THE HEARTLAND INSTITUTE

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# How to Fix America's Crumbling Infrastructure: Lessons from Australia

**By Darren Brady Nelson**

## Summary

- U.S. infrastructure is often characterized as "crumbling," D-grade, or, at the very least, in need of much improvement.
- Most U.S. reform proposals focus on spending huge sums of taxpayer money, sometimes supplemented by private financing and asset recycling, but rarely centered on privatization, deregulation, or competition.
- America can learn important lessons from Australia's recent and important infrastructure reforms, which were focused on enhancing privatization, deregulation, and improving competition.

## 'Crumbling' Infrastructure

The term "infrastructure" has no universally accepted meaning in economics or elsewhere, but it usually carries with it particular characteristics, such as being capital intensive, with large, long-lived and sunk cost characteristics; publicly consumed in the commons with externality and public good qualities; and government-centric in terms of funding, planning, and heavy-handed regulation.

The key industries and sub-industries that qualify under this definition are communications, including cable TV; postal services; telecommunications and the internet; energy, including electricity and gas generation, distribution, and transmission; transportation, including airports, ports, public transit, railways and roads; and water and sewerage, including dams and pipes.

In recent years, widespread reports have surfaced indicating that much of America's infrastructure is in serious need of repair. The highest profile report of infrastructure "crumbling" comes from the American Society of Civil Engineers (ASCE).

In its 2017 *Infrastructure Report Card*, ASCE gave America's infrastructure an overall grade of D+, and it estimated it would cost $4.59 trillion over a 10-year period to rectify this important problem. ASCE graded U.S. infrastructure in 16 categories, including airports

(D); energy (D+); ports (C+); public transit (D-); rail (B); roads (D); sewerage (D+); and water (D).[1]

The Bureau of Economic Analysis provides some support for ASCE's conclusions, as does the National Bureau of Economic Research, on the issue of underinvestment.[2]

Of course, not all researchers are in full agreement with ASCE on the degree to which infrastructure in the United States is "crumbling." Two recent challenges to the ASCE view come from the Cato Institute[3] and Mercatus Center at George Mason University.[4]

Regardless of whether U.S. infrastructure is truly "crumbling," policymakers and analysts generally agree that much work and many reforms are needed to repair, improve, and enhance infrastructure in America. But how, exactly, should these goals be achieved?

## America's Potential Fix

The Democratic Party's proposed fix for U.S. infrastructure is found in a 19-page plan issued by the U.S. House Committee on Transportation and Infrastructure.[5] Many of these ideas are also expressed in the policy platforms[6] of the presidential campaigns of Sen. Bernie Sanders (I-VT) and Joe Biden.

The House plan focuses not only on engineering upgrades, but also on climate environmentalism and social justice initiatives. The plan would cost roughly $760 billion over five years, and it would involve significant investments in roads ($434 billion), broadband ($86 billion), energy ($59.7 billion), rail ($55 billion), water ($50.5 billion), airports ($30 billion), and navigation ($29.7 billion).

The House plan also includes a road-use fee pilot program, as well as increasing and indexing the airport Passenger Facility Charge.[7]

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[1] *2017 Infrastructure Report Card*, American Society of Civil Engineers, March 2020, https://www.infrastructurereportcard.org/wp-content/uploads/2016/10/2017-Infrastructure-Report-Card.pdf

[2] Jennifer Bennett *et al*., "Measuring Infrastructure in BEA's National Economic Accounts," National Bureau of Economic Research, November 2019, https://www.nber.org/chapters/c14354

[3] Chris Edwards, "Crumbling Infrastructure?," *National Review*, March 2013, https://www.nationalreview.com/2013/03/crumbling-infrastructure-chris-edwards

[4] Robert Krol, "America's Infrastructure Isn't Crumbling: Some Facts on Highway, Road, and Bridge Conditions in the United States," Mercatus Center, May 2017, https://www.mercatus.org/system/files/krol-infrastructure-conditions-mop-v1.pdf

