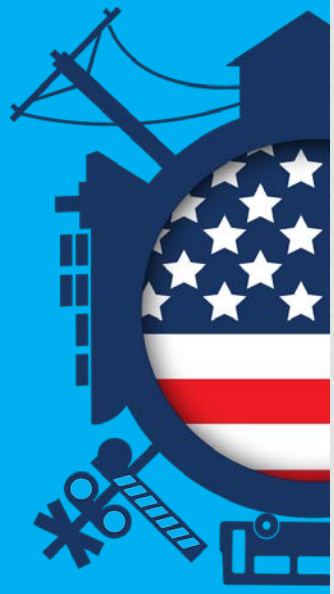
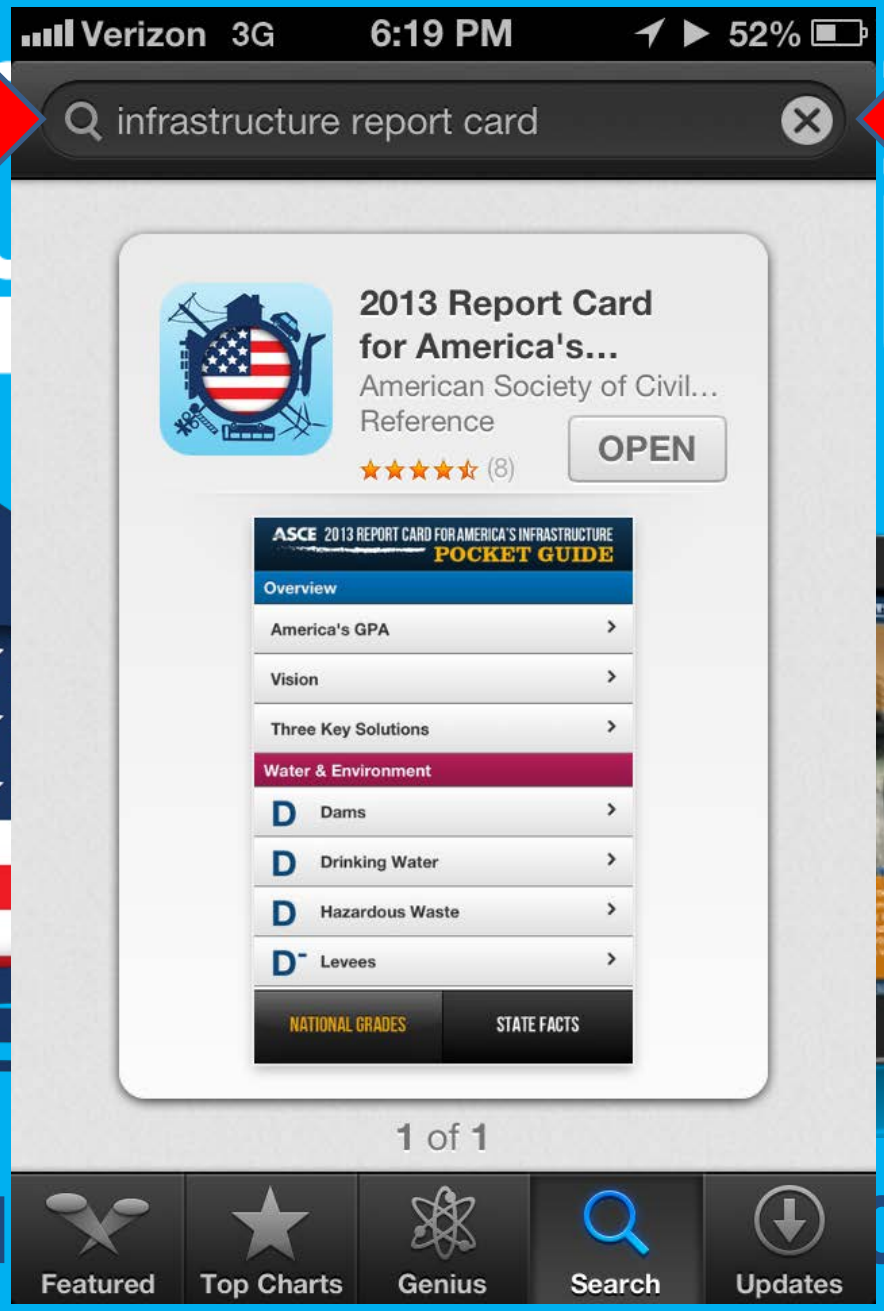
ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

2013 REPORT CARD for America's INFRASTRUCTURE

2013 REPORT CARD

America's INFRASTRUCTURE





WWW.IN CARD.ORG

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What is the "Report Card"?

16 Categories

- Aviation
- Bridges
- Dams
- Drinking Water
- Energy
- Hazardous Waste
- Inland Waterways
- Levees
- Ports
- Public Parks and Recreation
- Rail
- Roads
- Schools
- Solid Waste
- Transit
- Wastewater

Evaluation Criteria

- Condition
- Needs
- Funding/Policy
- Trends
- Leadership

Evaluators

- Practitioners
- Academia
- Policy Experts

Courtesy of Flickr/Corey Leopold

What do ASCE's Grades Mean?

A EXCEPTIONAL: FIT FOR THE FUTURE

B GOOD: ADEQUATE FOR NOW

C MEDIOCRE: REQUIRES ATTENTION

D POOR: AT RISK

F FAILING/CRITICAL: UNFIT FOR PURPOSE

Courtesy of Flickr/Corey Leopold

What are the Results?

Aviation	D
Bridges	C+
Dams	D
Drinking Water	D
Energy	D+
Hazardous Waste	D
Inland Waterways	D-
Levees	D-
Ports	C
Public Parks and Recreation	C-
Rail	C+
Roads	D
Schools	D
Solid Waste	B-
Transit	D
Wastewater	D
America's Cumulative G.P.A.	D+

NEGATIVE

- Continued lack of maintenance and capital investment.
- Backlog of projects keeps growing.
- Two categories received a grade of "D-": levees and inland waterways.

Courtesy of Flickr/Corey Leopold

What are the Results?

