

Ongoing Discussion “Thought Piece”

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Six Thinking Hats and Public Policy

Debbie Cook

Across America, we hear and see growing anger and contempt for government and those who work in government. Politics has become an extreme sport with the majority of us sitting on the side lines cheering for either a red team or a blue team. Clearly, continuing what we've been doing is not going to produce better results. After attending a PWR Six Thinking Hats workshop in 2010, I have been imagining how such a framework could help bring greater awareness to elected officials and constituents for the complexity of the problems we face and how we solve them.

During eight years in public office I saw my share of both silly and serious local issues: nudity, chickens, dog parks, public smoking, plastic bags, live aboard boats, urban runoff, parking meters, speed bumps, medical marijuana, stop signs, to name a few. No matter how significant or trivial the issue, the discussion was adversarial and the outcome of our bi-monthly council meetings was irritation and frustration followed by a restless night's sleep.

It was apparent to me that our method of self governance with its pretense of public participation was producing poor results, bad public policy, and a disaffected public. I longed for the opportunity to explore alternatives, to consider unintended consequences, and to be more creative in our problem solving. Lacking better tools, every issue was attacked piecemeal, as if nothing were attached to anything else. This meant that resolutions were temporary, creating more problems for future councils and residents.

If I could go back in time, and test Edward De Bono's [Six Thinking Hats](#) framework on one particularly complex issue, it would be ocean desalination. A project proposed for Huntington Beach was originally approved in 2005 after setting a new council record for public comment. Six years later it is no closer to fruition than it was in 2005. For the *proponents*, it was about one piece, providing more water. For the *opponents* it was about the other pieces, but still just pieces. At no point was the system considered holistically.

Had we moved from the standard method of thinking that was option foreclosing to one that was able to achieve multiple social, economic, and environmental outcomes, where would we be today? That is the experiment I would like to run; real life problem solving by thinking together. In thinking together we can not only raise awareness of a complex issue, but give insight into the complex challenges that face those we elect. The improvements we could make to our democratic vitality are endless.

Edward De Bono's [Six Thinking Hats](#) provide the ability to *think together*, using the "white hat" for context setting, the "green hat" for creating alternative solutions, the "yellow hat" to explore the logical positive (benefits) of each alternative, the "black hat" to explore the "logical negative" (cautions and risks) of each alternative, as well as the "red hat" to include feelings in an otherwise logical exploration. Add the "blue hat" to *thinking about our thinking*, to guide the use of the six hats, and we have a foundation for what Edward refers to as "parallel thinking."

With the (white hat) context provided on the following pages, we'll be ready to think together about ocean desalination in a way that I would have thoroughly enjoyed during my days in political office.

Desalination: Unlocking Lessons from Yesterday's Solution (part 1) by [Debbie Cook](#)

([Link here](http://blogs.ei.columbia.edu/2011/01/17/desalination-unlocking-lessons-from-yesterdays-solution-part-1/) for to find this article online on a Columbia University blogsite at <http://blogs.ei.columbia.edu/2011/01/17/desalination-unlocking-lessons-from-yesterdays-solution-part-1/>)

This is a guest post by Debbie Cook. Debbie Cook is the former mayor of Huntington Beach, California and was the Democratic candidate for California's 46th Congressional District in 2008. Cook has had a long interest in the interrelationship between water and energy policy. Her writing on sustainability issues has appeared in the Huffington Post, Energy Bulletin, The Oil Drum and Post Carbon Institute, of which she is also a board member. In this three part series, Cook casts a skeptical eye on the increasingly popular practice of desalination of seawater to meet growing water needs.

There is powerful information waiting to be unleashed in water data. If it were set free it would force us to re-think how we use, develop, sell, transfer, and dispose of water. Rather than focusing on the miles per gallon our cars get, we might consider how much water per mile we get from that fuel. Rather than arguing over how much energy is being used to produce water, we would give credit to how much water is required to produce energy. Rather than focusing on whether our food is grown locally, we would consider how much water it took to grow that food in our locality.



Sunset at Huntington Beach, California. Source: paige_eliz on Flickr.

For all the lip-service we give to water and its pivotal role, why is there not a U.S. Water Information Administration modeled after the U. S. Energy Information Administration? Established in 1977 as a response to the 1973 oil disruptions, [the EIA](#) “collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment.” With a budget of \$111 million per year, the agency produces data and analysis free of influence from the Executive Branch. The water sector screams for such a resource.

My particular interest in water began in 2003 when I served on the California Desalination Task Force, a group appointed by the State Legislature to look into the opportunities and impediments of desalination. Data is at the heart of reaching conclusions on a technology. Where did the data come from that allowed the committee to write its [findings and recommendations](#)? Who verified the veracity of the data? Would it stand up to scrutiny? I have spent eight years chasing such questions.

