



Business for Social Responsibility



## At the Crest of a Wave: A Proactive Approach to Corporate Water Strategy

PG&E Water Conservation Showcase

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### Outline

- Background
- The Context: 21<sup>st</sup> century water trends
- Phase I – Establishing a corporate water strategy
- Phase II – Implementation and innovation
- Conclusions

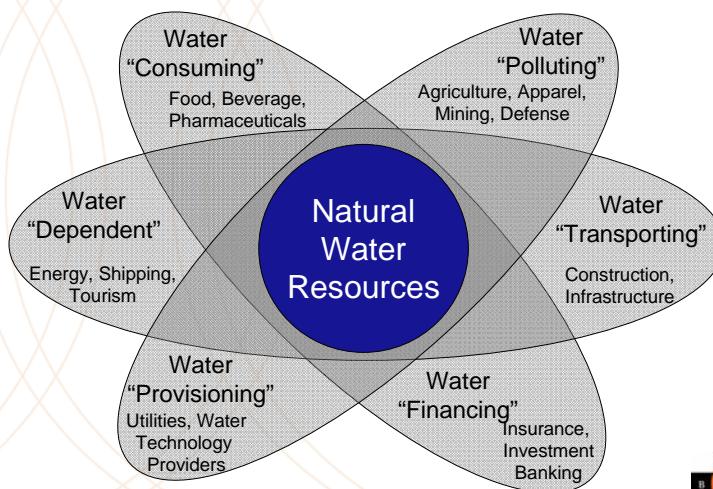


## The Context: 21<sup>st</sup> Century Water Trends

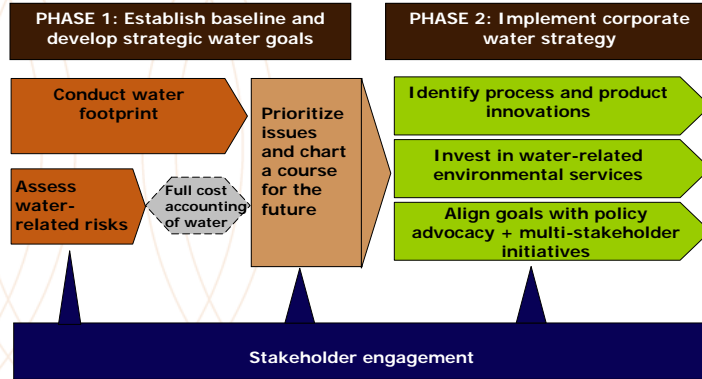
- Increasing and inequitable demand
- Ongoing over appropriation
- Intensifying environmental impacts
- Declining water quality
- Climate change and its effect on water
- Emerging role of the public in water policy
- Growing debate over the role of markets in delivering water



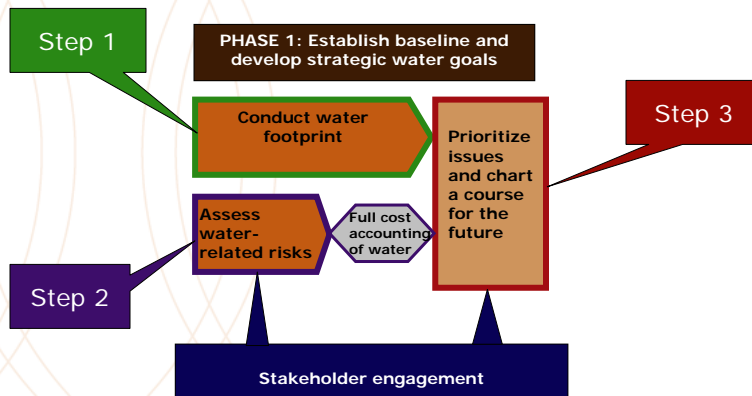
## Implications for Business



# Developing and Implementing a Corporate Water Strategy



## Phase I: Establish Baseline and Develop Strategic Water Goals



# Conduct Comprehensive Water Footprint

## Step 1

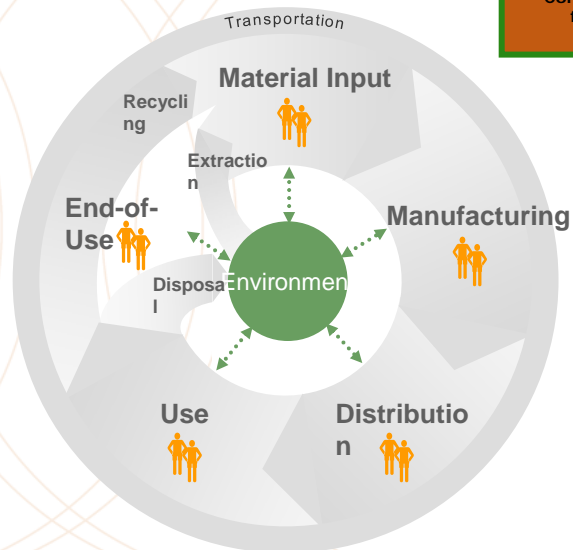
Conduct water footprint

- Assessing relative risks
  - Water use beyond the fence line
  - “Embedded” and “virtual” water
- Prioritizing management efforts
- Setting strategic goals
- Evaluating progress