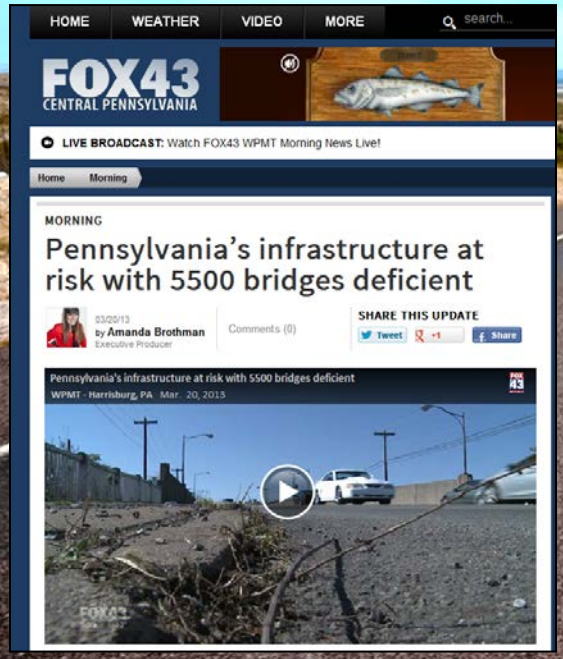
Aviation	D
Bridges	C+ ↑
Dams	D
Drinking Water	D ↑
Energy	D+
Hazardous Waste	D
Inland Waterways	D-
Levees	D-
Ports	C
Public Parks and Recreation	C-
Rail	C+ ↑
Roads	D ↑
Schools	D
Solid Waste	B- ↑
Transit	D
Wastewater	D ↑
America's Cumulative G.P.A.	D+ ↑

POSITIVE

- Improvements in six sectors:
  - Roads
  - Bridges
  - Solid waste
  - Drinking Water
  - Wastewater
  - Railroads
- Improvements result from greater investment, targeted efforts, and ARRA funding.

Courtesy of Flickr/Corey Leopold

Who Cares?



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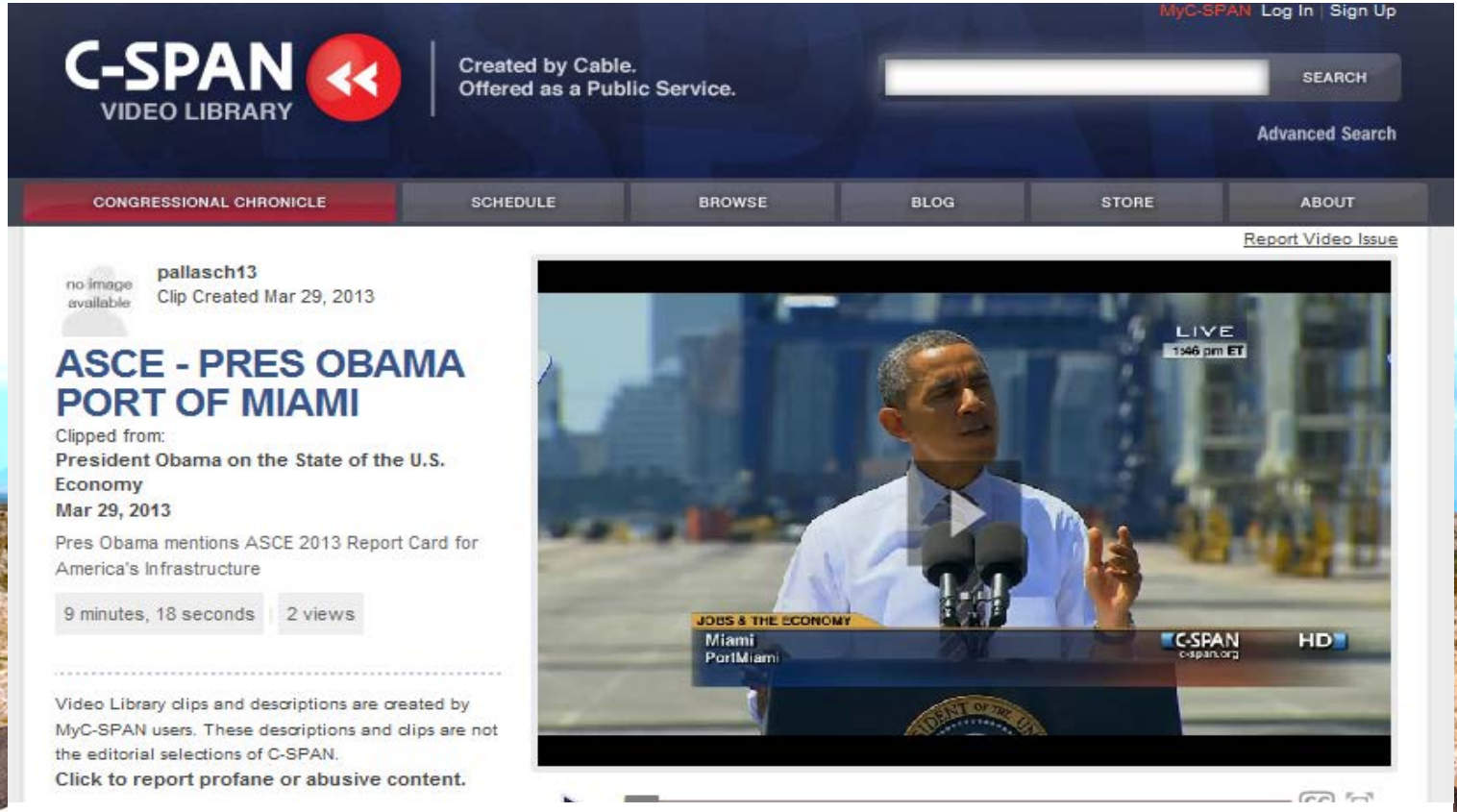
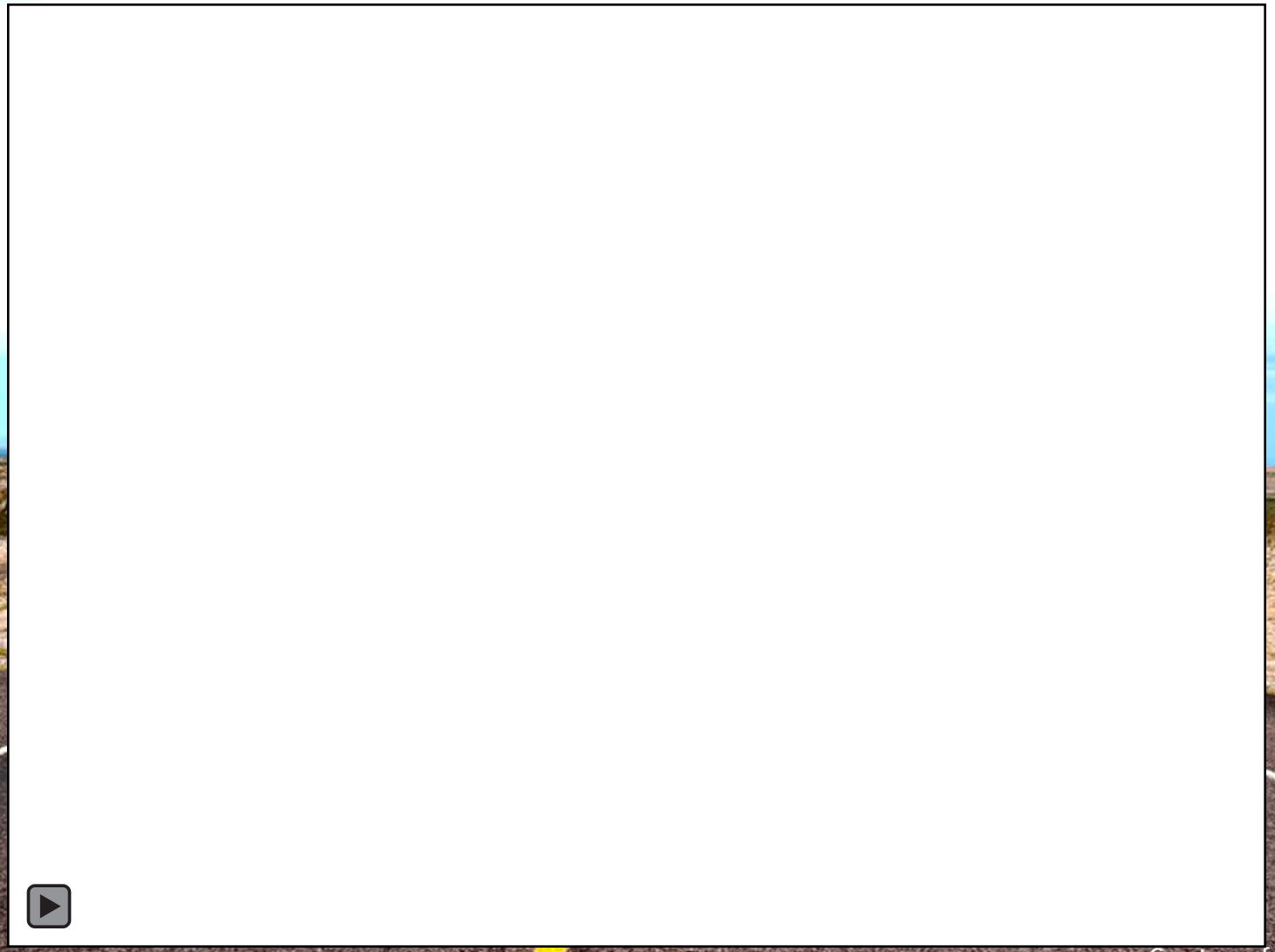


