NationalJournal LEADERSHIP COUNCIL

Infrastructure 101

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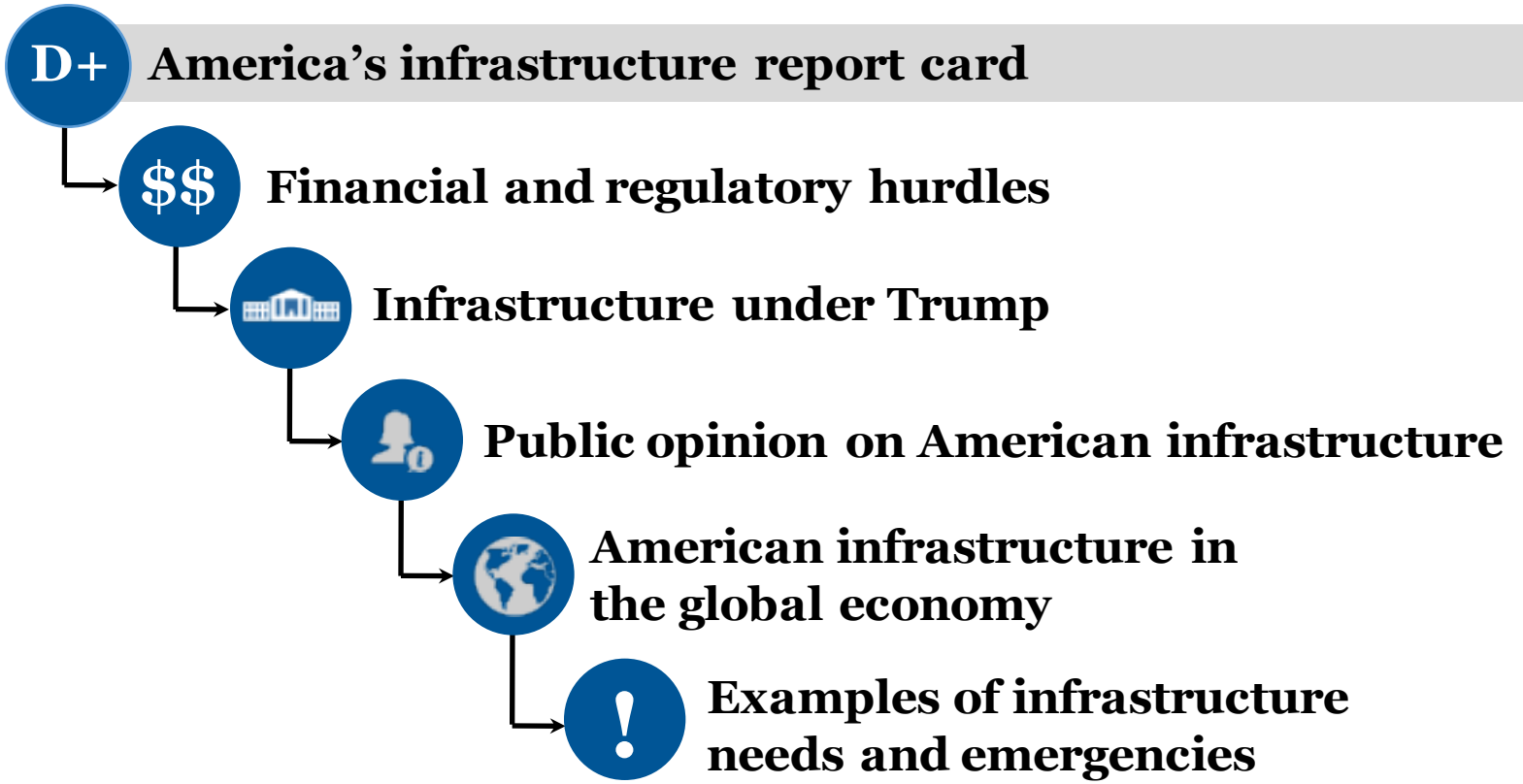
Director: Alistair Taylor

Roadmap for the presentation



United States receives D+ grade on infrastructure

2017 report card for America's infrastructure

Conducted by the American Society of Civil Engineers

Sector	Grade	Sector	Grade
Aviation	D	Ports	C+
Bridges	C+	Public Parks and Rec.	D+
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+

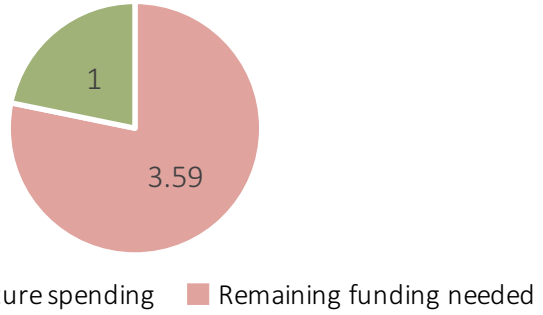
Grading system

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

The ASCE takes into account **capacity, condition, funding, public safety, innovation, operation and maintenance**. The purpose behind the report card is to inform the public of the current condition of America's infrastructure in a concise, easily accessible manner.

$4.59 trillion

In 2017, the ASCE estimated that a total of $4.59 trillion is needed by 2025 to maintain highways, bridges, trains, water and electrical facilities, but President Trump has only proposed a $1 trillion spending plan, which is unlikely to be approved in full by Congress



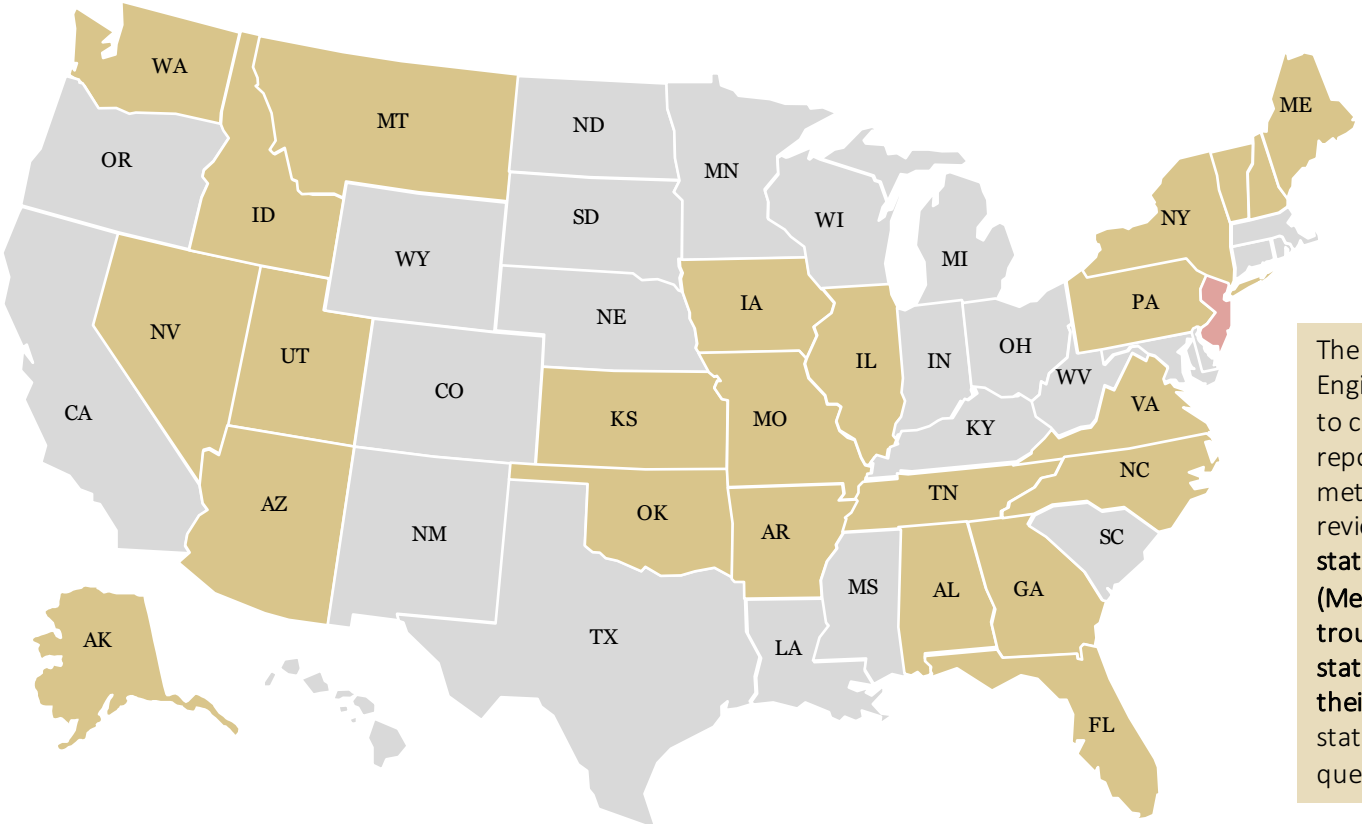
Sources: American Society of Civil Engineers, 2017..

No state received higher than a "C" for infrastructure, 24 states have not been graded since 2013

ASCE infrastructure report card grades, by state

Assessments conducted by state chapters of the American Society of Civil Engineers

A (Exceptional) B (Good) C (Mediocre) D (Poor) F (Failing)



The American Society of Civil Engineers relies on local chapters to conduct state infrastructure report cards following the methodology of the national review done by the ASCE. **No state received above a C (Mediocre) grade. Even more troubling is that roughly half of states have not been graded by their local chapters**, making the status of their infrastructure questionable.

Source: American Society of Civil Engineers, "State Infrastructure Report Cards", 2013-2017.

America has history of poor grades for infrastructure

ASCE report cards for America's infrastructure 1988-2017

Sector	1988	1998	2001	2005	2009	2013	2017
Aviation	B-	C-	D	D+	D	D	D
Bridges	-	C-	C	C	C	C+	C+
Dams	-	D	D	D+	D	D	D
Drinking Water	B-	D	D	D-	D-	D	D
Energy	-	-	D+	D	D+	D+	D+
Hazardous Waste	D	D-	D+	D	D	D	D+
Inland Waterways	B-	-	D+	D-	D-	D-	D
Public Parks and Recreation	-	-	-	C-	C-	C+	D+
Rail	-	-	-	C-	C-	C+	B
Roads	C+	D-	D+	D	D-	D	D
Schools	D	F	D-	D	D	D	D+
Solid Waste	C-	C-	C+	C+	C+	B-	C+
Transit	C-	C-	C-	D+	D	D	D-
Wastewater	C	D+	D	D-	D-	D	D+
America's Overall Grade	C	D	D+	D	D	D+	D+

