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# Sustainable Water Planning: One Answer to a Looming Global Challenge

Dan McCarthy  
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# Sustainable Water Planning: One Answer to a Looming Global Challenge

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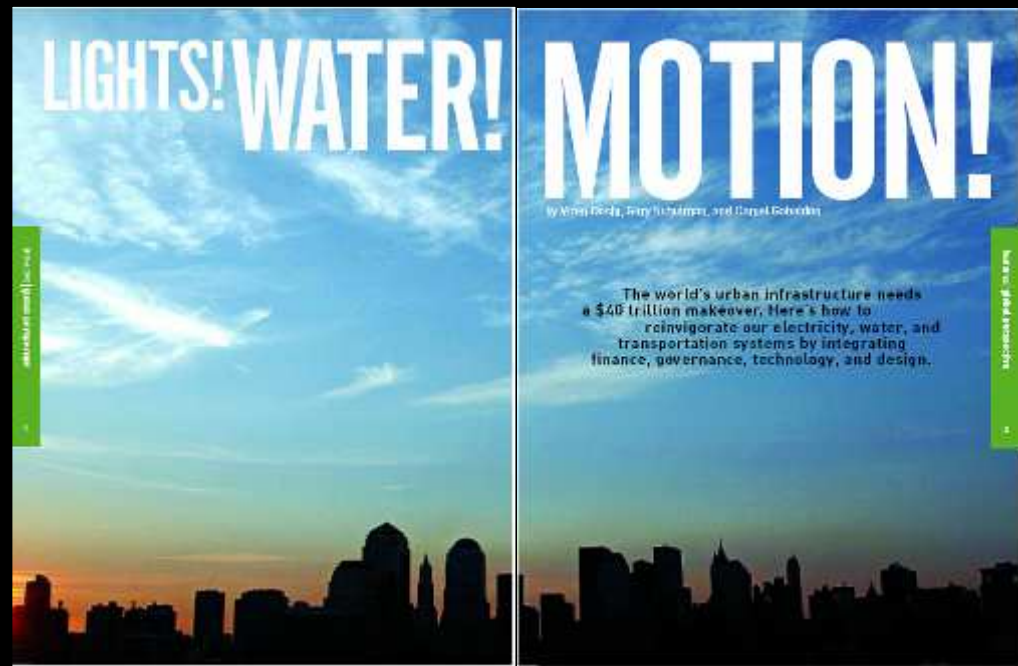
## Water/wastewater industry drivers

- Economic factors
  - Economic growth and urbanization
  - Resource imbalance
  - Aging infrastructure
  - Credit crunch
- Public awareness
  - Health and environmental concerns
  - Sustainability

