

Plumbing-Heating-Cooling Contractors of California

To: Lori Andreoni, Clerk of the Air Resources Board

From: Steve Lehtonen, CEO California's Plumbing, Heating, Cooling Contractors (CAPHCC)

Date: May 2, 2007

RE: Proposed Early Action Measure by the CAPHCC GREENPLUMBERS®

The attached is a proposal to consider for funding as part of the early action measures to impact climate change in California. We believe that by retraining plumbers through their contractor employers and making training available to all plumbers regardless of their affiliation, we can impact climate change. The program would be based upon a successful program that has been in operation in Australia and has already trained half the plumbers in the country to adopt new procedures and technologies that have decreased the effects of climate change.

These comments and proposal is filed on behalf of the California's Plumbing, Heating and Cooling Contractors (CAPHCC), which represents over 400 businesses in California that provide service plumbers to households, install heating and ventilating systems in large commercial projects as well as in single dwellings throughout the state. This organization is affiliated with the national association, which participates in setting standards for the industry and is affiliated worldwide with similar associations in other countries. Since the California affiliate is one of the largest in the nation, it is often able to set policy for the rest of the country. Our organization while forward thinking in many areas has not until recently become involved in the issue of climate change, global warming and the impacts of these changes on water supply.

Last year, the organization became aware of a successful program founded by the affiliate in Australia to address the issue of climate change. The Stern Review, published in Britain (http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm), is an exhaustive review of climate change worldwide and discusses Australia and California in the same section. It seemed sensible to contact our sister organization in Australia to find out about their efforts in this area. What we found was a very successful program to retrain plumbers about new technology that has been developed to combat climate change. This program makes plumbers the ambassadors to the home in order to impact positive individual change as well as to affect change through the use of newly developed technologies.

California's Plumbing, Heating, Cooling Contractors (CAPHCC) have just concluded negotiations that will allow us to use the enormously successful and effective GreenPlumbers® program of Australia in California. This program developed in Australia and now available for use in California is a national training and accreditation program developed in 1999 by the

Master Plumbers & Mechanical Services Association of Australia to assist plumbers in understanding their role in the environment and public health.

Originally funded by Australia's national government, the initiative seeks to reduce greenhouse gas emissions in heating, cooling and hot water appliances. The training of existing plumbers and those entering the field includes:

- water conservation,
- reduction in greenhouse gas emissions,
- alternative energy sources for hot water heating,
- alternative water sources, and
- residential and commercial buildings water and energy auditing.

The program and the emerging technologies have been a major catalyst for change in plumbing regulations and have reduced water consumption in Australia up to 50% from 1990 levels. Major industry leaders in Australia have actively supported the program and consumers have benefited from significant savings in operating costs and from environmental improvements.

California and Australia both face similar problems in water management, increasing population and climate change. California's Plumbing, Heating, Cooling Contractors believe that implementing the *GreenPlumbers*® program can help meet and mitigate these challenges.

Plumbing contractors serve almost 100,000 households each and every day. Our goal is to train and deploy an army of thousands of residential "green" plumbers to promote the benefits of water conservation and the reduction of GHG emissions. The plan addresses an ongoing cultural change for both plumbers and consumers well past the four-year project cycle. As a grassroots effort, our plan is a voluntary one that can be implemented quickly without legislation or regulation.

Aware of the time constraints of the early action measures, we are attaching a submission but we are open to further discussion and changes based upon your needs. CAPHCC is open to reviewing the budget and making changes to the proposal that you may find necessary. We would be pleased to provide further evidence of savings and conservation that make the capital expenditures worthwhile.



Stephen J. Lohman
KC

Business Case for a Proposed PHCC **GreenPlumbers**[®] Training, Accreditation and Community Communication Program

July 2007 to June 2011 - 4 year program

to the California Air Resources Board

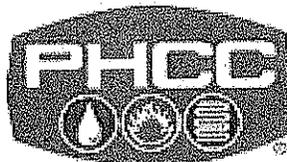
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Early Actions to Mitigate Climate Change in California

Prepared by: Master Plumbers' and Mechanical Services Association of Australia (MPMSAA)

For: Plumbing Heating Cooling Contractors Association (PHCC)

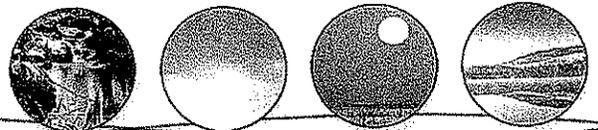
April 2007



**PLUMBING-HEATING-COOLING
CONTRACTORS ASSOCIATION**



GreenPlumbers[®]
CREATING SUSTAINABLE COMMUNITIES



greenplumbers.com

Business Case

The Plumbing Heating and Cooling Contractors of California (PHCC) is an association organized as a not for profit corporation chartered in 1901. Its purpose is to provide legislative representation, business management, and technical seminars for its members. It also provides input to the regulating codes regarding the industry, the association promotes the interests of the association and the advancement of education of members, on this basis we submit this business case.