Information is not easy to come by. There are over 52,000 public and private water utilities in the U.S alone operating largely in anonymity. Public utilities offer varying levels of transparency, private utilities virtually none. The desalination industry consists of over 30,000 companies producing membranes, tanks, chemicals, pipes, monitoring, design, construction, mitigation, engineering, drilling, waste management, and consulting services. Many are competitors and hold data close to the vest. Foraging through public information, industry publicity, scientific papers, and news stories produces information that is contradictory and confusing.

There are 19 desalination projects proposed for California’s coast. With billions of dollars at stake, the public deserves more clarity on financial and environmental impacts. What are the assumptions that underlie our decisions to move forward? What issues are being left unaddressed? What lessons have we missed that could inform better water planning? Water agencies may be satisfied with the industry’s propaganda, but my research suggests they should pause and re-examine where we have been and where we are going.

Remembering the past

Desalination proponents throw out numbers that cannot be verified or replicated and those numbers are repeated by the media and government officials as if they were fact.

An article [published by the Los Angeles Times on December 4, 2010](#) is an example.

“Although still not cheap, the cost of desalinated water has been cut by more than half since 1998, according to the U.S. Geological Survey.”

I contacted the reporter to find the source of this statement and received no reply. I searched the USGS website and found an out-of-date overview of desalination with an **unsourced sentence** that looked like it might be the culprit of the reporter’s “fact.”

“As of 1998, the high cost of desalination has kept it from being used more often, as it can cost over \$1,000 – \$2,200 per acre-foot (1992 cost basis) to desalinate seawater as compared to about \$200 per acre-foot for water from normal supply sources. Desalination technology is improving and costs are falling, though, and Tampa Bay, Florida is currently desalinizing water at a cost of only \$650 per acre foot.”

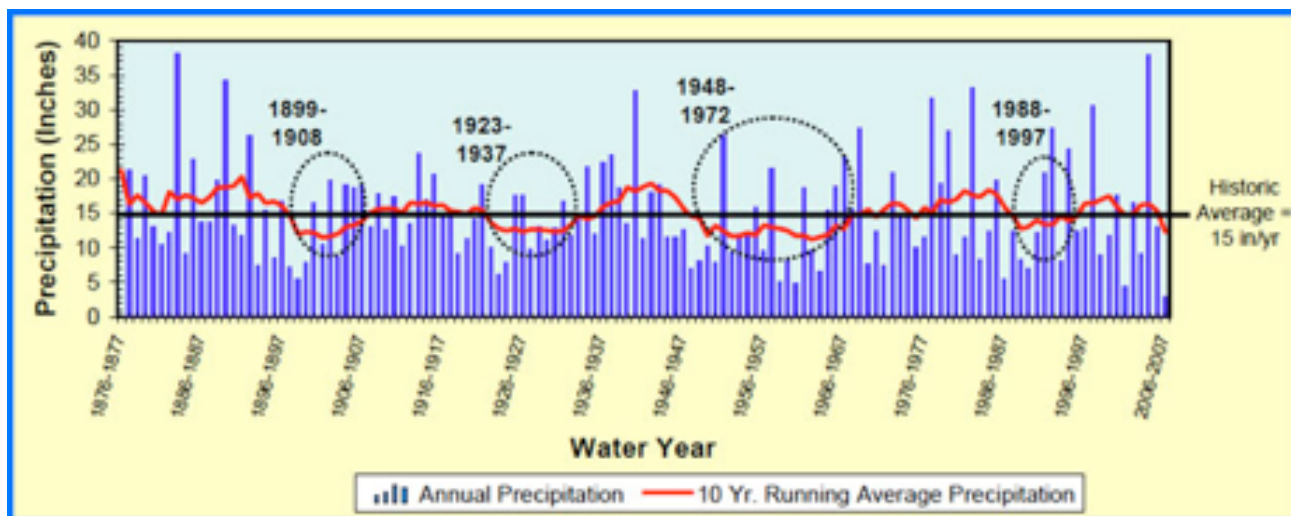
Thinking there might be additional data available from the USGS, I contacted them. They were unable to direct me to any reports or studies to verify the veracity of the claim that Tampa Bay is producing water at \$650 an acre-foot. Most likely the figure came from the original presentations made to Tampa Bay Water over a decade ago. Price was probably the motivating factor in Tampa Bay’s decision to construct a project, but as NOAA **stated in a 2003 publication**, “Time will not only tell the environmental impacts of Tampa Bay’s desalination plant, but it will also determine if it’s really producing the cheapest desalted seawater in the world.” It would be wonderful if time did tell its secrets. Unfortunately for truth seekers, time may tell but no one is listening.

