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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

In the Matter of the Application of California-American Water Company (U 210 W) for a Certificate of Public Convenience and Necessity to Construct and Operate its Coastal Water Project to Resolve the Long-Term Water Supply Deficit in its Monterey District and to Recover All Present and Future Costs in Connection Therewith in Rates.	)	Application 04-09-019 (Filed September 20, 2004; Amended July 14, 2005)

PUBLIC TRUST ALLIANCE OPENING BRIEF

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I. INTRODUCTION

Whiskey is for drinking; water is for fighting over.
[quote attributed to Mark Twain]

The Regional Project is a CEQA alternative. It is the subject of a settlement agreement joined by most of the parties to this action. But perhaps most important, the Regional Project is also a story. The project was created against a backdrop of intransigence, turf protection, and repeated, failed proposals to resolve the Monterey area's ongoing water shortages and ecosystem damage. It resulted, remarkably, in a framework for cooperation.

A number of unusual things happened as various stakeholders addressed the water crisis and the State Water Resources Control Board's increasing impatience with the status quo. California American Water Company decided it did not want to build its Moss Landing project that, apparently, "nobody wanted." Marina Coast Water District ("MCWD") took a long view and a collaborative "good neighbor" approach to allocating benefits and burdens. MCWD might have made an easy objection that it was assuming most of the environmental burdens of a desalination plant while sending most of the increasingly valuable desal water out of its area. Instead, it focused on finding long-term synergies, moving past an immediate, narrow agenda of looking for ways in which it might portray itself as being somehow shortchanged. Monterey County Water Resources Agency took a similar approach, reaching a difficult balance between being a good neighbor, complying with legal constraints about taking groundwater out of the basin, and protecting investments made by its constituents—gaining a high degree of cooperation from agricultural interests that might easily have been completely intransigent.

In short, the project took on an ethos and a life of its own. The project served as an incubator for constructive, thoughtful, collaborative work among stakeholders, with a strong

component of citizen participation. It offered an empowering, energizing framework. This kind of framework is wholly consistent with the premise animating the public trust doctrine: that resources belong to "the people," to be managed under a long-term, sustainable, stewardship approach for the benefit of the people, including future generations of ratepayers whose concerns encompass more than their utility bills.

We think these attributes of the Regional Project represent a broad array of values. They are worth a lot. They go a long way toward reinventing the water supply governance structure for the Monterey region. We would object to a return to "business as usual" in the Monterey area. Such a negative result would cast the Monterey communities into a future limited in social value and derogatory toward environmental quality.

Our brief will address three of the issues identified by the court that relate most closely to our core concerns: boron—what is the impact of second pass technology on costs and public health; cost cap—if a cap is imposed, how should it address environmental/nonmonetized values; ratepayer protection—how might some of the cost control and governance functions can be achieved through a contracting approach.

II. BACKGROUND

A. The Boron Issue: Statutory Background

1. Federal Law

a. The Safe Drinking Water Act

The Safe Drinking Water Act ("SDWA") authorizes the U.S. EPA to set limits on contaminants in public drinking water supply systems. The objective of the SDWA is to protect public health by establishing safe limits (based on the quality of water at the tap) for

contaminants that may have an adverse effect on human health, and to prevent contamination of surface and ground sources of drinking water.[1]

The Act provides for two types of limits. The first is a nonbinding "goal." These maximum contaminant level goals ("MCLG"s) are set at a level at which "no known or anticipated adverse effects" on human health occur. These goals must allow "an adequate margin of safety." 42 U.S.C. § 300g-1(b)(4)(A). The second type of limit is a binding "maximum contaminant level" ("MCL"). These MCLs are set "as close as is feasible" to the health-based goals. 42 U.S.C. § 300g-1(b)(4)(B). "Feasible" means "feasible with the use of the best technology, treatment techniques and other means" that operate effectively in the field. 42 U.S.C. § 300g-1(b)(4)(D). EPA also conducts a cost-benefit analysis and retreats from the maximum feasible level if it determines that the benefits of a stricter standard would not justify the compliance cost. 42 U.S.C. § 1412(b).

The SDWA requires EPA to establish National Primary Drinking Water Regulations ("NPDWR"s) for contaminants that may cause adverse public health effects.[2] The Safe Drinking Water Act also requires EPA to list unregulated contaminants that are known or anticipated to occur in public water systems and may require a national drinking water regulation in the future. Every five years, EPA must publish a list of contaminants called the Contaminant Candidate List (CCL) and decide whether to regulate at least five contaminants from the list. 42 U.S.C. § 1412(b)]. An important underpinning of the process is the EPA) Integrated Risk Information System (IRIS). IRIS is EPA's database on what science has said about the risks of particular chemicals.[3]

[1] See, e.g., EPA website, Safe Drinking Water Act, http://www.epa.gov/agriculture/ldwa.html.
[2] See 40 CFR Part 141.
[3] See EPA website, http://www.epa.gov/iris/.

b. EPA Determinations

Boron was considered in the EPA's second Drinking Water Contaminant Candidate List (CCL2).[4] Based on a survey indicating limited amounts of boron in ground and surface water [not desalinated water], EPA made a determination that it was not necessary to regulate boron with a national primary drinking water regulation (NPDWR).[5]

In the CCL2, the EPA defined a reference dose of 0.2 mg/kg/day (.16 rounded up). A reference dose is "an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime."[6] The reference dose was conservatively estimated based on developmental effects in rats as well as applied uncertainty factors based on the extrapolation of data from animals to humans. EPA also calculated a health reference level (HRL) of 1.4 mg/L or 1,400 µg/L for boron, using the reference dose of 0.2

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[4] 73 Fed. Reg. 44251,44257 (July 30, 2008) (see also Table 1).

[5] EPA, Chapter 3: Boron, REGULATORY DETERMINATIONS SUPPORT DOCUMENT FOR SELECTED CONTAMINANTS FROM THE SECOND DRINKING WATER CONTAMINANT CANDIDATE LIST (CCL 2): PART II: CCL 2 CONTAMINANTS UNDERGOING REGULATORY DETERMINATION (June 2008). EPA evaluated boron occurrence in drinking water using data collected from 989 ground water public water systems (PWSs) by the National Inorganics and Radionuclides Survey (NIRS). Boron was found at levels greater than EPA's Health Reference Level (and ½ the HRL) in several of the ground water systems surveyed by NIRS. The NIRS data indicate that approximately 4.3 percent of the ground water Public Water Systems had detections of boron at levels greater than 700 µg/L (1/2 the HRL), affecting approximately 2.9 percent of the population served by these ground water systems. Approximately 1.7 percent of the ground water PWSs had detections of boron at levels greater than 1,400 µg/L (the HRL), affecting approximately 0.4 percent of the population served by these ground water systems. Because NIRS only investigated ground water systems, the Agency evaluated the results of a survey funded by the American Water Works Association Research Foundation (AwwaRF) to gain a better understanding of the potential occurrence of boron in surface water systems. Of 341 samples analyzed for boron, approximately 67 percent represented ground water sources and 33 percent represented surface water sources. Of the ground water sources, 3.1% had boron concentrations that exceeded the HRL of 1,400 µg/L; the highest observed concentration was approximately 3,300 µg/L. In contrast, none of the surface water sources exceeded the boron HRL of 1,400 µg/L, and the highest concentration in surface water was 345 µg/L. Taking this surface water information into account, the Agency believes the overall occurrence and exposure from both surface and ground water systems together is likely to be lower than the values observed for the NIRS ground water data. Because boron is not likely to occur at levels of concern when considering both surface and ground water systems, the Agency concluded that an NPDWR did not present a meaningful opportunity for health risk reduction.
http:/www.epa.gov/safewater/ccl/pdfs_reg_determine2/report_ccl2_reg2_supportdocument_ch03_boron[1].pdf.

[6] U.S. EPA, Health Effects Support Document for Boron, section 4.3.2, EPA Document Number EPA-822-R-08-002 (January 2008), http:/www.epa.gov/safewater/ccl/pdfs_reg_determine2/healtheffects_ccl2-reg2_boron[1].pdf.

mg/kg-day.[7] EPA noted that there may be sensitive subpopulations, including developing fetuses and individuals with impaired kidney function.

EPA has issued Health Advisories for boron.[8] Health Advisories set forth concentrations of drinking water contaminants at which adverse health effects are not anticipated to occur over specific exposure durations (one-day, ten-days, several years, and a lifetime).

Current EPA Drinking water standards and health advisories for boron[9]:

1-day health advisory for a 10-kg child	3 mg/L (from 4 in 2004)
10-day health advisory for a 10-kg child	3 mg/L (up from .9 in 2004)
Ref. Dose (mg/kg/day)	.2 (up from .09 in 2004)
DWEL (drinking water equiv. level)	7 mg/L (up from 3 in 2004)
Lifetime	6 mg/L (up from .6 in 2004)
10^{-4} Cancer risk	No data
National primary drinking water standards	None

EPA Health Advisories serve as informal technical guidance to assist Federal, State and local officials, and managers of public or community water systems in protecting public health when emergency spills or contamination situations occur. They are not legally enforceable Federal standards. The HAs are subject to change as new information becomes available.[10]

2. State Law

Although the Federal Government does not regulate boron in drinking water or require public drinking water systems to monitor for this contaminant, some states have drinking water

[7] An HRL is a benchmark against which to measure the occurrence data; it is not a Health Advisory guideline. For noncarcinogens such as boron, the HRL is calculated by multiplying the Agency Reference Dose by a 70 kg body weight and a 20 percent default Relative Source Contribution and dividing the product by a drinking water intake of 2 L/day. 73 Fed. Reg. 44251-44261.

[8] EPA Drinking Water Health Advisory for Boron (May 2008) Document Number: 822-R-08-013. http:/www.epa.gov/safewater/ccl/pdfs_reg_determine2/healthadvisory_ccl2-reg2_boron[1].pdf.

