

# Achieving Economic Feasibility in Drinking Water Regulation

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# The historical evolution of the Safe Drinking Water Act: Statutory provisions

Goals	SDWA 1974	SDWA 1986	SDWA 1996
Stringent public health protection	✓	✓✓	✓
Technical feasibility	✓	✓	✓
Accommodation for diseconomies of scales	✓	✓	✓
Methods for making tradeoffs across goals	✗	✗	✓

# The historical evolution of the Safe Drinking Water Act: Regulatory implementation

Goals	SDWA 1974	SDWA 1986	SDWA 1996
Stringent public health protection	✓	✓✓	✓
Technical feasibility	✓	✓	✗
Accommodation for diseconomies of scales	✗	✗	✗
Methods for making tradeoffs across goals	✗	✗	✗

# SDWA 1996 regulations with no claim that 'benefits justify costs'

<b>Post-SDWA 1996 Rulemaking</b>	<b>Date/ Reference</b>	<b>Economic Feasibility Can Be Reasonably Characterized Based on USEPA Analysis</b>
Lead and Copper NPDWR	1/12/2000 65 FR 2000	No
Revisions to IESWTR, Stage 1 DBPR	4/4/2000 65 FR 20304	No
Public Notification Rule	5/4/2000 65 FR 40520	No
Revisions to IESWTR, Stage 1 DBPR	1/16/2001 66 FR 3770	No
Lead and Copper: Short-Term Regulatory Revisions and Clarifications	10/10/2007 72 FR 57782	No
Drinking Water Regulations for Aircraft Public Water Systems	10/19/2009 74 FR 53589	No

# SDWA 1996 regulations claiming that 'benefits justify costs'

Post-SDWA 1996 Rulemaking	Date/ Reference	Economic Feasibility Can Be Reasonably Characterized Based on USEPA Analysis
Disinfectants and Disinfection Byproducts Rule (DBPR)	12/16/1998 63 FR 69390	No
Interim Enhanced Surface Water Treatment Rule (IESWTR)	12/16/1988 63 FR 69478	No
Radionuclides NPDWR	12/7/2000	Yes
Uranium NPDWR	65 FR 76708	Yes
Arsenic	1/22/2001 66 FR 6976	Yes
Filter Backwash Recycling Rule (FBRR)	6/8/2001 66 FR 31085	No
Long Term 1 ESWTR	1/14/2002 67 FR 1811	No <sup>b</sup>
Stage 2 DBPR	1/4/2006 71 FR 388	Yes
Long Term 2 ESWTR	11/8/2006 71 FR 653	Yes
Ground Water Rule (GWR)	11/8/2006 71 FR 65573	Yes
Revisions to the Total Coliform Rule (RTCR)	2/13/2013 78 FR 10270	No
Notes: <sup>a</sup> "The Agency has determined that the benefits of the FBRR justify their cost on a qualitative basis." <sup>b</sup> Key analytic documents are not publicly available.		

# SDWA 1996 regulations for which 'benefits justify costs' can be described quantitatively

Post-SDWA 1996 Rulemaking	Reported or Implied NB or VSL	Smallest System Size with Annualized Net Benefits	Annualized Cost/HH
Radionuclides NPDWR	NB: -\$36.4 m	None	Not disclosed
Uranium NPDWR	VSL: \$68 m	Not disclosed	Not disclosed
Arsenic	NB: -\$8.5 to -\$66 m	<u>See next slide</u>	
Stage 2 DBPR	PB: 61-610 cancers CC: \$76.8 m	Not disclosed	Not disclosed
Long Term 2 ESWTR	Yes	Not disclosed	Not disclosed
Ground Water Rule (GWR)	Max NB: -\$11.7m	Not disclosed	Not disclosed

# Smallest CWS and USEPA-estimated Annualized Household Net Benefit by Household Size for which 10 µg/L Arsenic Standard is Economically Feasible

Discount Rate	Risk Estimate	
	"Lower Bound"	"Upper Bound"
<b>3%</b>		
Household Size = 3	3,301–10,000 \$15.95	101–500 \$92.15
Household Size = 5	501–1,000 \$18.71	< 100 \$97.60
<b>7%</b>		
Household Size = 3	>1 million \$3.28	>1 million \$18.81
Household Size = 5	>1 million \$6.05	10,001–50,000 \$0.41

## Why 'economic feasibility' matters

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- Defined as  $MB > MC$  is consistent with
    - intuition about household choices
    - Water supply planning guidance and practices
    - SDWA 1996 (“benefits justify costs”)
  - Solves the ‘California Conundrum’
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# The 'California Conundrum' (Part 1)