"We have upgraded more than 6,000 miles of rail, enough to go coast to coast and back. We have repaired or replaced more than 20,000 bridges. We have helped get tens of thousands of construction workers back on the job. Because of these efforts, when the American Society of Engineers put out their 2013 Report Card on our national and for structure, they gave it the best overall grade in 12 years. That is the good news. The bad news is we went from a D to a D +."

Courtesy of Flickr/Corey Leopold

The Report Card goes Hollywood!

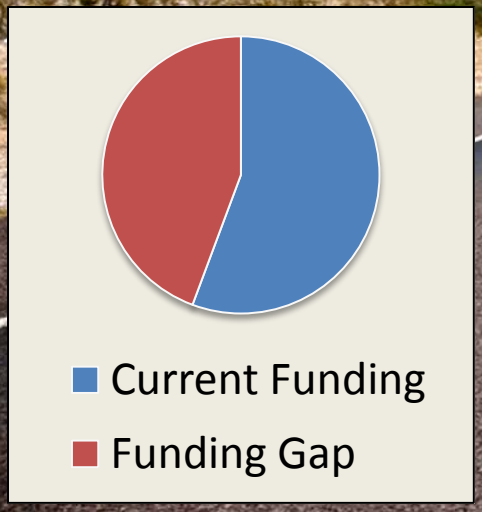


Courtesy of Flickr/Corey Leopold

Infrastructure Funding Needs by 2020

Funding Needs

- ASCE's *"Failure to Act"* reports
- Industry Projections



DOLLARS IN $2010 BILLIONS

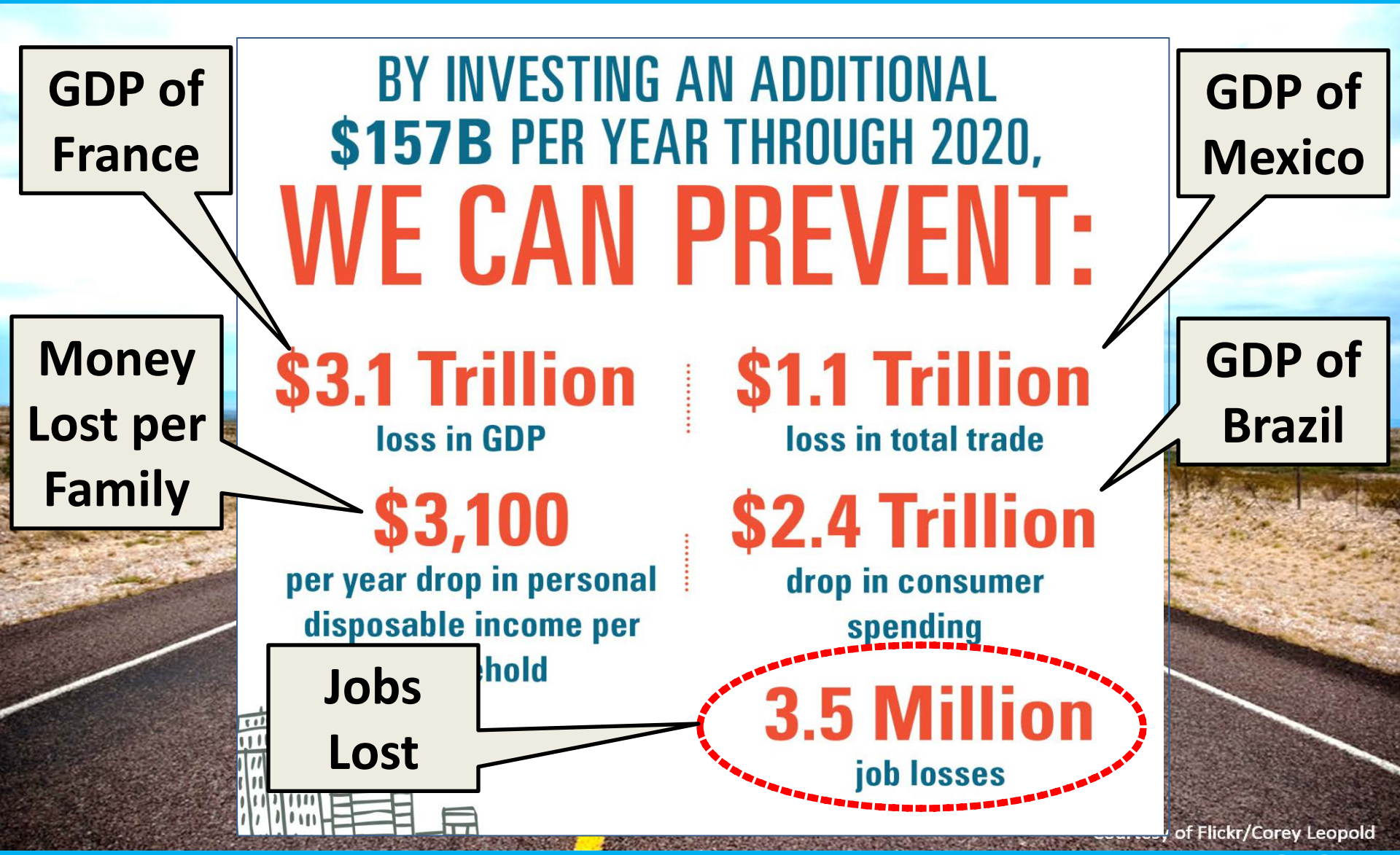
Infrastructure System	Total Needs	Estimated Funding	FUNDING GAP
Surface Transportation[1]	$1,723	$877	$846
Water/Wastewater Infrastructure[1]	$126	$42	$84
Electricity[1]	$736	$629	$107
Airports[1,2]		$95	$39
Inland Wa		$14	$16
Dams[3]		$6	$15
Hazardou		$10	$46
Levees[5]		$8	$72
Public Parks & Recreation[6]		$134	$104
Rail[7]	$100	$89	$11
Schools[8]	$391		$271
TOTALS	$3,635	$2,024	$1,611
YEARLY INVESTMENT NEEDED	$454	$253	$201

