September/October Topic Analysis

Resolved: The United States Federal Government should substantially increase its investment in high-speed rail.

Definitions:

High-speed rail: While there is technically no standardized definition of high-speed rail, it can be generally thought of as trains operating at speeds of at least 125 mph, where some can reach up to 220 mph.

Substantially increase: Realistically, the term "substantially increase" is unlikely to fundamentally change how the topic is debated; the debate exists over whether an increase is good or bad, not over the scale of the increase. However, teams may want to define this upfront to preempt any debates over what a substantial increase would constitute.

Background:

Another school year is upon us, which means the beginning of another great debate season! The first topic of the year is interesting and highly relevant in today's political climate, as many people across the country support the idea of the US developing its own high-speed rail (HSR) system. Generation Z in particular has been vocal in the push for HSR, citing environmental concerns and a need for interconnectedness as reasons to develop these railroads. Opponents, however, claim that these benefits would not manifest in a significant way, and that HSR would be a waste of money.

The US has been working to develop a high-speed rail system for decades, beginning with the High-Speed Ground Transportation Act of 1965.[1] The Federal Railroad Administration (FRA) was created in 1967, and throughout the 1980s and 90s it looked further into the development of high-speed rail corridors across the US. At present, the US has just one high speed rail system - Amtrak's Acela Express line - putting it far behind the likes of China, Japan, and Europe in the development of this transportation.[2] California is in the process of building a HSR system, but the first phase is not expected to be completed until 2029. There are no formal plans in any other part of the country to develop HSR systems.

Transportation Secretary Pete Buttigieg has been an avid supporter of high-speed rail and says he wants to see the US as a global leader in this area,[3] making this development an even more tangible concept moving forward. President Biden is a frequent user of Amtrak trains, and he has talked for a long time about investment in railroads and particularly high-speed rail.[4] An original version of last year's expansive infrastructure bill contained $25 billion for HSR projects,[5] but this was scrapped in order to gain enough support to pass the bill.[6] The

---

[1] US Department of Transportation. "High-Speed Rail Timeline." US Department of Transportation. 5 Dec. 2019. https://railroads.dot.gov/passenger-rail/high-speed-rail/high-speed-rail-timeline

[2] Environmental And Energy Study Institute. "Fact Sheet | High Speed Rail Development Worldwide." EESI. 19 Jul. 2018. https://www.eesi.org/papers/view/fact-sheet-high-speed-rail-development-worldwide#4

[3] Blum, Jeremy. "Pete Buttigieg Wants The U.S. To Lead The World In High-Speed Rail." HuffPost. 5 Feb. 2021. https://www.huffpost.com/entry/pete-buttigieg-high-speed-rail_n_601dafc1c5b6d78d44465429

[4] The White House. "Remarks by President Biden on the Bipartisan Infrastructure Bill and Build Back Better Agenda" The White House. 20 Oct. 2021. https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/10/20/remarks-by-president-biden-on-the-bipartisan-infrastructure-bill-and-build-back-better-agenda-2/

[5] Julia Mueller. "High-speed rail getting last minute push in Congress." The Hill. 15 Jun. 2021. https://thehill.com/policy/transportation/558403-high-speed-rail-getting-last-minute-push-in-congress/

[6] Zeitchik, Steven. "All this money pouring into infrastructure should be a boon for high-speed rail, right? Not so fast." Washington Post. 18 Nov. 2021. https://www.washingtonpost.com/technology/2021/11/18/infrastructure-bill-high-speed-rail/

Build Back Better Act, passed in November, includes $10 million for high-speed rail corridor assistance and additional funds for railroads that could support HSR projects.[7]

[7] Wanek-libman, Mischa. "Build Back Better bill contains nearly $20 billion for better transit and high-speed rail." Masstransitmag.com. 29 Oct. 2021. https://www.masstransitmag.com/management/article/21244437/build-back-better-bill-contains-nearly-20-billion-better-transit-and-highspeed-rail

Aff Arguments:

Economic Development and Jobs

One of the largest advantages of affirming the resolution is the amount of economic activity it would produce. Investing in high-speed rail would be a marked change from the status quo in the US, and a great deal of work would need to be done in order to lay the foundations for a HSR system. That's why proponents argue that for every $1 billion invested in HSR, 24,000 jobs are created, and that every $1 invested creates $4 in economic benefits.[8] The efficiency of high-speed rail would be beneficial as well, as it would increase productivity by cutting down on travel time and congestion, and would help transport goods must faster.[9]

Aside from job creation and broad economic growth, high speed rail would benefit rural communities and residents of smaller cities, ultimately bringing prosperity into these cities as well. Residents in smaller cities would be able to avoid the high cost of residing in larger metropolitan areas while still being able to commute to work within a reasonable amount of time.[10]

