

ASCE GRAND CHALLENGE

Keynote Presentation: The Challenges of Today and Tomorrow
Anthony S. Bartolomeo, President | Pennoni

September 26, 2017



PARTNERS FOR WHAT'S POSSIBLE

www.pennoni.com

ASCE Grand Challenge



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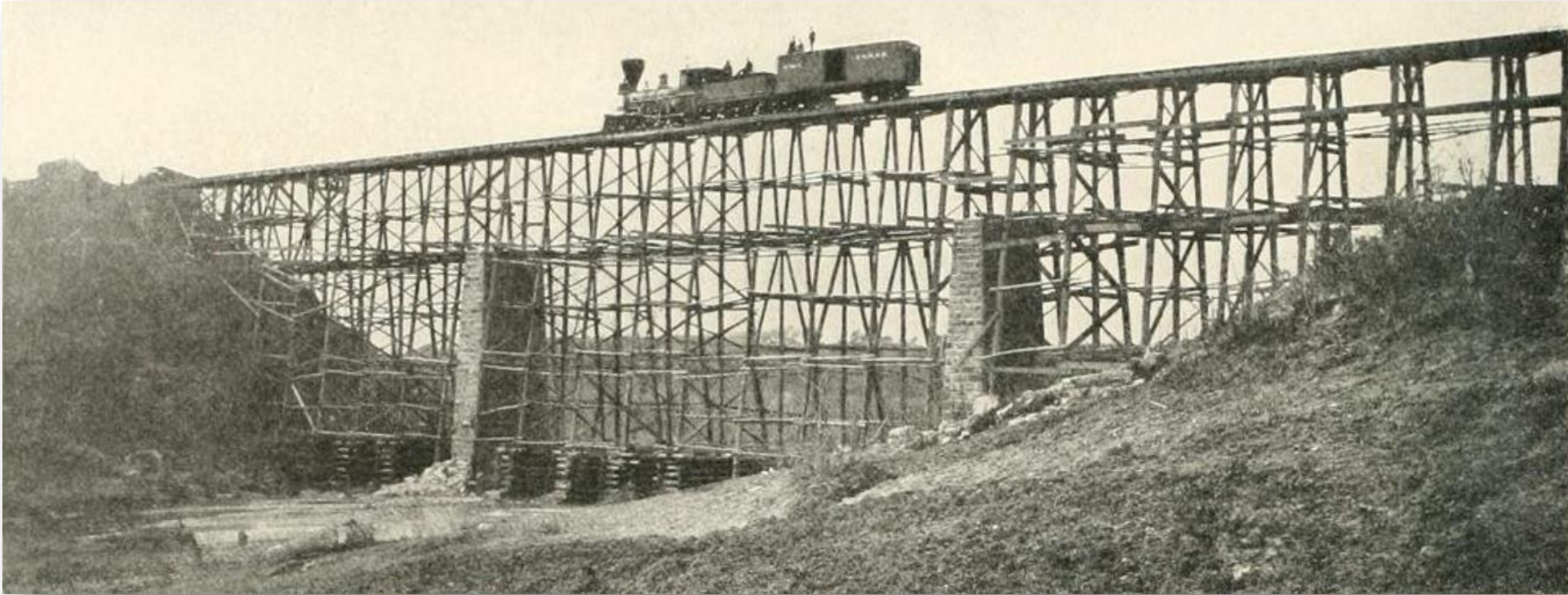


Why Us?



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“Loaded trains are passing every hour, and upon my word, gentlemen, there is nothing in it but cornstalks and beanpoles.”

- ◆ **President Abraham Lincoln | May 28, 1862**

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Grand Central Station

ASCE Canon 1



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Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties.

The State of Today's Infrastructure



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D+
\$2.0
trillion
needed



FUNDING
GAP

CURRENT
FUNDING

2017 Infrastructure Grades

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

America's
Cumulative
Infrastructure
Grade



A EXCEPTIONAL

B GOOD

C MEDIOCRE

D POOR

F FAILING

We Have Decisions To Make



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FAILURE TO ACT

CLOSING THE INFRASTRUCTURE
★ INVESTMENT GAP ★
FOR AMERICA'S ECONOMIC FUTURE

COST TO THE ECONOMY

\$3.9
TRILLION

COST TO BUSINESS

\$7
TRILLION

COST TO WORKERS

2.5
MILLION JOBS

COST TO FAMILIES

\$3,400
PER YEAR

The ASCE Grand Challenge



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Reduce the life cycle cost of infrastructure by 50 percent by 2025 and foster the optimization of infrastructure investments for society.