Last March, **according to Tampa Bay’s General Manager**, the cost of production was \$1140/acre-foot. It’s anyone’s guess how he came up with that figure. If you calculate the marginal cost of water based on what the plant has actually produced since 2003, then the cost of water is **closer to** \$1826/acre-foot. Either way, the reporter did the public a disservice by perpetuating the myth that desalinated water can be produced at \$650 per acre-foot. I could almost hear the gullible politicians jumping on board.

The reporter could have provided a valuable public service had she written about Tampa’s twelve years of bankruptcies, technical challenges, and cost overruns. A search of news archives produced an interesting collection of stories, likely with similar fact checking issues, but nevertheless, interesting for the overall picture they paint.

- 1998 engineering contract awarded to Stone & Webster
- 2000 Stone and Webster declares bankruptcy
- 2001 Covanta (partnering with Poseidon Resources) hired to construct and operate for 30 years at \$7 million/year
- 2003 (March) initial output begins producing 3 million gallons but acceptance test fails

- 2003 (August) plant is shut due to clogged filters
- 2004 Tampa Bay pays \$4.4 million for Covanta to go away
- 2004 (September) American Water Services hired to fix plant at cost of \$29 million. Completion projected for 2006.
- 2006 (January) Agreement reached between Southwest Florida Water Management District (Swiftmud) (agency funding \$85m of project) and Tampa Bay for payments: 25% when plant is running, 50% when it operates at an annual average rate of 12.5 mg/d for 12 consecutive months, 25% when plant produces 25 mg/d for four consecutive months.
- 2006 (November) Tampa Bay Executive Director announces additional delays
- 2007 (August) Tampa Bay announces plant should be running by Halloween
- 2007 (December) Officials complete 14 day acceptance test. American Water contracts to run plant for 15 years.
- 2008 \$48 million over its original budget of \$110 million, the plant is operating
- 2009 plant producing 16-19 mg/d
- 2010 (February) plant passes final benchmark, receives final payment
- 2010 (April) plant put on “standby” due to Tampa Bay’s budget constraints
- 2010 (October) Pinellas County (customer of Tampa Bay Water) projects water rate increases of 16% by 2014
- 2010 (December) SWFMD looks into sanctions against Tampa Bay Water for failure to operate facility in accord with agreement.
- 2011 (January) Tampa Bay announces plans to reach 9 mg/d production by end of January.



Los Angeles annual rainfall 1876-2007. Will cyclical weather patterns turn desalination plants into expensive orphans? Source: Data from Los Angeles Almanac.

Reviewing the news accounts of the Tampa Bay experience gave me pause. Having served in public office, I am familiar with the face-saving, “circle the wagons” mentality that takes over an agency when problems start to mount. Unfortunately, it means others are not likely to learn any lessons.

No one contemplated a standby plant at Tampa Bay. Now, faced with real production costs higher than the rate guaranteed to customers (\$841/acre-foot versus \$1140 or more), Tampa Bay will eventually have to raise rates or renegotiate an agreement that locks them a 17 mg/d production rate.

Link [here](http://blogs.ei.columbia.edu/2011/01/19/desalination-yesterday%ca%bcs-solution-part-2/) for part 2 (http://blogs.ei.columbia.edu/2011/01/19/desalination-yesterday%ca%bcs-solution-part-2/)

Link [here](http://blogs.ei.columbia.edu/2011/01/21/desalination-yesterday%ca%bcs-solution-part-3/) for part 3 (http://blogs.ei.columbia.edu/2011/01/21/desalination-yesterday%ca%bcs-solution-part-3/)

Biography

Debbie is a former Mayor and Council Member from the City of Huntington Beach, California. She served on many regional boards and commissions including the Southern California Association of Governments, League of California Cities, Orange County Sanitation District, and the California Desalination Task Force.

In 2008, Debbie was the Democratic Party nominee for the 46th Congressional District. Her campaign attracted national attention and support for its focus on our nation's energy vulnerabilities.

Debbie holds a Bachelor of Science degree in Earth Science from Cal State Long Beach, a Jurisdoctorate from Western State College of Law, and a license to practice law in California. Debbie is also a graduate of the Kennedy School of Government National Preparedness Leadership Initiative and Great Valley Leadership Institute.

Debbie currently serves as the President of the Board of Directors of Post Carbon Institute and advisor to the Association for the Study of Peak Oil. Debbie is a frequent lecturer and writer on energy and water issues.