Environmental Impacts

Young people are increasingly looking for greener ways to travel, with 54% of young Gen Z say they're willing to pay higher rates to use an environmentally responsible travel service provider.[11] For that reason, we can expect to see a global transition towards these greener forms of transport, away from the polluters we're used to. Fossil fuel air pollution is responsible for 1 in 5 deaths worldwide.[12] Transportation is the largest source of greenhouse gas emissions in the US, and an increase in air travel demand helped fuel the rise in US emissions after a

[8] APTA admin. "Benefits of High-Speed Rail for the United States." American Public Transportation Association. Last accessed 15 Aug. 2022. https://www.apta.com/research-technical-resources/high-speed-passenger-rail/benefits-of-high-speed-rail-for-the-united-states/

[9] Freudenrich, Craig. "8 Benefits of High-speed Trains." HowStuffWorks. 29 Aug. 2012. https://science.howstuffworks.com/transport/engines-equipment/8-benefits-high-speed-trains.htm

[10] Lorenz, Bella. "High-Speed Rail Benefits Small Towns and Large Cities." The Urbanist. 30 Jul. 2020. https://www.theurbanist.org/2020/07/30/high-speed-rail-benefits-small-towns-and-large-cities/

[11] CX Best Practices. "How Generation Z Is Changing The Future Of Travel." Telus International. 3 Jun. 2021. https://www.telusinternational.com/articles/generation-z-future-of-travel

[12] Vohra, Karn et. al. "Fossil fuel air pollution responsible for 1 in 5 deaths worldwide." Harvard T.H. Chan School of Public Health. 9 Feb. 2021. https://www.hsph.harvard.edu/c-change/news/fossil-fuel-air-pollution-responsible-for-1-in-5-deaths-worldwide/

sustained period of decline.[13] If the goal is to replace even some air travel with something more environmentally-friendly, high-speed rail would be the only thing that could truly function at the same rate with much lower emissions. In an analysis of European HSR systems, HSR was found to have a "remarkable advantage over aircraft" in regards to carbon dioxide emissions.[14] The same study also found that HSR is better able to adapt to adverse weather conditions, which will become even more important as the climate continues to worsen. The development of HSR systems throughout the world have led to a dramatic reduction in air travel - in China, domestic airlines have canceled regional flights, and the HSR system carries more than twice as many passengers as its domestic airlines.[15]

Health and Safety

The most obvious element of the health and safety argument is the idea that trains are safer than cars, and passengers are much less likely to experience accidents when traveling by train. Despite a few high-profile crashes in recent years, Amtrak collisions and deaths are rare, and trains are safer for passengers than cars or buses.[16]

Another important component of the health and safety argument is the fact that high speed rail has the potential to significantly improve the healthcare environment. Studies of China's HSR system have found that the increased travel accessibility and economic development resulting from the development of HSR presents an important contribution to the improvement of overall healthcare conditions.[17] HSR can have an even greater benefit on low-income and minority communities; these communities are more likely to be located near highways and other transportation facilities that produce local reduced air quality, as well as having longer commutes and higher transportation costs.[18] Expanding access to public

[13] Irfan, Umair. "America's trains are a drag. The Green New Deal wants to fix that." Vox. 8 Feb. 2019. https://www.vox.com/2019/2/8/18215774/green-new-deal-high-speed-train-air-travel

[14] Prussi, Matteo. "Passenger Aviation and High Speed Rail: A Comparison of Emissions Profiles on Selected European Routes." Journal of Advanced Transportation. 27 Jun. 2018. https://www.hindawi.com/journals/jat/2018/6205714/

[15] Environmental And Energy Study Institute. "Fact Sheet | High Speed Rail Development Worldwide." EESI. 19 Jul. 2018. https://www.eesi.org/papers/view/fact-sheet-high-speed-rail-development-worldwide#4

[16] Jansen, Bart. "Trains safer than cars, buses for passengers, experts say." USA TODAY. 4 Apr. 2016. https://www.usatoday.com/story/news/2016/04/04/trains-safer-than-cars-buses-passengers-experts-say/82613144/

[17] Song, Cai-xia. "Does High-Speed Rail Opening Affect the Health Care Environment? – Evidence From China." Frontiers. 9 Jun. 2021. https://www.frontiersin.org/articles/10.3389/fpubh.2021.708527/full

[18] US Department of Transportation. "Health and Equity." Transportation.gov. 17 Dec. 2013. https://www.transportation.gov/mission/health/health-equity

transportation for these communities would be a great way to combat this inequality, and HSR would do so in an environmentally-friendly and efficient way.

