World Class Infrastructure – Background

January 30, 2022

Top Line

1. A strong infrastructure is vital to our economy and our quality of life.
2. However, America's infrastructure is substandard relative to national and international standards. The American Society of Civil Engineers rates our infrastructure as a C- as of 2021 (2)
3. Our poor infrastructure results from a long period of underinvestment.
4. Americans recognize the importance of a strong infrastructure. A recent poll showed that 80% of Americans believe "rebuilding America's infrastructure" is Extremely or Very Important. (1)
5. Sound investment in infrastructure can strengthen our economy

A world class infrastructure is vital to America's future and today our infrastructure falls short. This calls for forward-looking policies and investment.

Backup

1. A strong infrastructure is vital to our economy and our quality of life

a. Infrastructure can be defined as "the basic physical systems of a business, region, or nation".
   - Examples of infrastructure include transportation systems, communication networks, sewage, water, and electric systems.
   - Infrastructure is sometimes divided into "hard" (physical assets) and "soft" (institutions that help maintain the economy, such as the healthcare system, financial institutions, governmental systems, law enforcement, and education systems.) (1)

b. A strong infrastructure is important for many reasons, including:
    - Facilitating trade,
    - powering businesses,
    - connecting workers to their jobs,
    - creating opportunities for struggling communities and
    - protecting the nation from an increasingly unpredictable natural environment. (5)

c. The economy needs reliable infrastructure to:
    - Connect supply chains and efficiently move goods and services across borders.
    - Connect households to higher quality opportunities for employment, healthcare, and education. (5)

d. Infrastructure, and investment in improving infrastructure, is important for US employment as well:
    - Bureau of Labor Statistics data reveals that 14 million people have jobs in fields directly related to infrastructure. (5)
    - Infrastructure jobs account for nearly 11 percent of the nation's workforce, offering employment opportunities that have low barriers of entry and are projected to grow over the next decade. (5)
    - Economists argue that robust investment in infrastructure in the twentieth century set the foundation for the nation's strong growth in the aftermath of World War II (6).

2. However, America's infrastructure is substandard.

a. The American Society of Civil Engineers has rated America's infrastructure, at the national and state level, since 1998 (1)

- Their most recent analysis, in 2021, rates America's infrastructure a C-. (1)

- The ASCE also rates specific elements of our infrastructure. For example:
    - Our bridges received a grade of C
    - Drinking water and energy infrastructure both rate a C-.
    - Our roads are graded a D, and transit systems a D-

- Our aviation network scores a D+.

- The ASCE also provides recommendations for improving infrastructure elements. See the first document listed in the "More Information" section below for specific recommendations.

b. The World Economic Forum Produces a "Global Competitiveness Report" which rates countries on a number of dimensions relevant to global competitiveness, including Infrastructure

- In the 2019 ranking, the US was ranked 13th overall, and 10th among the 17 large, developed countries. (See Appendix 1)
- The US infrastructure ranks below Germany, France, Spain, the UK, Japan, and South Korea among others.

c. Our substandard infrastructure creates significant costs and risks for Americans

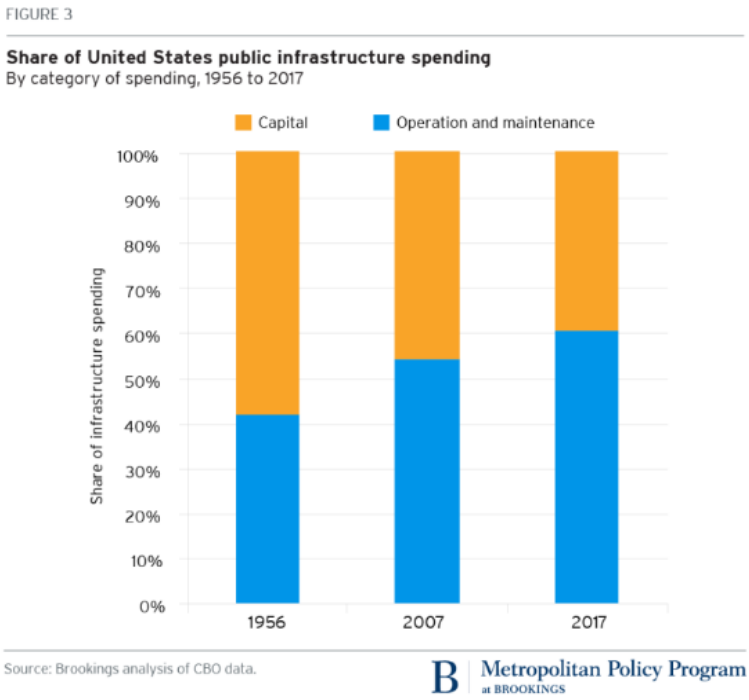
- Driving on poor roads cost motorists roughly $112 billion in additional repair and operating costs annually (12)
- More than 5,000 water systems in America are in violation of the EPA's lead and copper rule, exposing 18 million Americans to dangerous drinking water. (13)
- 46,154, or 7.5% of the nation's bridges, are considered structurally deficient, meaning they are in "poor" condition. 178 million trips are taken across these structurally deficient bridges every day. (14)