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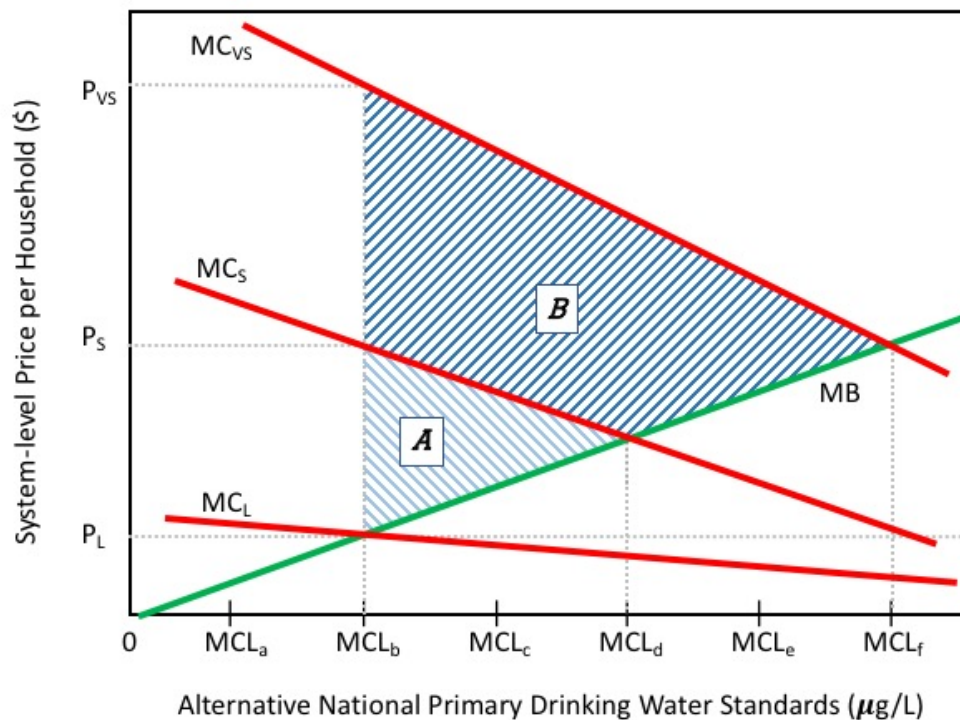
- HSC 116365 requires MCLs be set:
    - as close as feasible to the public health goal placing primary emphasis on the protection of public health; and
    - to the extent technologically and economically feasible, meet all of the an expansive set of criteria
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## The 'California Conundrum' (Part 2)

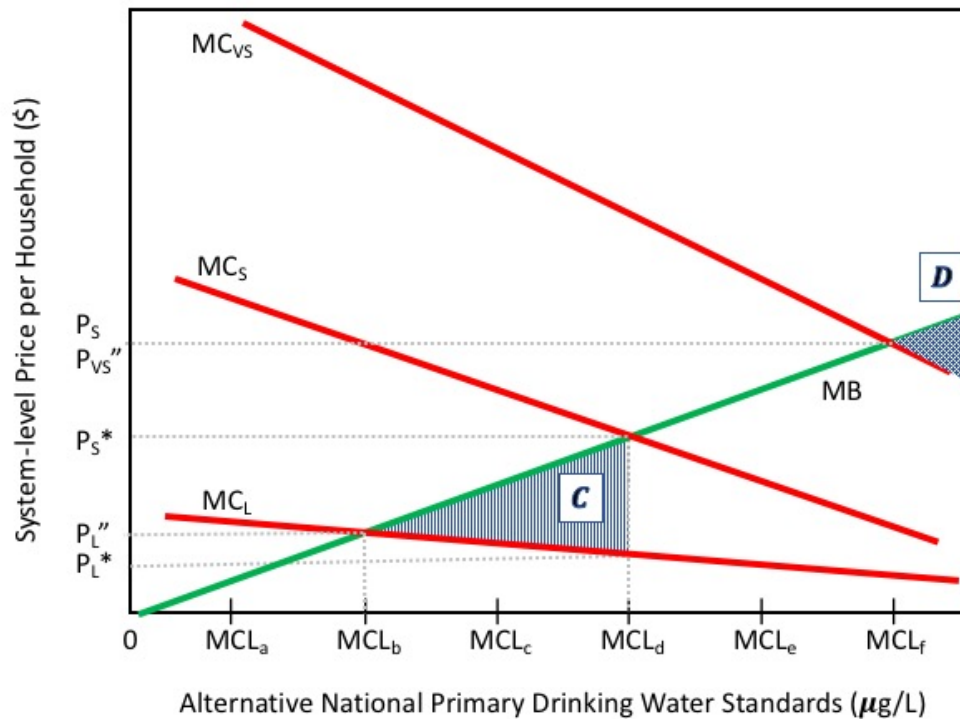
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- In 2014, CA set Cr6 MCL at 0.010 mg/L
  - *CMTA v. SWRCB* (2017) on CA's Cr6 MCL:
    - Estimated small system cost of \$5,630/hh/yr is 'on its face economically unfeasible for many'
    - MCL was vacated
    - SWRCB was directed 'to consider the MCL's economic feasibility'
  - SWRCB is struggling to define 'economic feasibility'
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# Drinking Water Standards as Issued by USEPA



# Economically Feasible Drinking Water Standards



# Questions?

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