= Grade Improved

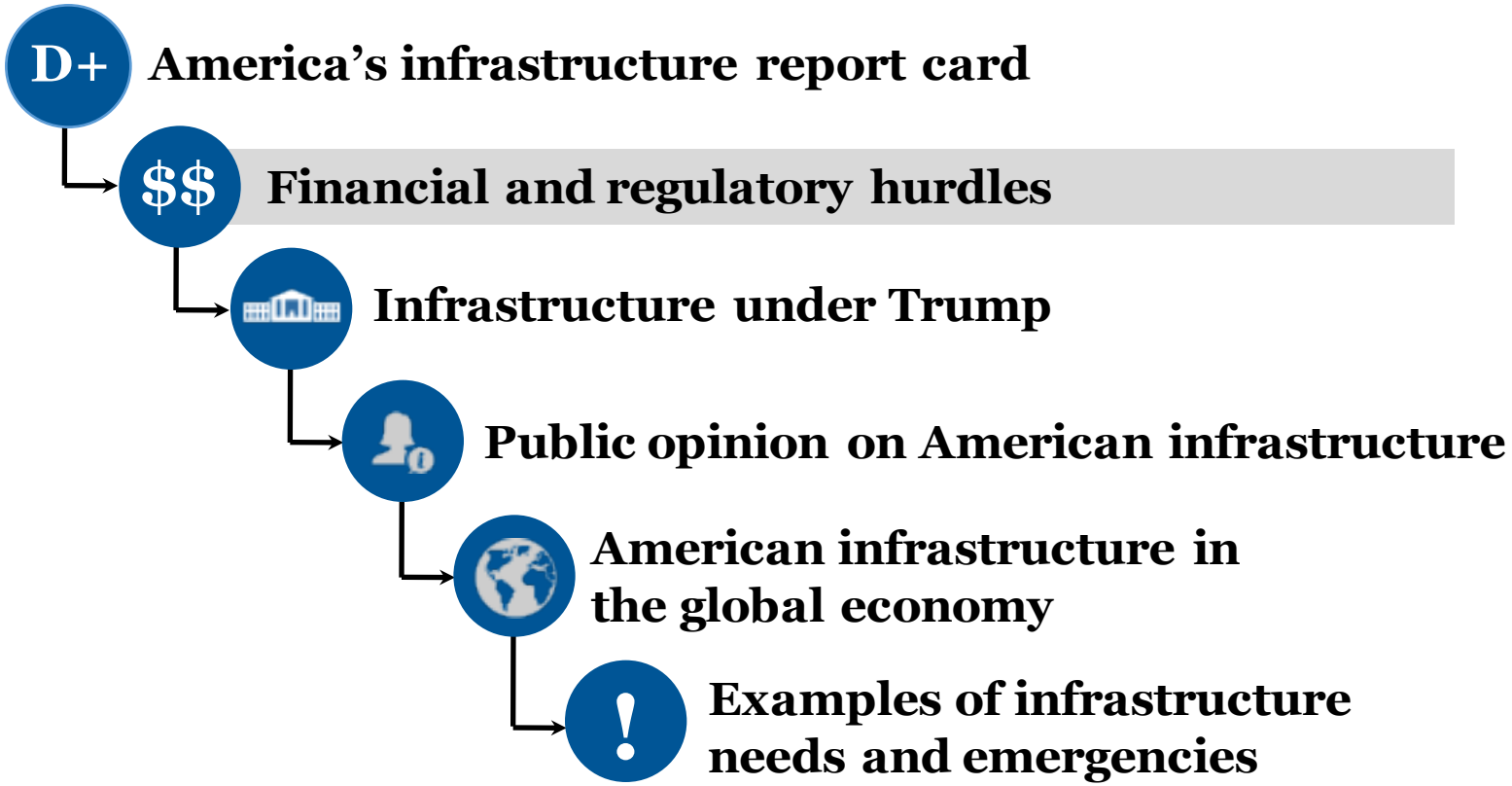
= Grade Fell

Analysis

- In 2017, the US saw its **greatest improvement in rail;** this is likely related to the freight rail industry's $27.1 billion investment in rail infrastructure in 2015
- While the rail score is an improvement, the ASCE estimates an **additional investment of $28 billion** in rail is needed to bring the system to a state of good repair
- **Amtrak** in particular has a large maintenance backlog

Source: American Society of Civil Engineers, "State Infrastructure Report Cards", 2017.

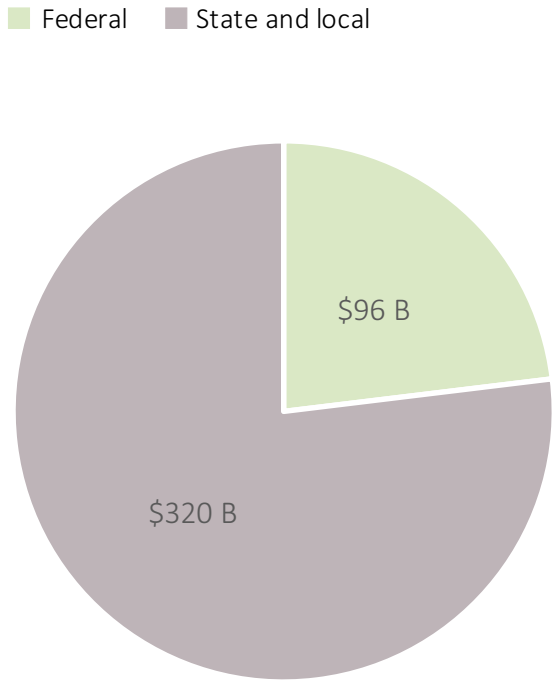
Roadmap for the presentation



In 35 years, federal infrastructure investment has dropped by half, leaving the responsibility to state and local governments

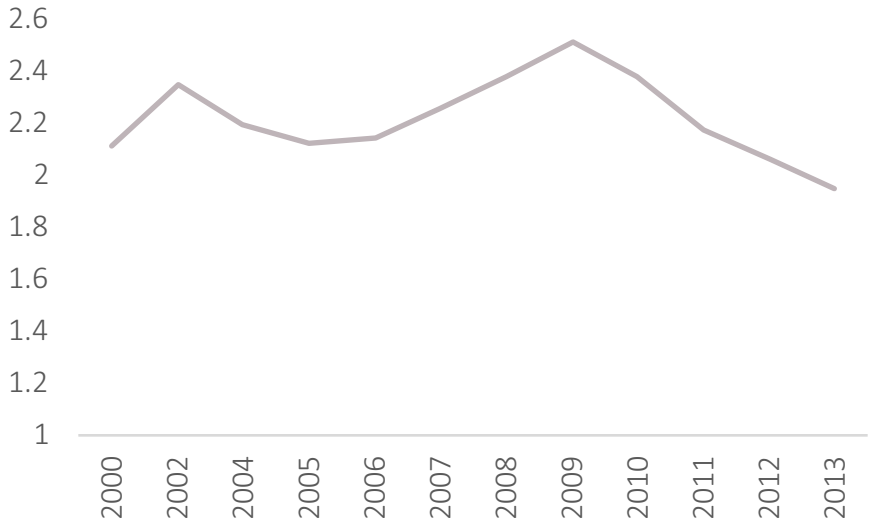
Breakdown of transportation and water infrastructure spending

Congressional Budget Office, 2014



State and local capital spending as percent of GDP, 2000-2013

U.S. Bureau of Economic Analysis



Background

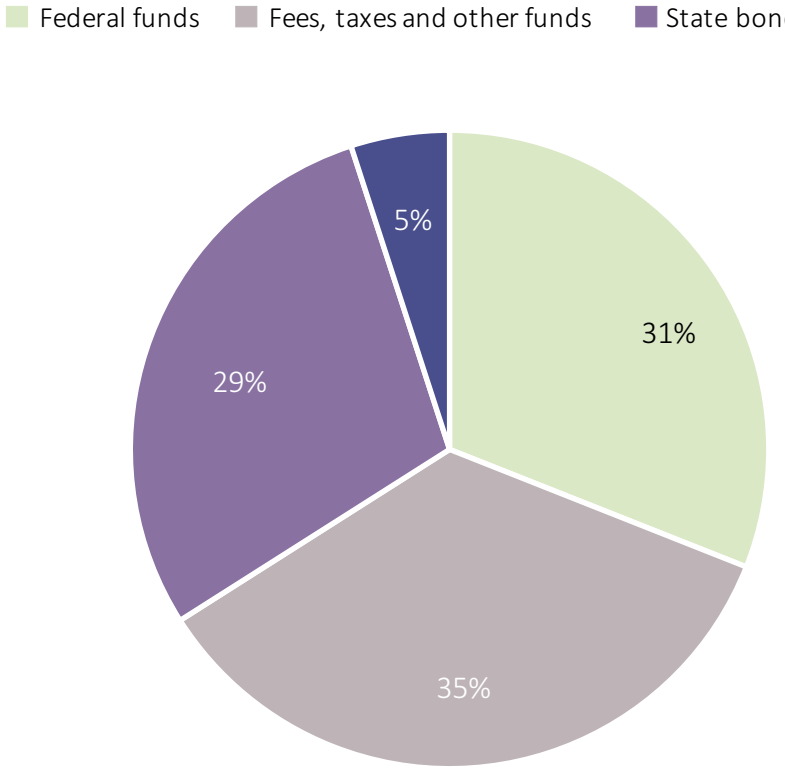
- State and local governments pay for almost 75% of the nation's public infrastructure
- After the financial collapse in 2008, all but five states cut capital spending, and even as the economy has bounced back spending levels have not increased

Sources: Elizabeth McNichol, "It's time for state to spend more on agriculture," Center on Budget and Policies Priorities, February 23, 2016.

States rely heavily on borrowing and user fees to fund infrastructure projects

How states pay for infrastructure projects

Center on Budget and Policy Priorities



Traditional bond proceeds:
Due to the large upfront costs associated with infrastructure, states borrow funds by issuing general obligation bonds to spread costs out over time instead of using annual tax collections and other revenues. These bonds are paid pack through user revenues, including taxes, vehicle-related fees and tolls

Taxes, fees and tolls:
Fuel taxes, vehicle registration fees and bridge, tunnels and road tolls contribute to funding, but only account for a small percentage of upfront costs

Grants:
Federal grants compose a large portion of state funding for road and public transit projects

Sources: Elizabeth McNichol, "It's time for state to spend more on agriculture," Center on Budget and Policies Priorities, February 23, 2016.

Due to rising costs and a lack of traditional infrastructure funding, state and federal entities are exploring new options

Methods of funding infrastructure projects

Non-traditional funding and financing methods	
Grant Anticipation Revenue Vehicles bonds (GARVEE)	GRAVEE bonds are any debt financing instrument that states issue whose principal and interest are repaid primarily by future federal-aid funds
Private activity bonds (PABs)	PABs are tax-exempt debt financing instruments for infrastructure projects limited by annual federal guidelines
American Recovery and Reinvestment Act (ARRA)	The 2009 ARRA created two new transportation bonds, Build America Bonds (BABs) and Recovery Zone Bonds (RZBs). BABs are a popular funding method among Democrats and Republicans as they carry special tax credits and federal subsidies for the bond issuer and the bondholder; however, they expired in 2011.
Federal credit assistance	The federal government can provide direct loans, guarantees, and lines of credit for major transportation infrastructure projects through the Transportation Infrastructure Finance and Innovation Act loan program
State or national infrastructure banks	35 states currently have infrastructure banks due to the federal government's expansion of eligibility and seed funding provisions in 1998. Creating a national infrastructure bank is a popular idea among Democrats that would allow the government to provide guaranteed loans, below market cost-credit and subsidized bonds
Public-private partnerships (PPPs)	PPPs establish a contract between a public agency and a private entity to work together on a transportation project. 26 states use a form of PPPs, but it is a more popular model internationally. Trump has made PPPs a central part of his infrastructure plan
Vehicle Mile Traveled fees (VMTs)	VMTs charge drivers directly for each mile they travel, replacing a transitional motor fuel tax.

Sources: Greg Dierkers, "How states and territories fund transportation," NGA Center for Best Practices.

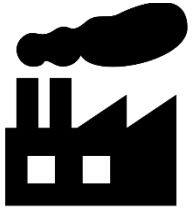
The National Environmental Policy Act establishes a regulatory framework for major infrastructure projects

Basics of the National Environmental Policy Act

EPA United States Environmental Protection Agency

The National Environmental Policy Act (NEPA) was signed into law on January 1, 1970 and requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. The legislation was passed in advance of the formation of the EPA which occurred in December of that year.