[9] EPA, Drinking Water Standards and Health Advisories 8 (Summer 2009). http://www.epa.gov/waterscience/criteria/drinking/dwstandards2009.pdf. Standards and advisories for 2004 at http://www.epa.gov/waterscience/criteria/drinking/dwstandards2004.pdf.

[10] U.S. EPA, Drinking Water Health Advisory for Boron, *supra* note 8, at 1.

standards or guidelines for boron (California, Florida, Maine, Minnesota, New Hampshire and Wisconsin). The State of California has adopted a notification level for boron at 1 mg/L (California Department of Public Health, Drinking Water Notification Levels and Response Levels: An Overview 2007).[11]

III. ARGUMENT

A. Boron: Project Proponents Should Be Permitted to Use Technology that Exceeds Minimum Requirements.

The Water Purchase Agreement ("WPA") contains a provision in 9.7, Water Quality, that addresses boron, which is also a proxy for other pollutants that affect water quality. At 9.7 subsection (b), TDS [total dissolved solids] standards, the WPA states:

> In addition to Legal Requirements, MCWD also recognizes that the Product Water may require treatment to meet reasonable standards of acceptance to MCWD's customers and CAW's customers and to the public. Such Legal Requirements or standards for acceptability may require that, after mixing, the Product Water TDS constituents, including without limitation boron, sodium and chlorides, be further reduced to comply with such standards and a "second pass" treatment of all or a portion of the Product Water may be necessary. Furthermore, regarding boron or other contaminants, the Parties may implement a margin of safety that exceeds the current minimum legal requirements, and may acquire the appropriate technology to achieve this margin of safety. In addition to cost and Legal Requirements, factors that shall be considered in reaching such a decision include the protection of susceptible sub-populations, consistency with Best Industry Practice, anticipation of possible tightening of regulatory standards, evolving technology, the uncertainty levels underlying regulatory standards, and the relative cost-effectiveness of acting proactively vs. retrofitting. After taking into account the foregoing factors, if a second pass or other form of treatment is required to ensure that the applicable standards and/or Legal Requirements will be met, such second

[11] CDPH website at http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Notificationlevels/NotificationLevels.pdf.

> pass or other treatment shall be deemed necessary and reasonable when required to ensure that the applicable standards and/or Legal Requirements will be met.

This provision has been challenged on the ground that it may prove too costly. Technology requirements under the SDWA are based on "feasibility." The concept of feasibility, in turn, is based on the available treatment technology, taking cost into consideration. 42 U.S.C. § 300g-1(b)(4)(D); 42 U.S.C. § 1412(b).

1. Benefits of Second Pass Technology Justify Compliance Cost.

The second pass technology that is contemplated in this provision has several benefits. While many benefits of second pass technology occur in the present, they are even more heavily weighted toward the future, both in the form of (1) driving technology forward and reducing its cost, and (2) protecting children, fetuses, and future generations.

The technical "feasibility" concept that underlies the cost-benefit analysis under the Safe Drinking Water Act is a moving target. The cost-benefit equation changes as evolving desalination technology becomes both more effective and more cost-effective. This is particularly true when demand for technology increases due to increasingly stringent environmental requirements. Industry sources have noted that stringent boron limits have been driving the development of lower-cost boron technologies.[12] Second pass technology is no longer a "gold-plated" standard; it is relatively common in new projects.

Harmful effects of boron exposure are likely to fall most heavily on the young and on future generations; thus, the benefits of using the best technology will benefit them disproportionately. EPA noted in 2008 that studies in laboratory animals conducted by oral

[12] *Id*. See also, Lenntech website, http://www.lenntech.com/processes/desalination/post-treatment/post-treatments/boron-removal.htm#ixzz0eEWTcV2Q.

exposure have identified the developing fetus and the testes as the two most sensitive targets of boron toxicity in multiple species. The testicular effects that have been reported include reduced organ weight and organ:body weight ratio, atrophy, degeneration of the spermatogenic epithelium, impaired spermatogenesis, reduced fertility, and sterility. The mechanism for boron's effect on the testes is not known, but the available data suggest an effect on the Sertoli cell, resulting in altered physiological control of sperm maturation and release. Developmental effects have been reported in mice, rabbits, and rats. The developmental effects that have been reported following boron exposure include high prenatal mortality; reduced fetal body weight; and malformations and variations of the eyes, CNS, cardiovascular system, and axial skeleton. Increased incidences of short rib XIII (a malformation) and wavy rib (a variation), and decreased incidence of rudimentary extra rib on lumbar I (a variation), were the most common anomalies in both rats and mice. Cardiovascular malformations, especially interventricular septal defect, and variations were the frequent anomalies in rabbits. Fail et al. (1998) attributed reduced fetal growth, the most sensitive developmental endpoint, to a general inhibition of mitosis by boric acid, as documented in studies on the mammalian testis, insects, yeast, fungi, bacteria, and viruses.[13]

There are additional issues that might reasonably affect consumer confidence in the current determinations under the Safe Drinking Water Act. EPA's regulatory process under the Safe Drinking Water Act has been slow and cumbersome since the Act was passed.[14] However,

[13] EPA, HEALTH EFFECTS SUPPORT DOCUMENT FOR BORON, *supra* note 6, at 7.5, Synthesis and Evaluation of Major Noncancer Effects and Mode of Action, EPA Document Number EPA-822-R-08-002 January, 2008. [citations omitted]

[14] As enacted in 1974, the SDWA directed EPA to establish national interim primary drinking water standards within 90 days and revise the standards after a National Academy of Sciences study recommended MCLs. EPA promulgated 16 interim standards, based on recommendations of a 1962 U.S. Public Health study. Although the NAs issued its report in 1977, by 1986 EPA had proposed final MCLs for only 8 chemicals. Amendments in 1986 instructed EPA to regulate 83 chemicals by 1989 and to add 25 chemicals to the list by every 3 years after 1989. By

the environmental regulatory process came under particular fire during the George W. Bush administration, which generally expanded the role of industry and government polluters in the regulatory process and delayed or defeated regulation and dissemination of information to the public in some cases.[15] There were allegations of regulatory laxity in protecting public health and the environment across a number of issues and statutory protective schemes, with the scientific community playing a prominent role in the criticism.

These include allegations of EPA being ordered to mislead the public[16] and allegations regarding the doctoring of scientific reports.[17]

January 1991, EPA had promulgated MCLs for 67 of the 83 mandated chemicals and pledged to set new standards for 108 contaminants by 1995, a goal it did not meet. Amendments in 1996 rescinded the provision for regulating 25 chemicals every 3 years and in its place directed EPA to publish a list of contaminants not now subject to regulation but that are known to occur in public water systems (the CCL process) and to decide every 5 years whether to regulate at least 5 contaminants on the list. Once EPA decides to regulate, it has 24 months to propose an MCLG and MCL and another 18 months to promulgate the proposal. Percival et al, Environmental Regulation: Law Science and Policy 480 (3rd Ed. Aspen Law and Business). (In recent years, EPA has consistently determined not to regulate any of the contaminants on the list. Between 2004 and 2008, EPA completed assessments for only 16 substances. The time for completing an assessment of a chemical can range up to ten years. The regulatory process lags behind the rate at which industries introduce new chemicals. The more time that passes, the longer the queue grows. OMB Watch, In Drinking Water, What's Legal Can Be Poisonous (Matthew Media, Dec. 17, 2009), http://www.ombwatch.org/node/10655; OMB Watch, EPA Regains Control of Toxic Chemical Studies (June 2, 2009), http://www.ombwatch.org/node/10066.

[15] One of many examples was the treatment of coal ash waste ponds, which released high levels of boron and other, legally regulated contaminants in drinking water. According to a joint report of Earthjustice and the Environmental Integrity Project, during the Bush Administration, the EPA made a concerted effort to delay the release of a comprehensive EPA risk assessment detailing the dangers that coal ash disposal ponds posed to drinking water. A 2002 screening study, the precursor to EPA's 2007 risk assessment, identified the same astronomical cancer risks and dangers to aquatic life from coal ash dumps, but it was not made public until March 4, 2009—seven years after its publication. Freedom of Information Act requests to EPA during the Bush Administration were denied or resulted in the production of documents with the cancer and noncancer risk estimates blacked out. COMING CLEAN: WHAT EPA KNOWS ABOUT THE DANGERS OF COAL ASH: A SUMMARY OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY'S 2007 HUMAN AND ECOLOGICAL RISK ASSESSMENT OF COAL COMBUSTION WASTES 2 (Report by Environmental Integrity Project and Earthjustice May 2009), http://www.wvgazette.com/static/coal%20tattoo/coalashreport.pdf.

[16] Laurie Garrett, *EPA Misled Public on 9/11 Pollution: White House Ordered False Assurance on Air Quality, Report Says*, LONG ISLAND NY NEWSDAY (Aug. 23, 2003), available at http://www.commondreams.org/headlines03/0823-03.htm.

[17] Distorting and Suppressing Climate Change Research, Scientific Integrity in Policymaking, http://www.webexhibits.org/bush/5.html (Report of the Union of Concerned Scientists). See also, other tabs/links on this page.

Criticism extended to the IRIS database, the scientific underpinning for EPA regulation. According to a congressional report, by the end of the Bush Administration, EPA's IRIS process was broken: The Bush Administration's Office of Information and Regulatory Affairs (OIRA) used its position at the top of the Executive branch to force EPA to undergo a multi-year, interagency review ostensibly designed to establish a new process for creating new or updated IRIS database entries. At the same time, OIRA both supplied detailed scientific challenges to proposed IRIS entries and coordinated scientific comment from agencies across the government. OIRA's own scientific comments on proposed listings included detailed editorial comments that would have changed the import and meaning of the scientific findings in EPA's documents. All of this was done in secret, without any acknowledgment to the public or the Congress that OIRA was calling the shots. As a result of the IRIS process breaking down, public health offices across the country and around the world, as well as concerned citizens, were left without the reliable, expanding, up-to-date database of chemical risks that they had come to rely upon, in the view of the congressional report.[18]

A regulatory roadblock was also apparent in the CCL process. Not one chemical has been added to the list of chemicals regulated by the Safe Drinking Water Act since 2000. In 2003 and 2005, EPA determined that no regulation was needed for contaminants on the CCL list.[19] Thus, of the more than 60,000 chemicals used within the United States, only 91 contaminants are regulated by the Safe Drinking Water Act.[20]

[18] Nipping IRIS in the Bud: Suppression of Environmental Science by the Bush Administration's Office of Management and Budget (Report by the Majority Staff of the Subcommittee on Investigations and Oversight of the Committee on Science and Technology House of Representatives to Subcommittee Chairman Brad Miller, June 11, 2009), http://science.house.gov/publications/caucus_detail.aspx?NewsID=2499.

