



Water Infrastructure

Water Education Foundation Executive Briefing
March 17, 2016

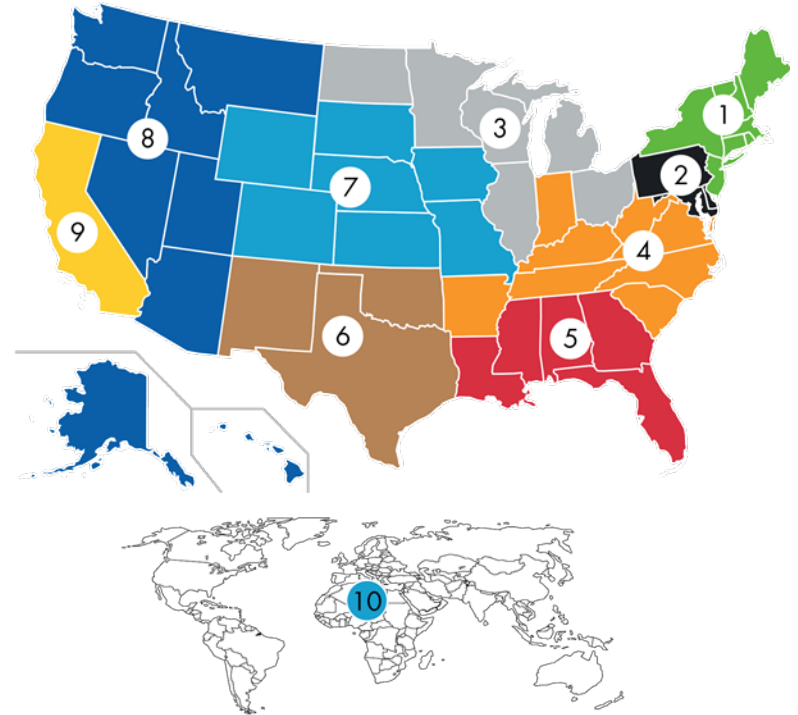
ASCE Region 9 Water and Environment Committee
Committee Chair Xavier Irias, P.E.

Topics

1. ASCE Background
2. Report Card
3. ASCE Policy positions relative to water infrastructure

ASCE Background

- Founded in 1852
- 150,000 members in 177 countries, about 136,000 based in the USA
- Over 18,000 members in Region 9 (California)



ASCE Mission

Provide essential value to our members and partners, advance civil engineering, and serve the public good.

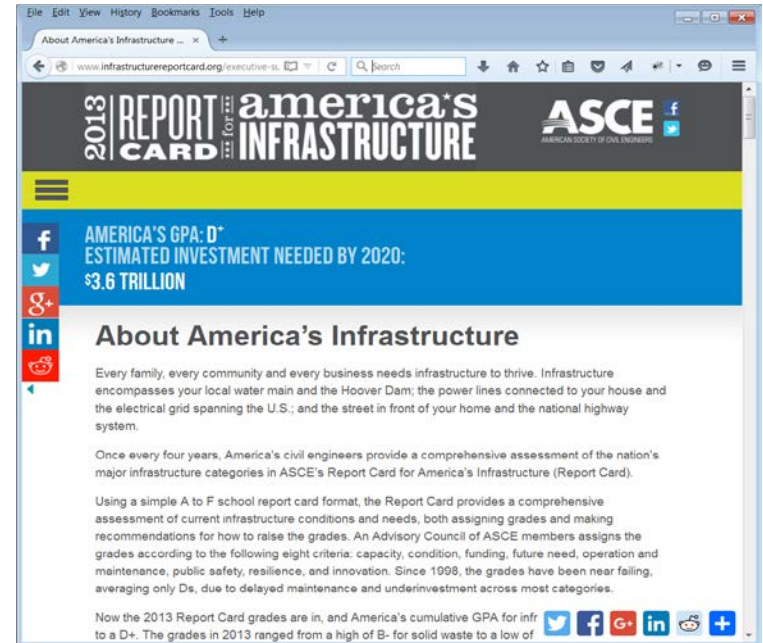
In carrying out our mission, ASCE:

- Advances technology
- Encourages lifelong learning
- Promotes professionalism and the profession
- Develops civil engineer leaders
- Advocates infrastructure and environmental stewardship



ASCE Infrastructure Report Card

- Infrastructure assessment updated every 4-6 years
- Done at regional, state and national levels



<http://www.infrastructurereportcard.org>

National report card 2013

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AMERICA'S INFRASTRUCTURE G.P.A. **D+**

Each category was evaluated on the basis of capacity, condition, funding, future need, operation and maintenance, public safety and resilience.