Annual <u>additional</u> investment needed to achieve a "B"

$3.6 TRILLION

Courtesy of Flickr/Corey Leopold

What Happens Without Investment?



Report Card Findings

Highlights

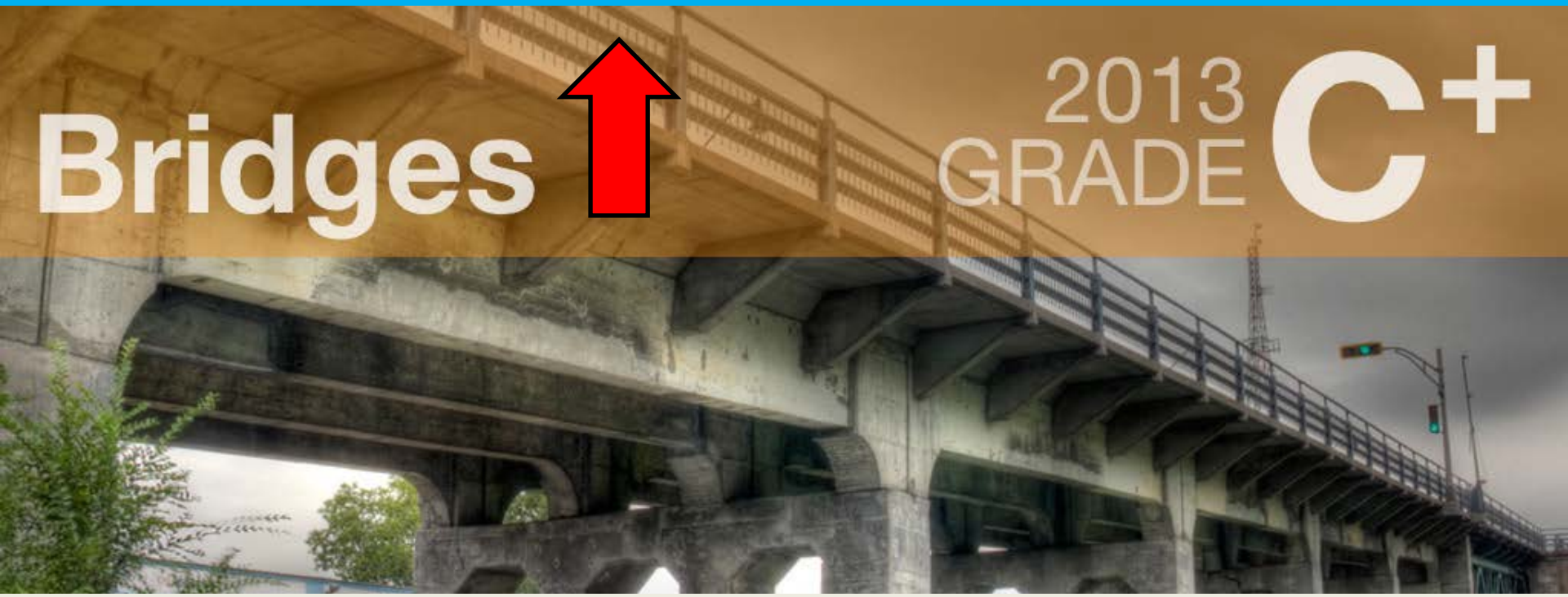
- Roads improved slightly from a D- to a D; due mostly pavement condition improvements and significant reductions in highway fatalities.
- Forty-two percent of America's major urban highways remain congested; costing the economy an estimated $101 billion in wasted time and fuel annually.
- Current investment of $91 billion annually is still short of what is needed; resulting in a decline in conditions and long term performance.

Report Card Findings

Highlights

- Despite the recession, commercial flights were about 33 million higher in number in 2011 than in 2000, stretching the system's ability to meet the needs of the nation's economy.
- The estimated cost of airport congestion and delays was about $22 billion in 2012 according to the Federal Aviation Administration.
- Major projects like NextGen promise to modernize our airport system, but they require full funding and planning to meet both near and long term needs.

Report Card Findings



Highlights

- The overall number of structurally deficient bridges continuing to trend downward. However, one in nine of the nation's bridges are rated as structurally deficient. ; resulting in a grade improved to C+.
- In urban areas, which carry the most traffic, the number of deficient bridges is rising.
- Over two hundred million trips are taken daily across deficient bridges in the nation's 102 largest metropolitan regions.