## Step 1: Going Beyond the Fence Line

Conduct water footprint



## Step 1: Assessing Water Impacts Along the Supply Cycle

Conduct water footprint

### Material Input

- What are primary inputs to a company's goods and services?
- Does the production, transportation, or storage of these primary inputs either require, or affect, water?
- Are there input substitutes that reduce these water-related impacts?

### Distribution

- What are water-related impacts associated with various packaging materials?
- Does the potential for spills exist during product transportation or distribution?
- What approaches are available to reduce the amount of water required to produce the same product or service?

### Manufacturing

- Does water used in production come from sustainable/renewable sources?
- Are there other local users that rely on these same sources?
- Are legal issues associated with water access clear and resolved?
- Do water discharges generated during production activities result in water-quality impacts through deposition?

### Use and End-of-Use

- Is significant amount of water needed to use the product/service?
- Is significant amount of water required to dispose of or recycle the products?
- Do its products (or product components or residuals) end up in surface or ground water following use?



## Assessing Water-Related Risks

### Step 2

Assess water-related risks

Risks associated with the following:

- Local hydrological conditions
- Socio-economic conditions in production regions or key consumer markets
- Business impacts on defined water resources

The impacts of companies' water use vary depending on local hydrological, social, economic and political factors



## Step 2: Assessment of Region-specific risks

Assess water-related risks

- Potential shortage risks
- Potential flooding risks
- Trends in regional demand
- Deficiencies in institutional or political “water governance” capacity
- Disparities/inequities in local water access/pricing
- Impacts of water use and wastewater on local community and ecosystems



## Establish Corporate Water Policy

### Step 3

Prioritize issues and chart a course for the future

- High-level commitments
- Concrete, quantifiable goals and targets
- Contingency plans to respond to risks (e.g., extreme hydrologic events etc.)



## Guidelines for Water Management Plan

### Step 3

- Affirm top management commitment.
- Set initial priorities and goals for the program.
- Consult water suppliers, industry associations, and regulatory agencies for guidance
- Form a water team from every business function that uses water or that has the potential to pollute water.
- Create a water management program and develop tasks and measures based on the water footprint and impact assessments.
- Communicate water management objectives internally and externally.