[19] See OMB Watch, In Drinking Water, What's Legal Can Be Poisonous (Matthew Media 12/17/2009), http://www.ombwatch.org/node/10655. See also EPA website,

B. GENERAL REGULATORY UNCERTAINTIES

1. Definitions Pertinent to Setting Health Levels

"Risk assessment" refers to a formal or informal procedure producing a quantitative estimate of environmental risk. For example, risk assessment is often used to estimate the expected rate of illness or death in a population exposed to a hazardous chemical.

"Risk analysis" is used more broadly to include quantitative and qualitative evaluation of all relevant attributes of environmental hazards, risks, adverse effects, events and conditions that lead to or modify adverse effects, and populations or environments that influence or experience adverse effects.

"Risk management" is the process of deciding what should be done about a hazard, the population exposed, or adverse effects, implementing the decision, and evaluating the results. It also refers to decision making at the program or agency level, for example, deciding which hazards should be managed and in what order. Comparative (or relative) risk analysis and cost-benefit analysis are aids to risk management.[21]

2. Uncertainties in the Process

Although it is common to define risk management as policymaking, as contrasted with science-based risk assessment, the risk assessment methodology includes many policy-related decision points. These decision points include which dose response curve to employ, how to characterize risk information, whether animal studies will be accepted as indicative of human

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http://www.epa.gov/safewater/ccl/reg_determine2.html; Charles Duhigg, *That Tap Water Is Legal but May Be Unhealthy*, THE NEW YORK TIMES (Dec. 17, 2009), http://www.nytimes.com/2009/12/17/us/17water.html?_r=1&ref=us&pagewanted=print.

[20] Duhigg, *supra* note 19.

[21] Linda-Jo Schierow, Resources, Science, and Industry Division, Congressional Research Service, IB94036: The Role of Risk Analysis and Risk Management in Environmental Protection (September 6, 2001), http://www.ncseonline.org/nle/crsreports/risk/rsk-1.cfm.

health effects, and the weight to be accorded to different kinds of information. An National Academy of Sciences report describes some 50 points in the risk assessment process at which a choice is required among several scientifically plausible options.[22] The Academy of Natural Sciences has noted that "Ideally, setting the Primary Drinking Water Standards would be based entirely on sound scientific evidence as to the risk presented by the substance being regulated. In reality, risk assessment remains an inexact science, and a number of political and economic factors enter into the decision making."[23]

Risk analysis is widely viewed as a potentially valuable tool for summarizing scientific information obtained from animal experiments and studies of accidental or occupational human exposures to hazards. However, people disagree about how risk analysis should be used and how much influence it should have on government decisions. Regulated industries and many academics support legislation that would increase use makers of risk analysis by environmental policy, arguing that risk analysis is a scientific and objective basis for making rational risk management decisions. Other academics and most environmentalists stress the limitations of risk analysis.[24]

Critics of risk analysis argue that the science used in risk analysis is immature and suitable only for assessing immediate threats or the risk of developing cancer. In addition, they warn that risk analysis oversimplifies the problems faced by policymakers and managers of environmental programs, for example, by generally focusing on one hazard and one effect at a time, or on problems or aspects of problems that already are well understood. Critics of risk

[22] Percival et al, Environmental Regulation: Law Science and Policy 453-54, citing National Research Council, Risk Assessment in the Federal Government: Managing the Process 5-8 (1983).
[23] Roland Wall, Standards for Safe Drinking Water (November 2001), http://www.ansp.org/museum/kye/natural_resources/2001_drinking_water.php.
[24] Linda-Jo Schierow, *supra* note 21.

analysis also assert risk assessment methods are complex and easily manipulated for political purposes. Thus, it is argued, the decision-making process may be less democratic to the extent it is ostensibly based on risk.[25]

3. Objectivity of Studies: Industry Sponsorship

In 2004, the U.S. EPA's National Center for Environmental Assessment ("NCEA")[26] announced its finding that people can safely consume more than twice the amount of boron previously considered harmless. NCEA increased its allowable daily dose of boron from 6.3 milligrams to 14 milligrams per day. [27]

The revision was the result of a multi-year assessment of more than 200 studies on boron's health effects, some of which were completed recently by scientists at the University of California, Irvine, and the Research Triangle Institute. NCEA conducted its risk assessment on boron to update the EPA's Integrated Risk Information System (IRIS), a database of human health effects associated with exposure to more than 500 substances found in the environment. IRIS is widely considered one of the world's most robust databases in this field.

At least some of the studies that find a lower health risk for boron have been sponsored by companies within the boron industry. Borax mining company Rio Tinto has sponsored

[25] *Id.* See also, John Applegate, *Beyond the Usual Suspects: The Use of Citizens Advisory Boards in Environmental Decisionmaking*, 73 IND. L.J. 903 (1998), regarding the "tyranny of the expert."

[26] EPA's Office of Research and Development conducts research to help ensure that efforts to reduce environmental risks are based on the best available scientific information. The National Center for Environmental Assessment (NCEA), a major component of ORD, is EPA's national resource center for human health and ecological risk assessment. NCEA conducts risk assessments, carries out research to improve the state-of-the-science of risk assessment, and provides guidance and support to risk assessors. NCEA occupies a critical position in ORD between (1) researchers in other ORD components generating new findings and data and (2) regulators in the EPA program offices and regions who must make regulatory, enforcement, and remedial action decisions. As a result, NCEA plays an important role as a consultant to EPA programs and regions on the use of science in environmental decision making and also influences the direction of environmental research.

[27] Rio Tinto Press Release, Susan Keefe, 661/287-5484, ENVIRONMENTAL PROTECTION AGENCY RAISES SAFETY LIMITS FOR BORON CONSUMPTION: *Review of 200 Studies Results in Increasing Levels Considered Safe for People* (August 5, 2004), http://www.borax.com/news38.html.

studies at UC Davis and UCLA that focused on expanding the evidence that the reproductive effects of borates seen in animals would not occur in humans, except by abuse. According to Rio Tinto, "It has long been felt that even at abusive doses, effects are unlikely to occur in humans. To examine this, a study to compare different dosing regimes in rats on blood levels and reproductive effects was conducted. Data indicate fewer reproductive effects in rats with daily peak blood boron levels (analogous to abuse dosing) compared to rats with a continual blood boron level."[28]

4. Uncertainty Factors

Uncertainty factors ("UF"s) are mathematical formulas applied to data which are used to protect populations from hazards that cannot be assessed with high precision. Uncertainty factors are applied in the reference dose methodology to account for recognized uncertainties in extrapolation from experimental conditions to lifetime exposure for humans. These UFs cover somewhat broad areas of uncertainty, such as "animal-to-human" and "sensitive human" extrapolations. Both can be addressed as a combination of two subfactors, one each for toxicokinetics and toxicodynamics. In the simplest terms, toxicokinetics deals with what the body does to the chemical, while toxicodynamics deals with what the chemical does to the body. In essence, the toxicokinetic factor addresses internal exposure, determining the dose at the target tissue. The toxicodynamic factor deals with the response of the target tissue given a

[28] Rio Tinto, Explore the World We Live In: Programmes, http://www.riotinto.com/library/microsites/socEnv2002/content/world/program/93_prod_rsrch_humtox.html. See also, Rio Tinto Press Release, Health and Safety Effects, http://www.borax.com/borates4a.html. See further, James R. Coughlin, Ph.D., *The Big Picture: Groundbreaking news on boron's nutritional essentiality*, PIONEER MAGAZINE (February 1998), http://www.borax.com/pioneer30.html (discussing sponsors of a series of boron symposiums at UC Irvine.

specific dose.[29] The default uncertainty factor is 100, a level that provides a maximum margin of safety.[30]

Uncertainty factors were an issue in recent revisions of boron standards by EPA and the World Health Organization ("WHO"). At EPA, the National Center for Environmental Assessment ("NCEA") reduced its uncertainty factor for boron from the default level of 100 to 66 - a precedent-setting policy change. The World Health Organization employed an uncertainty factor of 60 and also changed assumptions regarding the amount of boron exposure attributable to drinking water. WHO relied on "extensive data from the USA and UK" indicating that "dietary intakes of the group of primary concern" are low in relation to the tolerable daily intake, and increased allowable proportion of exposure via drinking water from 20% to 40%.[31] With those changes, WHO justified a guideline of 2.4/L.

According to a Rio Tinto press release, NCEA's decision to assign a lower uncertainty factor to boron reflects the availability of new and more reliable research. However, it appears that the new research involves a change in underlying assumptions that may reflect policy concerns rather than purely scientific decisionmaking.