NEPA was enacted to…



Prevent pollution and endorse more environmentally friendly alternatives

Safeguard endangered species and important historical landmarks

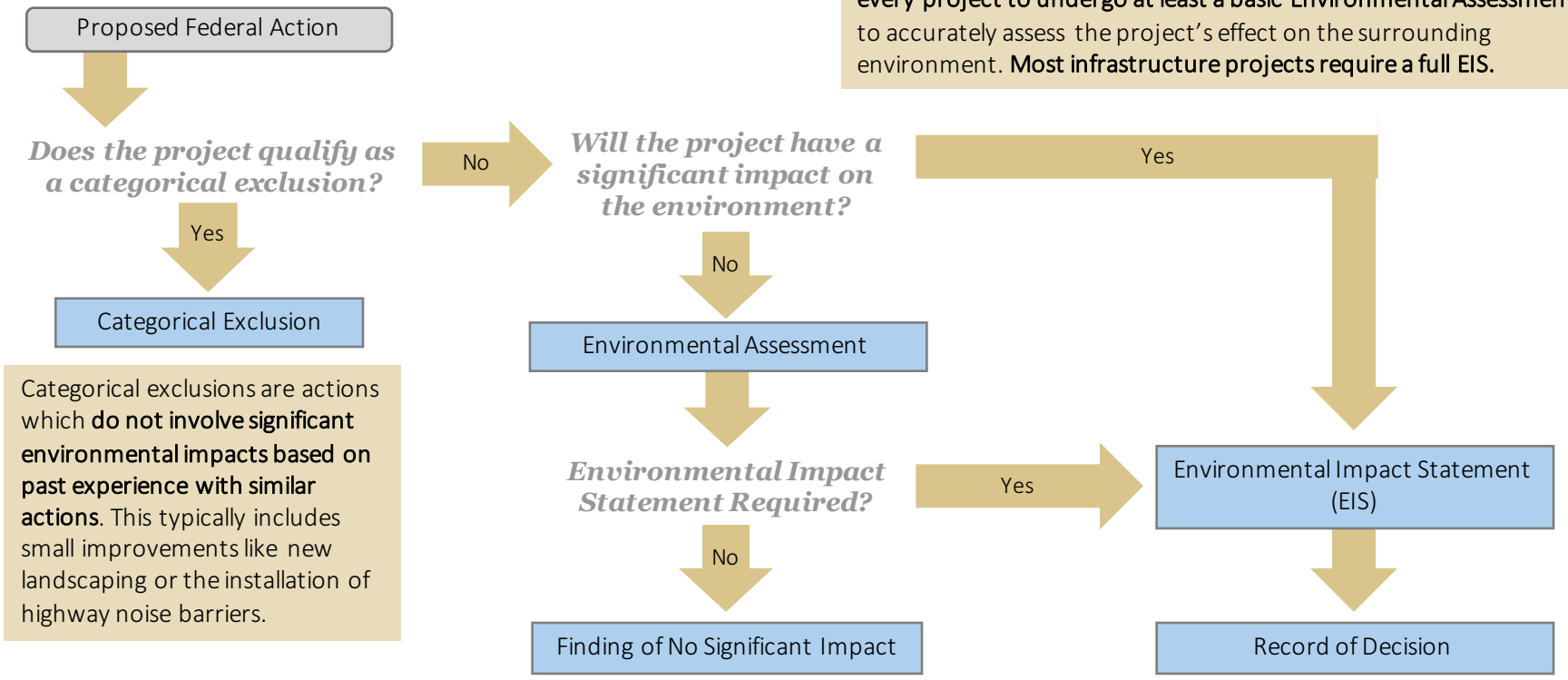
Prevent discrimination and civil unrest

While NEPA grew out of efforts to strengthen environmental regulation, the legislation also passed as a result of frequent and contentious highway revolts experienced in the 1960s. Many large infrastructure projects built pre-NEPA tended to negatively impact surrounding communities causing widespread civil unrest in cities. Following NEPA's enactment in 1970, **the legislation became one the most effective legal weapons for disadvantaged communities to prevent the destruction of their neighborhoods for infrastructure projects.**

Sources: US Environmental Protection Agency, "National Environmental Policy Act Review Process," November 2, 2015; Raymond A. Mohl, "The interstates and the Cities: The U.S. Department of Transportation and the Freeway Revolt, 1966-1973," The Journal of Policy History, Vol 20, No. 2, 2008; Icons created by Amelia Wattenberger and Elizabeth Lopez, made available through The Noun Project.

Compliance with NEPA is extensive, has positive benefits but slows infrastructure development

Review process required by NEPA



Unless a project qualifies as a categorical exclusion, **NEPA requires every project to undergo at least a basic Environmental Assessment** to accurately assess the project's effect on the surrounding environment. **Most infrastructure projects require a full EIS.**

Categorical exclusions are actions which **do not involve significant environmental impacts based on past experience with similar actions**. This typically includes small improvements like new landscaping or the installation of highway noise barriers.

If a project can prove there will be no significant impact to the surrounding environment, construction can begin without a full EIS.

After preparing an EIS, the reviewing agency will release a Record of Decision which **may require addendums or another draft of the EIS to be prepared to address concerns raised.**

Sources: Environmental Protection Agency, "National Environmental Policy Act Review Process," November 2, 2015; U.S. Government, "Environmental Impact and Related Procedures, Title 23: Highways," U.S. Government Publishing Office – Electronic Code of Federal Regulations, 2016.

Several drafts of EIS, public comment periods make full compliance process lengthy

Step-by-step process for completing an environmental impact statement

Scoping Period – The leading agency invites the larger community to comment on the range of alternatives, areas of impact and mitigation measures that should be evaluated in the EIS. This allows public input into the process before the first draft of the EIS is crafted.

Draft EIS – Following the scoping period, the leading agency prepares a Draft EIS, specifying the purpose of the project, the effects and impacts on surrounding communities as well as possible alternatives and the accompanying effects and impacts resulting from each alternative.

Comment Period(s) – After the Draft EIS is completed and released to the public, the surrounding community is allowed a period of time to comment on points of interest in the Draft EIS through both hearings and electronic submissions. Comment periods typically last for 45 days. While a comment period is required following the completion of a Draft EIS, there may be several comment periods throughout the entire EIS process. After each comment period is over, the leading agency must review and address each comment individually.

Final EIS and Proposed Action – Following the comment period, the lead agency must explain how the proposed action and its alternatives were modified, make factual corrections, explain how their analysis was improved and identify new alternatives that were created.

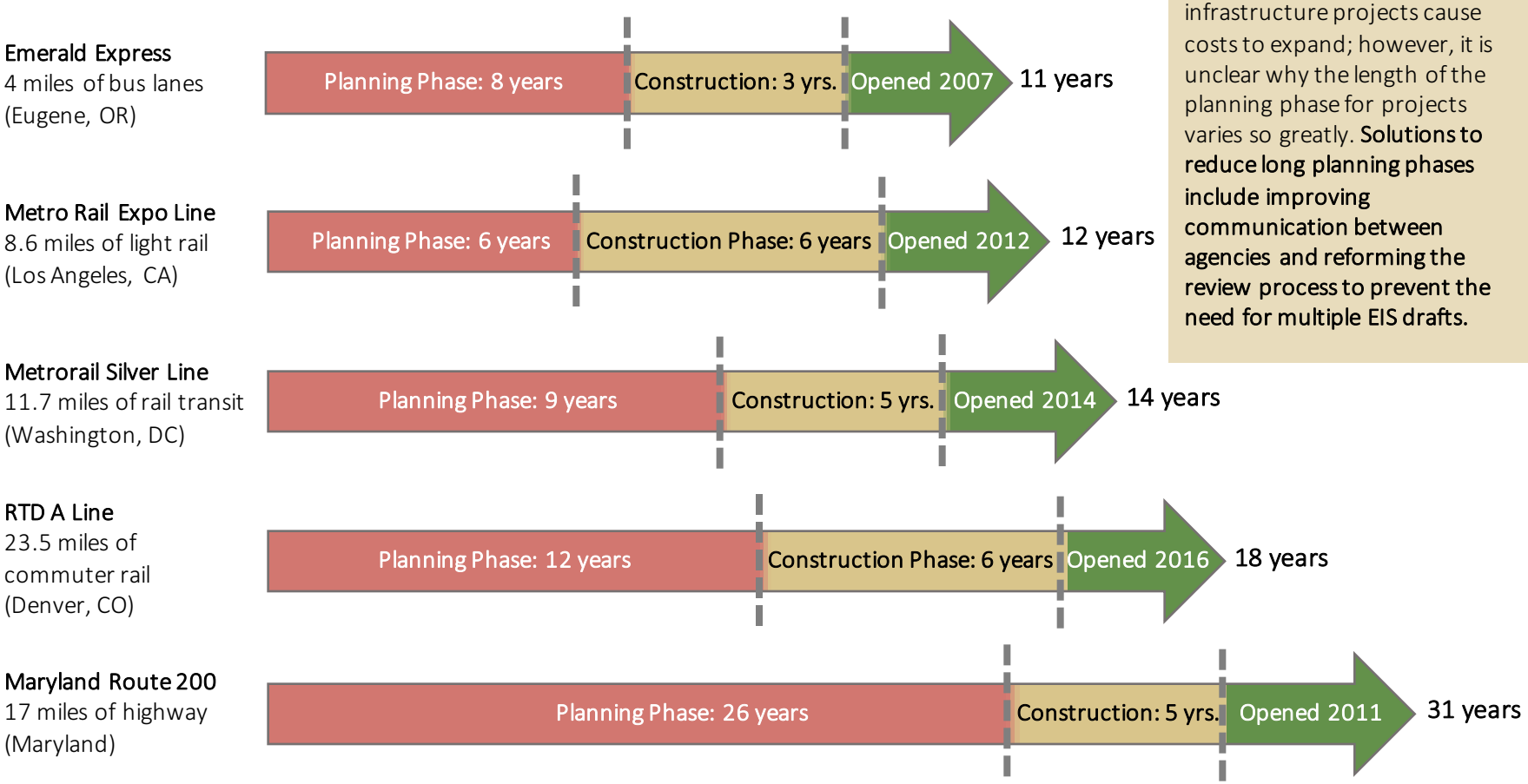
Record of Decision – Issued by the reviewing agency, the final document specifies whether the proposed action or a recommended alternative will be implemented.

A leading agency may need to issue a supplemental EIS after the Final EIS or Record of Decision is released. The supplemental EIS is typically issued if new impacts to the environment are discovered and require research. If a significant amount of time has passed between the final EIS and implementation a supplemental EIS may be required to assess changes in the environment.

Sources: Federal Highway Administration, "NEPA Documentation – Environmental Impact Statement," 2016; Department of Ecology, "Environmental Impact Statement Process," State of Washington, 2016. Images by Arthur Shlain, Eightemdi, Augusto Zamperlini and Keta Shah; made available through The Noun Project.