Prioritize issues and chart a course for the future

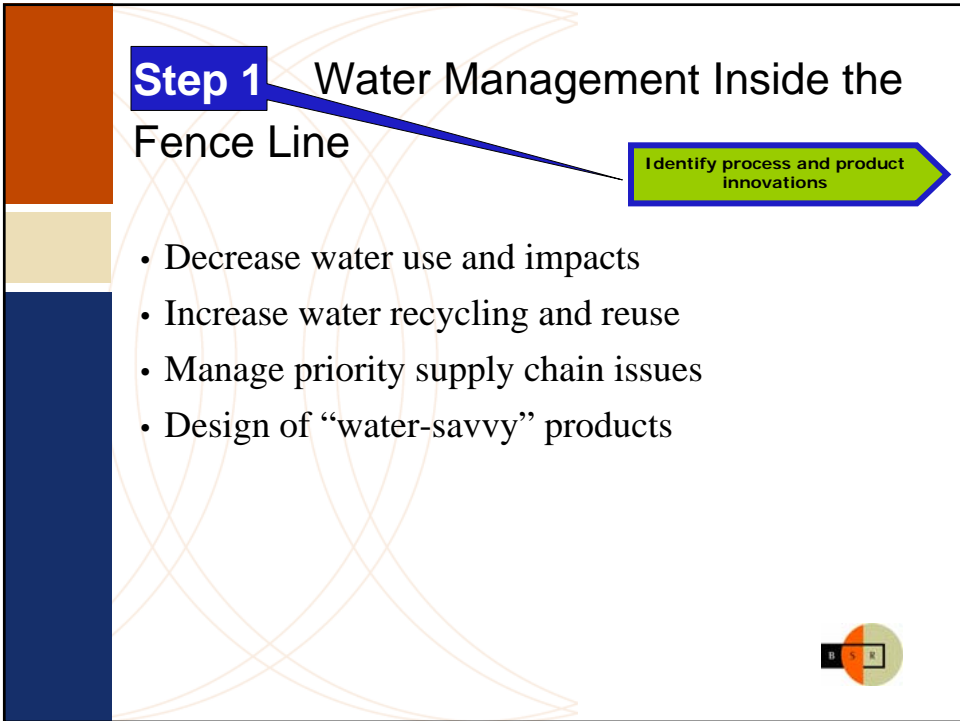
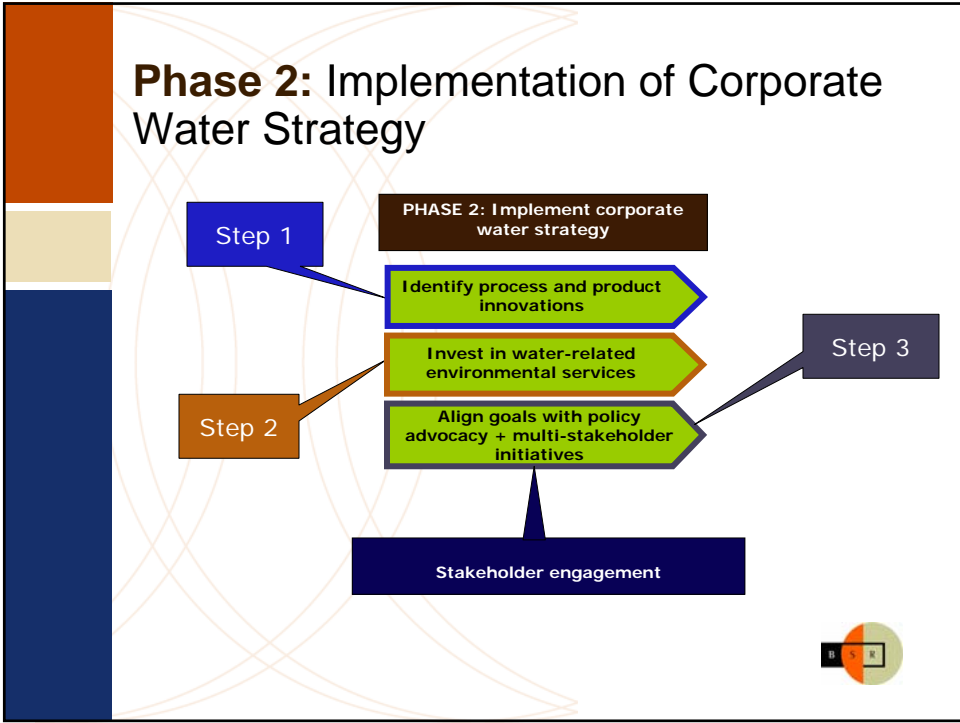


### Step 3: Use Stakeholder Input in Strategic Planning

- Identify local actors and their water-related needs
- Communicate findings from water footprint and risk assessment to gain feedback from investors, customers, local communities and others
- Recognize that civil society and NGOs play increasingly important roles in defining water policy along with affected communities

Prioritize issues and chart a course for the future





# Step 1: Water Management Inside the Fence Line

Identify process and product innovations

One useful categorization:

- Hardware Solutions
- Operational Solutions
- Employee Solutions

Value Chain Category	Hardware	Operational	Employee
Extracting raw materials	Install meters to monitor water withdrawals, use, and discharge.	Develop alternatives for recycling water.	Monitor discharge discharges.
	Evaluate technological options for reducing waste associated with materials extraction or production.	Limit surges in water pressure.	Monitor unaccounted water.
Manufacturing	Install leak noise detector.	Automatically shut off water flow at end of production cycle.	Survey the water pressure at specific pieces throughout a site.
	Install water meters where water is being used.	Automatically shut off water flow at end of employee shift.	Work with local water utility to measure water pressure at key delivery and usage points.
	Install "tap-meters" for sub-processes and specific pieces of equipment.	Install flow restrictions to ensure specified flow throughout a range of water pressures.	Review historic water usage for your facility. Analyzing several years of consumption data will often identify leaks or other process inefficiencies.
	Install separate water meters for large operations.	Identify water-efficient alternatives for production.	
	Identify water-efficient alternatives for production.	Explore and implement more efficient cooling systems that use less, or recycled, water.	
Packaging, Distribution, Marketing/Sales	Install water-efficient fixtures such as toilets, faucets and showerheads.	Implement leak detection and repair program.	Communicate leaks to maintenance team.
		Restroom and shower facilities.	Alternatives to water-powered cleaning (eg. Use brushes rather than water to clean sidewalks).
		Restrooms and food preparation.	Wash-down areas.
		Wash-down areas.	Water fountains.
Consumer Operation / Use		Water delivery devices (handage, mop, etc.)	Implement employee conservation suggestions (eg. "No water conservation meetings).
		Common restroom links to cold water only.	Water water-related notices on bulletin boards.
Product end-of-life		Use water efficiency labeling where possible.	Encourage consumers to wash fabrics in cold water.
		Pattern water usage test on products to determine washing potential.	