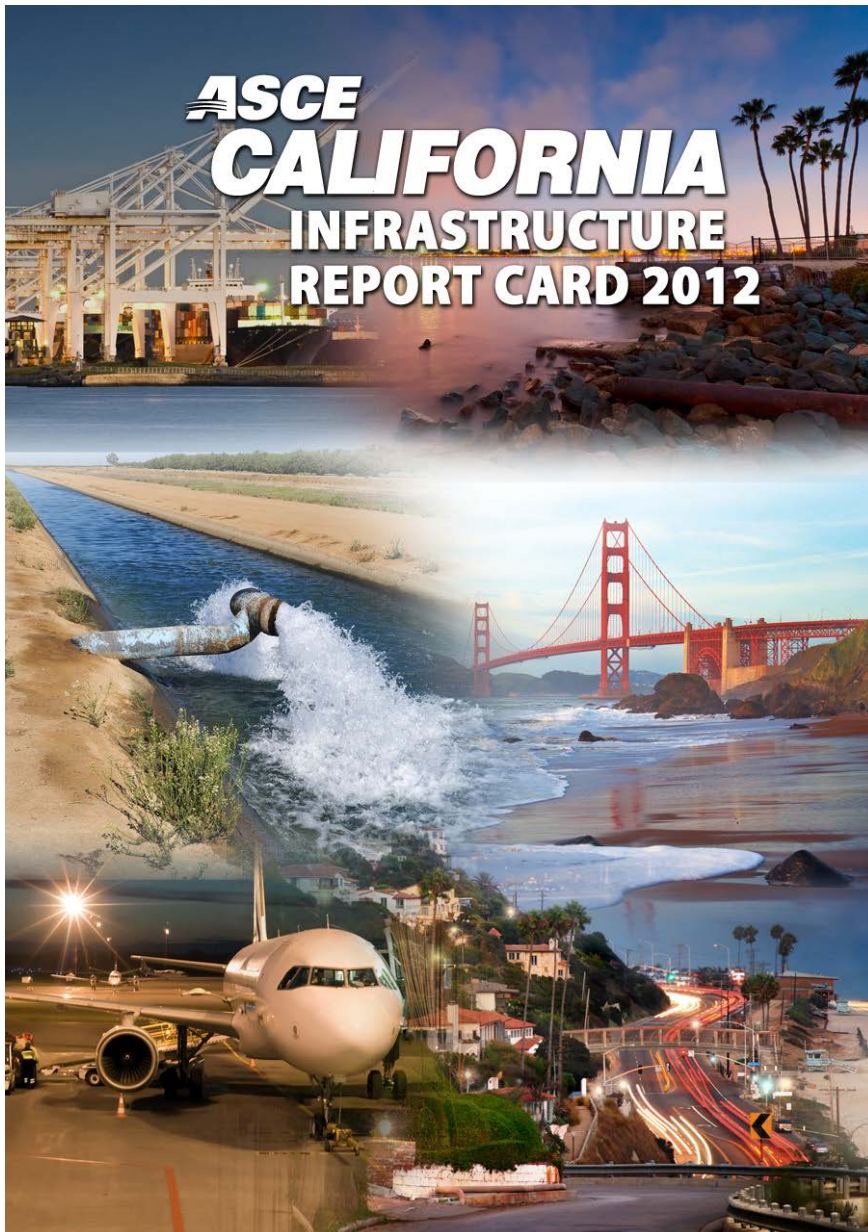
[METHODOLOGY >](#)

AVIATION	D	PORTS	C
BRIDGES	C ⁺	PUBLIC PARKS AND RECREATION	C ⁻
DAMS	D	RAIL	C ⁺
DRINKING WATER	D	ROADS	D
ENERGY	D ⁺	SCHOOLS	D
HAZARDOUS WASTE	D	SOLID WASTE	B ⁻
INLAND WATERWAYS	D ⁻	TRANSIT	D
LEVEES	D ⁻	WASTEWATER	D

