# Revitalizing Intercity Rail: A Comprehensive Approach for Safety, Sustainability, and Innovation in the United States

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The significance of intercity rail cannot be overstated when fostering a robust, well-connected nation and community. While acknowledging that passenger rail in the U.S. is on a journey of improvement, it holds immense potential to outshine automobile-based transportation regarding safety, speed, and environmental and economic viability. The safety aspect is particularly noteworthy, with trains inherently boasting a safer track record—exemplified by the mere 17 passenger and employee fatalities in 2021 compared to a staggering 43,000 car-related fatalities (National Safety Council, 2023; Bureau of Transportation Statistics, 2022). Elevating ridership becomes a direct means to enhance overall transit safety. However, achieving these goals and boosting ridership necessitates a comprehensive approach, demanding substantial efforts to enhance and expand the existing rail network.

Critical areas of focus for this improvement journey include strategic investments in infrastructure, such as expanding electrification and updating an aging fleet, optimizing track usage using Artificial Intelligence, and enhancing the accessibility of user-facing ticket booking processes. These measures contribute to cleaner, safer and more efficient rail travel and position passenger rail as a preferred mode of travel.

As the United States charts a course towards a 50-52% reduction in emissions by 2030 (U.S. DOT, 2023), it is imperative to look at the transportation sector, which accounts for a substantial 33% of CO2 emissions (U.S. DOT, 2023), prioritizing the growth and improvement of passenger rail systems emerges as a critical component in reducing carbon footprints and fostering sustainable transportation solutions as CO2 emissions from rail travel are notably lower than those from air and automobile travel, especially within an electrified rail network (Miller,

2021). Currently, Amtrak employs electric locomotives in its busiest sector, the Northeast Corridor, demonstrating the potential and feasibility for broader electrification across its diesel-reliant network.

Further challenges to be addressed in the non-electric portion of the network, such as track-sharing with freight transit, require innovative solutions. Track utilization concerns, often a point of contention, where Amtrak shares railways with freight transit, can be mitigated with advancements in Artificial Intelligence. Leveraging AI models for scheduling freight and passenger trains can optimize short- and mid-term logistics, offering practical solutions while long-term strategies are developed and implemented.

Beyond the practical aspects of the rail travel experience, the very first step for embarking on an Amtrak train is the ticket booking process. A positive user experience while booking a ticket sets a positive tone for the rest of the journey. Unfortunately, this crucial first experience falls short. From the buggy website to the clunky, cumbersome experience of planning your route, it can dissuade and overwhelm those with good computer proficiency but be downright impossible for those less tech-savvy, showing just how much the Amtrak ticket booking process and website could use some much needed TLC. Despite its shortcomings, one notable feature is the "Travel Planning Map," which includes a wonderful, albeit archaic, "Find Fare" option that is clean and simple to use. Disappointingly, however, the "Find Fare" button does not function as intended; instead, it redirects users to the home page. This underscores a missed opportunity and highlights the urgent need for a streamlined and user-friendly ticket-booking interface that aligns with the overall expectations of travelers of any age.

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