3. Our poor infrastructure results from a long period of underinvestment.

a. Total public spending on infrastructure has actually declined in real terms since 2007, even as our economy has grown.
   a. Brookings reports that "real infrastructure spending nationally has fallen over the past decade, from $450.4 billion in 2007 to $440.5 billion in 2017." (7)

b. Spending has also shifted from capital projects to repair and maintenance, as our infrastructure ages.
   a. Since 2007, real spending on operation and maintenance jumped from $243.3 billion to $266.5 billion. Meanwhile, real spending on capital projects plummeted 16 percent, from $207.1 billion to $174.0 billion. (7)

b. In 1956, capital spending was almost 60% of total infrastructure spending. As of 2017, this had fallen to less than 40%. (7)
c. This shift means we are spending less on new and better infrastructure, as more and more of our spending goes to just maintaining outdated facilities.



c. According to the Organization for Economic Cooperation and Development (OECD), a group that mostly consists of developed countries:
    a. The United States invests less in transportation infrastructure as a percentage of GDP than many other wealthy countries, including France, Germany, Japan, and the United Kingdom.
    b. China, meanwhile, spends far more. (8)

4. Americans recognize the importance of a strong infrastructure.

a. A March 2020 survey by FM3 research found that 80% of Americans believe that federal government support for "Rebuilding America's Infrastructure" was "Extremely Important" (39%) or "Very Important" (42%), for a total of 81% rating it at least Very Important. (3)
    - This is on a par with "Strengthening our Economy" (81%) and "Reforming our Healthcare System" (77%).

- This is a bipartisan issue: Support was strong across parties, with 84% of Democrats, 74% of Republicans, and 79% of Independents rating infrastructure as Extremely or Very Important.

b. A CBS News/YouGov poll in April 2021 found very similar results (4) - a strong majority of Americans approve of additional spending on infrastructure initiatives.

- For most initiatives, support was strong across party lines.
- Approval ratings for various initiatives are shown in the table below:

Would you approve or disapprove of Congress passing a bill to spend additional federal money to...

(% approve)

	Total	Dem	Rep	Indep
Build or repair US roads and bridges	**87%**	92%	80%	88%
Repair or replace old water pipes	**85%**	92%	76%	85%
Provide more home care for elderly people	**83%**	94%	74%	82%
Put broadband internet in rural areas	**78%**	90%	62%	79%
Build public schools	**73%**	90%	54%	73%
Build more train and rail lines	**63%**	78%	48%	63%
Set up electric car charging stations on roads	**61%**	82%	36%	61%

Source: CBS News/YouGov poll, April 2021
https://drive.google.com/file/d/1SvFSPgFNYkLRTRu02JAKR-wHtJom5JwW/view

5. Sound investment in infrastructure can strengthen our economy

a. The Council on Foreign Relations points out: "The $20 trillion U.S. economy relies on a vast network of infrastructure from roads and bridges to freight rail and ports to electrical grids and internet provision. But the systems currently in place were built decades ago, and economists say that delays and rising maintenance costs are holding economic performance back." (8)

b. An analysis by the Business Roundtable found that as much as $3 in economic activity is created by every $1 invested in infrastructure. (9)

c. A study by the International Monetary fund concluded that "increased public infrastructure investment raises output in the short term by boosting demand and in the long term by raising the economy's productive capacity." (10)

d. S&P Global estimates that "a $1 trillion investment in infrastructure would add $1.4 trillion to the economy over an eight-year period--a fiscal multiplier of 1.4x – and would create 883,600 jobs by 2030–many middle-class jobs." (11)

More Information

1. Report card on US infrastructure, and recommendations for improvement in key areas: American Society of Civil Engineers, https://infrastructurereportcard.org/
2. Why Infrastructure Matters - Brookings, January 20, 2015, https://www.brookings.edu/opinions/why-infrastructure-matters-rotten-roads-bum-economy/
3. Council on Foreign Relations - The State of US Infrastructure - August 2021 - https://www.cfr.org/backgrounder/state-us-infrastructure?gclid=CjwKCAjw4KyJBhAbEiwAaAQbEz6EM5Rkek6pe2aRuhi5lHVU0dIKrZQw7QTwhdfXy0axrrbQalvf4hoC1OEQAvD_BwE

Sources

1. Investopedia, March 24, 2021, https://www.investopedia.com/terms/i/infrastructure.asp
2. American Society of Civil Engineers, https://infrastructurereportcard.org/
3. FM3 Research, March 2020, http://thevalueofwater.org/sites/default/files/VOW%20Poll%20Results%20for%20External%20Distro%2004272020.pdf
4. CBS News/YouGov poll, April 2021, https://drive.google.com/file/d/1SvFSPgFNYkLRTRu02JAKR-wHtJom5JwW/view
5. Brookings, January 20, 2015, https://www.brookings.edu/opinions/why-infrastructure-matters-rotten-roads-bum-economy/
6. Council on Foreign Relations - "The State of US Infrastructure", August 2021 - https://www.cfr.org/backgrounder/state-us-infrastructure
7. Brookings, Shifting into an era of repair: US infrastructure spending trends, May 10, 2019, https://www.br"The ookings.edu/research/shifting-into-an-era-of-repair-us-infrastructure-spending-trends/
8. Council on Foreign Relations - The State of US Infrastructure - August 2021 - https://www.cfr.org/backgrounder/state-us-infrastructure?gclid=CjwKCAjw4KyJBhAbEiwAaAQbEz6EM5Rkek6pe2aRuhi5lHVU0dIKrZQw7QTwhdfXy0axrrbQalvf4hoC1OEQAvD_BwE