[5] "Moving Forward Framework for the People: Funding Our Roads, Transit, Rail, Aviation, Broadband, Wastewater and Drinking Water Infrastructure," U.S. House of Representatives Committee on Transportation and Infrastructure, January 2020, https://transportation.house.gov/imo/media/doc/Moving%20Forward%20Framework.pdf

[6] "A Guide to 2020 Presidential Candidate Infrastructure Proposals," *Madrus LLC*, February 2020, https://static1.squarespace.com/static/5c913ffeda50d32839326672/t/5e384afa4bfa0a280312fbf3/1580747518765/Candidate+Infrastructure+Plans_Overview+020320.pdf

[7] "The passenger facility charge (PFC) is a congressionally authorized, federally regulated local airport user fee. The PFC exists alongside the Airport Improvement Program (AIP), a federal grant program funded through aviation taxes. Together, the PFC and AIP account for approximately half of total airport

Biden's plan has a price tag of $1.3 trillion, most of which would be paid by the federal government through tax increases on corporations and the wealthy.

Sanders' plan, which includes a requirement for the entire country to run entirely on expensive renewable energy by 2030, would cost an astounding $16.3 trillion.

The Republican Party's infrastructure upgrade plan can be found in a 50-page proposal titled the Legislative Outline for Rebuilding Infrastructure in America, which was put together for President Donald Trump by a team led by D.J. Gribbin.[8,9] Trump's plan has a price tag of $1 trillion. It includes $50 billion for a Rural Infrastructure Program, $20 billion for transformative projects, and expanded federal credit programs. Trump's proposal also includes a $100 billion Incentives Program designed to encourage raising non-federal funds and financing. It would also provide a streamlined environmental approval system and comprehensive regulatory reform.

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The Council of Economic Advisers estimates Trump's plan would add an additional 0.1–0.2 percent in average annual real GDP growth over a decade.[10]

In addition to the aforementioned proposals, there are a number of high-profile trade associations lobbying for infrastructure reform, including the National Association of Manufacturers (NAM), Association of Equipment Manufacturers (AEM), and the Association for the Improvement of American Infrastructure (AIAI).

NAM's policy includes $340 billion of increases in gasoline taxes, vehicle registration fees, and a new "vehicle miles traveled" fee. It would also aim to deliver $690.3 billion in government and private financing through additional bonds and a new National Infrastructure Bank, among other means.[11]

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funding available for capital projects. … The federal PFC cap [of $4.50 per boarding] was last raised by Congress in 2000." Quote from Marc Scribner, "Modernizing the Passenger Facility Charge to Increase Airport Investment, Reduce Federal Spending, and Save Travelers Money," Competitive Enterprise Institute, August 2019, https://cei.org/sites/default/files/Marc_Scribner_-_PFC_Modernization_Can_Increase_Airport_Investment%2C_Reduce_Federal_Spending%2C_and_Save_Travelers_Money.pdf

[8] D.J. Gribbin, "On Paving the Way for Funding and Financing Infrastructure Investments," testimony before the U.S. House of Representatives Committee on Ways and Means, January 2020, https://docs.house.gov/meetings/WM/WM00/20200129/110410/HHRG-116-WM00-Wstate-GribbinD-20200129.pdf

[9] Legislative Outline for Rebuilding Infrastructure in America, The White House, whitehouse.gov, Executive Office of the President, February 2018, https://www.whitehouse.gov/wp-content/uploads/2018/02/INFRASTRUCTURE-211.pdf

[10] "The Economic Benefits and Impacts of Expanded Infrastructure Investment," Council of Economic Advisers, Executive Office of the President, March 2018, https://www.whitehouse.gov/wp-content/uploads/2018/03/The-Economic-Benefits-and-Impacts-of-Expanded-Infrastructure-Investment.pdf

[11] "Building to Win," National Association of Manufacturers, February 2019, https://www.nam.org/wp-content/uploads/2019/05/IIHR.BTW_.2019.v08.pdf

AEM's policy proposal makes the case for focusing on networks and systems by increasing the use of "smart" technology and restricting environmental approval processes to two years or less.[12]