Target Areas



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- ◆ 4 targets areas to transform profession (all linked)



Our Guiding Principles



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- ◆ **ASCE leads from the front to help America close its Infrastructure funding gap**
- ◆ **ASCE helps transform the delivery of Infrastructure investments to improve and maximize the benefit of America's infrastructure, resulting in enhanced economic potential and global competitiveness**
- ◆ **Continuously improve civil engineering practices, processes, solutions, and the profession**

Benefit of the Grand Challenge

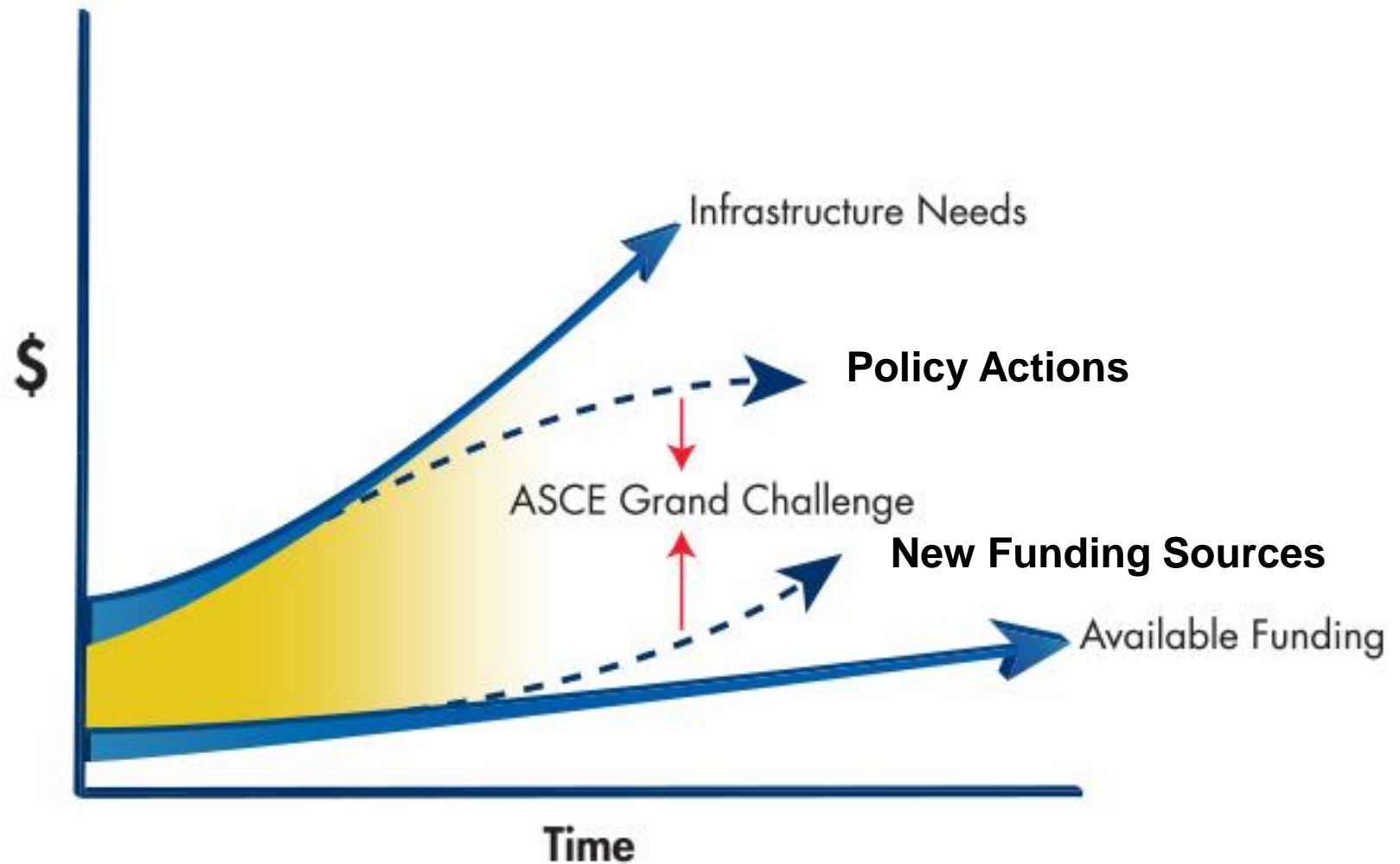


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- ◆ Reduces the national infrastructure funding requirements while increasing investments to close the significant funding gap.



