. Designers cannot break the physic of soil mechanics or hydraulic flow. According the representative of completing product manufacturers, even with 100% uniformity coverage; which is against the law of physics; the 92% cannot be achieved. The DWR formula would require better than perfect uniformity. This is despite irremovable variation with the many variables of any equipment and any circumstances. 71% is an unreasonable expectation of success. 85% requires a miracle. 91% requires God to rewrite the laws of physics.

The construction and the maintenance issue that were ignored in DWR have not improved either. During the debate over the original model ordinance the question was raised “how can the design IE, as well as other problem during construction, be the construction IE when the builder, owner and city make changes throughout the construction. The area and shape of the landscape morph on every major project with the possible exception of parks. The designer does not redesign as the property molds into something different. This not account for in the 71% IE and causes the actual IE to be very much lower than the design. The logic at the time was simple. The model ordinance requires the redesign on any changes but that is not occurring. According to the irrigation designers, the true IE is still in the 65% range. This change did not save any water.

Finally, the maintenance instructions are subject to lowest common denominator. The people maintaining the systems are subject to the business cycles that determines the maintenance. The owner replaces horticultural and irrigation maintenance with longer runtimes and more chemicals. The

lowest common denominator is the lowest bidder will perform the tasks assigned in the contract which are not the tasks assigned by the designer or the product manufacturer.

The net result is the 71% IE as written results in 65% IE. The Residential Runoff Reduction Study showed that irrigation management is the key to water savings. The savings with ET controller operated by water managers will reduce usage to near the ET values. This provides greater actual savings and functionally a proven success. Changing the IE provides no actual savings and over the last 5 years of the original model ordinance, there is no supporting evidence that the original changes save the volume of water that ET controllers with water managers can.

Water meters, pressure regulation and Flow sensors

The new wording or requirements pressure regulation is a step backwards. The new wording allows a bell pressure regulator on the main and the wording is satisfied. The previous wording place the burden the designer to show that proper pressure calculations and would make the designer liable to the customer for not considering the alternatives. However, a water manager would note misting or shallow throws. The manager could adjust pressure for such problems.

Water meter will not produce any results. The metering or submetering of landscapes has been an active concern of the conservation departments since the early 1990's and as former conservation specialist that provided meter reading software, I can say that the meter is useless unless someone is forced to read the meter on a weekly basis. The meter will be added and not a soul will ever read the meter unless there is a water manager involved with the operation of the system.

Flow sensors have been used on large landscape for years. However, the success is related to central control system like Calsense, Rainbird, Toro, Hunter and other small companies products. The flow is worth unless part of a water management system.

These items are poorly written. Returning the water managers and ET controller, the water saving are available. However, adding bells and whistles to the system that no one hears is like Shakespeare writing his plays in the sand below the tide line. Both would a waste and little more than an exercise in futility.

.75 inches per hour precipitation rate

This idea is an insult to science and engineer. It is the magic number approach used by uninformed people. People believe that a value pulled from another use in this case the precip rate for steep slopes applies to other applications.

First, the effective precip rate of sprayheads is 1.8 in/hr. The basic intake rates of different soil are well known. The 1.8 in/hr precip rate coincides with the full range of soils. Since the soil varies on any site,

the 1.8 in/hr target the medium soil. Yet, 1.8 in/hr services the purpose of coverage without runoff with proper irrigation system design.

Thus, we turn to the .75 in/hr for a steep slope. Soil studies dating back to the 1930's prove that a steep slope reduces the intake rate by 50%. This is effectively the same as a 1.5 in/hr. Now, we adjust for the reduced coverage as the sprayhead is tilted. This increases the coverage area and uphill angle subjects the throw to additional gravity vectors. The combined factors adjust the effective precip rate by an additional 20%. That adds 0.3 in/hr to the 1.5 in/hr. The sum brings the effective precip rate to 1.8 in/hr. Thus, .75 in/hr breaks the rules established in freshman year to every Irrigation science and engineering student.

Why is the correct rate better than a lower rate? Each emitter's precip rate varies exponentially with distance. This is especially true with drip and microspray. Thus, low flow irrigation clusters emitters to increase the precip to match the soil intake. While the flow rate is low, the precip rate close to the emitter is near the 1.8 in/hr. However, the precip decrease rapidly at a longer distance because of the flow rate. All irrigation products are design to handle a range of landscape conditions.

Conclusion

If a single solution could save all the water, you would not need certified designers and certified water managers. These changes will not save water and create conflict with new stormwater management regulations, water retention and other environmental concerns. The answer lies in the areas removed from the original model ordinance, water management.