Neg Arguments:

Costs

The development of a HSR system in the US would require a great deal of new infrastructure, as well as its continued maintenance. Due to this fact, high speed rail comes with a hefty price tag. California has spent, on average, more than $100 million per route-mile building on flat land.[19] This project was initially projected to cost $33 billion total, and is now expected to cost around $105 billion.[20] California is just one example of how proponents of high-speed rail systems consistently underestimate the cost of developing these systems. One study has estimated that constructing a HSR system longer than China's would cost at least $4 trillion.[21] To put this into perspective, the entire federal budget is around $5.8 trillion.[22] Many people argue that it is simply not worth spending this large amount of money purely on construction, knowing we will have to continue spending money on the upkeep and maintenance of these systems

Environmental Harm

Although proponents of a HSR system argue that it would be beneficial to the environment and preferable to air travel, this may not actually be true in practice. When all components are considered, it's entirely possible that high-speed rail could end up harming the environment. In California, there are concerns that construction of the HSR lines would exacerbate already concerning levels of particulates, nitrogen oxides, and other harmful gasses.[23] Since construction in California is already taking much longer than expected, it is likely to have a very harmful effect on California's air quality. Similar pollutants have been identified

[19] O'Toole, Randal. "The High-Speed Rail Money Sink: Why the United States Should Not Spend Trillions on Obsolete Technology." Cato Institute. 20 Apr. 2021. https://www.cato.org/policy-analysis/high-speed-money-sink-why-united-states-should-not-spend-trillions-obsolete

[20] Vartabedian, Ralph. "Costs of California's troubled bullet train rise again, by an estimated $5 billion." Los Angeles Times. 9 Feb. 2022. https://www.latimes.com/california/story/2022-02-08/california-bullet-train-costs-rise-roughly-5-billion

[21] O'Toole, Randal. "The High-Speed Rail Money Sink: Why the United States Should Not Spend Trillions on Obsolete Technology." Cato Institute. 20 Apr. 2021. https://www.cato.org/policy-analysis/high-speed-money-sink-why-united-states-should-not-spend-trillions-obsolete

[22] Bloomberg Government. "President's Budget 2023." Bloomberg Government. Last accessed 15 Aug. 2022. https://about.bgov.com/presidents-budget-2023/

[23] Dawid, Irvin. "High Speed Rail: Detriment or Benefit to the Environment?" Planetizen. 16 Jun. 2012. https://www.planetizen.com/node/57184

in the construction of HSR lines in China, and this often leads to water pollution as well.[24] Studies of Spain's HSR systems have revealed that the environmental balance of HSR lines is modest, and that there are alternative modes of transportation that are better balanced.[25] On top of this, environmentalists have raised concerns that a HSR system in the US could go through irreplaceable, environmentally significant land.[26]

Suburban Sprawl

Many people argue that a HSR system would never work in America because of the cultural differences between the US and other countries. Suburban sprawl is the term used to describe how spread out the US is, and this is why it's unlikely that HSR lines would see the same amount of success in the US as they are purported to see in other countries. There is evidence to suggest that high-speed rail doesn't reduce the number of people using other modes of transportation; when Japan first opened its HSR line, 70% of passenger travel was by rail and 12% by automobile. Today, only 25% of passenger travel is by rail, with nearly 70% by automobile.[27] Similar trends have been observed in France, Spain, and Germany. If this is the case, then it is clear that the benefits that the pro teams claim will not manifest to the scale that we may hope for. It has also been noted that high-speed rail systems do not perform well where population density is low, and the US has a population density much lower than countries with extensive HSR systems.[28] On top of this, the US is designed entirely differently from towns developed in the pre-automobile area (like most European towns). Most Americans live in suburbs, and communities and cities alike have been designed with the primary mode of transportation in mind, and thus are built for driving.[29]

---

[24] Lin, Jianyi. "Environmental Footprints of High-Speed Railway Construction in China: A Case Study of the Beijing–Tianjin Line." PubMed Central (PMC).. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6981942/

[25] Kortazar, Andoni et. al. "Environmental balance of the high speed rail network in Spain: A Life Cycle Assessment approach." Research in Transportation Economics. 28 Jan. 2021. https://www.sciencedirect.com/science/article/pii/S073988592100007X#

[26] Cox, Jeremy. "High-speed train could go through 'irreplaceable' land in Maryland." Bay Journal. 2 Mar. 2021. https://www.bayjournal.com/news/growth_conservation/high-speed-train-could-go-through-irreplaceable-land-in-maryland/article_73ce9f30-7856-11eb-a581-ab45e0fb1552.html

[27] O'Toole, Randal. "The High-Speed Rail Money Sink: Why the United States Should Not Spend Trillions on Obsolete Technology." Cato Institute. 20 Apr. 2021. https://www.cato.org/policy-analysis/high-speed-money-sink-why-united-states-should-not-spend-trillions-obsolete

[28] Millsap, Adam A. "Biden's High-Speed Rail To Nowhere." Forbes. 15 Apr. 2021. https://www.forbes.com/sites/adammillsap/2021/04/15/bidens-high-speed-rail-to-nowhere/

[29] Luk, Glenn. "Why Doesn't The United States Have High-Speed Bullet Trains Like Europe And Asia?" Forbes. 11 Mar. 2017. https://www.forbes.com/sites/quora/2017/03/11/why-doesnt-the-united-states-have-high-speed-bullet-trains-like-europe-and-asia/