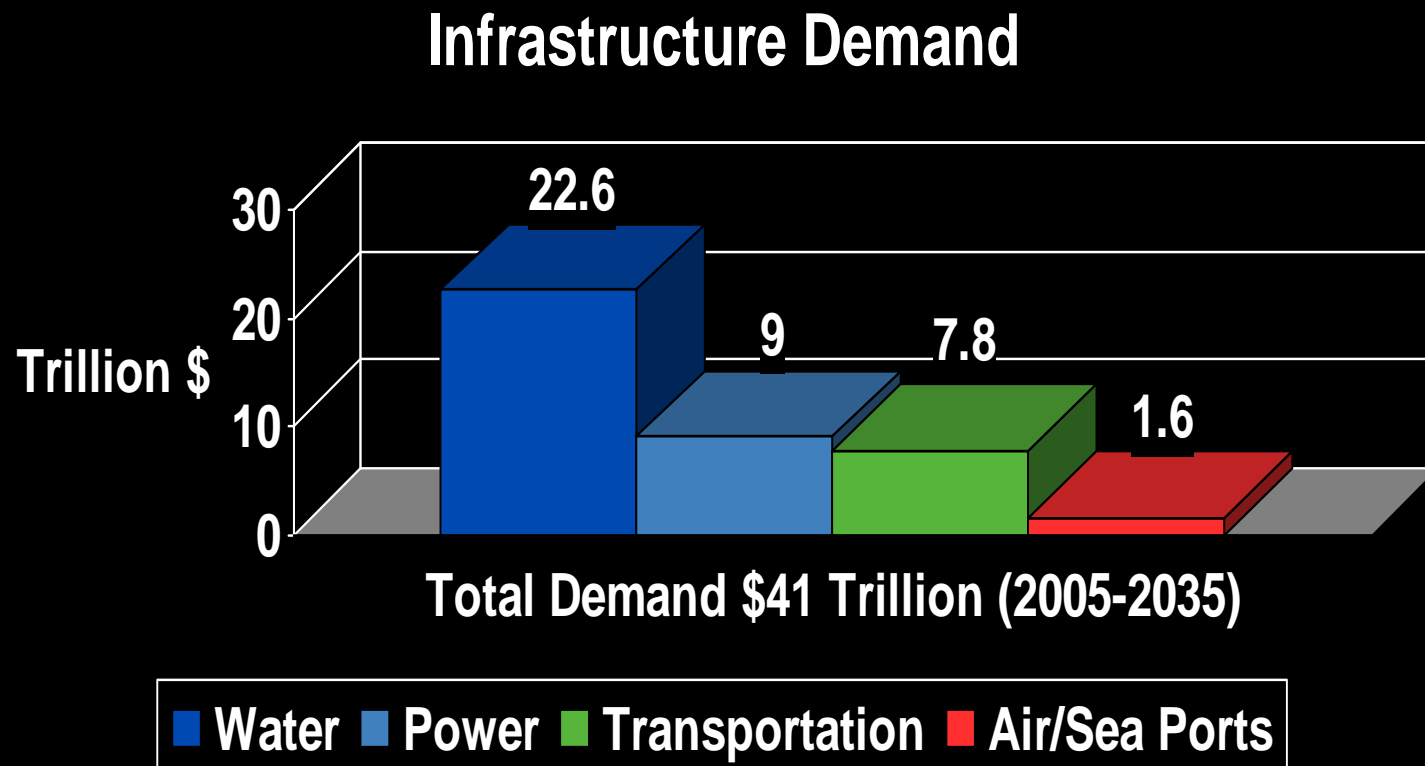


## What does the water market look like going forward?

- Booz Allen Hamilton's April 2007 report on global infrastructure needs over the next 30 years
- Projected needs for water, power, transport and port facilities totaled \$41 trillion