Most infrastructure projects take decades to complete

Timelines for recently completed infrastructure projects



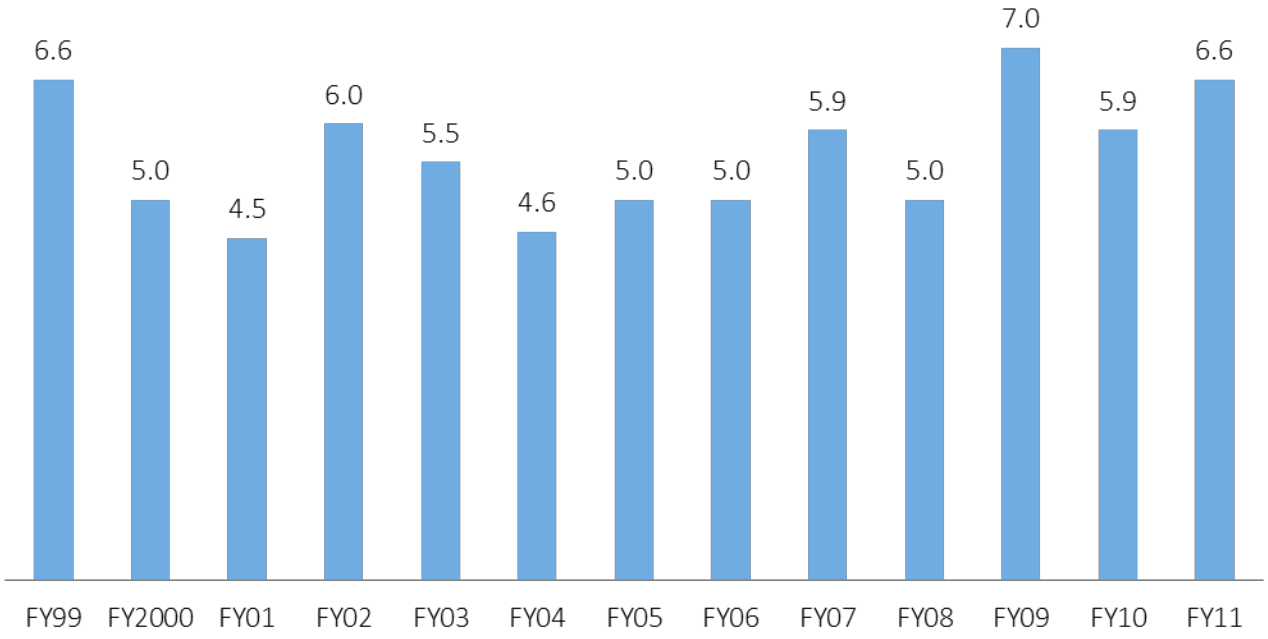
It's widely known that delays in infrastructure projects cause costs to expand; however, it is unclear why the length of the planning phase for projects varies so greatly. **Solutions to reduce long planning phases include improving communication between agencies and reforming the review process to prevent the need for multiple EIS drafts.**

Sources : Railway Gazette, "Urban Rail News in Brief – October 2010," October 3, 2010; Institute for Sustainable Communities, "Case Study: The Emerald Express, Overcoming Growing Pains and Opposition to Bus Rapid Transit," March 26, 2012; TheDenverChannel.com Team, "RTD Service From Union Station to DIA Scheduled to Start April 22," ABC7 – The Denver Channel, October 23, 2015; Ryan Mulligan, "East Corridor Groundbreaking!" Denver Infill, July 26, 2010; LA Metro, "Facts at a Glance," 2013; Los Angeles County Metropolitan Transportation Authority, "Mid City Westside Transit Draft EIS," 2000; John Spiers, "The Long and Winding Road: A History of the Intercounty Connector, 1950-2006," 2011.

Studies find EIS process is consistently lengthy, process gradually taking longer as years pass

Average time required for highway projects to complete an EIS, in years

(EIS - Environmental Impact Statement)

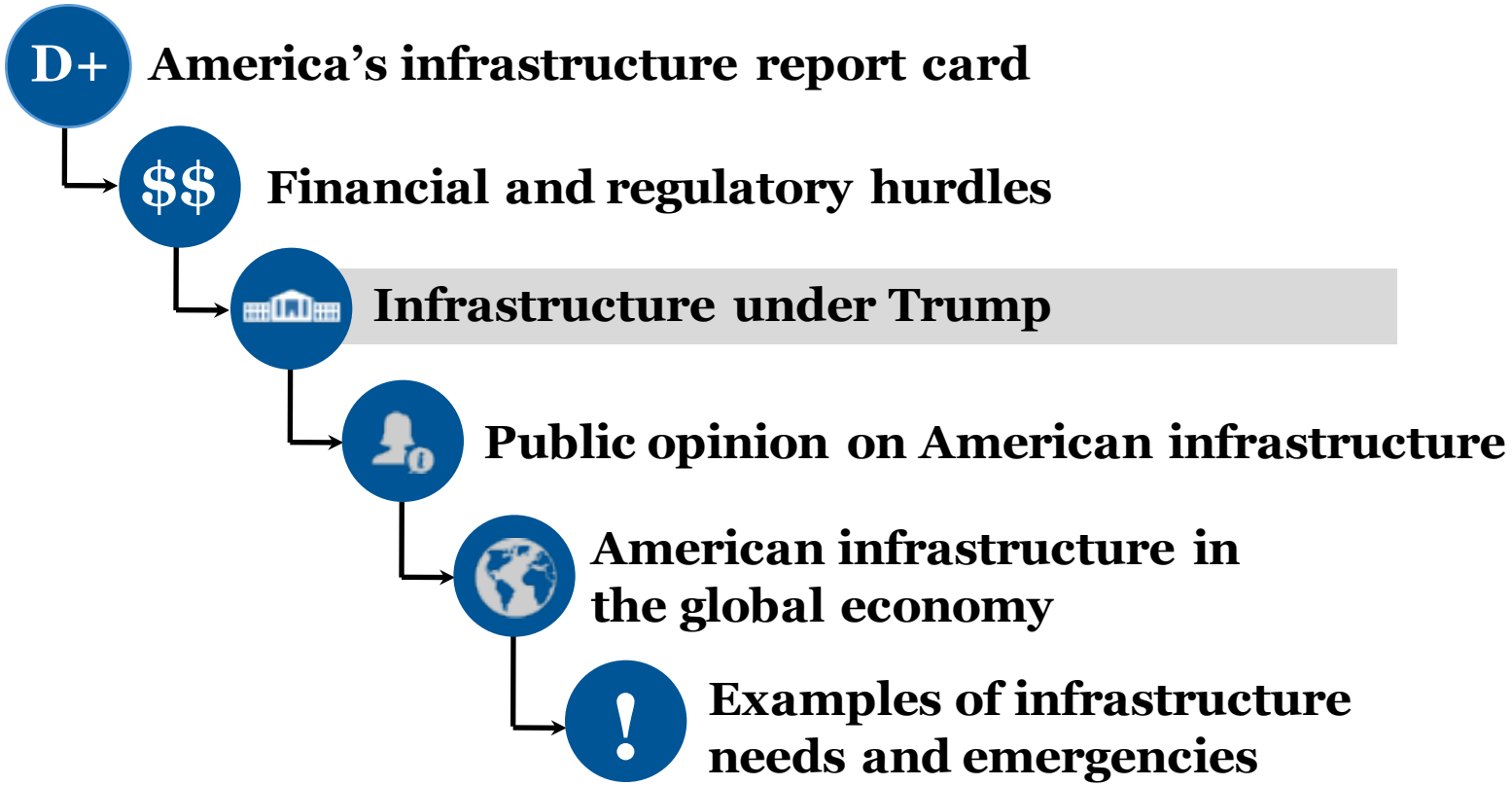


While NEPA compliance naturally forces infrastructure projects to move along an extended regulatory timeline, other permitting and regulatory requirements often stall the EIS process as well. It is also unclear what specific elements of the environmental review process routinely delay project delivery making the identification of possible reforms difficult.

A separate study found that **the time it took to complete an EIS ranged from less than 3 months to as long as 18 years.**

Sources: Federal Highway Administration, "Estimated Time Required to Complete the NEPA Process," 2012; Piet deWitt and Carole A. deWitt, "How Long Does It Take to Prepare an Environmental Impact Statement?" Linda Luther, "The Role of the Environmental Review Process in Federally Funded Highway Projects: Background and Issues for Congress," Congressional Research Services, April 11, 2012.

Roadmap for the presentation



Private financing is the backbone of Trump's $1 trillion infrastructure plan

Trump's infrastructure first plan

P3 **Revenue neutral plan based on public-private partnerships:**
Harness market forces to attract new private infrastructure investments through a deficit-neutral system of tax credits that will offset costs with revenue from new wages to construction workers and contractors

Promote private sector energy infrastructure projects:
Utilize private pipeline and coal export projects to connect American coal and shale energy production with markets and consumers

Reform the FAA and TSA:
Work with Congress to modernize airports and air traffic control systems, shorten wait times, and ensure that American travelers are safe

Roll back regulations:
Use regulatory reform to fast-track projects at lower cost by streamlining permitting and approvals

Prioritize clean water:
Triple funding for state revolving loan fund programs to help states and local governments update drinking and wastewater infrastructure

Analysis

- Trump's $1 trillion dollar plan would require $167 billion in equity investment from the private sector
- In exchange, investors would get a tax credit equal to 82% of their equity amount, which would be repaid to the government from incremental tax revenues from project construction
- This form of financing lends itself to increased investment in mature, revenue-based infrastructure assets, such as toll roads, which offers a chance of high returns with relatively low risk

Sources: Wilbur Ross and Peter Navarro, "Trump versus Clinton on infrastructure," Trump Pence Campaign, October 27, 2016; Kevin DeGood, "How Donald Trump's infrastructure plan fails America," CAP, December 1, 2016; Robert Freedman, "Early views on the US energy and infrastructure sectors under a Trump administration," Shearman and Sterling LLP, December 5, 2016; Jeremy W. Peters and Maggie Haberman, "Trump picks Elaine Chao for transportation secretary," NY Times, November 29, 2016; Noun Project.

Both sides of the aisle see Chao as someone who could make progress on infrastructure

Background on Trump's pick for secretary of transportation

Secretary of Transportation

Elaine Chao
Former Secretary of Labor

Significant previous positions	Bio
• 1983-1984: White House fellow • 1984-1986: Vice president of syndications at Bank of America • 1989-1999: Deputy transportation secretary • 1991-1992: Director of Peace Corps • 1992-1996: President and CEO of United Way of America • 1996-2000, 2009-2016: Distinguished fellow at the Heritage Foundation • 2001-2009: Secretary of Labor • 2011-present: Board director Wells Fargo • 2016-present: Distinguished fellow at the Hudson Institute	Elaine L. Chao was the first Asian American woman appointed to the President's cabinet in U.S. history. She immigrated from Taiwan at the age of eight. Chao has had a significant career in both the private and public sector, having worked under Presidents Ronald Regan, George H. W. Bush and George W. Bush. Married to Senate Majority Leader Mitch McConnell, Chao runs in prominent political circles.

Sources: Wilbur Ross and Peter Navarro, "Trump versus Clinton on infrastructure," Trump Pence Campaign, October 27, 2016; Kevin DeGood, "How Donald Trump's infrastructure plan fails America," CAP, December 1, 2016; Robert Freedman, "Early views on the US energy and infrastructure sectors under a Trump administration," Shearman and Sterling LLP, December 5, 2016; Jeremy W. Peters and Maggie Haberman, "Trump picks Elaine Chao for transportation secretary," NY Times, November 29, 2016.