EPA recognizes that other plausible science-based standards exist, based on different assumptions regarding uncertainty factors and other assumptions. It notes that the Agency for Toxic Substances and Disease Registry (1992) derived an intermediate oral MRL (Minimal Risk Level) of 0.01 mg B/kg/day based on a LOAEL value of 13.6 mg B/kg/day for decreased fetal body weight in rats and an uncertainty factor of 1000 (10 for LOAEL to NOAEL, 10 for animal

[29] EPA, TOXICOLOGICAL REVIEW OF BORON AND COMPOUNDS 67-68 (CAS No. 7440-42-8) In Support of Summary Information on the Integrated Risk Information System (IRIS) (June 2004).
[30] This includes a 10-fold factor for intraspecies variability (this is the default value); and a 10-fold factor for interspecies differences (this is the default value)
[31] WHO, Boron in drinking-water: Background document for development of WHO Guidelines for Drinking-water Quality 14, WHO/HSE/WSH/09.01/2 (2009), whqlibdoc.who.int/hq/2009/WHO_HSE_WSH_09.01_2_eng.pdf.

to human, and 10 for sensitive human). A chronic oral MRL was not derived. The Institute of Medicine (2001) developed a tolerable upper intake level ("UL") for various life stages of humans. These ULs were based on the NOAEL (9.6 mg B/kg-day) and an uncertainty factor of 30 (10 for animal to human uncertainty and 3 for sensitive human uncertainty based on the similarity in pharmacokinetics among humans). Using the appropriate reference body weight for women, the UL was set at 17 mg B/day for pregnant women of 14-18 years of age, and 20 mg B/day for pregnant women of 19-50 years of age. WHO (2003) derived a provisional guideline value of 0.5 mg/L using the tolerable daily intake value ("TDI") of 0.16 mg B /kg/day and the drinking water consumption of 2L for 60 Kg adults and the source allocation of 10%. The TDI is based on the NOAEL of 9.6 mg B/kg-day for fetal body weight effects and an uncertainty factor of 60 (10 for interspecies and 6 for intraspecies). The guideline value was designated as provisional, because it is difficult to achieve in areas with high natural background levels with the treatment technology available. EPA also notes state drinking water guidelines as follows: California, 1000 µg/L (1 mg B/L); Wisconsin, 900 µg/L (0.9 mg B/L); Florida, Maine, and New Hampshire, 630 µg/L (0.63 mg B/L); and Minnesota, 600 µg/L (0.6 mg B/L) (HSDB, 2006d).[32]

Some of the revisions in uncertainty factors or other assumptions may well reflect policy goals rather than a strict concern with public health and new scientific studies. Possible policy concerns in the U.S. include minimizing costs for areas with high natural boron levels in their drinking water, areas that do not want to invest in reverse osmosis treatment for well water treatment. It may be that the cost-effectiveness equation is different in the desalination context, where an RO plant is already being built.

[32] EPA, Health Advisory, *supra* note 8, at 6.0. Some of the cited standards have since been revised.

C. A Cost Cap Should Be Considered Carefully and Should Not Target Environmental and Social Benefits

1. Long-Term Benefits Should Be Recognized.

If a cost cap is imposed, we would like to see it formulated in a way that appropriately recognizes and preserves long-term benefits and does not shortchange the future in order to achieve short-term cost savings. The underlying problem is that the relationship between cost and corresponding benefits of values is not always easily recognizable, even to experts. There are aspects of the Water Purchase Agreement ("WPA"), and the Regional Project as a whole, where costs are quantifiable and corresponding long-term benefits remain unquantified. Examples include the use of double-pass reverse osmosis technology to maximize water quality and minimize ecological and public health impacts. Absent a clear realization that these costs are attached to benefits that will be lost if the costs are cut, we are concerned that these costs present an unduly easy target for the budgetary axe. See Hearing Transcript, June 10, 2010, p. 1584, lines 8-21.

> MS. NELSON [representing Public Trust Alliance, questioning Dr. Nihar Shah, sponsored by DRA]:
> Q In arriving at your cost cap recommendation did you at any point review data regarding comparative nonmonetized values of recent de-sal projects?
> A What do you mean by nonmonetized values?
> Q Well, some examples might be sensitivity to ecosystem effects, the creation of a framework for cooperation, climate impacts, preserving benefits for future generations.
> A No, I did not.
> Q Do you view those as appropriate factors to consider in setting a cost cap?
> A If they are not monetized, then there wouldn't be costs.

There are several features of the Regional Project and WPA that look to the future and produce a large part of their value in the future. These include the creation of a framework for long-term cooperation among water entities in the region and the adoption of a precautionary

approach to environmental and public health. These benefits have an economic dimension, but that dimension does not concern cost only. It concerns, what the project would add to the total, long-term public welfare.

There are several recognized ways to assign monetary value to environmental "goods." The non market value of environmental goods is commonly categorized into three components, existence, option and bequest values. An existence value is the value the public are willing to pay to some specific environmental amenities or scenic resources in order to keep them from being extinct or damaged. A bequest value is, on the other hand, the value that public gives to preserving the quality environment for their children or next generations to enjoy it as they do now. The option value of any environmental amenity, is the value that the public are willing to pay to preserve it for their own enjoyment at some indefinite time in the future. These values are typically ascertained by surveys. Environmental benefits are also valued under the natural resources damages provisions of environmental statutes such as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C. §§ 9607-9675, the Oil Pollution Act (OPA) 33 U.S.C. §§ 2701-2761, and the Clean Water Act (CWA) (see 33 U.S.C. § 1321(f)(5)). See 43 C.F.R. § 11.62 (providing a procedure for establishing causation for water resources, geological resources, and biological resources injury) (upheld in *Ohio v. Department of the Interior*, 880 F.2d 432, 468-73 (D.C. Cir. 1989), rehearing denied, *State of Ohio v. Department of Interior*, 897 F.2d 1151 (D.C.Cir. 1989)). See also, 43 C.F.R. § 11.61, establishing methodology for demonstrating injury and causation for natural resource damages.

The method most directly pertinent to the WPA and perhaps most easily applied may be the preferences recognized in the federal and state contracting systems. These preferences have quantified the value of environmental and social "goods" within a competitive procurement

system by establishing price preferences. Price preferences are set at a percentage of the contract value, meaning that an offer that would achieve the desired "good" will be regarded as equal in cost to a less expensive competing offer that would not achieve the same goal.

In the federal contracting system, environmental goods are protected by several executive orders issued under the government's spending power, that implement environmental statutes and the government's goals for the future, as expressed in statutes or executive policies.[33]

This preference policy is thoroughly interwoven in the competitive contracting regulations, addressing procedures from acquisition planning to contract administration. Federal Acquisition Regulation (48 C.F.R.) Part 23, Environment, Energy and Water Efficiency, Renewable Energy Technologies, Occupational Safety, and Drug-Free Workplace, directs agencies to acquire and use Environmentally Preferable Products to the maximum extent practicable without jeopardizing the intended use of the product while maintaining a satisfactory level of competition at a reasonable price.

FAR (48 C.F.R.) Part 7, Acquisition Planning, requires agency planners to consider energy efficient products and services and environmentally preferable products and services.

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[33] Executive Order 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*, required Federal agencies to establish programs for purchasing Environmental Protection Agency ("EPA") Comprehensive Procurement Guideline items containing recovered materials (Revoked by: EO 13423, January 24, 2007). Executive Order 13101 also directed Executive agencies to use the principles and concepts in the EPA Guidance on acquisition of Environmentally Preferable Products (EPP) and Services to the maximum extent practicable. Executive Order 13134, *Developing and Promoting Biobased Products and Bioenergy*, significantly expanded Federal procurement activities for biobased products and services (Revoked by: EO 13225, September 28, 2001 (in part); EO 13423, January 24, 2007). Executive Order 13123, *Greening the Government through Efficient Energy Management (*Revoked by: EO 13423, January 24, 2007)*,* and Executive Order 13221, *Energy Efficient Standby Power Devices* levy additional requirements on Federal procuring activities with respect to energy conservation. Executive Order 13149, *Greening the Government Through Federal Fleet and Transportation Efficiency*, requires Federal agencies to reduce petroleum consumption and recommends the use of alternative fuels (Revoked by: EO 13423, January 24, 2007). Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, and the CEQ Implementing Instructions require that each agency give preference to the purchase of environmentally preferable products in its procurements. Although a number of these orders have been superseded/revoked, they are cited to demonstrate the role of executive policy in implementing environmental preferences, thus "valuing" environmental goods.

FAR (48 C.F.R.) Part 11, Describing Agency Needs, requires agencies to consider maximum practicable use of energy- and water-efficient and environmentally preferable products and services when developing, reviewing, or revising contract specifications, product descriptions and standards, describing government requirements for supplies and services and developing source selection factors. Agencies may require offerors to submit additional information on life cycle costs and environmental and health benefits.

Clearly, there are no specific acquisition preferences for particular types of desalination technology. The cited acquisition regulations simply establish that environmental benefits are recognized in the competitive acquisition process, as they should be. They are given a measurable value under the preference system, essentially altering the maximum amount that an agency is willing to pay, based on the anticipated benefits. The WPA governing structure, with its advisory committee and project manager, appears well adapted to provide the administrative continuity and commitment to environmental values that are necessary to shepherd an environmentally preferable project through its lifetime. See WPA Article 4, Design, Engineering, Construction and Permitting of the Regional Desalination Project; Article 6, Advisory Committee.

An even more pertinent contracting principle is "best value" procurement. It has been noted that "the object of the exercise" in services contracting should be to focus on value received, rather than solely on costs.[34] This concept has been implemented under FAR (48 C.F.R.) Part 15, with a concept of "best value" procurement. Under best value procurements, the lowest bidder is not necessarily the winner of a competition—rather, an agency evaluates

[34] David C. Wyld, *Focusing on the Cookies (As Opposed to the Oven They Were Baked In): Assessing the Defense Department's Shift to Performance-Based Contracting*, 6 JOURNAL OF LEGAL, ETHICAL AND REGULATORY ISSUES 64 (2003) (citing Sam Tulip, Supply Management 38 (2002)).

competing offers based on specified Source Selection Criteria. These criteria reflect what the agency seeks and values in a procurement, such as the most beneficial technology or other specified benefits. The agency may weight these criteria according to the relative importance it assigns to particular factors. For quite simple procurements, the agency may simply select the lowest priced proposal that is technically acceptable ("LPTA"). For more complex procurements, the agency may balance the LPTA with an evaluation of the offeror's Past Performance (partial tradeoff). In a full best value procurement, the agency may consider price, past performance and stated selection criteria, including a statement of work. FAR 15.101, Best Value Continuum. The agency does not have to select lowest priced alternative. FAR 15.101-1, Tradeoff Process. It may select a higher priced proposal that provides better solution to the agencies objectives. It selects the winning proposal using fact-based business judgment with a rational basis.