9. Business Roundtable, The Case for Investing in America's Transportation Infrastructure, https://s3.amazonaws.com/brt.org/staging-qeOOpdhhbbqqq3/2015.09.16-InfrastructureReport-Final.pdf
10. International Monetary Fund, "The Time is Right for an Infrastructure Push", September 2014, https://www.imf.org/en/News/Articles/2015/09/28/04/53/sores093014a
11. S&P Global – The Opportunity for US Infrastructure - https://www.spglobal.com/en/research-insights/featured/latest-on-us-infrastructure-bill
12. Conference Board, Committee for Economic Development, January 10, 2018, https://www.ced.org/blog/entry/five-issues-with-americas-infrastructure-problem
13. CNN, "5,300 US water systems are in violation of lead rules", June 29, 2016, https://www.cnn.com/2016/06/28/us/epa-lead-in-u-s-water-systems/index.html
14. American Society of Civil Engineers, Infrastructure Report Card, 2021, https://infrastructurereportcard.org/cat-item/bridges/

Appendix 1 - Global Competitiveness - Infrastructure

Alphabetical

Country	Quality of Infrastructure Index (2019)	Infrastructure Rank among 17 large advanced countries	Infrastructure Rank Among all Countries
Australia	79.2	17	29
Austria	89.0	8	10
Belgium	87.3	11	14
Canada	80.8	16	26
Czechia	83.8	14	20
France	89.7	7	9
Germany	90.2	6	8
Israel	83.0	15	23
Italy	84.1	12	18
Japan	93.2	3	5
Korea (Republic of)	92.1	4	6
Netherlands	94.3	1	2
Spain	90.3	5	7
Sweden	84.0	13	19
Switzerland	93.2	2	4
United Kingdom	88.9	9	11
United States	**87.9**	**10**	**13**

Ranked

Country	Quality of Infrastructure Index (2019)	Infrastructure Rank among 17 large advanced countries	Infrastructure Rank Among all Countries
Netherlands	94.3	1	2
Switzerland	93.2	2	4
Japan	93.2	3	5
Korea (Republic of)	92.1	4	6
Spain	90.3	5	7
Germany	90.2	6	8
France	89.7	7	9
Austria	89.0	8	10
United Kingdom	88.9	9	11
United States	**87.9**	**10**	**13**
Belgium	87.3	11	14
Italy	84.1	12	18
Sweden	84.0	13	19
Czechia	83.8	14	20
Israel	83.0	15	23
Canada	80.8	16	26
Australia	79.2	17	29

Source: World Economic Forum Competitiveness Index, "Quality of Infrastructure" component, 2019
https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

Appendix 2 - State Level Infrastructure Rankings

STATE	INFRASTRUCTURE RANK OVERALL	ENERGY	INTERNET ACCESS	TRANSPOR-TATION
Alabama	28	16	41	23
Alaska	40	47	32	13
Arizona	23	14	34	22
Arkansas	43	35	47	32
California	31	39	6	45
Colorado	15	17	13	21
Connecticut	46	48	30	43
Delaware	25	31	33	10
Florida	20	23	19	19
Georgia	11	26	5	17
Hawaii	33	49	2	40
Idaho	10	5	28	15
Illinois	26	20	24	31
Indiana	32	36	22	33
Iowa	19	6	38	27
Kansas	7	13	9	5
Kentucky	18	34	17	14
Louisiana	47	41	46	48
Maine	37	11	45	37
Maryland	38	30	29	44
Massachusetts	42	46	31	39
Michigan	35	43	18	36
Minnesota	9	12	15	9
Missouri	27	28	21	35
Montana	13	4	44	8
Nebraska	6	8	14	12
Nevada	1	9	1	7
New Hampshire	34	44	4	41
New Jersey	41	40	23	46
New Mexico	45	18	50	34
New York	30	29	25	30
North Carolina	22	27	11	29
North Dakota	4	7	10	4
Ohio	29	37	26	20
Oklahoma	21	10	35	16
Oregon	2	1	20	3
Pennsylvania	44	33	43	47
Rhode Island	49	45	37	50
South Carolina	36	24	36	38
South Dakota	14	3	39	26
Tennessee	17	32	16	11
Texas	16	25	8	25
Utah	5	22	3	6
Vermont	12	15	42	1
Virginia	39	38	40	28
Washington	3	2	7	24
West Virginia	50	50	49	49
Wisconsin	24	21	27	18
Wyoming	8	19	12	2

Source: US News and World Report Infrastructure Rating, 2021 - https://www.usnews.com/news/best-states/rankings/infrastructure