Report Card Findings

Highlights

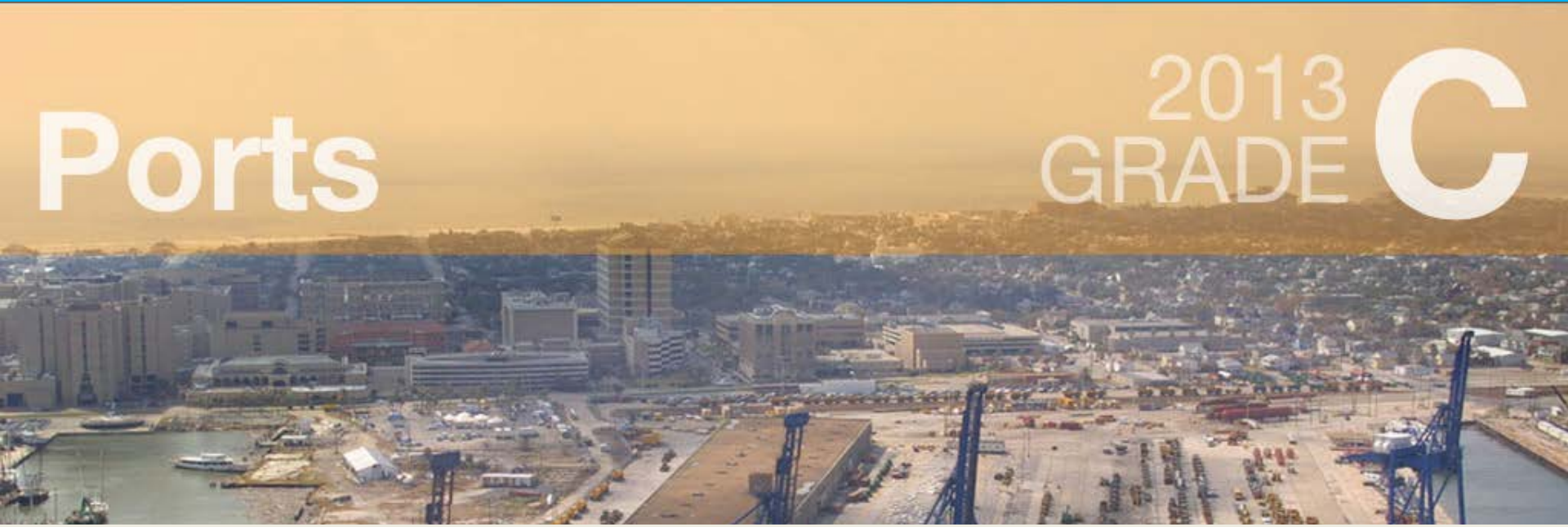
- Transit remained unchanged with a grade of D.
- Americans who do have access, increased their ridership 9.1% in the past decade, and that trend is expected to continue. However, 45% of Americans still lack access to transit.
- Although investment in transit has also increased, deficient and deteriorating transit systems cost the U.S. economy $90 billion in 2010, as many transit agencies are struggling to maintain aging and obsolete fleets and facilities amid an economic downturn that has reduced their funding, forcing service cuts and fare increases.

Report Card Findings

Highlights

- Inland waterways remained a D-; mostly due to inadequate, stagnant investment levels.
- Our nation's inland waterways and rivers are the hidden backbone of our freight network – they carry the equivalent of about 51 million truck trips each year.
- There are an average of 52 service interruptions a day throughout the system.
- Projects to repair and replace aging locks and dredge channels take decades to approve and complete. There is a backlog of major projects with estimated schedules stretching out to the year 2090 under current funding levels.

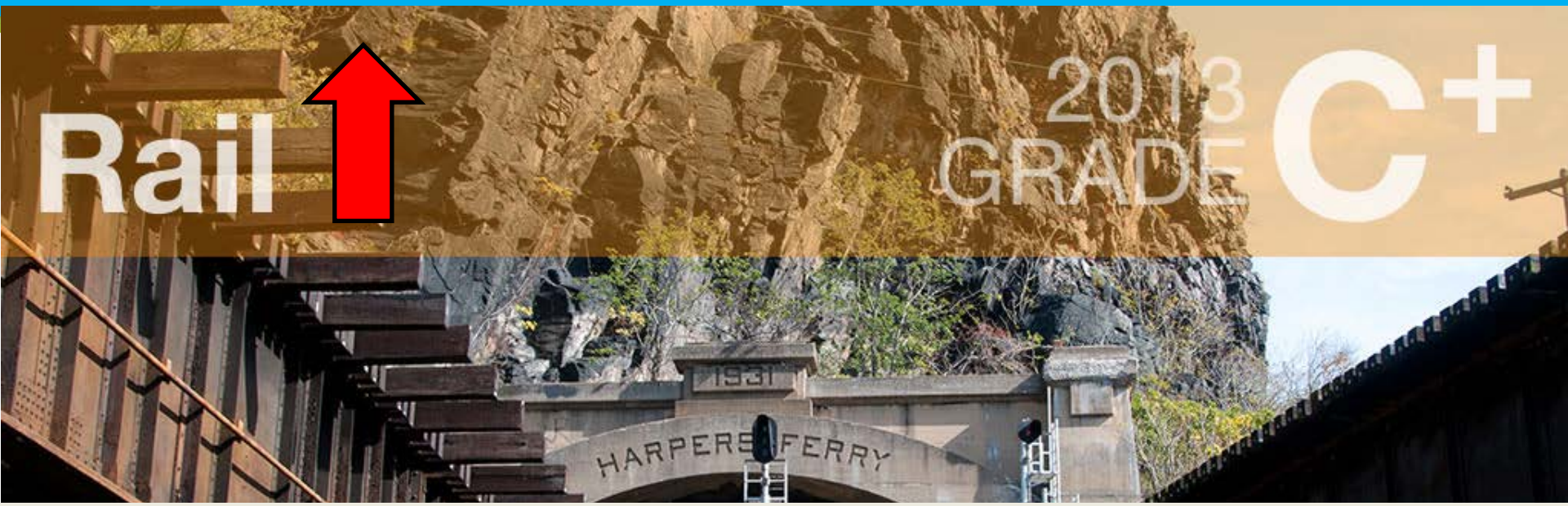
Report Card Findings



Highlights

- Ports is new category in 2013. Working closely with AAPA, it debuted with a grade of C. The evaluation focused on the landside and water connections, rather than the ports themselves.
- The U.S. Army Corps of Engineers estimates that more than 95% (by volume) of overseas trade produced or consumed by the United States moves through our ports.
- While port authorities and their private sector partners have planned over $46 billion in capital improvements from now until 2016, federal funding has declined for dredging as well as the landside connections needed to move goods to and from the ports.