# Step 1d: Design of "Water Savvy" Products

Identify process and product innovations

- Perform life cycle analysis to determine where in the cycle water is used the most
  - Eg. P&G, Unilever liquid detergents redesign
- Replace out-dated water intensive products
  - Eg. Waterless car wash; pervious concrete



## Step 2 Invest in Water-Related Ecosystem Services

Invest in water-related environmental services

- Assess the market potential
- Operationalize ecological restoration
- Identify investment opportunities in watershed services



## Step 2: Assess the Market Potential

Invest in water-related environmental services

Regulated / Compliance Markets	<ul style="list-style-type: none"> <li>• U.S. EPA Water Quality Trading</li> <li>• U.S. Clean Water Act Wetlands Mitigation Banking</li> <li>• U.S.' State Nutrient Trading Programs (Pennsylvania, Oregon, etc.)</li> <li>• Mexico's Payments for Hydrological Services (PSA-H, 2003)</li> <li>• Australian State Forests of New South Wales' reduction of water salinity program, where water transpiration credits earned by State Forests for reforestation are sold to irrigators for \$40/ha per year for 10 years and revenues are used to reforest private and public lands</li> </ul>
Voluntary / Self-Organized Payments for Watershed Services	<ul style="list-style-type: none"> <li>• Perrier Vittel pays upland farmers for specific practices to maintain water quality</li> <li>• New York City paying upland farmers to maintain water quality and quantity</li> <li>• A Beer Company, Municipal Water Company, and Electric Power Company pay \$1.7 million for upstream conservation in Quito, Ecuador</li> </ul>



## Step 2: Operationalize Ecological Restoration

Invest in water-related environmental services

- Identify ‘high [conservation] value’ properties
  - Perform ‘audit’ of properties to understand what ecological services are being produced on lands/water systems
- Take advantage of increased institutional capacity and market infrastructure
  - Engage with brokers, aggregators, and technical experts



## Step 2: Identify Investment Opportunities in Watershed Services

Invest in water-related environmental services

- Mitigation banks in the U.S. are most active areas of regulation-based restoration
  - Developers building on wetlands can buy credits, or shares, in mitigation banks located in the same watershed to offset the damage they cause



### Step 3 Internal Alignment with Public Water Goals

Align goals with policy advocacy + multi-stakeholder initiatives

- Collaboration with other businesses operating in the same watershed or in the same industry
  - CEO Water Mandate: Global Water Partnership;
- Collaboration with communities and NGOs
  - Eg. Ethos Water and CARE; Pfizer and Ann Arbor-based Miller's Creek Action Team
- Collaboration with government agencies
  - Eg. Intel and City of Chandler, AZ working to use reclaimed water rather than fresh water delivered by the city;



### Appendix A: Third-Party Data Sets

- World Resources Institute's *Earthtrends* sample data
  - Actual renewable water resources: Per capita
  - Agricultural inputs: Water use intensity
  - Freshwater indices: Water Poverty Index
  - Water withdrawals: Annual per capita and total
- Pacific Institute's "*The World's Water: The Biennial Report on Freshwater Resources*"
  - Total renewable freshwater supply, by country (2006 update)
  - Freshwater withdrawal, by country and sector (2006 update)
  - Investment in water and sewerage projects with private participation, by region, in middle- and low-income countries, 1990-2004
  - Irrigated area, by region, 1961-2003



## Appendix A: Third-Party Data Sets

- Ecological Footprint
  - [http://www.footprintnetwork.org/gfn\\_sub.php?content=datamethods](http://www.footprintnetwork.org/gfn_sub.php?content=datamethods)
  - Resource management tool for measuring how much land and water area a human population requires to produce the resources it consumes and to absorb its wastes under prevailing technology
  - Water is NOT adequately integrated in this approach, but methodology is useful
- Yale Environmental Performance Index (EPI)
  - <http://www.yale.edu/eipi/>
  - Identifies targets for environmental performance and measures how close countries come to these established goals
  - Issue-by-issue and aggregate rankings permits cross-country comparisons and could offer a tool for improving policy-making and environmental decision making



## Conclusions

- A strategic water plan will position a company over the longer term to more readily forecast change and respond to challenges.
- There is tremendous potential for a multi-faceted approach that combines:
  - Efficiency and conservation measures
  - Innovation at the process and product level
  - Investments in natural systems that replenish and purify water long into the future

