



The Future of Infrastructure: What Do We Plan For?

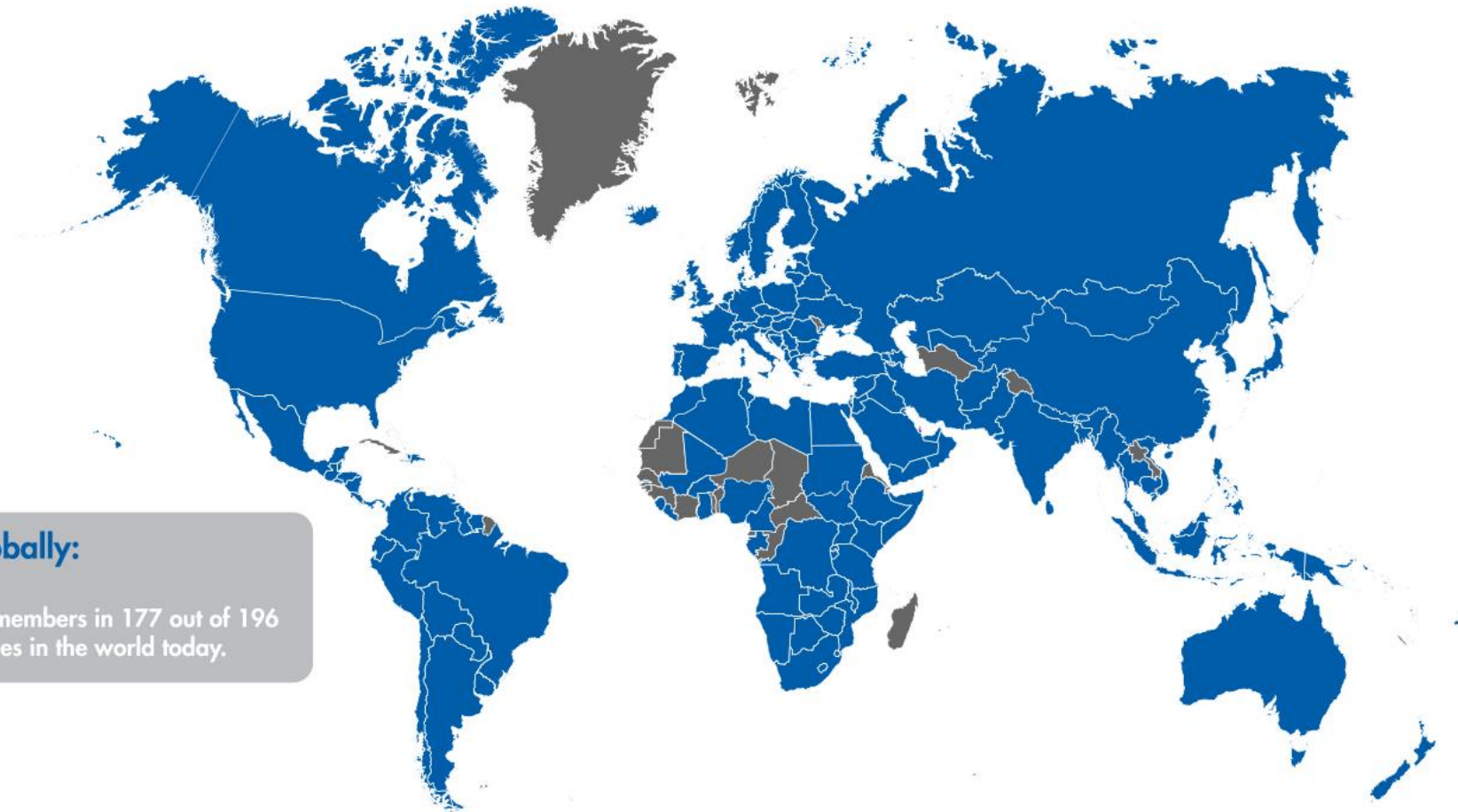
December 5, 2019

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Executive Director

Global Society

ASCE Globally:

- ASCE members in 177 out of 196 countries in the world today.



ASCE Vision

Civil engineers are
global leaders building
a better quality of life.