A = Exceptional
B = Good
C = Mediocre
D = Poor
F = Failing

ESTIMATED INVESTMENT NEEDED BY 2020:
\$3.6 TRILLION
ESTIMATED INVESTMENT NEEDED BY 2020:

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ASCE
CALIFORNIA
INFRASTRUCTURE
REPORT CARD 2012

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CALIFORNIA
INFRASTRUCTURE
REPORT CARD 2012
www.ascecareportcard.org

	2006	2012
Aviation	C-	C+
Levees / Flood Control	F	D
Ports	C+	B-
Solid Waste	B	B
Transportation	D+	C-
Urban Runoff	D+	D+
Wastewater	C+	C+
Water	C+	C
California's Infrastructure GPA	C-	C
<i>Annual Investment Needs (Billions)</i>	<i>\$37</i>	<i>\$65</i>

<http://www.ascecareportcard.org>

“C” for Water

- Based on:
 - Seven regional report cards covering about 80 percent of the state’s population
 - Facilities operated by USBR, CA DWR, MWDSC
- Considered:
 - Reliability of supply
 - Storage and distribution capacity
 - Seismic vulnerability
 - Security and safety
 - Water quality
 - Age and condition

Report Card Highlights

- Findings:
 - Delta is the “number one water supply challenge”
 - Significant funding will be needed at various levels of government
- Recommended:
 - Address Delta risks
 - Develop additional storage
 - Develop desalination
 - Develop water use efficiency projects such as recycled water
 - Promote integrated regional water supply planning of multi-benefit, multi-jurisdictional solutions
 - Support public education, and appropriate incentives for improving water use efficiency
 - Improve security against natural and manmade hazards

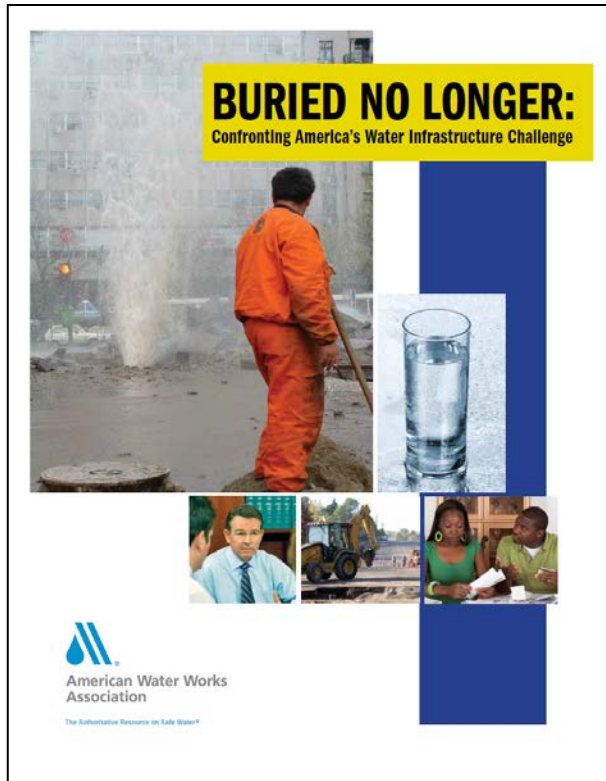
Report Card

Funding Analysis

- Nationwide:
 - Needed investment projected at \$126B by 2020, capital funding gap of \$84B
 - Needs grow to \$195B by 2040 with gap of \$144B
- California:
 - \$46B over 10 years
 - \$4.6B/year
 - 2006 report card identified \$4B/year