The objective of this business case is to create urban water efficiencies by establishing an Accreditation scheme to increase knowledge and build capacity for 15,000 plus plumbing installers that enables consistent design and installation of urban water saving fixtures and stormwater / rainwater.

The objectives will be achieved through using international best practice guidelines and integrated sustainable plumbing systems within a 4 year timeframe, commencing in July 2007. Australia and California have similar climates and water resources available, and both face similar water management problems with increasing population (California expecting another 15 million people by 2025) and potentially reduced rainfall due to climate change.

To support the uptake in domestic and commercial settings of water saving fixtures and stormwater (rainwater) PHCC will engage with and educate plumbing installers, local government and the wider community in valuing the benefits of water saving. The project will develop a consistent approach that will enable data to assist in the measurement of water savings achieved through this project.

A 4 year program is proposed to deliver workshops to 15,000 plumbers supported by updated technical solutions for new water saving technologies including dual flush toilets, water flow control devices, water saving appliances, rainwater technology and changing consumer and plumbing behavior

The program will include current local regulatory, technical and consumer barriers and provide best practice guidelines for water saving technologies and will include

60 Community awareness workshops in appropriate locations of 2 hour duration covering "Managing your Water". These programs would be customized and delivered with the support of local government county's, and include community promotion and awareness program to support existing government programs backed up with a Technical Advisory Centre and website.

To achieve this objective, funding is sought with financial and in kind support from industry and local government(s) which assist in the promotion of this initiative.

Water savings can be achieved!

Australia and California have similar climates and water resources available, with both face similar water management problems and increasing population (California expecting another 15 million people by 2025) and potentially reduced rainfall due to climate change.

Californians consume on average 180 -250 gallons per person per day
(200g/d = 73,000g/y)

Currently international best practice has identified that householders in countries where water saving technologies, consumer behavior and a informed plumbing industry consume 40% less water than in California.

As an example, Australian urban water consumption on average is 50 -80 gallons/p/p

Australia is the driest habitable continent in the world, however rainfall (precipitation) varies greatly across the country, over the past 20 years the Master Plumbers and Mechanical Services Association of Australia (MPMSAA) a like organization to PHCC have implemented a number of water saving programs that have assisted water authorities and governments to achieve a significant water usage reduction through the use of new technologies, behavioral change of plumbing practitioners which is achieved through environmentally sustainable education and training.

Current Australian strategies include the establishment of the National training and accreditation program GreenPlumbers® which commenced in 1999 as a federally funded government initiative for reducing greenhouse gas emissions in heating, cooling and hot water appliances. This program has been expanded to training

Caring for our water – water conservation

Climate Care - reduction in greenhouse gas emissions

Solar hot water - alternative energy sources for hot water heating.

Water efficient technology – alternative water sources

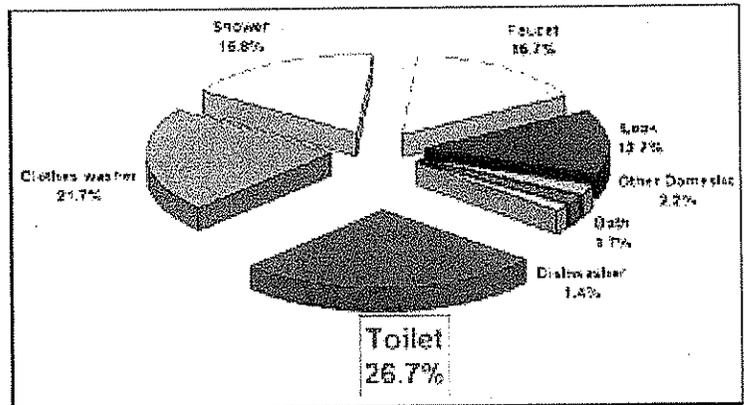
Inspection reports – residential and commercial buildings water and energy auditing

This program and emerging technologies has been a major catalyst for change in plumbing regulations and has assisted the plumbing industry with implementing measurable water savings, that has delivered in reducing water consumption by up to 50% on 1990 levels.