AIAI supports increasing public-private partnerships, which it says would allow governments to overcome funding restrictions through private financing of building, operating, and maintaining infrastructure in exchange for financial risk-sharing.[13]

There are also many well-known think tanks that have developed infrastructure proposals, including The Heartland Institute and Brookings Institution.[14] Heartland's policy is based on its "10 principles of privatization," which include identifying privatization opportunities, preparing a business case evaluation, creating a council on efficient government, and public advocacy, among other important principles.[15]

Clifford Winston of the Brookings Institution makes the historical and empirical case for deregulation in transportation, especially airports, in order to allow for greater private sector competition.[16,17]

## Lessons from Australia

Although the proposals mentioned above have many important and potentially transformative elements, some of the most promising infrastructure reforms come from Australia and have not been included in many of the leading infrastructure proposals in the United States.

Australia, like America, has a federal system of government and has placed much of the responsibility for building and maintaining infrastructure at the state and local levels of government, although the Australian national government still plays a significant role.

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[12] "The U.S. Infrastructure Advantage," Association for the Improvement of American Infrastructure, June 2017, https://www.aem.org/AEM/media/docs/Advocacy/AEM_US_Infrastructure_Advantage_ReportJune2017.pdf

[13] "Public-Private Partnerships: Benefits and Opportunities for Improvement Within the United States," Association of Equipment Manufacturers, January 2016, https://eng-cs.syr.edu/wp-content/uploads/2017/04/P3Report.pdf

[14] Honorable mentions include: The American Action Forum, American Enterprise Institute, American Legislative Exchange Council, Atlas Network, Cato Institute, Center for Freedom and Prosperity, Competitive Enterprise Institute, Foundation for Economic Education, Fraser Institute, Heritage Foundation, Independent Institute, Institute of Economic Affairs, Institute of Public Affairs, Institute of Public Utilities, Mercatus Center at George Mason University, Mises Institute, National Bureau of Economic Research, R Street Institute, and the State Policy Network.

[15] Leonard Gilroy and Adrian Moore, *Ten Principles of Privatization*, The Heartland Institute, July 2010, http://store.heartland.org/shop/ten-principles-of-privatization-legislative-principles-series-number-7

[16] John Semmens, book review of *Last Exit: Privatization and Deregulation of the U.S. Transportation System*, *The Independent Review*, Winter 2011–12, https://www.independent.org/publications/tir/article.asp?id=869

[17] Airports are more exposed to market forces because the airlines that use and fund them are private and, thus, face stronger incentives to make sure their fees are well-spent. Further, the airports themselves compete with one another for business that is not necessarily local, due to airlines' hub-and-spoke models, which is especially true when it comes to competing for international flights.

From the mid-1980s to the mid-2000s, Australia enacted many positive economic reforms, mainly in the areas of trade, finance, labor, taxes, pensions, and market competition. Some of the most important reforms for enhancing competition were the federal and state privatizations of infrastructure and other government assets, which occurred mainly during the late-1980s and early-1990s.

These privatizations have largely been considered an economic success,[18] but less so politically. Politics has been less of an issue for public-private partnerships in Australia, which has for decades been a leader in privatization.[19] Australia has also led the world in asset recycling since the mid-2010s.[20]

> "Some of the most important reforms for enhancing competition were the federal and state privatizations of infrastructure and other government assets ..."

However, it is Australia's National Competition Policy (NCP) that is truly unique and potentially revolutionary for the United States and much of the rest of the world. NCP reforms involved (1) removing anti-competitive regulation and legislation; (2) separating the non-monopoly from the monopoly parts of large state-owned enterprises (SOEs) and government-sponsored enterprises; (3) providing competitive neutrality for non-monopoly SOEs; (4) formalizing oversight of pricing for monopoly SOEs; (5) creating a third-party access regime for monopoly infrastructure, whether state-owned or not[21]; (6) extending antitrust laws to all SOEs; and (7) having states and territories apply these reforms to local government.