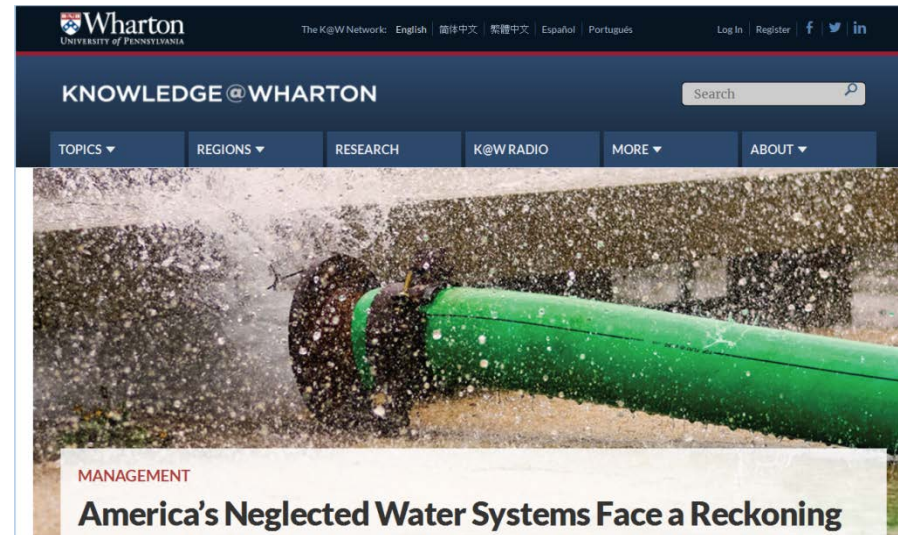
Item	\$B over 10-year period
DWR funding	1
Delta improvements	11
Regional projects based on seven regional report cards	32
Regional projects not captured in regional reporting	2
Total	\$46B

Other Industry Reports Paint an Even Starker Picture



2011 study commissioned by American Water Works Association:

- \$1 trillion nationwide over next 25 years
- Smaller communities will be most impacted
- Not a one-time investment – investment needs to ramp up and stay there



June 2015, Wharton University article

ASCE Region 9 Water Policy Position Summary


1. Emphasize water supply reliability, accounting for climate change
2. Enhance regional sustainability
3. Support funding based on beneficiary-pays principle
4. Support sustainable groundwater management
5. Support IRWM
6. Maximize existing storage, provide additional storage where needed, based primarily on regional funding to meet regional needs
7. Support increased water use efficiency to meet 20x2020
8. Expand use of recycled water
9. Promote and subsidize desalination and other technologies
10. Manage flood control systems to maximize capture and recharge

ASCE Region 9 Water Policy Position Paper

The ASCE Region 9 supports and advocates the following policies regarding water resources and the environment, in recognition of the co-equal importance of environmental needs and reliable water supplies.

1. Continue to emphasize water supply reliability for all regions of the State in order to protect California's economy. In light of the risks with climate change and current constraints imposed on Delta conveyance, it is imperative that California make rapid progress in this area.
2. Enhance and support regional sustainability. Reducing dependence on imported water should be encouraged, favoring more locally available water resources where available. By practicing sustainability measures, energy costs and greenhouse emissions will decrease while becoming more environmentally balanced.
3. Support funding for water projects based on the beneficiary-pays principle and direct funds as quickly as possible to provide a Sacramento-San Joaquin Delta fix addressing the fundamental water supply risks and environmental needs in the Delta.
4. Ensure that groundwater basins are sustainably managed based on both water quality and quantity needs.
5. Continue support and funding for Integrated Regional Water Management (IRWM) programs. Authorize additional appropriations for Proposition 84 IRWM. Allow as much flexibility to IRWM regions as possible to solve water resource problems without excessive oversight or duplicative reviews at the State level.
6. Maximize existing storage facilities - groundwater and surface water - and provide additional storage and conveyance as necessary to capture important runoff that is excess to environmental needs before it is lost to the ocean. For regional storage for which local areas benefit, local and regional funding should be encouraged to finance the majority of the need. Where such storage provides statewide value, investment of state and federal funds is justified.
7. Support increased water use efficiency practices to meet or exceed State-wide goals of 20% reduction by the Year 2020, to achieve multiple benefits including reducing greenhouse emissions, dependence on imported water and reducing negative water quality impacts from urban runoff. In achieving this goal, governing principles for water use efficiency programs and incentives should be tailored to regional needs and recognize varied benefit and outcomes of conservation efforts.
8. Expand and encourage use of recycled water as an additional ongoing reliable water resource to serve many types of water needs. Increasing the use of recycled water will greatly increase water supply reliability and provide a much less energy dependent water supply.
9. Promote and subsidize state-of-the-art water treatment and desalination technologies including processes such as reverse osmosis, ion exchange and microfiltration including residuals treatment and brine disposal as appropriate.
10. Manage flood control systems to increase stormwater capture and recharge of groundwater aquifers. Land use practices that retain water on site for recharge through Low Impact Development practices can also provide benefits when carefully planned.

As approved by the Region 9 Board of Governors on May 8, 2014


Jennifer B. Epp, P.E., MASCE
Region 9 Chair/Director