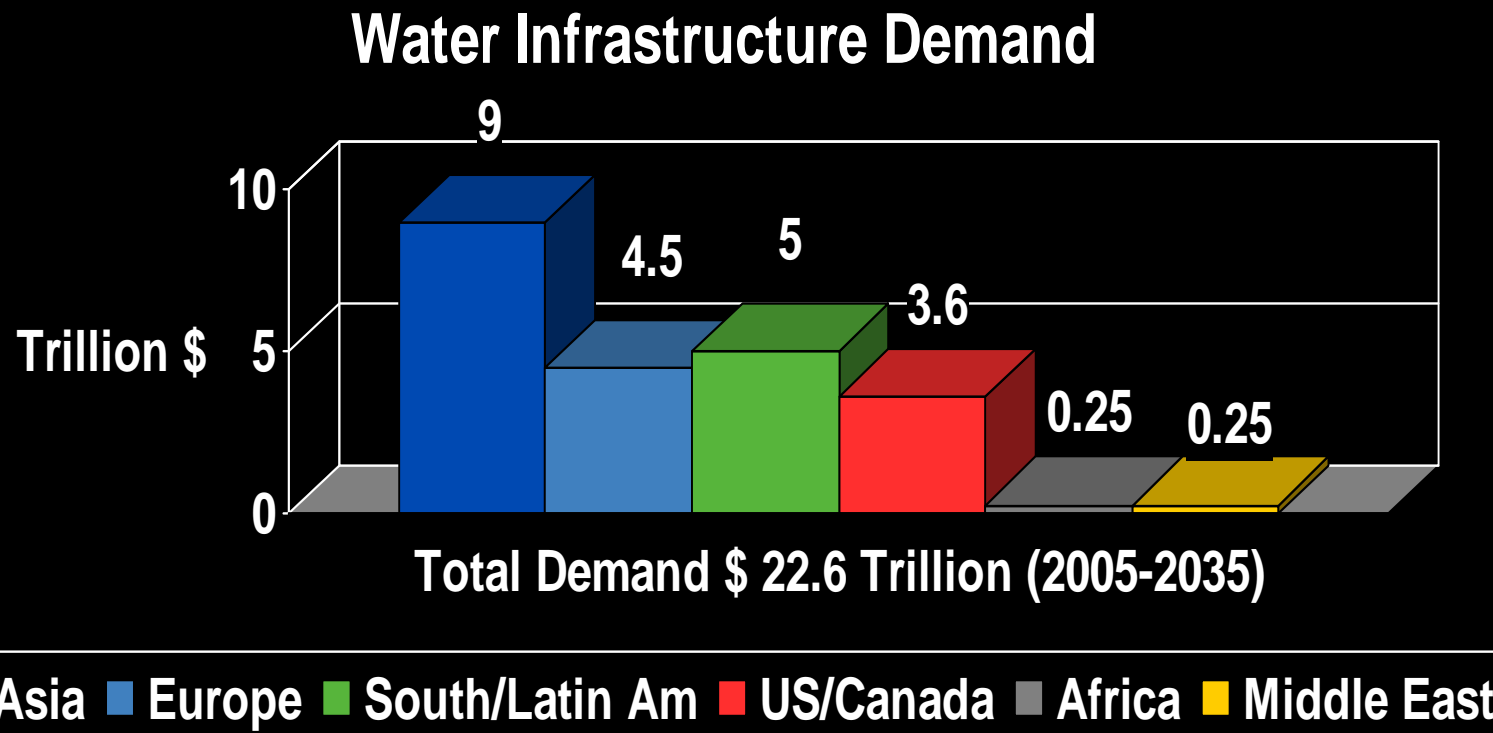


## The infrastructure challenge



*Source: Booz Allen Hamilton, 2007*

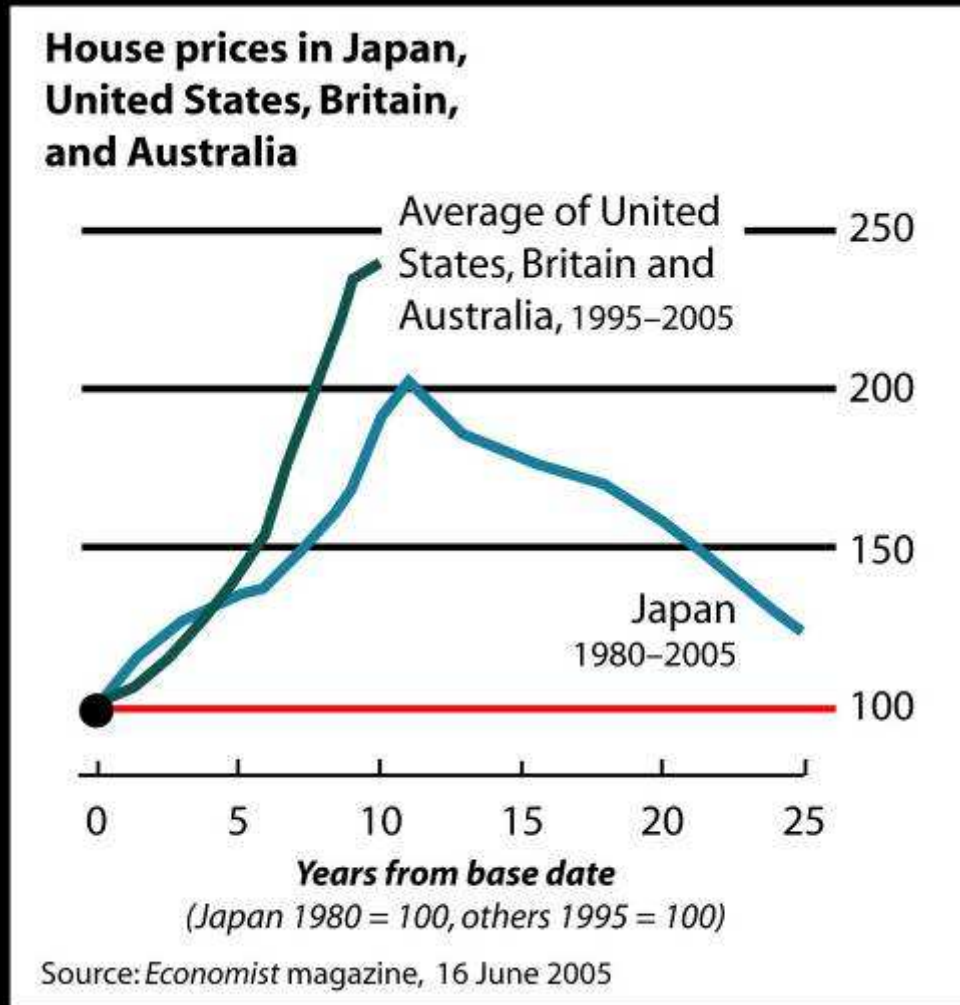
## The infrastructure challenge



*Source: Booz Allen Hamilton, 2007*



## Impact of the global (not just U.S.) housing bubble



## Role of credit in the water/wastewater industry

- What's occurring in financial markets has an impact on water/wastewater utilities globally



## So how do the sub-prime woes impact the industry?

- Rate base affected by rapid and significant declines in property values and new connection fees
- “Slow-pay” or “no-pay” consumers further stressing revenue streams
- Many consumers (especially industry) are reducing consumption thus utility revenues are lower



## The result – the bad news

- Utilities facing lower cash flows, increased finance costs and increased uncertainty
- Many delaying, deferring and/or canceling capital expenditures where possible
- Many delaying discretionary maintenance and looking for operational savings



## The result – the good news

- Bubbles always burst and when they do it appears to be the “end of the world” (and it is for some incautious investors)
- Once the bubbles have burst, markets reform and growth resumes (cautious optimism returns to financial markets)
- Confidence returns, innovation sparks new approaches intended to eliminate prior ills and the bull market returns
- New inefficiencies creep into the market and the cycle begins once more, the next bust is approaching
- Life goes on, babies are born, houses are built, businesses are started, fortunes are made and lost