Chao has expressed support for Trump's current infrastructure plan and is likely to push it forward

What to expect in the coming administration

Programs likely to continue

- **Fixing America's Surface Transport Act** (Fast): a five-year bill that reauthorized core federal transportation funding programs including key programs within the US Department of Transportation that provide support to PPPs, including the Transportation Infrastructure Financing and Innovation Act (TIFIA) loan program and the use of private activity bonds (PABs) to finance the construction of surface transportation projects and water projects

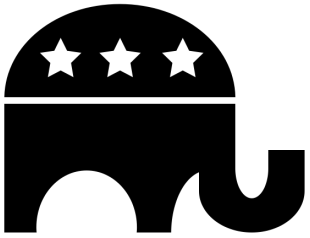
Programs up in the air

- **Water Resources Development Act** (WRDA): a bill that would authorize numerous Army Corps of Engineers projects and provide funds to support communities with water contamination
- The Senate's version of the bill also includes additional funding for the state revolving funds (SRFs) that would make low-cost loans to public and private entities for water infrastructure improvements
- If the WRDA does not pass in the lame duck session, it is likely it will be reintroduced in January

Sources: Wilbur Ross and Peter Navarro, "Trump versus Clinton on infrastructure," Trump Pence Campaign, October 27, 2016; Kevin DeGood, "How Donald Trump's infrastructure plan fails America," CAP, December 1, 2016; Robert Freedman, "Early views on the US energy and infrastructure sectors under a Trump administration," Shearman and Sterling LLP, December 5, 2016; Jeremy W. Peters and Maggie Haberman, "Trump picks Elaine Chao for transportation secretary," NY Times, November 29, 2016.

Although both Democrats and Republicans want to improve infrastructure, partisan divides may stall progress

Partisan perspectives



Republican perspective:

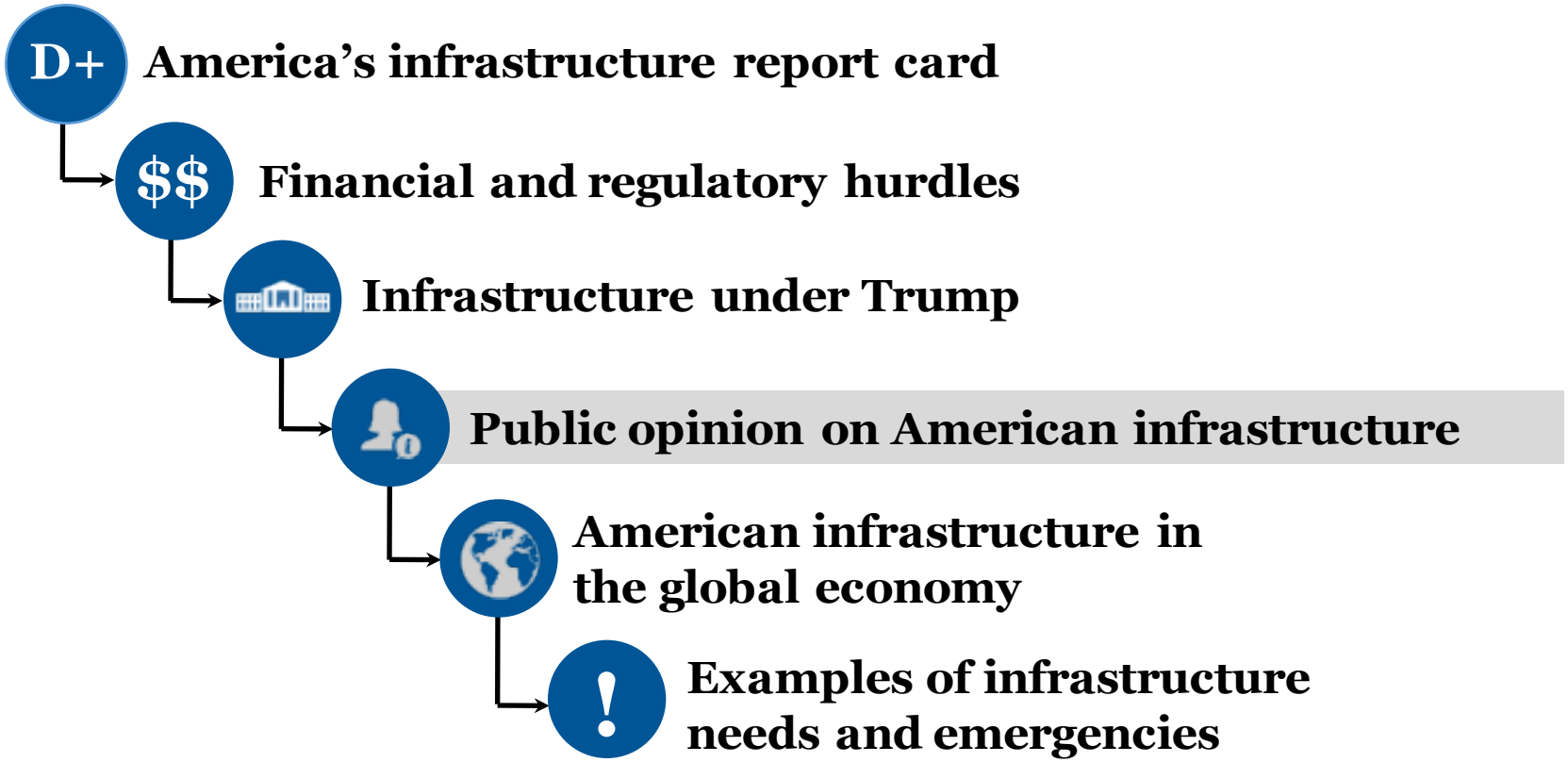
- Prefer the efficiency of private sector infrastructure projects
- Disagree with creating a new government bureaucracy in the form of a national infrastructure bank
- Do not want to increase business taxes to fund infrastructure projects, so current infrastructure projects are not likely to receive increased funding

Democratic perspective:

- Disagree with the PPP model, instead favoring the design-bid-build procurement process in which the state contracts with a private firm for all design and engineering work, but after construction is completed, the state assumes responsibility for all aspects of the operation and maintenance of the highway
- Worry the high cost of PPPs fall on the backs of average Americans in the form of increased bridge, highway and user tolls collected to increase private sector profit
- Believe the PPP model ignores repairs and incremental expansion projects in rural communities and towns that are too small to generate sufficient toll or other user fee revenues

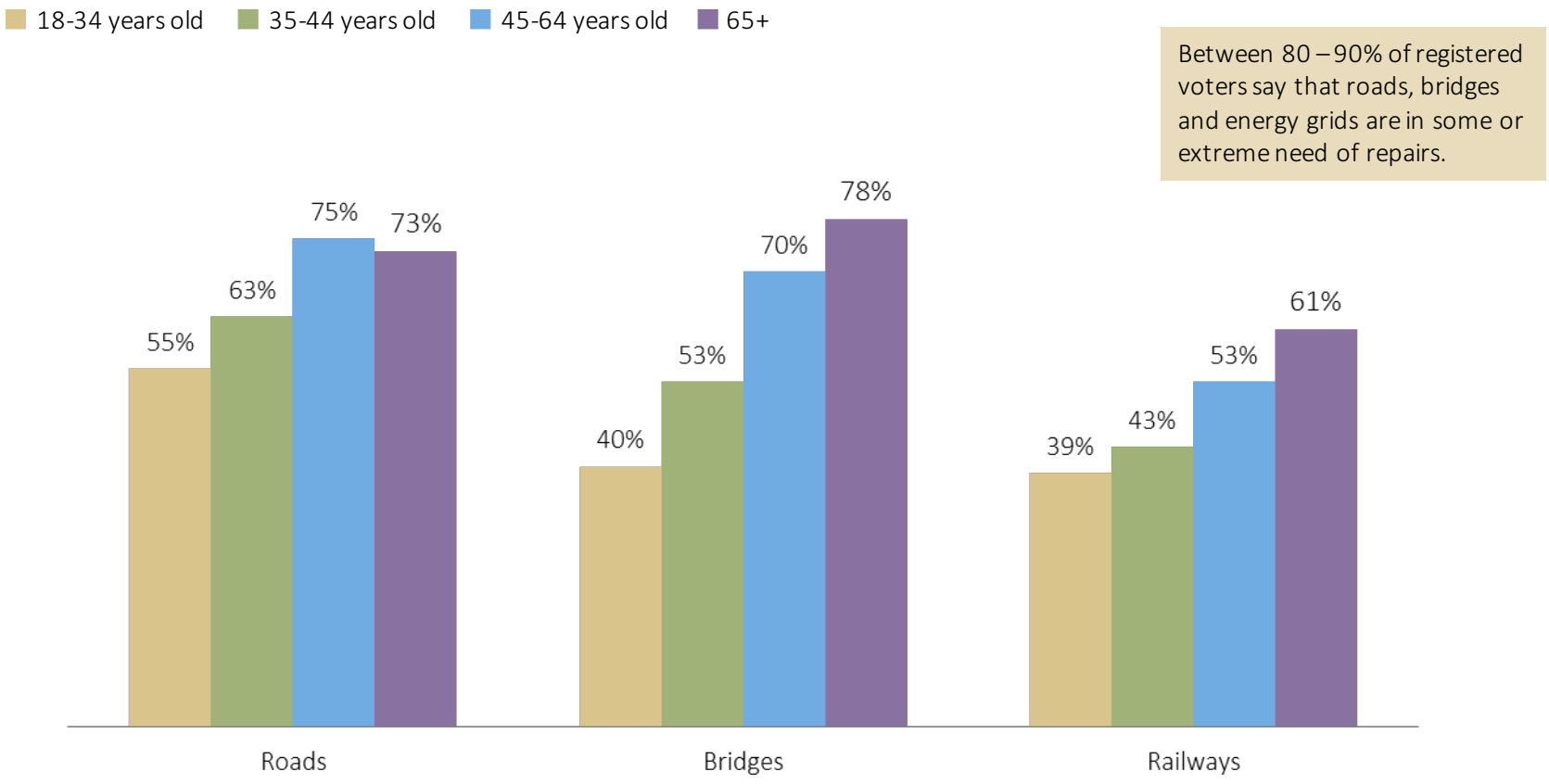
Sources: Wilbur Ross and Peter Navarro, "Trump versus Clinton on infrastructure," Trump Pence Campaign, October 27, 2016; Kevin DeGood, "How Donald Trump's infrastructure plan fails America," CAP, December 1, 2016; Robert Freedman, "Early views on the US energy and infrastructure sectors under a Trump administration," Shearman and Sterling LLP, December 5, 2016; Jeremy W. Peters and Maggie Haberman, "Trump picks Elaine Chao for transportation secretary," NY Times, November 29, 2016.

Roadmap for the presentation



Majority of registered voters agree that U.S. infrastructure is in need of repair

Voters who rate U.S. infrastructure "poor to fair"



Between 80 – 90% of registered voters say that roads, bridges and energy grids are in some or extreme need of repairs.

Source: Poll conducted by the Association of Equipment Manufacturers, between June 17-20, 2016, among a national sample of 1,975 registered voters.