Report Card Findings



Highlights

- With high ridership and greater investment in the system, the grade for rail realized the largest improvement, moving up to a C+ in 2013.
- In 2012, Amtrak recorded its highest year of ridership with 31.2 million passengers, almost doubling ridership since 2000; growth is anticipated to continue.
- Both freight and passenger rail have been investing heavily in their tracks, bridges, and tunnels as well as adding new capacity for freight and passengers to the tune of $75B since 2009.
- In 2010 alone, freight railroads renewed the rails on more than 3,100 miles of railroad track, equivalent to going coast to coast.

Report Card Findings

Highlights

- Dams again earned a grade of D.
- The average age of the 84,000 dams in the country is 52 years old.
- The overall number of high-hazard dams continues to increase, to nearly 14,000 in 2012.
- The Association of State Dam Safety Officials estimates an investment of $21 billion is needed to repair these aging, critical, high-hazard dams.

Report Card Findings

Highlights

- Levees again earned a near failing grade of D-.
- Approximately 100,000 miles of levees in all 50 states and the District of Columbia. Increasing development near levees means the consequences of failure can be more significant.
- While the Army Corps of Engineers and FEMA have begun an inventory of levee conditions, it is not yet complete and there is not a National Levee Safety Program.
- Nearly 85 percent of levees are locally owned and operated, making data collection difficult.
- Public safety remains at risk from aging structures and there

Report Card Findings

Highlights

- The grade for wastewater improved slightly to a D.
- Since 2007, the federal government has required cities to invest more than $15 billion in new pipes, plants, and equipment to eliminate combined sewer overflows. It is estimated that aging pipes and inadequate capacity result in the discharge of about 900 billion gallons of untreated sewage per year.
- Capital investment needed for the nation's wastewater and stormwater systems are estimated to total $298 billion over the next 20 years. Pipes represent the largest capital need, comprising three quarters of total needs. Stormwater needs, while growing, are still small compared with sanitary pipes and treatment plants.

Report Card Findings

Highlights

- The grade for drinking water improved slightly to a D.
- There are an estimated 240,000 water main breaks per year in the US.
- While the quality of drinking water remains high, the pipes and mains are frequently more than 100 years old and in need of replacement. Some even date back to the Civil War era!
- The annual replacement rate of pipes is expected to reach up to 20,000 miles of pipe per year by 2035 – we replace about 5,000 miles of pipe per year now.
- New regulatory requirements for drinking water require upgrades amid funding shortfalls. Investment needs will likely double from $13 billion a year today to almost $30 billion by 2040.

Report Card Findings

Highlights

- The grade for solid waste improved in 2013, and it earned the highest grade of B-.
- In 2010, Americans generated 250 million tons of trash.
- The US recycles 34% of our waste, more than double the 14.5% in 1980.
- Per capita generation rates of waste have been relatively steady over the past 20 years and have recently even begun to decline
- An area of concern is the growing amount of used electronics that are disposed, which have the potential to leak toxic substances with known adverse health effects.

Report Card Findings

Highlights

- The grade for hazardous waste remained unchanged at a D.
- There has been undeniable success in the cleanup of the nation's hazardous waste and brownfields sites.
- Annual Superfund shortfall site cleanup is estimated to be as much as $500 million short of what is needed. Even as the needs have grown, federal appropriations have declined by 40 percent since 1998.
- Over 1,000 sites remain on the National Priorities List and more than 400,000 brownfields sites await cleanup and redevelopment.

Report Card Findings

Highlights

- The grade for energy remained a D+.
- America relies on an aging electrical grid and pipeline distribution systems, some of which originated in the 1880s.
- Investment in transmission has increased since 2005; ongoing permitting delays, weather events, and limited maintenance contribute to an increased failures and power interruptions.
- While demand for electricity has remained level, the availability of energy in the form of electricity, natural gas, and oil will become a greater challenge after 2020 as the population increases.

Report Card Findings

Highlights

- Schools received a D again this year.
- School construction has diminished to approximately half the level of funding seen previously.
- Almost half of America's public school buildings were built to educate the baby boomers – a generation that is now retiring from the workforce.
- No national data on school facilities has been collected for more than a decade, estimates for investments to maintain our nation's school facilities is at least $270 billion or more.

Report Card Findings

Highlights

- The grade for parks remained unchanged at a C-.
- Over 140 million Americans use public parks and facilities as a part of their daily lives. These activities contribute $646 billion to the nation's economy.
- There is an estimated $18.5 billion in unmet needs for parks. The National Park Service estimates its maintenance backlog at approximately $11 billion.

How Do We Raise the Grades?