## Water/wastewater industry drivers

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  - Health and environmental concerns
  - Sustainability





# Sustainability is today's hot topic

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**BBC NEWS**

**Zero carbon goal needs firm foundation**

There is no "magic bullet" solution when it comes to meeting the world's Green Room, he argues that poor use of technology v

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One third of the planet will be desert by the year 2030 say climate experts in the most dire warning yet of the effects of global warming

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**Area Tap Water Has Traces of Medicines**

Tests Find 6 Drugs, Caffeine in D.C., Va.

By Carol D. Leonnig  
Washington Post Staff Writer  
Monday, March 10, 2008; B01

The Washington area's drinking water contains trace amounts of six commonly used drugs that typically turn up in wastewater and cannot be filtered out by most treatment systems.

The pharmaceuticals -- an anti-seizure medication, two anti-inflammatory drugs, two kinds of antibiotics and a common disinfectant -- were found in very small amounts in the water supply that serves more than 1 million people in the District, [Arlington County](#) and [Falls Church, Va.](#) But scientists say the health effects of long-term exposure to such low levels are unknown.

Pharmaceuticals, along with trace amounts of caffeine, were found in the water supply that serves more than 1 million people in the U.S. metropolitan areas tested. The findings were announced Monday by a team of researchers from the U.S. Environmental Protection Agency and the U.S. Geological Survey.