Most Americans agree all levels of government should act on repairing infrastructure

Public opinion on government infrastructure action

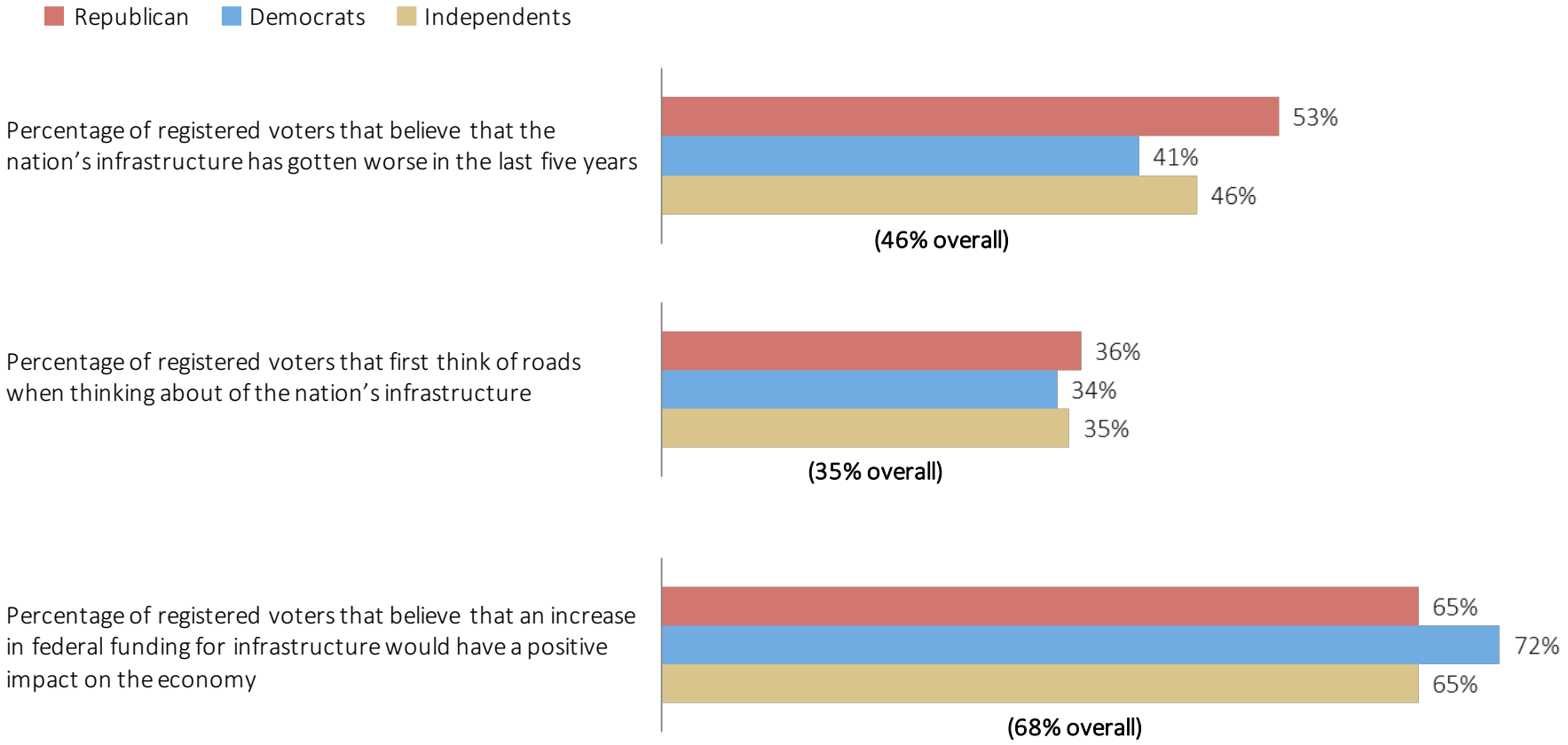
"Government should be doing more at the … level to improve infrastructure."

49% of the surveyed population believes that the federal government is **primarily** responsible for funding infrastructure repairs.

Source: Poll conducted by the Association of Equipment Manufacturers, between June 17-20, 2016, among a national sample of 1,975 registered voters.

Infrastructure remains a bipartisan issue with voters across the political spectrum in general agreement

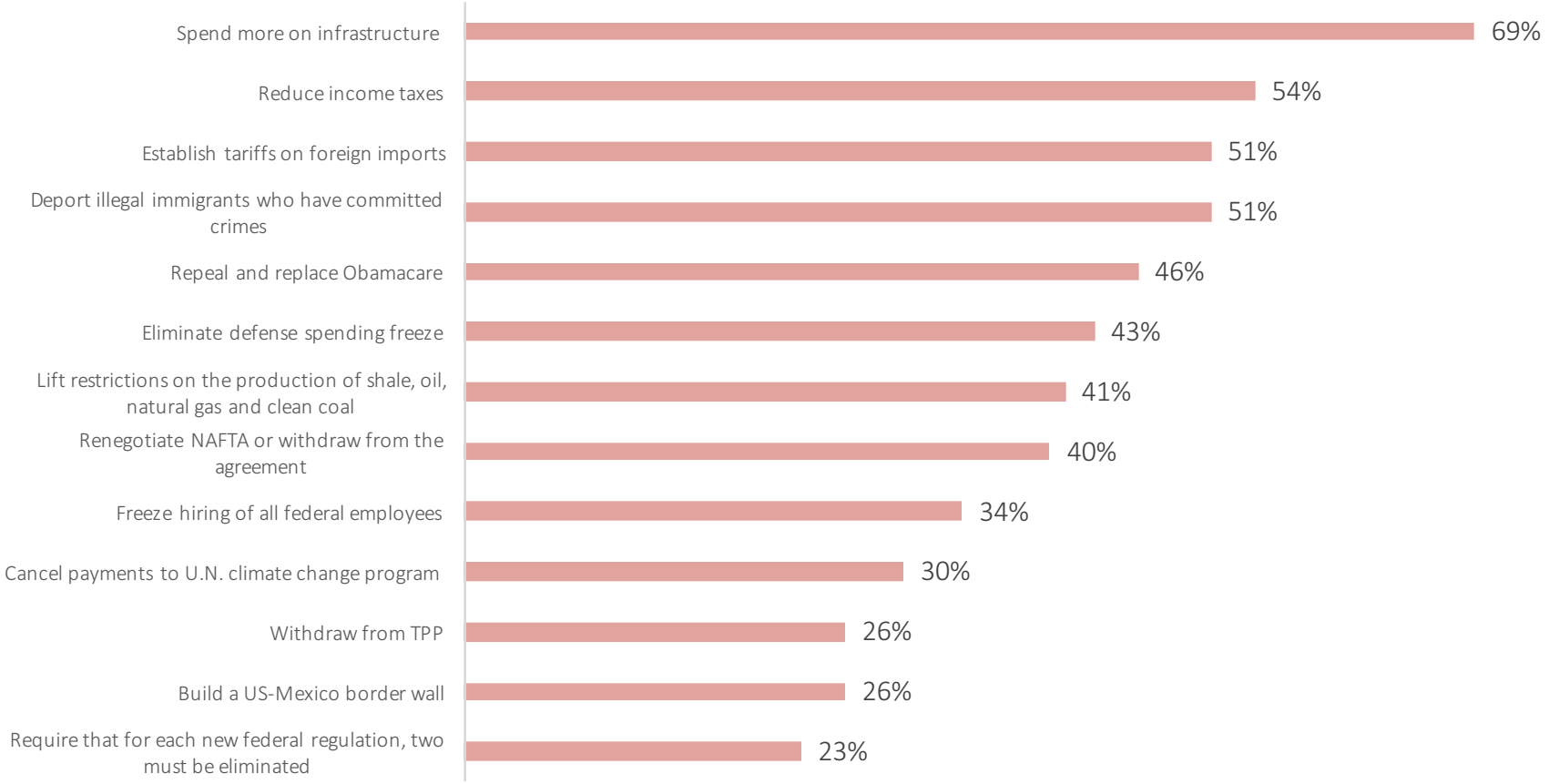
Opinions on infrastructure by party



Source: Poll conducted by the Association of Equipment Manufacturers, between June 17-20, 2016, among a national sample of 1,975 registered voters.

Infrastructure spending polls as Trump's most important promise

Percent of Americans who say it is "very important" that Trump keep specific campaign promises



Source: Gallup, January 9-10, 2017.

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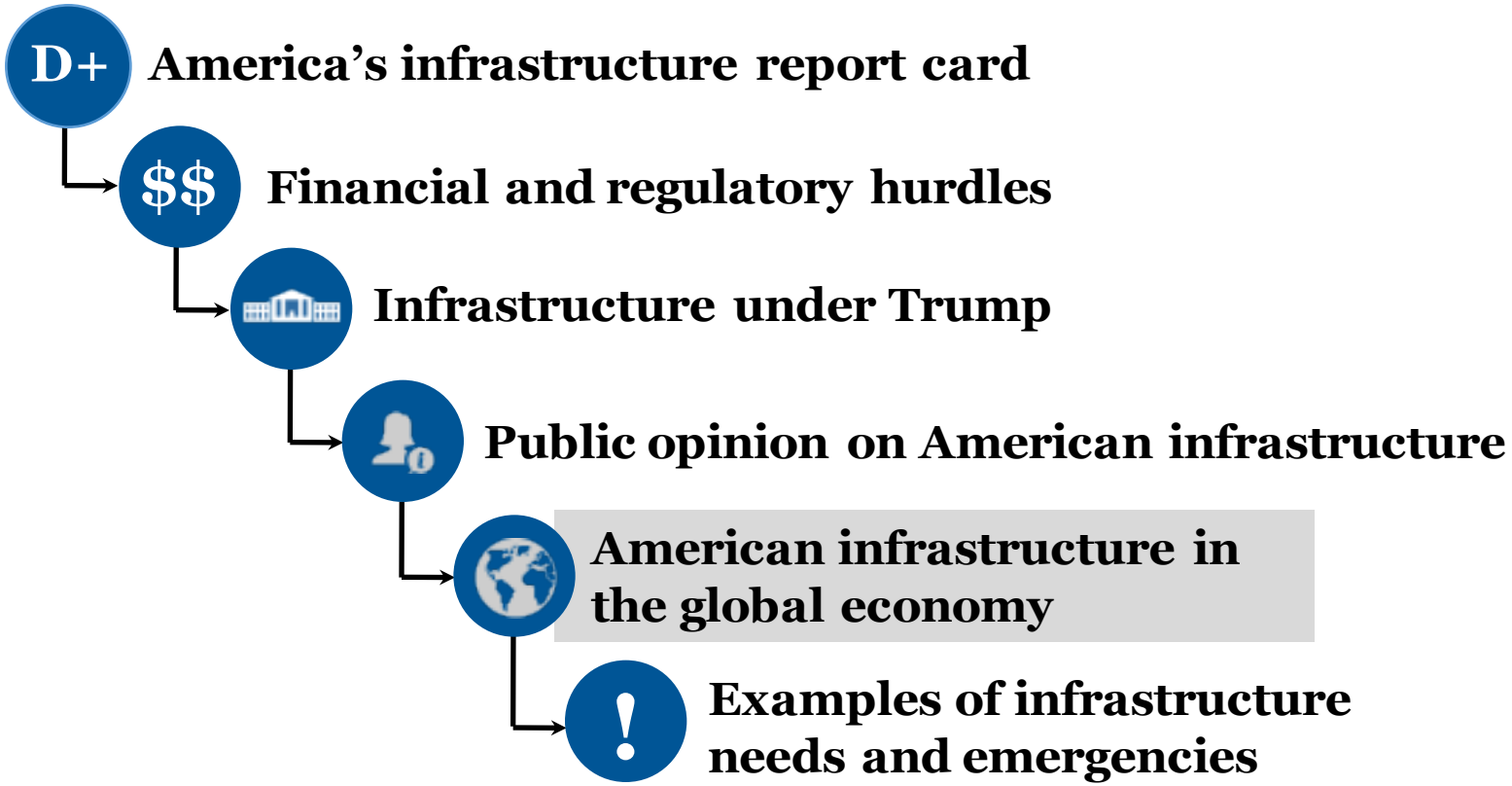
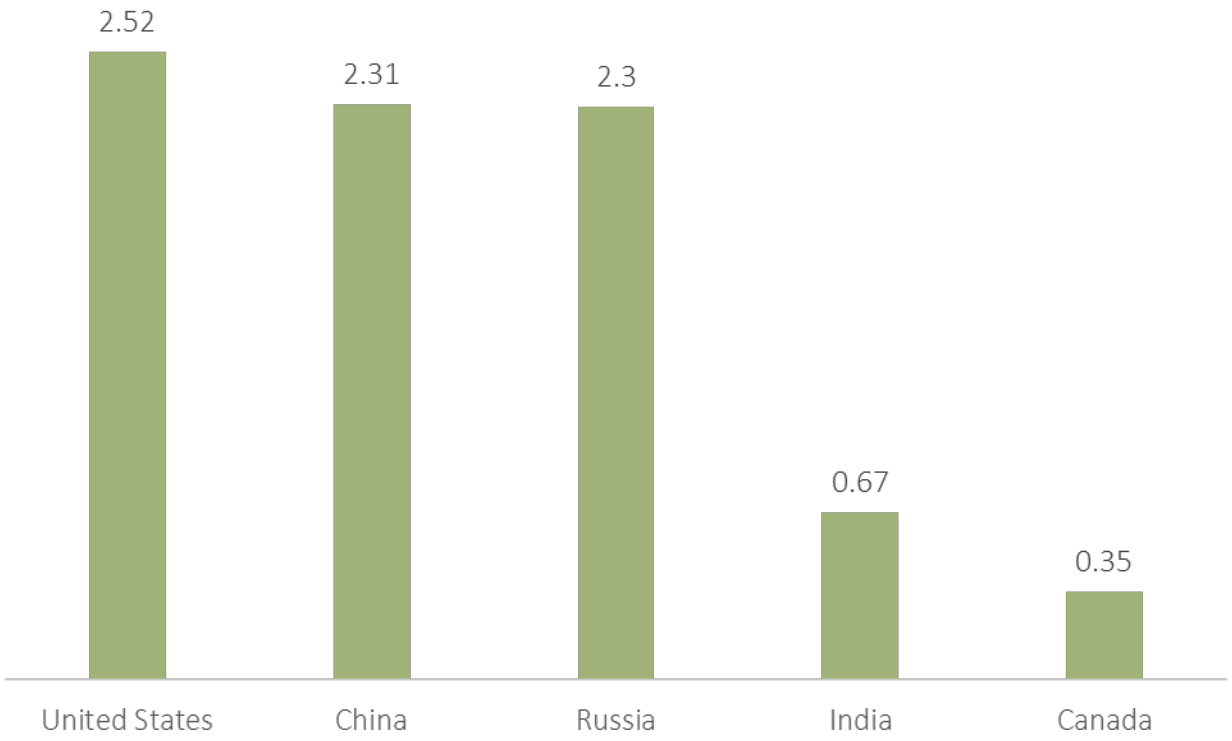