Or, put more simply, NCP was aimed at removing or minimizing the monopoly power of the numerous federal, state, and local government-owned businesses in the economy by injecting competition (in an actual, potential, or proxy sense) and, thus, shifting infrastructure systems away from monopoly and oligopoly towards competition.

NCP was directly aimed at the following infrastructure industries: electricity (federal and state); gas (state); roads (federal, state, and

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[18] Alan Moran, submission to *Inquiry into Privatisation of Regional Infrastructure and Government Business Enterprises*, Institute of Public Affairs, November 2003, https://ipa.org.au/wp-content/uploads/archive/Energy28.pdf

[19] Inquiry Report on "Public Infrastructure," Australian Productivity Commission, May 2014, https://www.pc.gov.au/inquiries/completed/infrastructure/report

[20] Brianna Fernandez, "Asset Recycling and its Potential for Infrastructure Savings," American Action Forum, July 2017, https://www.americanactionforum.org/research/asset-recycling-potential-infrastructure-savings

[21] "In antitrust law, … the essential facilities doctrine holds that dominant firms may incur antitrust liability if they do not provide access to their truly unique facilities on a non-discriminatory basis, even to their competitors, where sharing is feasible and the competitors cannot obtain or create the facility on their own." Quote from Brett Frischmann and Spencer Waller, "Essential Facilities, Infrastructure, and Open Access," Department of Justice, 2006, https://www.justice.gov/sites/default/files/atr/legacy/2014/05/30/219672_a.pdf

**Figure 1: Annual NCP Payments Received by Jurisdictions (AU$ million)**

| Jurisdiction | 1997-98 (a) | 1998-99 (a) | 1999-00 (a) | 2000-01 (a) | 2001-02 (a) | 2002-03 (a) | 2003-04 (a) (b) | 2004-05 (a) (b) | 2005-06 (b) (c) |
|---|---|---|---|---|---|---|---|---|---|
| New South Wales | 126.5 | 138.7 | 211.9 | 155.9 | 242.5 | 251.8 | 203.5 | 233.6 | 292.5 |
| Victoria | 92.8 | 102.0 | 153.8 | 114.7 | 179.6 | 182.4 | 178.7 | 201.6 | 197.9 |
| Queensland | 74.2 | 81.6 | 120.4 | 73.0 | 147.9 | 138.9 | 87.9 | 143.3 | 178.7 |
| Western Australia | 38.4 | 42.4 | 62.6 | 45.5 | 71.1 | 72.0 | 33.6 | 53.5 | 71.0 |
| South Australia | 34.3 | 38.4 | 54.2 | 35.9 | 55.7 | 57.1 | 40.7 | 50.4 | 54.3 |
| Tasmania | 12.6 | 13.9 | 14.8 | 11.2 | 17.4 | 17.7 | 17.2 | 19.8 | 19.0 |
| ACT | 6.2 | 7.0 | 10.9 | 7.5 | 11.6 | 12.4 | 11.0 | 13.6 | 12.7 |
| Northern Territory | 11.2 | 13.0 | 19.1 | 4.5 | 7.6 | 7.5 | 5.9 | 8.4 | 8.0 |
| Total | 396.2 | 436.9 | 647.7 | 448.0 | 733.3 | 739.9 | 578.5 | 724.2 | 834.1 |

*Source*: Data and table from "National Competition Policy Payments to the States and Territories," National Competition Council, n.d., accessed March 2020, http://ncp.ncc.gov.au/pages/about.