**WWT &**

**Round Table 2008**



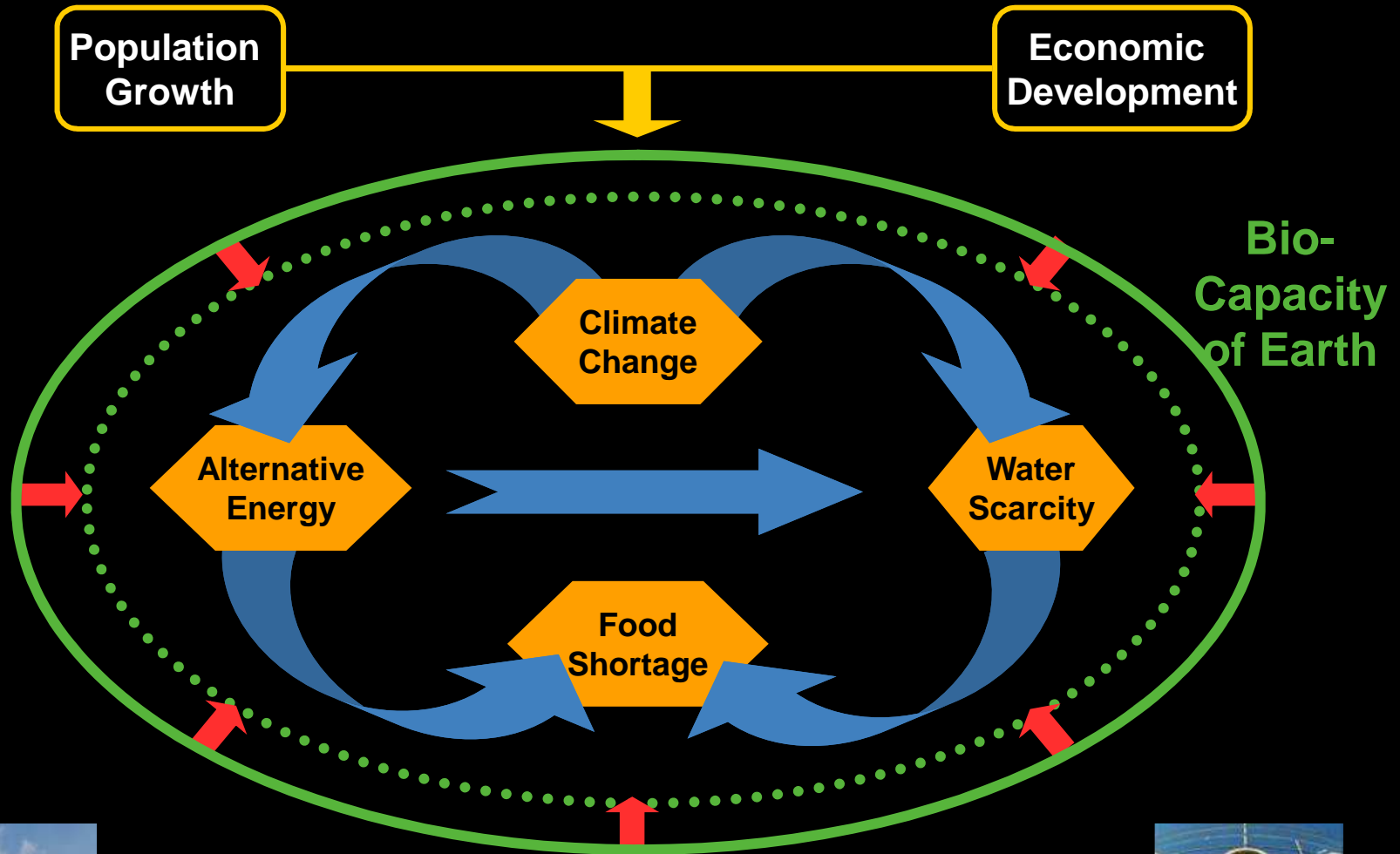
To what extent should water companies take the frontline role in tackling the effects of climate change?