The point of these examples is that environmental benefits have value that should be considered in setting a cost cap, if the Commission elects to use that approach. It is not an argument for a "gold-plated" project, but for a project that maximizes value to the consumer. Although double pass technology is more expensive than single pass technology, it is likely to be reasonable within a competitive contracting environment. Industry sources have noted that "The competitive bidding process has affected prices of every equipment component of RO systems (including membrane elements) and resulted in a broad price decline. Better performance of equipment and optimization of process design have resulted in lower operating cost."[35]

[35] See Jill Manning Hudkins, Mark Wilf, and Jarrett Kinslow, *Feasibility of Seawater Treatment in the United States: Domestic Challenges and Solutions for Implementation*, WATER WORLD (n.d.), http://www.waterworld.com/index/display/article-display/1478269173/articles/membranes/volume-2/issue-

2. Federal Decision Not to Regulate Boron Does Not Preclude Project Proponents from Taking Precautionary Action to Protect Constituents.

a. Statutory Requirements Are a Floor, Not a Ceiling

Most Federal pollution control laws reflect a cooperative federalism model that permits states to enact standards more stringent than the federal requirements, but preempts all state laws less stringent than, or inconsistent with, the federal minimum standards. The statutes typically contain savings clauses to this effect, explicitly reserving state authority to adopt more stringent controls than those adopted or required by EPA. See, e.g., Clean Water Act, 33 U.S.C. § 1370; Federal Insecticide, Fungicide, and Rodenticide Act 7 U.S.C. §136v(a) (2000); Toxic Substances Control Act (TSCA) 15 U.S.C. § 2617(a)(1); Resource Conservation and Recovery Act, 42 U.S.C. § 6929; Clean Air Act, 42 U.S.C. § 7416. The usual way of describing this is to say that federal law represents a floor, not a ceiling, for protective measures.

The California Supreme Court has interpreted the "floor vs. ceiling" issue in the context of balancing economic factors. In *City of Burbank v. State Water Resources Control Board*, 35 Cal. 4th 614 (Cal. 2005), California's Supreme Court held that federal standards for discharges under the Clean Water Act ("CWA") constituted a floor, not a ceiling, for local standard-setting. The Los Angeles Regional Water Quality Control Board had set daily maximum limitations for more than 30 pollutants, based on a local Basin Plan that contained general narrative criteria relating to existing and potential future beneficial uses and water quality objectives for the Los Angeles River and its estuary. The plaintiffs alleged that achievement of the numeric requirements would be too costly and that the pollutant restrictions in the National Pollution Discharge Elimination System ("NPDES") permits were unnecessary to meet the Basin Plan

30/Features/Feasibility_of_Seawater_Treatment_in_the_United_States__Domestic_Challenges_and_Solutions_for_Implementation.html (last visited July 1, 2010).

objectives. The Court found that under the CWA's regulatory scheme for cooperative federalism, a State Regional Water Quality Control Board could not adopt a discharge standard less stringent than the federal standard. The CWA allows states to administer the federal program and to establish effluent limitations under state law that are more restrictive than those established by federal law (33 U.S.C. §§ 1313, 1370), provided that the state agency adheres to state law requiring consideration of economic factors (Porter- Cologne Act – sections 13263 and 13241). The decision effectively required the cost-effective use of more effective technology under the CWA technology scheme.

The U.S. Supreme Court reached a somewhat similar result in interpreting the Clean Air Act. *Alaska Department of Environmental Conservation v. Environmental Protection Agency,* 540 U.S. 461 (2004). The Federal Clean Air Act requires new factories and power plants to use the "best available control technology" to limit air pollution, but generally allows states to determine what specific systems satisfy the law. The Environmental Protection Agency (EPA) stepped in, however, when the State of Alaska decided to allow a major mining operation to install a pollution control system for a new power plant that would be one-third as effective as a more expensive technology. See also, *Union Electric Co.*, 427 U.S. 246, 265(1976), in which the Supreme Court has held that: "the States may submit implementation plans more stringent than federal law requires and that the Administrator must approve such plans if they meet the minimum requirements of [section] 110(a)(2)."). Many more case have upheld the "floor, not a ceiling" distinction. See, e.g., *Old Bridge Chemicals v. NJDEP*, 965 F. 2d 1287, 1292, 1296 (3rd Cir. 1992), cert. denied 506 U.S. 1000 (1992) (" . . .although waste management may be an area of overriding national importance, in legislating in this field Congress has set only a floor, and not a ceiling, beyond which states may go in regulating the treatment, storage, and disposal of

solid and hazardous wastes. . . RCRA expressly allows states to adopt more stringent 'requirements' than those imposed by the EPA regulations, although states may not impose any regulations less stringent than the floor set by RCRA.)"; *Safety-Kleen, Inc.(Pinewood) v. Wyche*, 274 F. 3d 846, 863 (4th Cir. 2001) (A state may choose to impose "more stringent" regulations than those imposed by RCRA, 42 U.S.C. § 6929. "RCRA sets a floor, not a ceiling, for state regulation of hazardous wastes.")[36]

The principle of allowing states to exceed minimum requirements has proved to be both an important spur to innovation and a protection for local ecosystems. See, e.g., the story surrounding California's struggle to regulate greenhouse gas emissions from vehicles.[37] See also the system for protecting public trust values on the Great Lakes.

The federal Safe Drinking Water Act is based upon the same cooperative federalism model as the statutes cited above. The Act sets minimum standards for drinking water quality

[36] See also, 62 Fed. Reg. 31159, 31163 (June 6, 1997), discussing the approval of a Supplement to California State Plan, which incorporates notification provisions of Proposition 65 and the California Safe Drinking Water Act. The Occupational Safety and Health Administration emphasized that drafters of the Occupational Safety and Health Act "clearly envisioned the statute's 'at least as effective' requirement as providing a floor, not a ceiling, for future worker protections efforts by states having a State plan. See Senate Committee on Labor and Public Welfare, Legislative History of the Occupational Safety and Health Act of 1970 at 297, 1035 (92d Congress, 1st Session, June 1971) (Legislative History)." So long as state standards pass muster under the Commerce Clause, States "are free to devise not only more stringent substantive standards but also supplementary enforcement procedures. The flexibility granted the States under Section 18 also is in keeping with Congress' stated purpose of 'encouraging the States to assume the fullest responsibility for the administration and enforcement of their occupational safety and health laws' and its intent to allow the States 'to conduct experimental and demonstration projects in connection therewith[.]' 29 USC 651(b)(11)."

[37] California has been a national leader in the fight against global warming, passing laws like AB 1493 by now Senator Fran Pavley (D-Santa Monica), which required California to establish new standards for motor vehicle greenhouse gas emissions beginning in model year 2009. Since taking office, the Governor has aggressively pursued the enforcement of the Pavley law for California to enact and enforce emissions standards to reduce greenhouse gas emissions from vehicles. The state filed a lawsuit (which was joined by several other states) against the U.S. EPA in 2008 to overturn its decision denying California's waiver request to enforce the state's tailpipe emissions standards after the California Air Resources Board requested the waiver in 2005. The U.S. EPA granted California's waiver in June 2009. Subsequently, the U.S. EPA announced that it will adopt a vehicle emissions standard modeled after California's first-in-the-nation standard. See Governor's press releases: 1/26/2009, detailing *California's Road To Reducing Vehicle Emissions,* available at http://gov.ca.gov/index.php?/fact-sheet/11422/; 05/21/2010, Gov. Schwarzenegger Applauds President Obama's Commitment to Vehicle Emission Standards, Fuel Economy, available at http://gov.ca.gov/index.php?/press-release/15229/.

through the establishment of maximum contaminant levels for public water supplies. 42 U.S.C. § 300g-1(b)(1)(A). While the EPA sets national standards for drinking water, generally the direct oversight of public water systems is conducted by the states. Under the SDWA, a state can apply to implement the Act by agreeing to set standards at least as stringent as the federal standards and then enforce those standards. The SDWA authorizes states to create specific regulations to protect their underground drinking water sources, as long as the state complies with EPA's minimum requirements and receives EPA approval. 42 U.S.C. § 300h-1; 42 U.S.C. § 300g-2.

At the state level, the California Safe Drinking Water Act provides a similarly hierarchical scheme. Based on the premise that "Every citizen of California has the right to pure and safe drinking water," (Cal. Health & Safety Code 4010 (a)), the Act authorizes the California Department of Health Services to oversee the delivery of safe drinking water by the state's public water systems (Cal. Health & Safety Code 4010.1 (f)). Among other duties arising under the Act, the Department is charged with setting standards for water quality and ensuring that the water systems have access to a supply of water capable of meeting those standards (Cal. Health & Safety Code 4023.3). Water system compliance with minimum federal standards is maintained primarily through a permit process. All water systems must receive a permit from the Department to operate. (Cal. Health & Safety Code 4011) The Department may renew, reissue, revise or amend any permit whenever the Department deems it necessary for the protection of the public health. (Cal. Health & Safety Code 4011) See also, overview of the SDWA by Alan Cohen, Challenging the Adequacy of A Water Supply (n.d., Public Law Research Institute), http://w3.uchastings.edu/plri/fal95tex/watersu.html#F4 (last visited June 30, 2010).

b. Local Water Purveyors Have Discretion to Go Beyond Minimum Federal Standards

There is a paucity of reported case law involving situations in which the Department has objected to water systems' attempts to implement standards that go beyond the federal minimums. Nevertheless, as a practical matter, water systems are required to do so, in part as a matter of meeting consumer expectations. See, e.g., testimony of Rob MacLean, President of California American Water Company, Hearing Transcript, June 8, 2010, pp. 1062-1063:

> MS. MC CRARY [DRA]: Q On your testimony, page 10, you state on line 6, "California-American Water prides itself on its longstanding ability to provide reliable high quality and safe water to its customers."
>
> Does Cal-Am use the California Department of Public Health standards to determine safety of water quality?
>
> A I would say, yes, among other things.
>
> Q Are there other standards that Cal-Am uses?
>
> A I think in some instances there are – we probably could have somebody a little more technically orientated than me talk about this -- but in some instances there are expectations from customers that may be different than standards. So let me give you one example that is very commonly encountered in the water industry.
>
> Iron is something that causes discolored water. And you can have iron in water that is below the standard but very, very offensive to customers. And so in an instance like that, a company like ours or any water company, for that matter, sometimes actually has to treat the water to a better standard or to a better level than the standard for aesthetic reasons or for reasons of customer satisfaction.