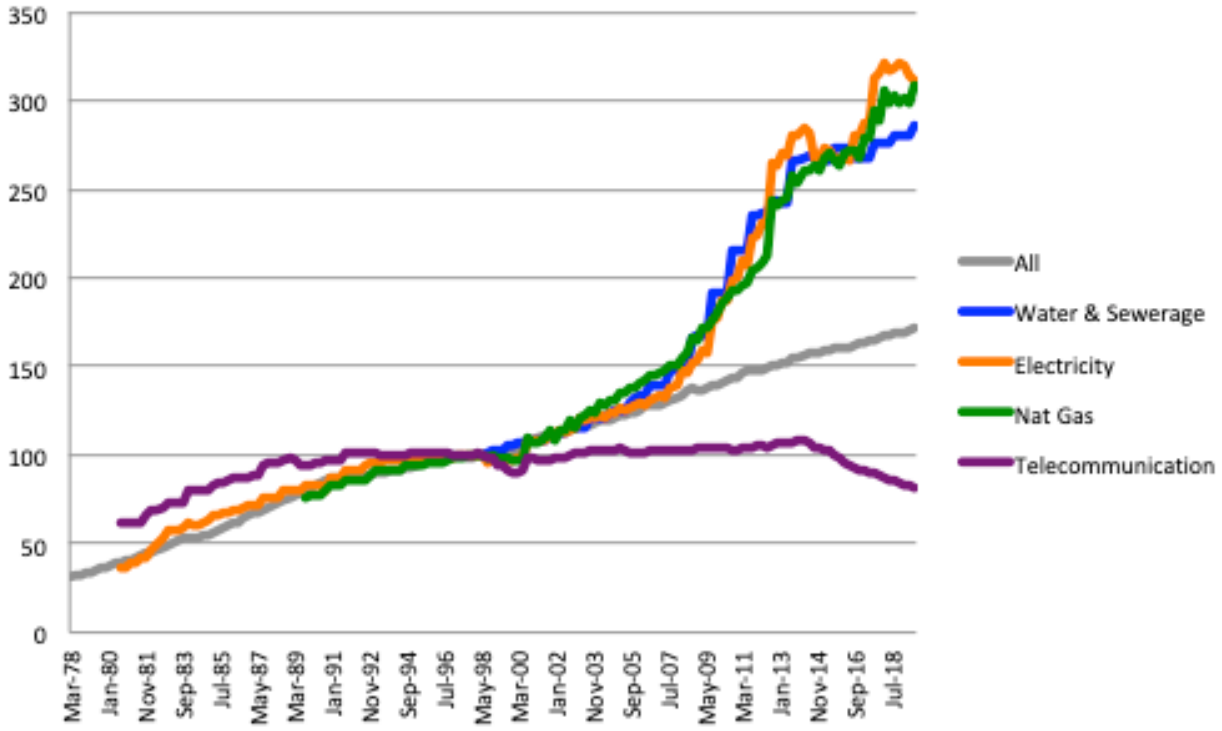
The following notes accompanied Figure 1 on the web page in which this table was published by the NCP: "(a) From Final Budget Outcome documents; (b) Each jurisdiction's payments reflects the application of permanent deductions and suspensions; (c) Costello, the Hon. P (Treasurer) 2005, 'National Competition Payments to States and Territories for 2005', Media release, 15 December
Note 1: Totals may not add due to rounding
Note 2: Figures up to and including 1999-2000 include Financial Assistance Grants"

local); and water and sewage (federal, state, and local). It was also designed to indirectly target airports (federal and local), ports (state), postal services (federal), rail (federal and state), and telecommunications (federal).[22]

Policymakers implemented NCP through three agreements between the federal, state, and territorial governments. Annual performance-based payments were provided to the states for nine years (see Figure 1), some of which the state of Queensland passed on to local governments for five years to incentivize NCP reform at that level.

[22] "National Competition Policy: Major Areas of Reform," National Competition Council, n.d., accessed March 2020, http://ncp.ncc.gov.au/pages/reform

**Figure 2: CPI Trends for Utilities (AU) Based on ABS Data**




*Source*: Data from "6401.0 - Consumer Price Index, Australia, Dec 2019," Australian Bureau of Statistics, January 2020, https://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/6401.0.

Note that the Australian energy industry features mixed private-government ownership and federal regulation, while water and sewage is state- or local government-owned and state-regulated. And interestingly, airports tend to be privately owned and regulated by the federal government, but relatively lightly compared to other industries.