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Sustainable Planning



Sustainable Design



Alternative Energy Supply



Alternative Water Supply



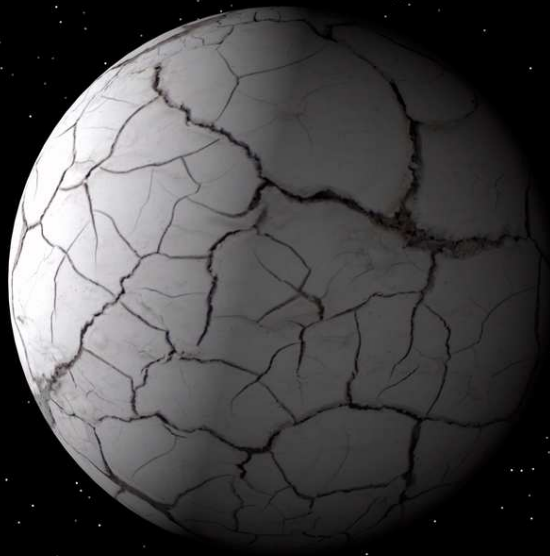
## Sustainability goals create the need for innovation

- We tend to take for granted the ongoing availability of sufficient, clean water
- As consumers we must reduce our water footprint – and encourage others to do so
- We can ensure a more sustainable future by taking urgent action now

### Water Footprint

The total volume of fresh water used by individuals, businesses or nations to produce and consume or use goods and services

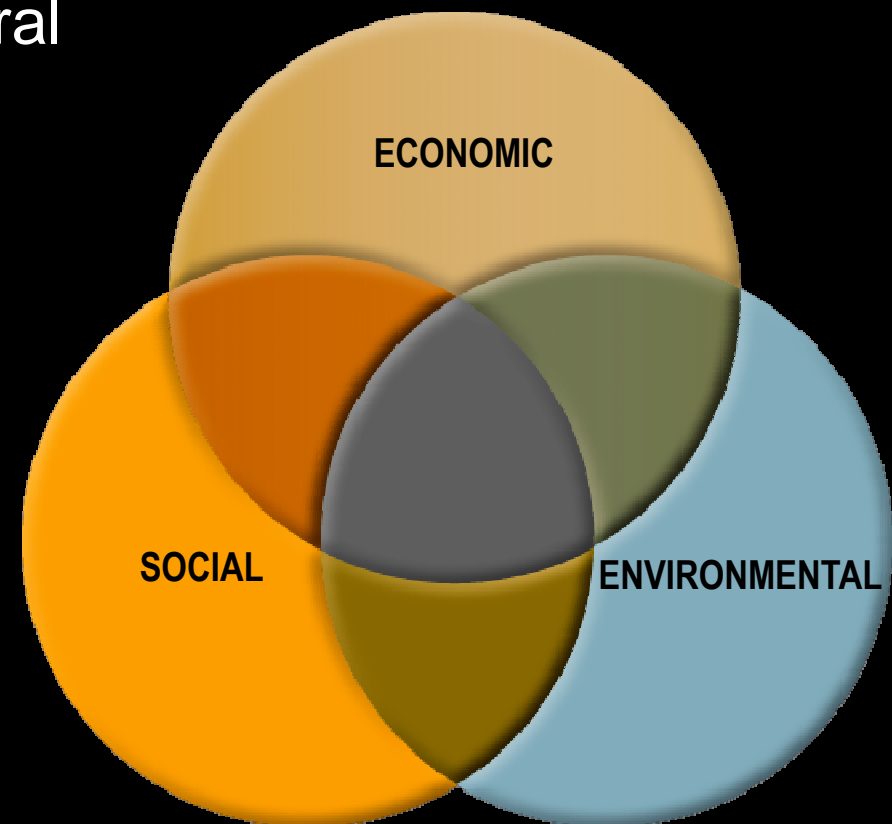
## Sustainable water planning – A long way to go



- Safe water
- Sufficient water
- Where it's needed
- When it's needed
- For whatever purpose it's needed
- At a price people can afford

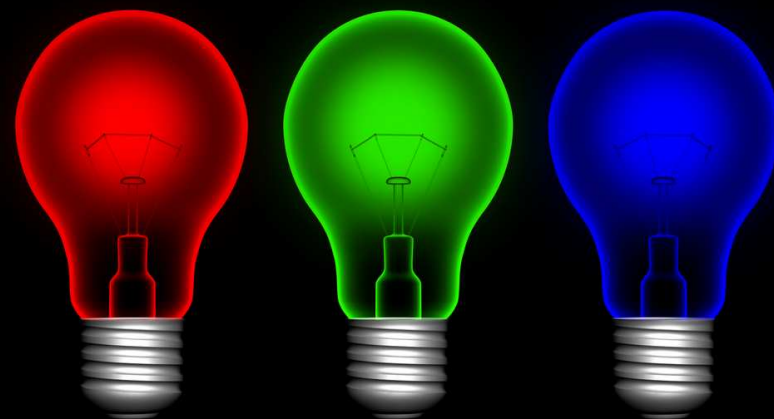
## Hallmarks of sustainable planning process