Examples of water purveyors needing to go beyond minimum requirements also include the need to "design in" a margin of safety. See Hearing Testimony of Dr. Robert Rhodes Trussell, sponsored by Marina Coast Water District, Hearing Transcript, June 11, 2010, pp. 1071-1073:

> Q [Ms. McCrary, DRA] And in your rebuttal testimony you make a clarification and you said if -- I am looking at line 19 on page 2 -- if a facility is built whose boron levels are just above 1 ppm and range as high as 1.6 ppm, both MCWD and Cal-Am would risk having to notify their customers.
>
> I'm wondering what the significance there is of providing a range?
>
> A The Question 11 in my original testimony was a further discussion or follow-up question to Question 10.
>
> In the answer to Question 10, I said the anticipated boron concentration in the permeate water from a SRWO system ranges between .6 and 1.6 ppm, but concentrations just below or just above 1.0 ppm are common.
>
> So in this further question I have given that range.
>
> So I am here tying the response, because the Question 11 was is that level safe, is that level of boron safe, so I am responding back to that question. And the reason that I added this clarification is because I thought my original response was too simple and didn't respect the complication that the facility would really fail, from the standpoint, the health notification.
>
> My response that it meets -- that boron levels of 1.44 meet this public health requirement technically is true, but it is important to understand that concentrations that might range from .6 to 1.6 would not. And they would have consequences.
>
> Q So if the boron range was 1.0 to 1.44, would it meet the notification levels?
>
> A Technically.
>
> Q Would Cal-Am have to notify their customers?
>
> A No. But you understand this would be precariously close.
>
> ALJ MINKIN: Precariously close to --
>
> THE WITNESS: To that notification. I mean, no utility I know would want to be there or even close to it.

It is clear that the interface between legal requirements and utility practice is not simple, even to experts. See further Hearing Testimony of Dr. Robert Rhodes Trussell, June 11, 2010, p. 1703, line 21 – p. 1704, line 28.

> Q [Ms. McCrary] A single pass would meet the California Department of Health notification level of 1, but the primary issue is the effect on landscaping. Is that a correct summation?
> A Yes, it is a correct summation of what is written in this memo. But I think I should be clear that my understanding of this problem has developed further since this memo was written. And I have a better appreciation for the risks that a utility would face when they approach this notification limit. And I now view that as a much more serious issue than I did in February, '09 or March, '09.
> Q And why is that?
> A Because the exercise of preparing for this testimony made me review the questions that I would normally review in trying to address drinking water regulations that a utility would have to meet and in looking at boron the same way I would look at those.
> And when we are running this, I was just looking at can I design this thing so that the average concentration is 1 or less. And I began to realize as I went through this analysis that the allowances that a utility would normally provide to be certain that this level did not get exceeded, and I don't end up in facing the public, are not present in this kind of analysis.
>
> Specifically, most utilities would choose to make an allowance to operate at a level substantially below the level of the regulation. In my experience that range ranges from 20 percent reduction to a 50 percent reduction or sometimes even more depending on the utility, depending on the cost and depending on the circumstances.
>
> And I realized that this service does not provide anything like that kind of assurance, this being a situation where the utility would be operating just below 1.44.

There are several further factors that reasonably impel the local water purveyors to go beyond minimum requirements regarding boron. One is the problematic role of water purveyors, local officials and their agencies as well as private water companies. Entities implementing

desalination projects are caught between cost and public health issues. Although boron is not specifically regulated in product water in the United States, consumer expectations may pressure desalination planners to design future seawater plants to follow these current guidelines. Consumers who know that there have been multiple recent standards (set at quite different levels) that purport to be adequately protective of public health may well demand the protection of the highest standard.

On the other hand, treatment to these levels will increase the cost of new seawater desalination plants, provoking public resistance. A New York Times article analyzing the gaps in the Safe Drinking Water Act noted that "Some officials overseeing local water systems have tried to go above and beyond what is legally required. But they have encountered resistance, sometimes from the very residents they are trying to protect, who say that if their water is legal it must be safe."[38] And yet, officials who fail to take every possible precaution may subject their agencies to extremely expensive litigation by individuals who believe that their health has been compromised by exposure to elements in desalinated water. Not to mention the public health costs if current regulatory guidance is eventually found to be insufficiently protective.

There is also some degree of regulatory uncertainty. The EPA has decided not to develop an MCL or health-based MCLG for boron because of its lack of occurrence in most groundwater and surface water and has encouraged affected states to issue guidance or regulations as appropriate. Therefore, most U.S. utilities lack clear guidance on what boron levels in drinking water are suitably protective of public health.[39] Moreover, EPA's decision action does not

[38] Charles Duhigg, *supra* note 19.

[39] Ch. 8, WATER QUALITY ISSUES IN DESALINATED PRODUCT WATERS Desalination: A National Perspective (Water Science and Technology Board, Nat. Academies Press, 2008), available online at http://www.nap.edu/openbook.php?record_id=12184&page=1. See also Executive Summary at aquadoc.typepad.com/waterwired/files/12184_EXS.pdf.

really address the impacts of increasing reliance on desalinated water, which typically contains higher levels of boron. If seawater desalination becomes a significant source for drinking water supply in the United States, additional regulatory attention or national guidance may be needed. [40] There is no guarantee that new regulations will not impose higher standards.

c. Local Discretion to Go Beyond Minimum Standards Should Be Informed by the Public Trust Doctrine and the Precautionary Principle.

Both the public trust doctrine and the precautionary principle are well suited to address the needs of future generations, which may be inappropriately discounted under other approaches. These concepts provide the underpinning for a key government role: to serve as the trustee of the common wealth for this and future generations. They enable government officials to speak and act for those who are outside of the political process and cannot protect themselves. They allow officials to combine the roles of visionary and prudent manager, values that have been addressed in the stakeholder meetings that comprised the Regional Project planning process.

Additional insights as to how these roles might play out in practice have been offered by public trust commentators. Mary Christina Wood has suggested that the public trust doctrine should inform agency discretion under environmental statutes. She characterizes that the public trust doctrine is an "interstitial" duty, guiding agency discretion at several key points:

> It is important to map out the interface between trust law and statutory law. In general, statutory law provides bureaucratic structure and process, while the trust doctrine supplies a firm obligation that can steer agency discretion to carry out the protective goals of the statutes. The trust doctrine supplies a beacon within the broad realms of statutory

[40] Ch. 5, 138 et seq., WATER QUALITY ISSUES IN DESALINATED PRODUCT WATERS Desalination: A National Perspective (Water Science and Technology Board, Nat. Academies Press, 2008), available online at http://www.nap.edu/openbook.php?record_id=12184&page=1.

> discretion, which might on their own allow several conflicting resource outcomes. In most cases, reorienting administrative practice towards safeguarding the trust is likely to effectuate underlying statutory goals that have been frustrated over the years by agencies using their deference in service to illegitimate political ends.[41]
>
> Environmental statutes generally provide discretion at four points. First, agencies interpret broad legislative mandates by promulgating rules and guidance documents. Second, agencies make individual permit and project decisions, bringing to bear a host of technical assumptions. Third, agencies have wide latitude in structuring their own operations and projects. Fourth, agencies have discretion to enforce the statutes and regulations they administer. At all points in the process, agencies often use their discretion in a manner that subverts statutory goals and diminishes public trust assets.

Wood notes further that "While all government officers owe a duty to uphold the public interest—as reflected in their oath of office—the trust duty of loyalty is an elevated duty associated with fiduciary offices. In the natural resources arena, government officials exert control over the people's assets. The trust functions are much different, and more weighty than the bureaucratic functions of other offices dealing with human services, economic development, criminal and moral matters, education, and the like. . . . ."[42]

In a similar vein, Carolyn Raffensbeger of the Los Angeles Air Quality Management District has outlined key assumptions in building for the future:[43]

- We have an obligation to prevent harm to the commonwealth.
- Values and ethics are essential to decision-making.
- Science can provide guidance but not the whole answer.
- Uncertainty and surprise are intrinsic to a complex world.
- Government has a key role to play

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[41] Mary Christina Wood, *Advancing the Sovereign Trust of Government to Safeguard the Environment for Present and Future Generations (Part II): Instilling a Fiduciary Obligation in Governance*, 39 ENVTL. LAW 91, 103 (2009) (also available at *The Free Library*. (2009). Retrieved April 27, 2010 from http://www.thefreelibrary.com/Instilling a fiduciary obligation in governance.-a0196728993.

[42] *Id*. (Section B, 1.)

[43] Carolyn Raffensbeger, The Precautionary Principle and the Public Trust Doctrine (August 2003), aqmd.gov/ej/events/Precautionary_Principle/RAFFENSPERGER.pdf (Powerpoint presentation, last accessed July 1, 2010).

• There are things as or more important than money
• We hold the commonwealth in trust for future generations

The local officials who will build and implement the Regional Project have made a commitment to adopt the appropriate values and roles for managing for the future. See, e.g., Hearing Testimony of Mr. James Heitzman, June 8, 2010, p. 1132, line 27 – p. 1133, line 21:

> Q [Ms. McCrary, DRA] So why, Mr. Heitzman, are you pursuing a desal plant?
> WITNESS HEITZMAN: A The reason that Marina Coast Water District was p[u]rsuing a desal plant, because it assists the Monterey County Resource Agency in managing that groundwater supply for future generations, and the board of Marina Coast Water District believes very strongly in the public trust doctrine[,] that part of your role and responsibility is to protect the water for the future generations to come.
>
> . . . .
>
> Q Do you have current plans to obtain additional groundwater from the Salinas Basin beyond what your current ones are?
> A No. We have no pressing need at this point in time to consider expanding our groundwater. We do work hand-in-hand with Monterey County Water Resource Agency, and as part of a water district and a water utility together we're constantly looking out in the future and seeing what the best possible scenarios are for our region and how best to manage those resources.