The United States' transportation system has industry titans, but faces hurdles to remain competitive

Rail freight transport in million ton-km

World Bank, 2014



Analysis

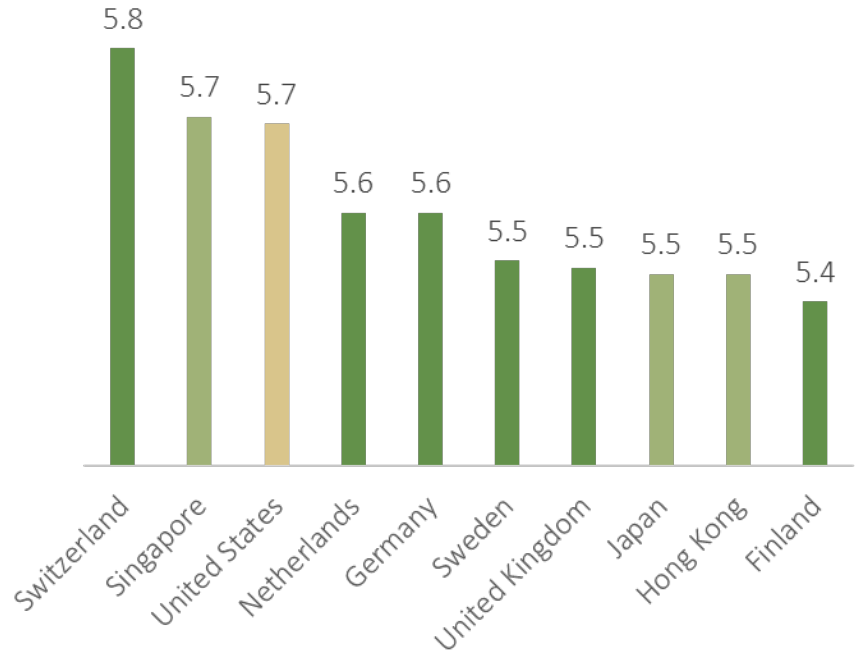
- U.S. railroads transport about a fourth of the world's total rail freight
- However, the U.S is far behind in the development of high-speed passenger trains
- Germany, China, Spain, Japan and France have the top five high speed rail networks

Source: Ed Maixner, "Keeping up with the international competitors: How U.S. infrastructure stacks up," AgriPulse, October 2016; World Bank, 2016.

While the U.S. ranks high in economic competitiveness, it slips in transportation infrastructure rankings

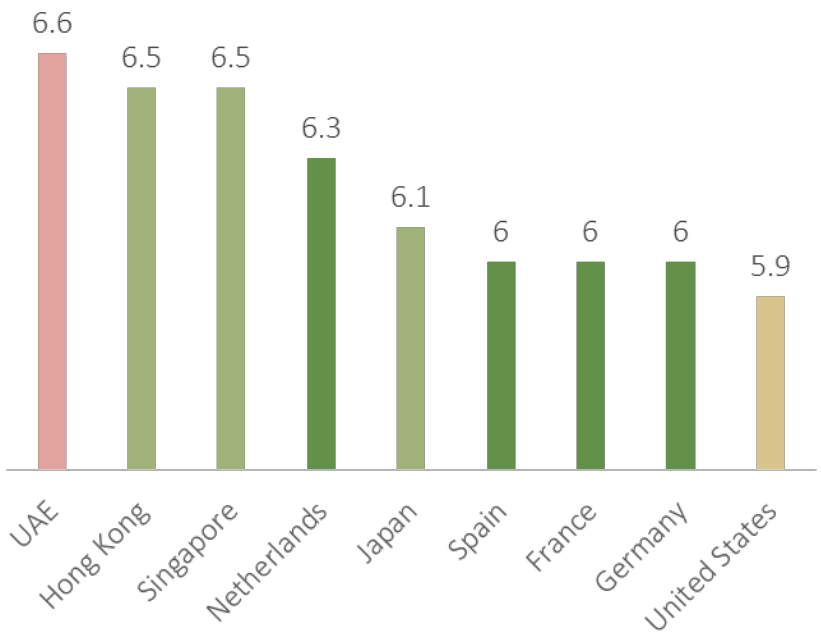
World's most competitive economy ranking

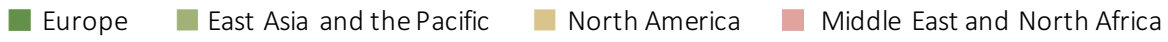
World Economic Forum, 2016-2017



Transportation infrastructure ranking

World Economic Forum, 2015-2016



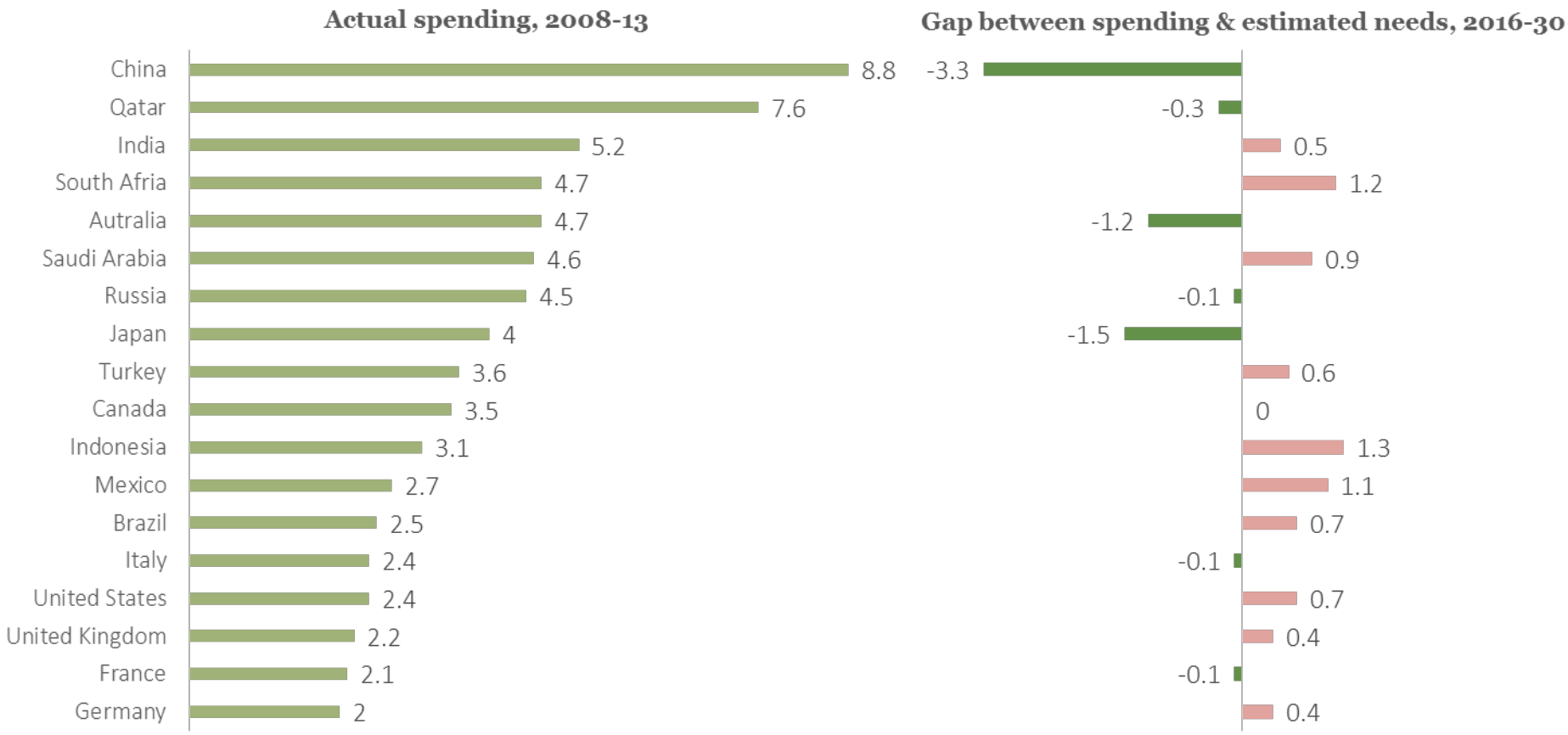


Source: Ed Maixner, "Keeping up with the international competitors: How U.S. infrastructure stacks up," AgriPulse, October 2016; World Economic Forum, 2016.