A small "watch-and-guide dog" called the National Competition Council was established to assess progress and make payments on an annual basis.[23] Cost-benefit analyses were embedded in every aspect of NCP, including in three major assessments of the economic impacts in 1995, 1999, and 2005. The 2005 assessment found there was a massive net-benefit (benefits over costs) from NCP, i.e. competition performance above competition payments. The sowing of AU$5.5 billion in taxpayer payments during the NCP decade conservatively reaped more than AU$1 trillion in additional benefits for Australian families, gained "from productivity and price changes observed over the 1990s in the electricity, gas, urban water, telecommunications, urban transport, ports

[23] *Ibid.*

and rail freight sectors."[24] This economic return was of biblical proportions, well over a hundred-fold.

Figure 2 on page 7 shows prices from 1978 to 2018 (in terms of Australian Consumer Price Index) for the major Australian utility industries of electricity, natural gas, telecommunications, water, and sewage. The key to putting downward pressure on prices from the late-1980s to early-2000s, through greater supply and choice, was NCP and its related micro-economic reforms (pre- and post-NCP).

Telecommunications continued to embrace these pro-competition reforms in the years that followed, and even more so after 2014. As a result, prices dropped substantially. But, unfortunately for electricity, gas, and water/sewage customers, a new form of infrastructure socialism took hold in the mid-2000s: government-mandated and subsidized renewable energy sources, which have also significantly impacted U.S. electricity prices, driving up costs in both countries.

## Conclusion

The various proposed fixes to "crumbling" infrastructure in America are largely composed of a hodgepodge of big government programs that would cost taxpayers anywhere from $760 billion to $16.3 trillion.

Public-private partnerships, asset recycling, and other private sector financing arrangements are better policies, but still largely dependent on government, and thus devoid of the economic benefits provided by free-market reforms. Even privatization would not properly solve the problem of monopoly unless reforms are put into place that improve competition—the reason why there are still too many problems related to cost and quality in infrastructure systems around the world.

"Australia's NCP reforms show market competition is the only high-quality regulator. This is true even in industries that have been considered for many decades to be natural monopolies, like infrastructure."

Australia's NCP reforms show market competition is the only high-quality regulator. This is true even in industries that have been considered for many decades to be natural monopolies, like infrastructure.

That doesn't mean Australia's NCP was perfect. Far too many regulations remained in certain sectors of Australia's infrastructure system, and many sectors eventually adopted higher-cost, socialized policies, such as renewable energy requirements.

Nevertheless, Americans have much to learn from Australia's infrastructure system. If the United States were to adopt a similar model,

[24] "Assessing the Importance of National Economic Reform - Australian Productivity Commission Experience," conference paper, Australian Productivity Commission, April 2008, http://www.pc.gov.au/research/supporting/assessing-national-economic-reform

it could be applied for four to eight years at a cost that's well below $100 billion. If the United States were to go this route, it's likely Americans would enjoy similar successes as those seen in Australia, delivering trillions of dollars in economic benefits.

The best way to fix America's crumbling infrastructure is for U.S. policymakers to (1) embrace decentralization, from the federal government to state to local governments; (2) private sector participation; and (3) reforms that embrace free-market competition.

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## About the Author

**Darren Brady Nelson** is an Austrian school economist who serves as the chief economist at LibertyWorks and as an associate scholar with the Center for Freedom and Prosperity. Nelson is also a policy advisor to The Heartland Institute.

Since 1994, Nelson has worked as an economist in Australia, New Zealand, United Kingdom, and the United States. Nelson's work in economics has focused on the energy, finance, government, transportation, water, and telecommunications industries.

Nelson has also worked as a political and policy commentator since 2009. As a commentator, Nelson has written articles for numerous conservative and libertarian publications and think tanks, and he has appeared on countless podcasts, radio shows, and television programs.

Recently, Nelson has advised Australian and American federal politicians on economic and cultural policies, as well as authored a book titled the *Ten Principles of Regulation & Reform* (2017).

Nelson has bachelor's degree in economics (*cum laude*) from the Australian National University, where he majored in economic history. Nelson also earned a master's degree in commerce (*magna cum laude*) from the University of New South Wales, where he majored in business law.

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