See also, p. 1134, line 12 – p. 1135, line 1, evidencing a long-term, cooperative, regional focus:

> Q [Ms. McCrary, DRA] When did the desal plant that was in RUWAP for a, what you did you say, 1500, 1700 acre desal plant change to a regional plan?
> A I think at the end of 2007 or thereabouts when we went to the water from Monterey [Water for Monterey] or the REPOG and they asked were there any public projects that were available, accessible or able to go on line[,] in[sic] [and] Marina Coast Water District. [delete period] Said[sic] [said] yeah, we have one that looks pretty good. And the people including Curtis and Cal-Am said, yeah, looks like a good project. Can we make it any larger? And we said, okay, we'll be a partner. And the Department [sic] of

> Ratepayer Advocate [sic] asked us to participate and said that they would partner with us and help us move along with this process.
>
> And so Marina Coast Water District said, okay, you know, it's going to help everybody and it's going to help the Peninsula, then we're happy to turn our little desal into a regional desal.

Regarding the role of Monterey County Water Resources Agency, see testimony of Mr. Lloyd Lowrey, June 9, 2010, p. 1249, line 28 – p. 1250, line 7:

> The Water Resources Agency, as I testified or in my initial testimony, had -- and as can be seen from the exhibits of the Agency Act that I've -- the portions I've attached as exhibit, has authority and obligation pretty much as a trustee agency to protect the aquifers and also to provide water for everybody within Monterey County, or to provide a context to provide water for everybody in Monterey County.

A precautionary approach[44] is implicit in the "trust" concept underlying officials' understanding of their duties and in the public trust doctrine,[45] in part because trustees managing public resources are held to a high standard of prudent management to preserve the value of trust assets for present and future generations.[46] The public trust doctrine and the precautionary

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[44] The precautionary principle states that: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." *See, e.g.*, Rio Declaration on Environment and Development, Principle 15, June 14, 1992, U.N. Conference on Env't & Dev., U.N. Doc. A/CONF.151/5/Rev.1 (1992), *reprinted in* 31 I.L.M. 874, 879 (1992)[44]; *see also*, Preamble to The Montreal Protocol on Substances that Deplete the Ozone Layer, *reprinted in* 26 I.L.M. 1550, *entered into force,* January 1, 1989. Risk managers have formulated an alternate definition: The precautionary principle recognizes the fundamental role of uncertainty in policy making and attempts to shift the burden of ignorance towards precaution rather than inaction. Society for Risk Analysis, 1999 Annual Meeting: Past President's Message: Risk Analysis Under Fire, reported in Risk Newsletter, Vol. 20 No. 1 (2000) at p. 3, http://www.sra.org/newsletter/news0200.pdf.

[45] The public trust doctrine is frequently analogized to common law trust principles, which include duties to preserve trust property, act in good faith, and manage the trust property prudently, protecting the productive capacity of trust assets, the people's natural resources. See, Restatement (Second) of Trusts §§ 3, 170, 176, 230; Restatement (Third) of Trusts § 227 (1992) (Prudent Investor Rule). See also, People v. California Fish Company, 166 Cal. 576, 597; 138 P. 79 (1913) (Implied powers of the state as trustee are commensurate with the duties of the trust and enable trustee to do everything necessary to the execution and administration of the trust).

[46] Although courts respond with deference to agency expertise in cases brought under administrative procedure acts, in actions they are less deferential in challenges brought under the trust doctrines, responding to a trustee's asserted expertise by "requiring a higher level of performance." Jon A. Souder & Sally K. Fairfax, *Arbitrary Administrators,*

principle have been explicitly linked in case law. See *In re Water Use Permit Applications*, 94 Hawai'i 97, 138; 9 P.3d 409, 450 (Haw. 2000)[47], *aff'd in part vacated in part (other grounds) by In re Water Use Permit Applications,* 105 Haw. 1, 93 P.3d 643 (Haw. 2004) (Waiahole I). In this decision, the Hawaiian Supreme Court endorsed a regulatory agency's use of precautionary principles to allocate instream flows in the absence of scientific certainty in the data. The Court affirmed the Commission's conclusion that, "at minimum, the absence of firm scientific proof should not tie the Commission's hands in adopting reasonable measures designed to further the public interest." *Id.* at 155, 9 P.3d at 467. The court reasoned that the public trust required the Commission to take precautionary action: Where scientific evidence is preliminary and not yet conclusive regarding the management of fresh water resources which are part of the public trust, it is prudent to adopt "precautionary principles" in protecting the resource. That is, where there are present or potential threats of serious damage, lack of full scientific certainty should not be a basis for postponing effective measures to prevent environmental degradation. 94 Haw. at 154, 9 P.3d at 466.

The precautionary principle has been incorporated in U.S. environmental statutes. The precautionary principle is frequently expressed in alternate terminology such as "risk aversion" and "margin of safety" or in special standards of proof. For example, the Endangered Species Act's ("ESA") "best scientific data" standard[48] incorporates the precautionary principle by authorizing action when information is incomplete and requiring the agency assessing the data to

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Capricious Bureaucrats and Prudent Trustees: Does It Matter in the Review of Timber Salvage Sales?, 18 PUB. LAND & RESOURCES L. REV. 165, 170-71(1997), citing Prudent Investor Rule. "In administrative law, there is a presumption that the agency has made a decision based on its experience and the challenger must demonstrate otherwise. In trust law, the trustee is required to demonstrate that she is acting prudently."

[47] (Rejecting the argument that the "'public interest' advanced by the trust is the sum of competing private interests" and that the "rhetorical distinction between 'public trust' and 'private gain' is a false dichotomy.")

[48] 16 U.S.C. §1355(b)(1)(A); H.R. Rep. 96-697, p. 12 (1979).

give the benefit of the doubt to endangered or threatened wildlife.[49] The ESA is one of a set of U.S. environmental laws for which the courts have recognized a precautionary purpose, including the National Environmental Policy Act, the Clean Air Act, the Clean Water Act, Safe Drinking Water Act, Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, and the Oil Pollution Act. See *Tennessee Valley Authority* v. *Hill*, 437 U.S. 153, 178-88 (1978); *Reserve Mining Co.* v. *EPA*, 514 F.2d 492, 528, 536 (8th Cir.1975) ([Where hazards can be measured only in the most general terms, and serious consequences could result], "[a] court is not powerless to act. . . ."); *Ethyl Corp*. v. *EPA*, 541 F.2d 1, 24-25 (D.C. Cir. 1976), *cert. denied*, 426 U.S. 941 (1976); *Lead Indus. Ass.n, Inc.* v. *EPA*, 647 F.2d 1130, 1152-58 (D.C. Cir. 1980), *cert. denied*, 449 U.S. 1042 (1980); *United States* v. *A&N Cleaners & Launderers*, 854 F.Supp. 229, 237-39 (S.D.N.Y. 1994). *See also, American Lung Ass'n v. EPA*, 134 F.3d 388, 389 (based on "endangerment" findings, EPA must act preventively to minimize the risk of harm); H.R. Rep. No. 95-294, at 49 (1977) (House Report for 1977 Clean Air Act amendments, stating that one of the legislation's purposes is "(t)o emphasize the preventive or precautionary nature of the act, i.e., to assure that regulatory action can effectively prevent harm before it occurs. . .").

The precautionary principle has been adopted on the local level as a guide to procurement decisions and as a general principle of governance. In 2003, San Francisco became the first local government in the nation to adopt an ordinance outlining the precautionary principle. The San Francisco ordinance requires officers, boards, commissions, and departments to implement the precautionary principle, which has five elements: anticipatory action, right to know, alternatives assessment, full cost accounting, and participatory decision process. The San Francisco Board of

[49] H.Rept. 96-697, p. 12 (1979). See also, FWS/NMFS ENDANGERED SPECIES CONSULTATION HANDBOOK 1-7, available at http://www.nmfs.noaa.gov/pr/pdfs/laws/esa_section7_handbook.pdf.

Supervisors adopted a follow-up purchasing ordinance in 2005 that requires the city to use safer alternatives when purchasing commodities for the city and sets product categories that will be given preference over the next few years. The list was created with input from residents, business owners, and city employees. See http://www.takingprecaution.org/inact_bayarea.html. The ordinance in San Francisco has served as a model for other local governments that have implemented or have considered a precautionary measure. Examples include Marin and Mendocino Counties in California; Berkeley, California; Eugene and Portland, Oregon; and Seattle, Washington.[50]

D. Procuring Agencies Are Covered by Market Participant Exemption

In addition to the discretion that they may exercise under the "floor, not a ceiling" principle applicable to federal environmental statutes, agencies procuring good and services are covered by the "market participant doctrine." First enunciated by the U.S. Supreme Court in *U.S v. Alexandria Scrap Corporation*, 426 U.S. 794 (1976), this doctrine exempts their higher-standard procurement policies from being preempted by the dormant commerce clause. As expanded by *Building and Construction Trades Council v. Associated Builders and Contractors*, 507 U.S. 218 (1993), the market participant exemption provides that local, higher-standard procurement standards policies are not preempted by the minimum standards set forth in environmental statutes. In this case, the Court concluded that procurement regulations related to labor conditions were implemented in a state's proprietary capacity rather than its regulatory capacity, and thus were excepted from preemption by federal labor laws. The Court noted that these higher standards reflected an effort to ensure completion of the project quickly and

[50] See Tara Bowling, JD, FACING UNCERTAINTY: LOCAL GOVERNMENTS AND THE PRECAUTIONARY PRINCIPLE National Sea Grant Law Center (n.d.), nsglc.olemiss.edu/Precautionary Principle.pdf (last visited July 1, 2010).