The U.S. is among many countries that are on infrastructure investment trajectories that will produce shortfalls

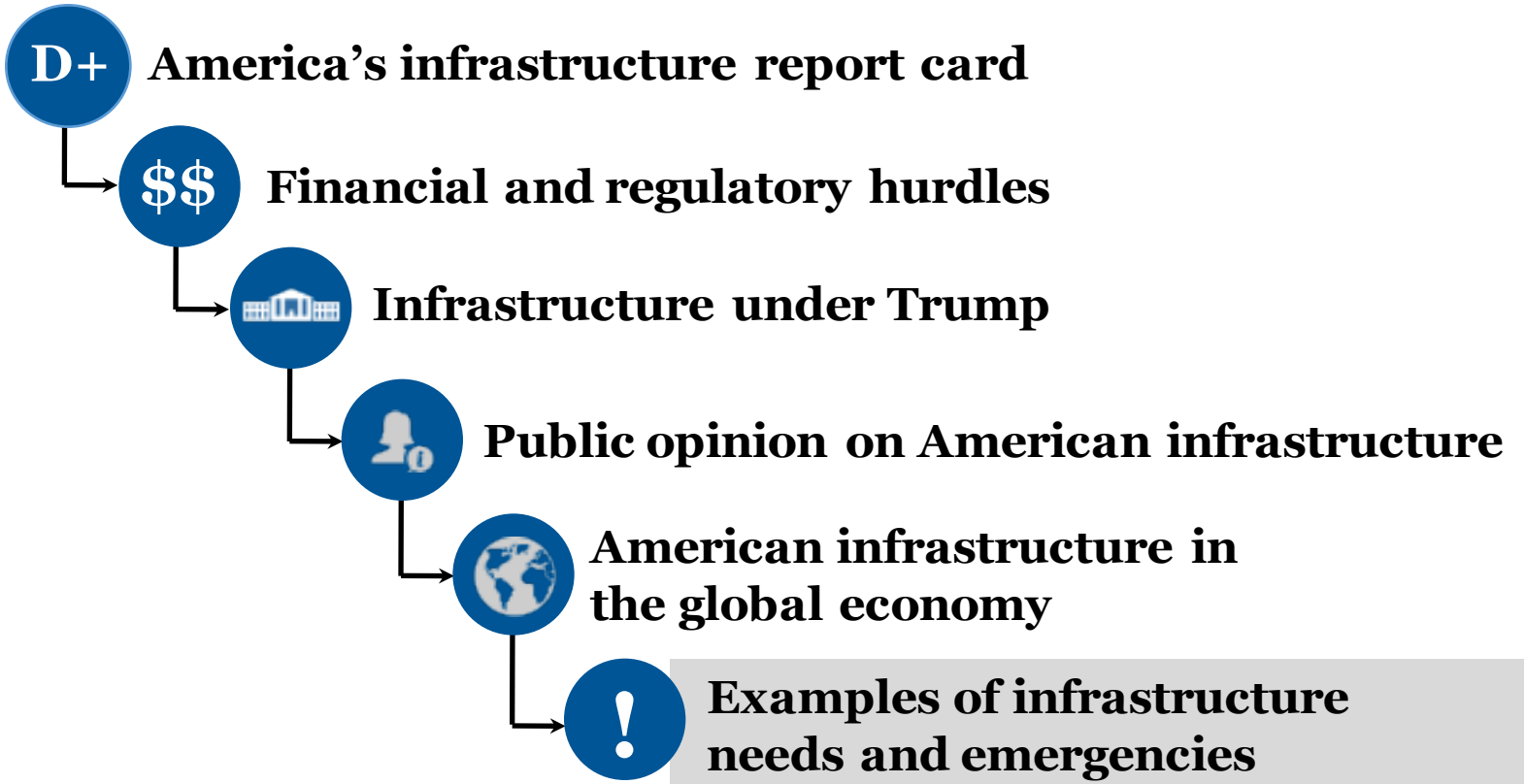
Economic infrastructure spending, % of GDP

McKinsey Global Institute



Source: McKinsey Global Institute, "Bridging global infrastructure gaps," June 2016.

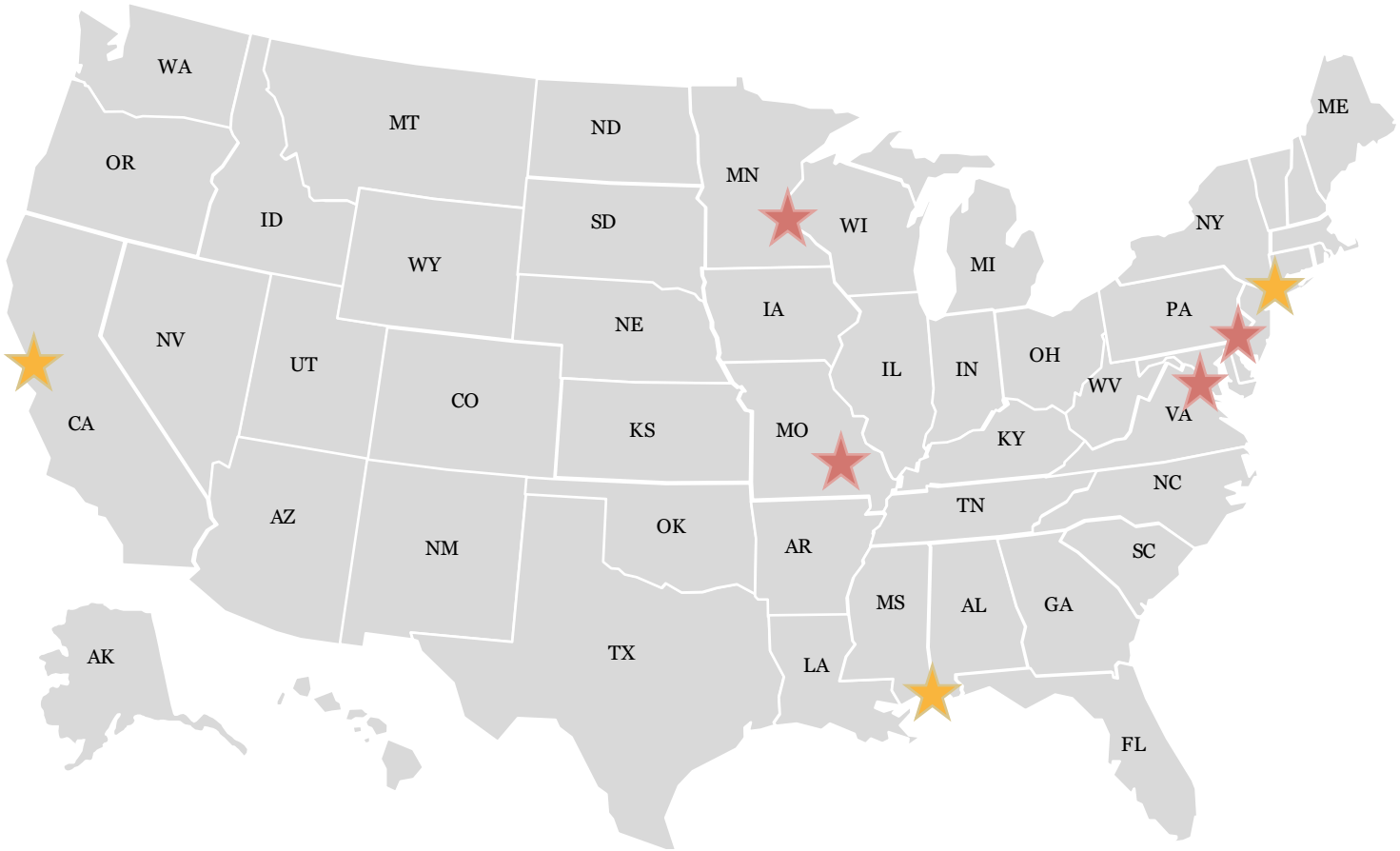
Roadmap for the presentation



New infrastructure is needed across the US

Examples of infrastructure projects and failures

Vital infrastructure project Previous infrastructure failure



Projects in development aim to retain competitiveness and improve resiliency against natural disasters

Vital infrastructure projects in development

Location	Infra Type	Responsible Agency	Description	Status
Mobile, AL	Auto Bridge	Alabama Department of Transportation	The I-10 Bayway is currently two, two-lane bridges which cross the Mobile Bay to bring traffic into the city of Mobile, Alabama. In 2001, a proposal was brought forth to build a bridge bypassing the congested Wallace Tunnel, as persistent congestion on the route hampers the area's economic competitiveness and poses a problem for emergency evacuation situations.	• Environmental Impact Statement Submitted • Funding not yet secured
New York City-New Jersey	Rail Tunnel	Amtrak/NJ Transit	The Gateway Rail Tunnel Project has taken several forms over decades and currently consists of a $24 billion project to build two new tunnels connecting NYC to NJ while rebuilding two existing tunnels as well. Current tunnels are over 100 years old and are in desperate need of repair following damage from Superstorm Sandy.	• Environmental Impact Statement not yet completed • Full funding not yet secured
East Palo Alto, CA (San Francisco Bay Area)	Auto Bridge	Caltrans (California Department of Transportation)	Plans to a replace US-101's bridge across the San Francisquito Creek aim to address growing concern over flood protection. The current bridge structure has low flow capacity and endangers the surrounding areas should a strong storm surge cause water levels to rise rapidly	• Construction has begun and is expected to be completed in late 2017

Sources: Amtrak, "Gateway Program Factsheet" 2015; City of Palo Alto, "San Francisquito Creek Bridge Replacement Project," March 18, 2016; Drew Buchanan, "The $850 Million Solution That Could Finally Free Mobile of its Traffic Nightmare," Pulse Gulf Coast, October 23, 2015; Melanie Zanona, "Five Infrastructure Emergencies," The Hill, May 16, 2016.

Infrastructure failures highlight dangers of slow development process

Recent infrastructure failures

Year	Responsible Agency	Infra. Type	Location	Description
2005	Ameren Union Electric Company (AmerenUE)	Hydroelectric Dam	Missouri Ozarks	On December 14, 2005 the reservoir experienced a catastrophic failure resulting in the full contents of the reservoir draining into the Black River. The cause was found to be "imprudence on the part of UE." No one was killed and a new reservoir was built and began operation in 2010.
2007	Minnesota Department of Transportation	Auto Bridge	Minneapolis, MN	During rush hour on August 1st, the I-35W Mississippi River bridge collapsed killing 13 people and injuring 145. The cause was found to be design flaw that was aggravated by increased use and routine repaving of the road surface. Questions were raised as to why the flaw was not discovered in over 40 years of inspections.
2015	Amtrak	Rail	Philadelphia, PA	An Amtrak Northeast Regional train derailed injuring over 200 and killing 8. The derailment was caused by an inattentive train engineer travelling 102mph in a 50mph zone. The incident would have been prevented by Positive Train Control a computerized speed-limiting system that was planned to be implemented at the site of the crash but was delayed due to regulatory requirements.
Ongoing	Washington Metropolitan Area Transit Authority	Transit	Washington, DC	On May 6, 2016 the Washington DC Metro announced the "SafeTrack" initiative, following regular fire incidents that necessitated a temporary shutdown of the entire system. The rebuilding plan will require Metro to shut down many segments of its system for weeks at a time through mid-2017.

Source: Melissa Gray, "Amtrak installs speed controls at fatal crash site," CNN, May 17, 2015; Monica Davey and Matthew Wald, "Potential Flaw is Found in Design of Fallen Bridge," The New York Times, August 8, 2007; Tom Roussey and Brianne Carter, "Metro Releases Final SafeTrack Plan; Orange, Silver, Blue Lines to Shut Down for 16 Days," ABC7, May 19, 2016; Kevin A. Thompson and Steven C. Reed, "Staff's Initial Incident Report," Public Service Commission, State of Missouri, October 24, 2007.