Bold Leadership and a Compelling Vision

Sustainability and Resilience

Prioritize, Plan, and Fund

Courtesy of Flickr/Corey Leopold

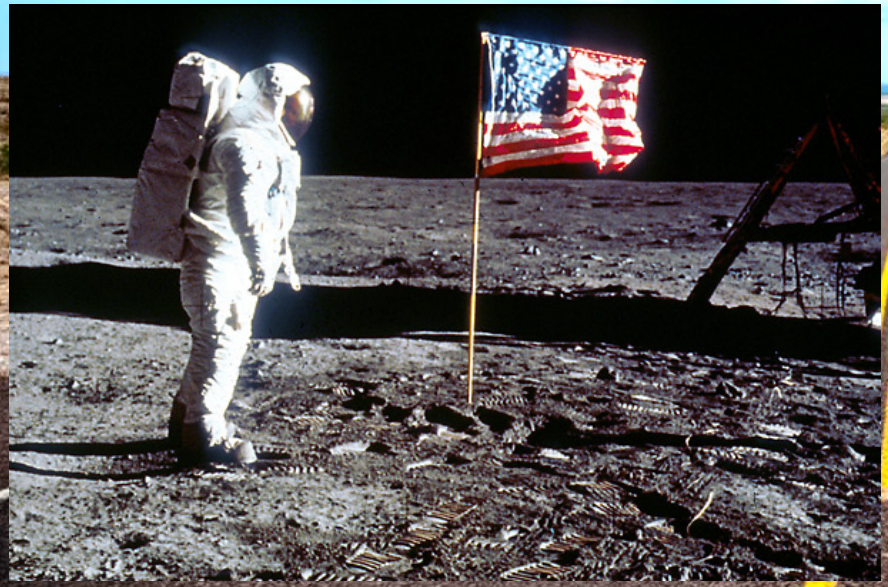
Vision For America's Infrastructure

Past

- National Highway System
- Man on the Moon
- Clean Water Act

Present

- Obama-care
- Driving Towards Zero (NH)
- Finish Line at Kona

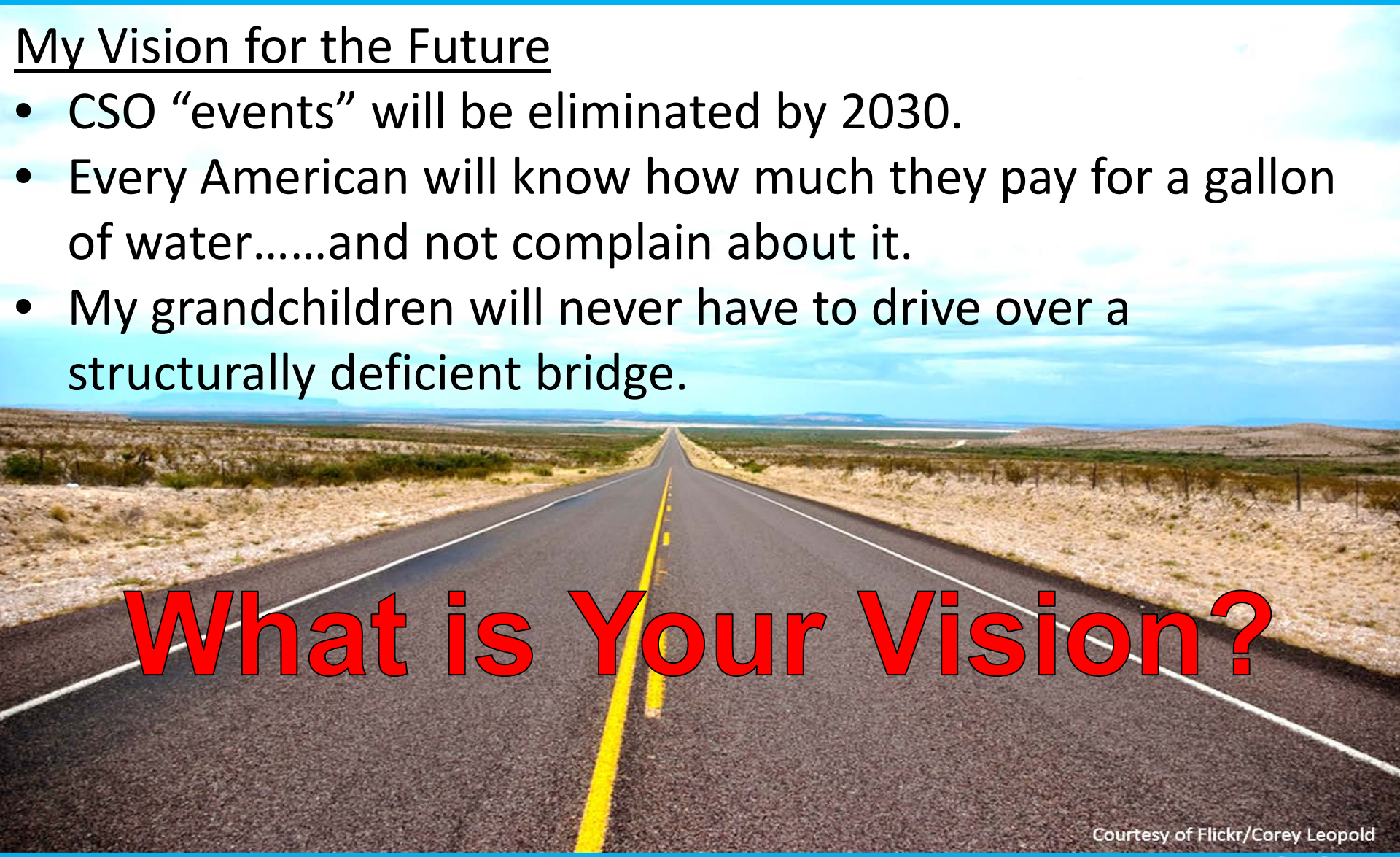


Courtesy of Flickr/Corey Leopold

Vision For America's Infrastructure

My Vision for the Future

- CSO "events" will be eliminated by 2030.
- Every American will know how much they pay for a gallon of water……and not complain about it.
- My grandchildren will never have to drive over a structurally deficient bridge.



Courtesy of Flickr/Corey Leopold

2013 REPORT CARD for America's INFRASTRUCTURE

- 16 graded categories
- 50 state profiles
- 100+ infrastructure success stories
- Infrastructure news
- Category videos

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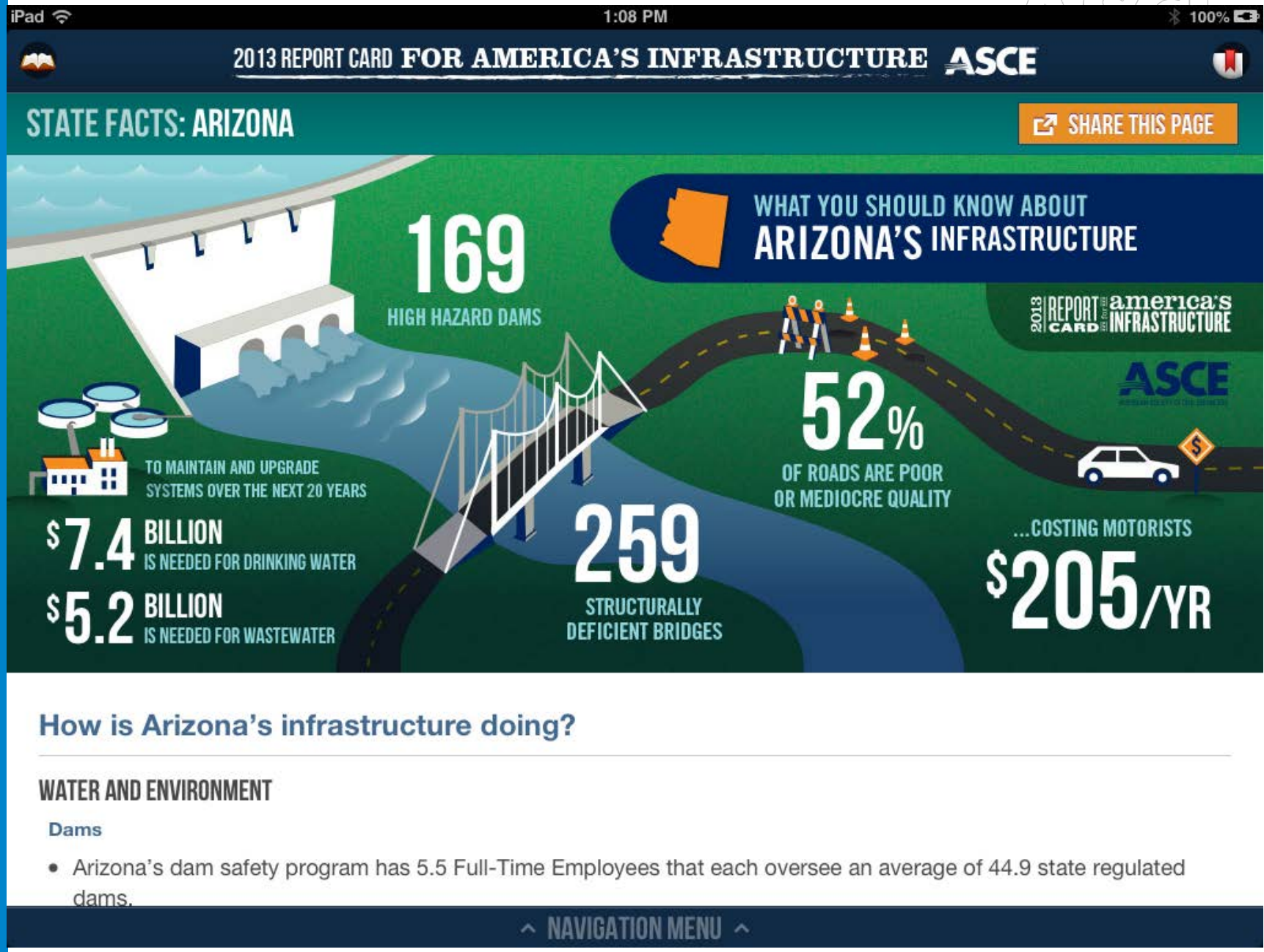
Find Your State's Info