California Water Statistics

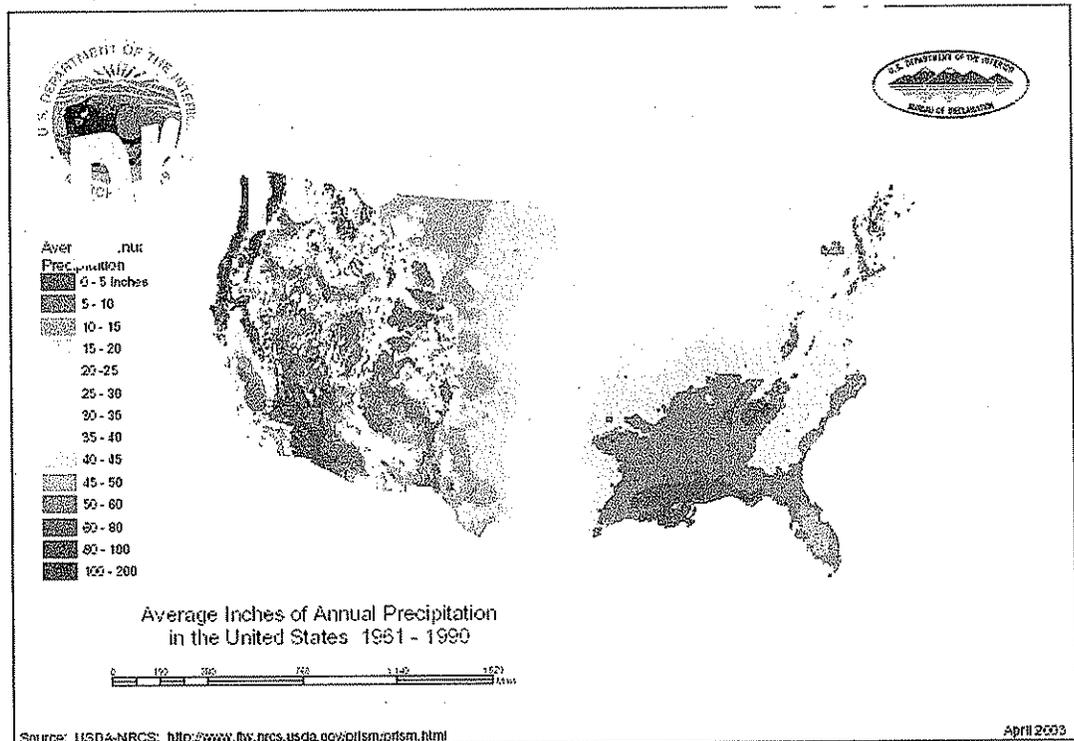
Current indoor water consumption

Toilet	26.7%
Clothes washer	21.7%
Shower	15.8%
Faucet	16.7%
Leaks	13.7%
Dish washer	1.4%
Bath	1.7%
Other	2.2%



USA National indoor per capita use percent by fixture (Mayer, et. al. 1999)