effectively at lowest cost. 507 U.S. at 232. The Ninth Circuit followed the Court's lead in the procurement context. *Babler Bros., Inc. v. Roberts*, 995 F.2d 911, 916 (9th Cir. 1993); *Tochler v. City of Santa Ana*, 219 F.3d 1040, 1048 (2000), abrogated other grounds by *City of Columbus v. Ours Garage & Wrecking Services, Inc.*, 536 U.S. 424 (2002). See also, *Cardinal Towing & Auto Repair, Inc. v. City of Bedford,* 180 F.3d 686, 693 (5th Cir. 1999) (concluding that to establish the market participant exception, the challenged action must "essentially reflect the entity's own interest in its efficient procurement of needed goods and services, as measured by comparison with the typical behavior of private parties in similar circumstances" and must have a "narrow scope . . . [to] defeat an inference that its primary goal was to encourage a general policy rather than address a specific proprietary problem."). An acquiring agency's decision to acquire services from a contactor with a plan that maximizes environmental benefits is entirely similar to the actions of large numbers of conscientious private parties. Moreover, such a decision is efficient and cost-effective on the part of an agency acting on behalf of constituents who will bear the long-term costs of a less conscientious procurement decision. In Chamber of Commerce v. Lockyer, 463 F.3d the court adopted two tests for determining

E. Cost-Related Governance Issues Can Be Addressed in Part Through Appropriate Contracting Approaches

Control of environmental (and other) costs of desalination might be managed best by a "performance-based" approach in the construction and operation and maintenance ("O&M") contracts that will implement the Regional Project. Should the Commission accept performance-based contracting principles as a valid cost-management tool, this might lessen the need for detailed reporting.

According to one "elevator speech," the essence of performance-based contracting is to "Tell the contractor the result you want, not how to do the work, and then be sure you can measure whether that result has been achieved. Performance metrics and incentives or disincentives that focus the contractor's actions on the agency's goals provide the framework for evaluation."[51] Jon Desenberg of the Washington-based Performance Institute, a think tank dedicated to improving government performance, suggests "The real philosophy behind this is the government was driving up the price of work by mandating that people do it in a certain way, when, in fact, [contractors] may have known a better way to get it done. . . The idea "is to let the contracted group come up with the best possible solution and only pay them based on solving the problem . . . not on the individual steps and minutia [sic] that we have for so many years required."[52]

The concept of the performance-based acquisition arose out of trial-and-error efforts to address concerns similar to those raised by citizens concerned about spiraling costs was designed to help agencies reap the benefits of private sector innovation. During the great expansion of government contracting during World War II, many contractors treated the public as a captive market for desperately needed goods, producing shoddy work at inflated prices. In the years following World War II, the government responded to concerns about fraud and war profiteering by micromanaging its contracts. It spelled out every detail of how the contractor was to perform, with contract specifications sometimes running thousands of pages. This approach proved to be inefficient and expensive. Detailed, specialized requirements drove up costs and often prevented

[51] David C. Wyld, *Focusing on the Cookies (As Opposed to the Oven They Were Baked In): Assessing the Defense Department's Shift to Performance-Based Contracting*, 6 JOURNAL OF LEGAL, ETHICAL AND REGULATORY ISSUES 62 (2003) (citing Allan Burman (2001), a former administrator with the Office of Federal Procurement Policy).
[52] *Id*.

government agencies from keeping up with the marketplace and receiving market-based technology—effectively saddling the government with outdated, overpriced technology.

In the performance-based approach, an agency says what problem needs to be solved and allows contractors to make proposals detailing their proposed solutions. The agency is charged with developing clear ways to measure the result as well as the contractors' performance over the course of the contract. It is designed so that customers get the best that private industry has to offer, and pay only for what they actually get.

This approach shifts a significant portion of cost risk to the contractor (*See Aleutian Constructors v. United States,* 24 Cl. Ct. 372 (1991)). It also shifts a significant portion of cost governance to the parties who formulate and manage the contract, and would work only if the parties are vigilant in their oversight of the contractor.[53] Performance-based contracting appears to be a logical cost-management complement to the value engineering principles spelled in the WPA. See Article 4.3, Cost Management. Indeed, several "governance"-type features in the WPA appear to be designed to facilitate this kind of vigilant oversight. See Article 6, Advisory Committee.

Performance-based contracting has been tried and tested for a number of years in the federal arena and has been the preferred approach in the federal government since at least the Clinton years. Despite possible difficulties in oversight and formulating statements of work, analyses of performance-based contracting have been largely favorable from a cost control point

[53] See David C. Wyld, *Focusing on the Cookies (As Opposed to the Oven They Were Baked In): Assessing the Defense Department's Shift to Performance-Based Contracting*, 6 JOURNAL OF LEGAL, ETHICAL AND REGULATORY ISSUES 59 (2003) (citing *Contracts for Professional, Administrative and Management Support Services (D-2000-100)* (Office of the Secretary of Defense, Inspector General, 2000), a study in which the Inspector General reviewed 105 service contracts in the DOD, with the audit finding problems with every one of them). (The problems were attributed largely to an overworked and untrained procurement workforce at DoD.)

of view. In the view of the Department of Commerce and the Office of Federal Procurement Policy, this approach has the following benefits[54]:

- Increased likelihood of meeting mission needs
- Focus on intended results, not process
- Better value and enhanced performance
- Less performance risk
- No detailed specification or process description needed
- Contractor flexibility in proposing solution
- Better competition: not just contractors, but solutions
- Contractor buy-in and shared interests
- Shared incentives permit innovation and cost effectiveness
- Less likelihood of a successful protest
- Surveillance: less frequent, more meaningful
- Results documented for Government Performance and Results Act reporting, as by-product of acquisition
- Variety of solutions from which to choose

The performance-based approach appears to "go well" with shifting governance paradigms that seek to maximize benefits and reduce costs to customers. In tandem with the Clinton Administration's "Reinventing Government" effort, which sought, among other things, to reform the contracting system so that it "worked better and cost less," Congress passed several

[54] 7 STEPS TO PERFORMANCE BASED ACQUISITION, https://www.acquisition.gov/comp/seven_steps/introduction.html (n.d., a project of the Department of Commerce and the Office of Federal Procurement Policy), https://www.acquisition.gov/comp/seven_steps/introduction.html (n.d., a project of the Department of Commerce and the Office of Federal Procurement Policy).
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performance-oriented laws, including the Government Performance and Results Act of 1993 (P.L. 103-62), the Federal Acquisition Streamlining Act of 1994 (FASA) (P.L. 103-355), and the Clinger-Cohen Act of 1996 (P.L. 104-208). The Administration's OFPP Policy Letter 91-2, Service Contracting, established that:

> It is the policy of the Federal Government that (1) agencies use performance-based contracting methods to the maximum extent practicable when acquiring services, and (2) agencies carefully select acquisition and contract administration strategies, methods, and techniques that best accommodate the requirements.[55]

The positive features of the performance-based contracting approach have led to an enduring preference for performance based contracting, and the approach has been thoroughly integrated in the contracting system, providing instructive examples for agency contracting at the local level. *See* FAR Subpart 37.6, Performance-Based Acquisition (FAR 37.600 et. seq; FAR 11.002, Policy; FAR 11.101(a) (establishing that "performance-oriented" specifications are preferred over "designed-oriented" specifications in the order of preference for requirements documents); FAR 1.102-2 Performance standards; FAR Part 46, Quality Assurance (notably provisions at 46.103 and 46.401). *See also* Robert J. Wehrle-Einhorn, *Use of Performance-Based Standards in Contracting for* Services, ARMY LAWYER 10 (1993); *Pitney Bowes, Inc.,* 68 Comp. Gen. 249 (B-233100), 89-1 CPD¶ 157.

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[55] This Office of Federal Procurement Policy Letter has been rescinded, although both the Bush II and Obama administrations have embraced the concept of performance-based contracting. See, e.g., statement by Presidential Candidate George W. Bush on June 9, 2000

...over the next five years, a majority of the service contracts offered throughout the federal government will be performance-based. In other words, rather than micromanaging the details of how contractors operate, the government must set the standards, set the results and give the contractor the freedom to achieve it in the best way. Available at 7 STEPS TO PERFORMANCE BASED ACQUISITION, https://www.acquisition.gov/comp/seven_steps/introduction.html (n.d., a project of the Department of Commerce and the Office of Federal Procurement Policy).

IV. CONCLUSION

We are proponents of cost control, not opponents. However, we ask that cost control not be achieved at the expense of environmental and engineering margins of safety that have real value to consumers. Nor should it be achieved at the expense of future generations who are not here to speak for themselves. The local officials who are implementing the project have undertaken to act for these generations, and we believe it would be productive to give that commitment meaningful scope and deference.

It would be useful to analyze how much of the cost control goal and the long-term value approach can be managed under the contracting system and the commitment of the public agencies to public trust and natural resource stewardship principles. This analysis should never be a simplistic one that overlooks nonmonetized values and the unique forward-looking framework for regional cooperation that the Regional Project represents.

On one occasion, Mr. Warburton of the Public Trust Alliance explained to me his view of the public trust doctrine. He compared it to mountain climbing, saying that it is a "guide to where you put your foot next." The Commission and the Regional Project have arrived at a place where this comparison is meaningful. We're not on a comfortable ledge where we can afford to stay while we ponder taking that next step. The illegal diversions from the Carmel River have not been without cost. We are not starting from a neutral position where we just haven't quantified benefits. There are very high public costs associated with the status quo and the Regional Water Quality Control Board is more than merely impatient; it is driven by its duty to protect public trust resources "whenever feasible."

A critical mass of stakeholders has climbed out of a tradition of divisiveness and competition. They have arrived at a good project. They and the California Public Utilities Commission should be very careful in taking the next step. The public trust gives better

guidance than just being careful on that next step; it provides hints on the character of the path that the next steps will follow: strategic advice on direction at each decision point.

Signed: July 2, 2010

Respectfully submitted,

_____/s/_____

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