Our Mission

Protect the public health, safety, and welfare



Advance civil engineering



Deliver value to our members

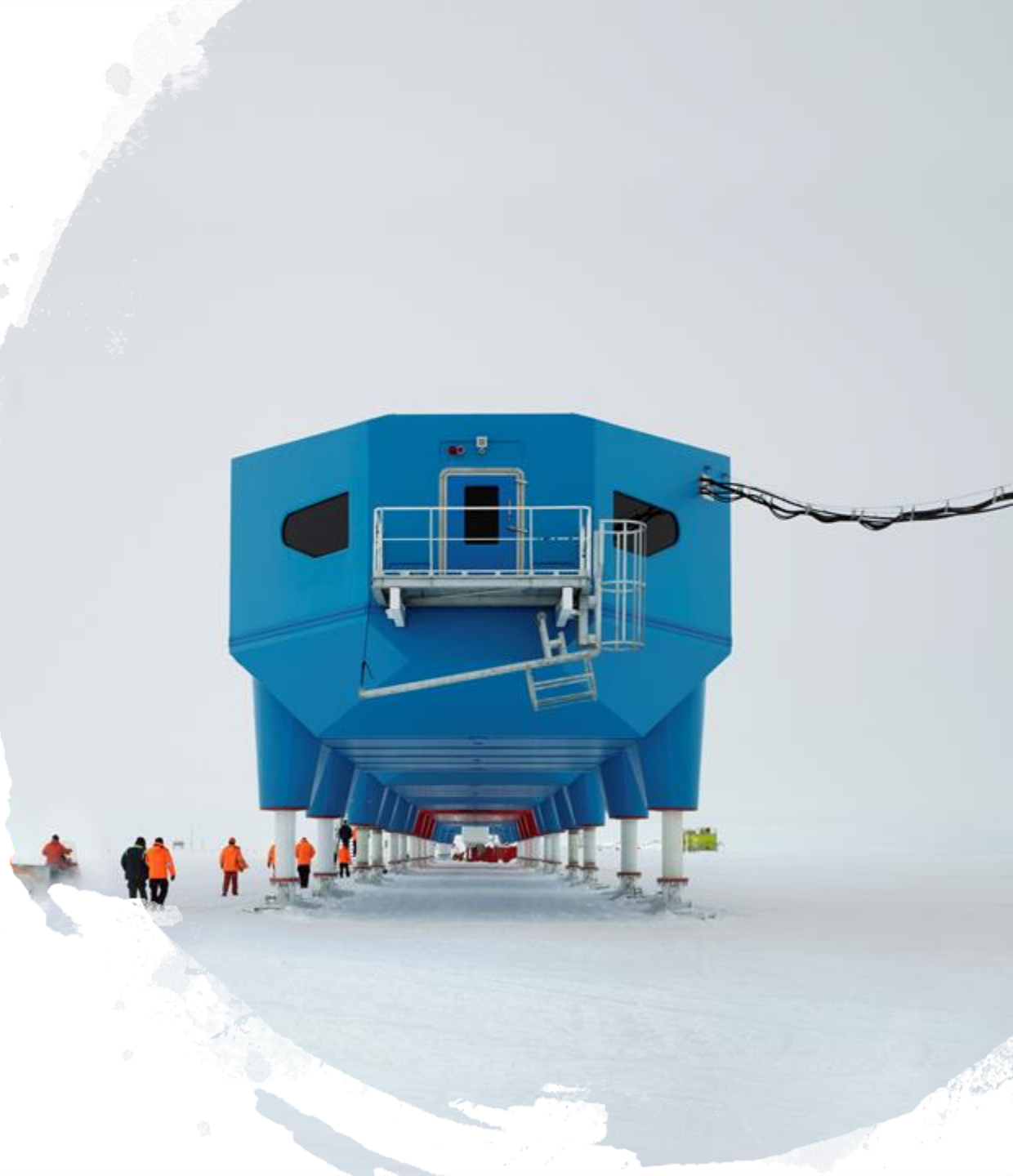
Challenges for the Future





Recent Activities

- Infrastructure Report Card
- Dream Big
- Future World Vision



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

Investment Gap

2016–2025 (10 years)

Infrastructure Systems	TOTAL NEEDS	ESTIMATED FUNDING	FUNDING GAP
SURFACE TRANSPORTATION	\$2,042	\$941	\$1,101
WATER/WASTEWATER INFRASTRUCTURE	\$150	\$45	\$105
ELECTRICITY	\$934	\$757	\$177
AIRPORTS	\$157	\$115	\$42
INLAND WATERWAYS & MARINE PORTS	\$37	\$22	\$15
DAMS	\$45	\$5.6	\$39.4
HAZARDOUS & SOLID WASTE	\$7	\$4	\$3
LEVEES	\$80	\$10	\$70
PUBLIC PARKS & RECREATION	\$114.4	\$12.1	\$102.3
RAIL	\$154.1	\$124.7	\$29.4
SCHOOLS	\$870	\$490	\$380
TOTALS	\$4,590	\$2,526	\$2,064

\$2.0
trillion
needed



FUNDING
GAP

CURRENT
FUNDING



FAILURE TO ACT

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

COST TO THE ECONOMY

① **\$3.9**
TRILLION

COST TO BUSINESS

① **\$7**
TRILLION

COST TO WORKERS

① **2.5**
MILLION JOBS

COST TO FAMILIES

① **\$3,400**
PER YEAR

A night-time photograph of a city skyline with illuminated skyscrapers and a multi-lane highway with light trails from traffic. The image is overlaid with a semi-transparent green filter.