Benefit of the Grand Challenge



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- ◆ **ASCE leads our industry as the integrator of innovative strategies, expert voice of transformative change that improves the state of our Nation's infrastructure.**

Additional Benefits



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- ◆ **Promotes, integrates, and unifies ASCE's major initiatives**
- ◆ **Enhances ASCE's ability to be a Change Agent and to lead new initiatives**
- ◆ **Encourages a culture of innovation for long-term infrastructure solutions**
- ◆ **Accelerates ASCE membership's personal and professional development**

Near-Term Desired Outcomes



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- ◆ **Champion, educate, and prepare the ASCE membership to achieve the Grand Challenge**



- ◆ **2 Innovation Contests Complete**
- ◆ **3rd Launched September 1, 2017, Closes March 1, 2018**
 - ✧ *Celebration Event: June 26-27, 2018*
 - ✧ *Five topic areas*
 1. Innovative Business Models & Technologies
 2. The Internet of Things
 3. Sustainable Engineering
 4. Next Generation Transportation
 5. ASCE's Role in Innovation
- ◆ **“Crowd contest”-share best ideas for transforming the future of our nation's infrastructure**

Promoting Innovation



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ASCENews

ABOUT ASCE

CONTRIBUTORS

ASCE HOME

Second Innovation Contest Showcases Winners Taking Aim at Grand Challenge

BY Ben Walpole

June 23, 2017

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Innovation Winners-2017



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◆ **Subsurface Utilities Made Visible Again,”** by Larry Stolarczyk, of Stolar Global Imaging LLC

PE-Cool System,” by Utpal Datta, M.Sc., Samer Dessouky, Ph.D., P.E., F.ASCE, and A. T. Papagiannakis, Ph.D., P.E., F.ASCE, of the University of Texas at San Antonio

AquaCharge,” by Jonathan L. Bradshaw, EIT, S.M.ASCE, a Ph.D. candidate in civil and environmental engineering at Stanford University

Near-Term Desired Outcomes



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- ◆ **Steward migration of all applicable codes and standards to include Life Cycle principles and Performance Based approaches**

2025 Desired Outcomes



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- ◆ **Develop processes to positively transform the state of our Nation's infrastructure**

- ◆ **Establish a resilient network committed to a culture that inspires sustained and accelerating innovation**

Addressing the Grand Challenge



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How is ASCE addressing the Grand Challenge?

- ◆ **Leading the transformation to Life Cycle Performance Based Standards**
- ◆ **Promoting the use of Life Cycle Cost Analysis**
- ◆ **Promoting Resilience**
- ◆ **Promoting Innovation**
- ◆ **Transforming how we prepare the workforce**

Transforming how we prepare the workforce



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- ◆ 360 Degree view of the ASCE Raise the Bar Strategic Issue—Considering all perspectives



SEI Congress April 2017



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◆ Leading the transformation to performance based standards (PBS)



How Can You Help?



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How Can You Help Achieve the ASCE Grand Challenge?

- ◆ Lead and contribute to ASCE committee work related to life cycle cost analysis, life cycle performance based design, sustainability, innovation, and resilience
- ◆ Author or present papers that advance the Grand Challenge
- ◆ Attend or lead training to accelerate the Grand Challenge
- ◆ Recognize/reward successes
- ◆ Promote innovative business models within your company or Agency and with your clients
- ◆ Share success stories: www.ASCEGrandChallenge.com

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- ◆ **Reduce the life cycle cost of infrastructure by 50 percent by 2025 and foster the optimization of infrastructure investments for society.**
- ◆ **Together we can close the infrastructure gap!**