State View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STATE FACTS: ARIZONA
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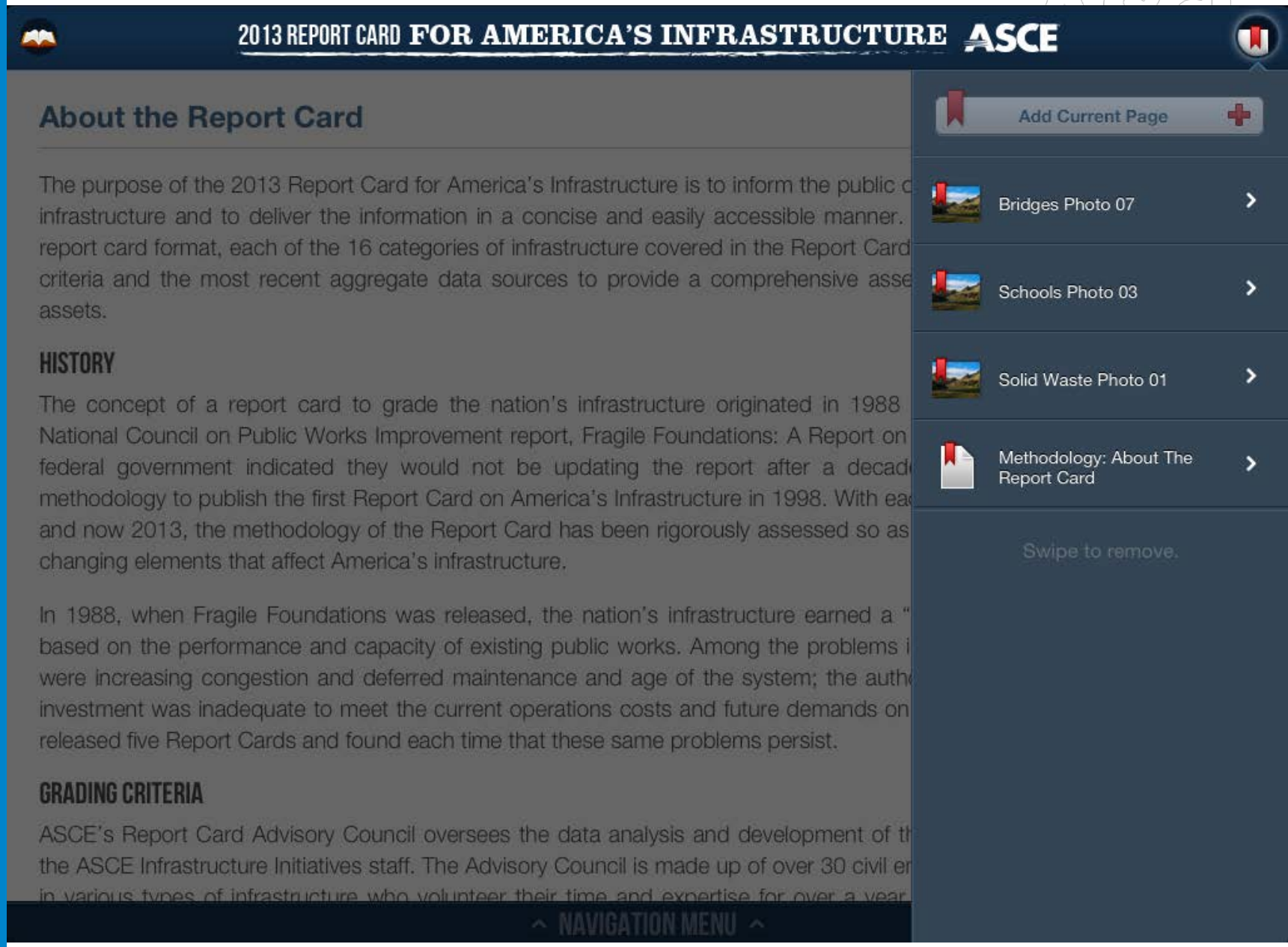
WHAT YOU SHOULD KNOW ABOUT
ARIZONA'S INFRASTRUCTURE
169
HIGH HAZARD DAMS
2013 REPORT CARD for America's INFRASTRUCTURE
ASCE
52%
OF ROADS ARE POOR OR MEDIOCRE QUALITY
...COSTING MOTORISTS
$205/YR
TO MAINTAIN AND UPGRADE SYSTEMS OVER THE NEXT 20 YEARS
$7.4 BILLION
IS NEEDED FOR DRINKING WATER
$5.2 BILLION
IS NEEDED FOR WASTEWATER
259
STRUCTURALLY DEFICIENT BRIDGES
How is Arizona's infrastructure doing?
WATER AND ENVIRONMENT
Dams
• Arizona's dam safety program has 5.5 Full-Time Employees that each oversee an average of 44.9 state regulated dams.
NAVIGATION MENU

Bookmark Key Points



Videos and Photos

Questions?

Have feedback or want to have a local speaker talk to you group?

reportcard@asce.org

or call (202) 789-7850

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