Investment

A digital, glowing blue map of a city grid with various data points and lines, suggesting a network or infrastructure. The image is overlaid with a semi-transparent blue filter.

**Leadership &
Planning**

A photograph of the Golden Gate Bridge in San Francisco, showing its iconic towers and suspension cables. The image is overlaid with a semi-transparent pink filter.

**Preparation
for the future**





FUTURE WORLD VISION

INFRASTRUCTURE REIMAGINED



Change on this scale can drive confusion and dysfunction unless industries, organizations, and individuals are **prepared to tackle new realities**



Alternative Energy



Autonomous Vehicles



Climate Change



Smart Cities



High-Tech Construction / Advanced Materials



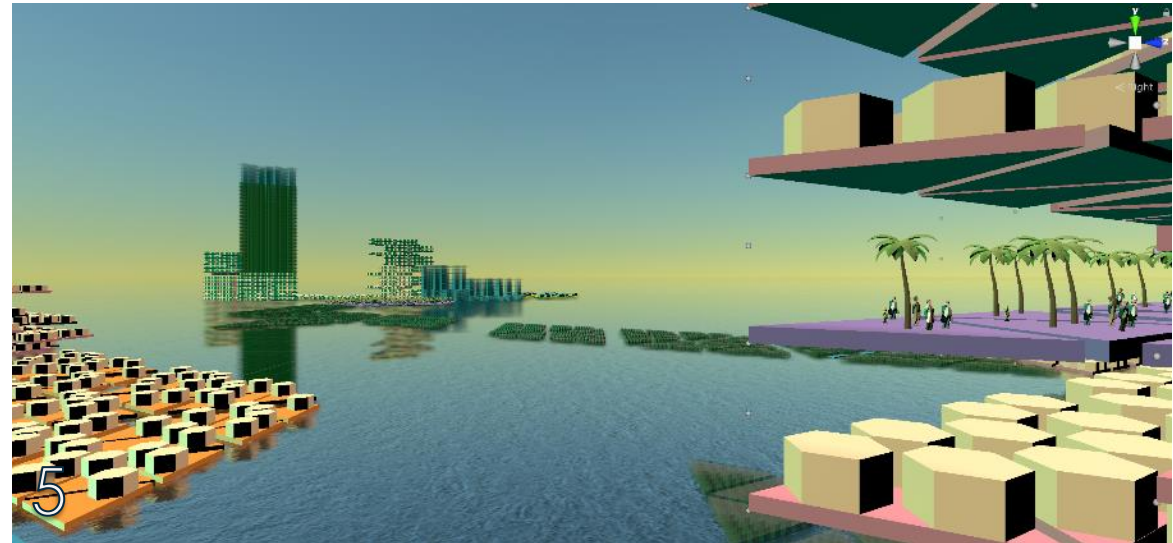
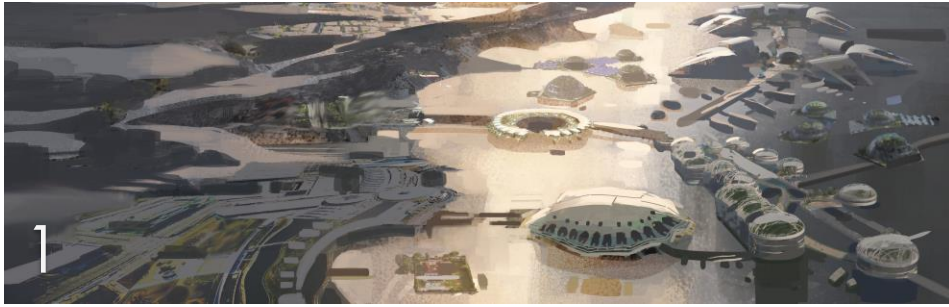
Policy & Funding





CATEGORIES: ● Innovation ● Disruptors ● Informed Speculation





Floating City Example

1. Concept Art for Flooded Cityscape
2. Systems View of Interactive Prototype
3. Floating City Detail Concept Art
4. Concept Art for Floating City Overview
5. Computer Model of City





FUTURE WORLD VISION

INFRASTRUCTURE REIMAGINED



Thank you!