

From: "Jim Soules" <jim@soulescompany.com>
To: 2020Comments@waterboards.ca.gov
Date: Fri, May 22, 2009 11:38 AM
Subject: 20x2020 Comment

Please find attached a memo from me as input to the 20x2020 Water Conservation Plan.

Since I am a professional consultant I request this not just be considered "citizen" input, but perhaps refer to me as a "green building consultant".

I will not be able to attend the May 29th workshop.

I look forward to some progressive results.

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May 21, 2009

Dear Members of the 20x2020 Task Force,

I appreciate the opportunity to comment on the April 30, 2009 draft 20x2020 Water Conservation Plan. I am a green homebuilder that returned to California last year from Seattle, WA where my innovative “green, smart growth” urban infill projects (www.soulescompany.com) received national and regional awards. I now live and work in Venice, CA. I have now shifted my work to supporting emerging innovative green technologies for the built environment.

I have been following water conservation issues in California and commend the team for working towards a comprehensive water conservation policy – it is very fragmented now. I also agree with the general conclusions that minor tweaking of codes and standards will not achieve the desired result. **But of even more importance is your “Year 2020 and Beyond” statement that “success relies on a fundamental revolution of the way Californians (including regulators) view water”.**

I would like to offer the following suggestions on revolutionary steps that can be implemented today:

ON-SITE TREATMENT OF GRAYWATER AND HARVESTED RAINWATER NEEDS TO BE IN THE PLAN

Oregon is Now Doing It! The State of Oregon Plumbing Code now allows on-site treatment of graywater and harvested rainwater with listed devices called “Water Conservation Systems”. I refer you to this Oregon Building Codes Division “green building” website: <http://www.cbs.state.or.us/external/bcd/programs/green.html#sam> Then click on each of the Statewide Alternate Codes (SAM’s). The water conservation systems must be listed by a national agency such as IAPMO or NSF and the listing includes conditions such as type or reuse, volumes, owner’s manuals, etc. This is a great model for all states to encourage innovation – just like advanced septic systems let NSF establish a national standard and manufacturers submit equipment for rigorous testing against the standard – then local building officials know what is safe, and manufacturers have an established standard they need to meet. And of course backflow devices are required at the meter to make sure if any cross-connection takes places there will be no harm to potable public supply. Oregon also requires that purple pipe be used for all types of treated water – they are not limiting purple dual plumbing to just municipal provided recycle water like CA does now. The lack of uniformity of pipe colors will make CA out of step with the rest of the nation, and the desired pipe may be hard to find and more expensive in CA. And while looking at the Oregon Building Codes Division website notice there is a SAM to allow harvested rainwater as potable water! There a few other Sam’s that will be of interest to some of the team.

Australia Has Been Doing it For Years Because many areas of Australia reached crisis water shortages ten years ago it is federal and state policy to promote (rebates) and certify appliance like devices for single dwellings as well as multifamily/commercial buildings to treat graywater on-site to established water quality standards for toilet flushing, clothes washing and surface

irrigation (limited spray distance). The objective is a 40% reduction in potable water use – that is significant. I refer you to this State of New South Wales (NSW) document for an overview: http://www.waterforlife.nsw.gov.au/_data/assets/pdf_file/0005/9923/Management_of_Private_Recycled_Water_Schemes.pdf I refer you to the NSW Health “Domestic Greywater Treatment Systems (DGTS) Accreditation Guidelines” http://www.health.nsw.gov.au/resources/publichealth/environment/water/greywater_pdf.asp which details the water quality standards that must reliably be produced by single dwelling devices as well as failure default requirements, servicing requirements, life expectancy, etc. This is not graywater diversion – these are high tech devices with micro processors, backflushing to sewer, etc. In addition federal and state policy encourages and provides incentives for commercial on-site graywater treatment systems where water source and use are different to meet a higher, tertiary like water quality. And after years the Australians seem to be pretty healthy. It would be a good idea to connect with Australia.

Need Clarity That On-Site Treated Water May Be Used for Private Irrigation

Currently SWRCB is considering a Statewide General Permit for the use of agency central plant treated and main distributed Recycled Water. But you know that agency mains will probably not reach 80 or more per cent of urban development in the next fifty years, and most existing homes do not have dual pipe systems. But just like the Australians know properly treated on-site non-potable water is safe for landscape irrigation. In Australia the use of potable water is prohibited for landscape irrigation in many cities, and homeowners are purchasing and installing the Oregon “water conservation systems” (CWS) in order to retain their landscaping – but of course the CWS also reduces water consumption with its use in toilet flushing and clothes washing. It is essential that water conservation policy include an integrated code structure for the use of on-site treated water for landscape irrigation – Californians want some green gardens in their lives – it will sell.

On-Site Treatment of Graywater and Harvested Rainwater is Good “Climate Change” Policy.

As you well know there is a great deal of embodied energy in transporting potable water, treating blackwater for outfall or as recycled water and pumping recycled water back through mains. There will also be a great deal of energy and other environmental impacts from digging up urban streets to install recycled water mains. And with the high capital and maintenance costs of recycled water treatment plants and distribution systems it is unlikely recycled water mains will reach 80% of urban areas in fifty years much less ten years. It requires much less energy to treat and use water on-site. And because one is starting with non-blackwater infested water it is easier to treat and obtain the desired water quality.

INTEGRATION WITH GREEN BUILDING AND FORWARD-THINKING INNOVATION NEEDS TO BE IN PLAN

CA Green Building Program It seems prudent to integrate water conservation with all forms of the CA and local agency green building programs. It doesn’t appear that DHCD that administers CA building codes is included in the team. It would seem prudent and economical to establish a DHCD Green Building code initiative like Oregon. In many California progressive cities and counties active, innovative green building programs are operating in spite of state policy and regulations – particularly in regards to regional SWCRB policy regarding on-site treated water.

Water Independent Buildings Yes they are coming and need to part of a long range plan. To gain points today for a top-rated LEED building or home requires a significant reduction in water

consumption which can only be achieved by on-site treatment of graywater and/or harvested rainwater. And beyond LEED the Cascadia Region Green Building Council (WA,OR,BC) www.cascadiagbc.org has created a new standard – the Living Building <http://www.livingshelter.com/Lb-challenge-v1-2.pdf> . A Living Building has many requirements one of which is being 100% water independent – fill up with main water once – so how is that for conservation. And several buildings are being built that closely meet the challenge – but not in California.

Start the Revolution – Encourage Innovation And as an example of how to encourage innovation the City of Portland has established an “Alternative Technology Advisory Committee” within the city building department to review and recommend new technologies for an alternative permit: <http://www.portlandonline.com/bds/index.cfm?c=48661>

Setup Procedure for Demonstration Projects Rather than spend years considering an across the board code change it is much more prudent to encourage “demonstration projects” – try a few onsite treatment devices and if they don’t work require the device to be removed or replaced. It would be very helpful if the state worked with cities and counties to support demonstration projects.

TAKE BUCKMINSTER FULLER’S ADVICE “You never change things by fighting existing reality. To change something, build a new model that makes the existing model obsolete.”

AND FROM PSYCHOLOGY TODAY “Appeals to conscience or pocketbook won’t turn people green as well as social pressure does. Presented with reasons like saving the Earth, being a good citizen, and saving money as homeowners – though they won’t admit it – cut energy usage only when they think their neighbors are already doing it.”

I hope this is helpful. Thank you for considering these ideas.

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