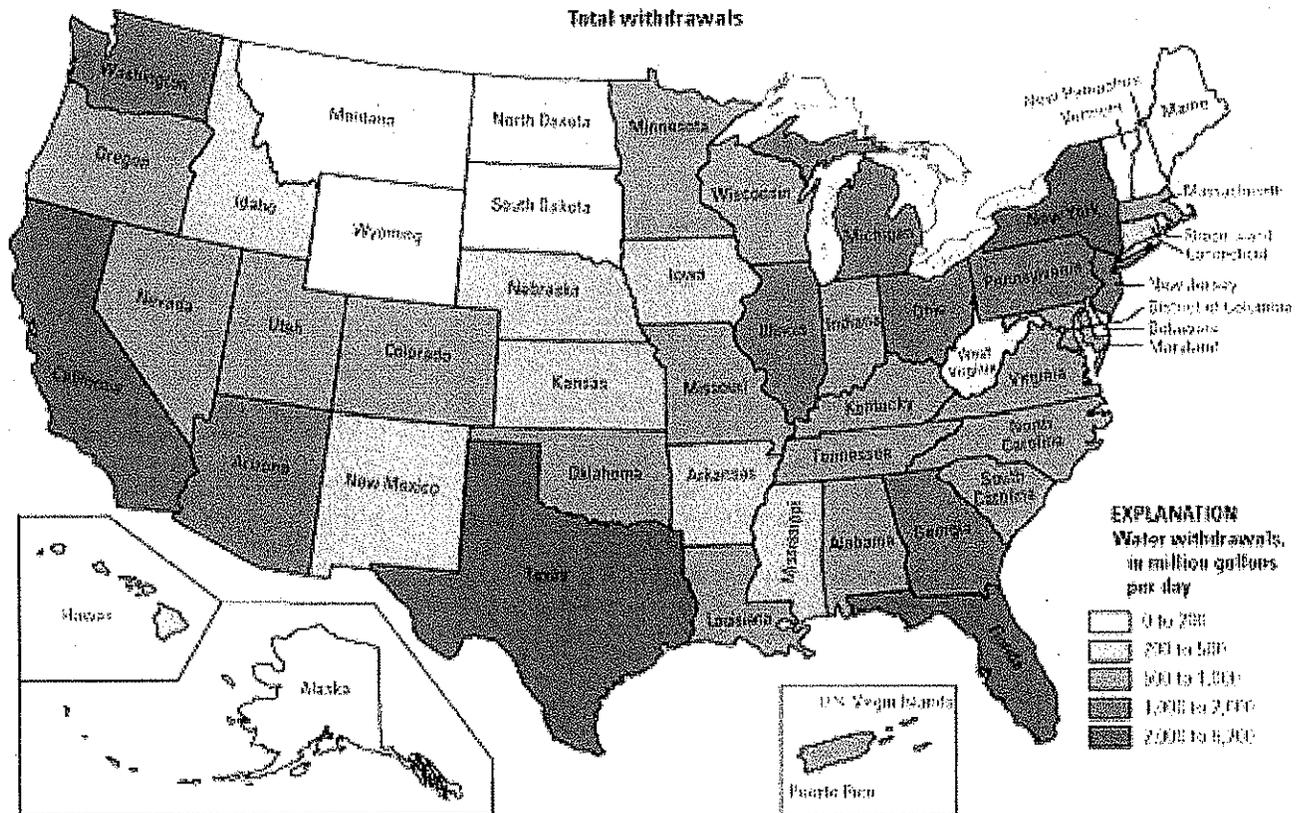
Rainfall especially in Southern California is very low between 5 – 30 inches per year, however in the northern part of the State there is good potential for rainwater harvesting where rainwater could be substituted as an alternative supply for activities such as toilet flushing, hot water heating and garden irrigation.



States with the Largest Public Supply Withdrawals

Source: USGS Circular 1268, 15 figures, 14 tables (released March 2004 and revised April and May 2004)

State	Total Withdrawals (mg/d)
California	6120
Texas	4230
New York	2563
Florida	2437
Illinois	1763
Ohio	1466
Pennsylvania	1462
Georgia	1246
Michigan	1143
Arizona	1082



Proposed 4 year Budget

Activities	Cost
Administration Research – Investigate and report on current barriers to rainwater reuse Development / customization and Update of Training materials Registration of participants Process for issuing qualifications / GreenPlumber Accreditation Website updates Communications Project measurement / surveys Project Management / staff salaries	\$463,000
Printing & Stationary (based on 15000 plumbers) Training materials Certificates Postage Promotional materials	\$320,000
Training Delivery – 400+ workshops over 4 years Venue hire, refreshments Training delivery & equipment Training assessment Community information sessions delivery – 60 information sessions over 4 years On Line Development and training delivery <i>In kind support</i> Local Government Support (Venue, promotional and catering support) Manufacturers technical presentations & installation materials, promotion support (based on \$1500/workshop 500+ in total) Industry Financial support (Manufacturers technical presentations & installation materials, promotion support –500+ workshops based on \$1000/workshop)	\$1,100,000 (\$1,065,000) (\$350,000)
Marketing ,Promotion & Advertising Technical Advisory Call centre support for community and industry advice. (Registration, consumer and plumber enquires) Project measurement / surveys	\$290,000 \$190,000
Industry support (in kind & financial)	\$1,385,000 (37%)
Funding assistance requested	\$2,363,000 (63%)
Total 4 year budget	\$3,748,000
Proposed funding model 2007/08 - \$886,125 (inclusive of seed funding) 2008/09 – \$590,750 2009/10 – \$590,750 2010/11 – \$295,375	