- Balance of human and natural environment
- Stakeholder involvement
- Long-term perspective
- Deals with uncertainty



## A planning framework for an uncertain future

- Is a rigorous process and evaluation system
- Enables utilities, communities and other stakeholders to make sound decisions about
  - Water supply
  - Wet weather
  - Other environmental issues
- Helps industry adapt to an uncertain and ever-changing future



## Concurrent sustainable planning processes

- Stakeholder involvement
- Risk analysis
- Scenario planning
- Decision analysis

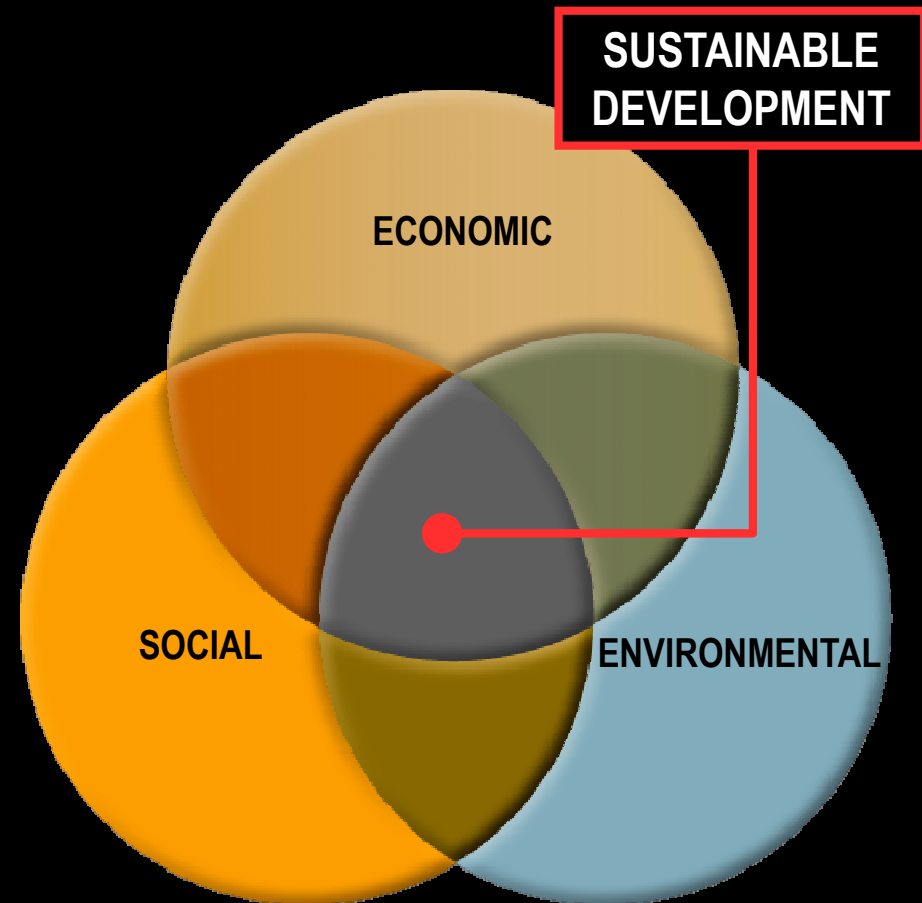


Sustainable development “meets the needs of the present without compromising the ability of future generations to meet their own needs.”

*Brundtland Commission, 1987*

## Adopt a problem-solving framework to help...

- Design, construct and operate infrastructure to use energy and materials as efficiently as possible and to generate little or no waste
- Restore the condition of the environment/resources
- Consider full life-cycle effects of project over long term
- Measure performance to confirm progress towards sustainability





## Discussion