



| Amtrak® FY21 Sustainability Report



A Message from Amtrak's Chief Executive Officer Stephen Gardner



Welcome to our FY21 Sustainability Report

We are embarking on a new era of growth and modernization here at Amtrak®. We're upgrading our products and services for our customers, reducing our carbon footprint, and planning to improve and expand our services in markets all across America.

With all these advancements, sustainability is a core principle guiding our progress. We are integrating sustainability into all facets of our business because we believe it is going to allow us to deliver even more benefits to the public—for our customers, the communities we serve, and our planet.

In environmental stewardship, we recognize the urgency to act now to reduce our carbon footprint, given climate change and the increased frequency of severe weather events it is causing. Our trains already consume less energy and create less emissions on a per-passenger-mile basis than cars, trucks and planes. Today, we are creating innovative solutions to reduce our energy consumption, emissions, and waste even further. Our FY21 Sustainability Strategic Plan and Performance Scorecard measure four targets and related competencies along with our long-term goal to cut our carbon emissions by 40% by 2030. This report outlines our progress in these four key target areas: Greenhouse Gas Emissions (GHG), Diesel Fuel Use, Electricity Use, and Recycling Rate.

Moving to the social aspects of sustainability, we managed to reduce our customer injury rate and grade crossing incidents in FY21; we've increased the diversity of our suppliers by adding 300 new diverse vendors; and we've completed 59 accessibility projects during the FY20-21 period, representing a \$117.9 million investment, to help enable greater access for all customers to our stations and service.

In support of our communities, we have a bold plan for the future. The historic level of federal funding we're receiving from the Infrastructure Investment and Jobs Act (IIJA) passed by Congress and enacted by the Biden Administration last year has changed what's possible for Amtrak and our state partners. With at least \$22 billion in federal funding, Amtrak will be able to undertake a comprehensive modernization and replacement program for our aged assets, from our locomotives and passenger cars, to new bridges, tunnels, stations, and tracks. Our country needs to upgrade our infrastructure—and Amtrak, working with our federal, state, local and railroad partners, will be an important part of that solution.

In addition, we will work with the U.S. Department of Transportation and partners across the nation to advance our **Amtrak Connects US** vision and expand service to more than 160 new communities across America, which will help boost local economies and connect millions of more people together.

“Driving sustainability at Amtrak means transforming the customer experience, reducing our carbon footprint and expanding service to new markets across America. Recognizing the urgency to act now, Amtrak is out to change the way our country moves.”

Sincerely, SG ■

Amtrak FY21 Sustainability Report

EXECUTIVE SUMMARY

An essential part of Amtrak’s sustainability story is our ability to connect people and support communities across the country. In FY21, Amtrak focused on getting America moving again. As the company advanced its COVID-19 recovery efforts, customers took nearly 12.2 million trips. This was a 42% increase over the year’s goal.

When people needed modes of transportation, Amtrak stood ready with enhanced safety measures, ready to take riders where they need to go; we upgraded our technology, fleet, stations and processes to make travel as seamless and safe as possible, including requiring our employees to be vaccinated.

As a result of greatly reduced train service due to the COVID-19 pandemic, fuel and electricity consumption declined, directly contributing to substantial reductions in GHG emissions. Additionally, remote work for office-based employees resulted in a temporary reduction in GHG emissions. Overall, Amtrak GHG emissions declined 16%¹ from 934,038 metric tons of CO₂e in FY20 to 672,734 metric tons of CO₂e in FY21.

Amtrak also set interim targets to stay on track to reduce GHG emissions by 40% by 2030, and set a target of 100% carbon-free electricity across our operations by 2030.

Amtrak is receiving \$22 billion in funding from Congress through the Infrastructure Investment and Jobs Act (IIJA), a historic investment in passenger rail, signifying trains as the future of safe and sustainable transportation. This funding will allow us to execute our vision for the future. We also launched **Amtrak Connects US**, a vision to advance the development of more frequent, reliable and sustainable intercity passenger rail service to over 160 more communities and 20 million more passengers annually by 2035, as outlined in the Amtrak Corridor Vision. With a clear plan and a record level of funding, Amtrak will be able to provide an even greater level of support to communities nationwide.

We also made several significant improvements to our customer experience. Amtrak advanced \$2.2 billion in capital spending, including major milestones such as an order for new multi-powered trainsets and acquisition of property for the Hudson Tunnel project. Improvements progressed at 95 stations, and we expended more than \$93 million on station accessibility projects. Upgrading soft goods in sleeping cars, debuting a refreshed menu in *Acela* first class, and starting the first of 450 Superliner railcar modernizations and interior re-designs are just a few of the investments into customer experience.

In FY21, Amtrak finalized a Vulnerability Assessment on our operations on the Northeast Corridor (NEC), with the findings informing our Climate Resilience Strategic Plan to reduce the



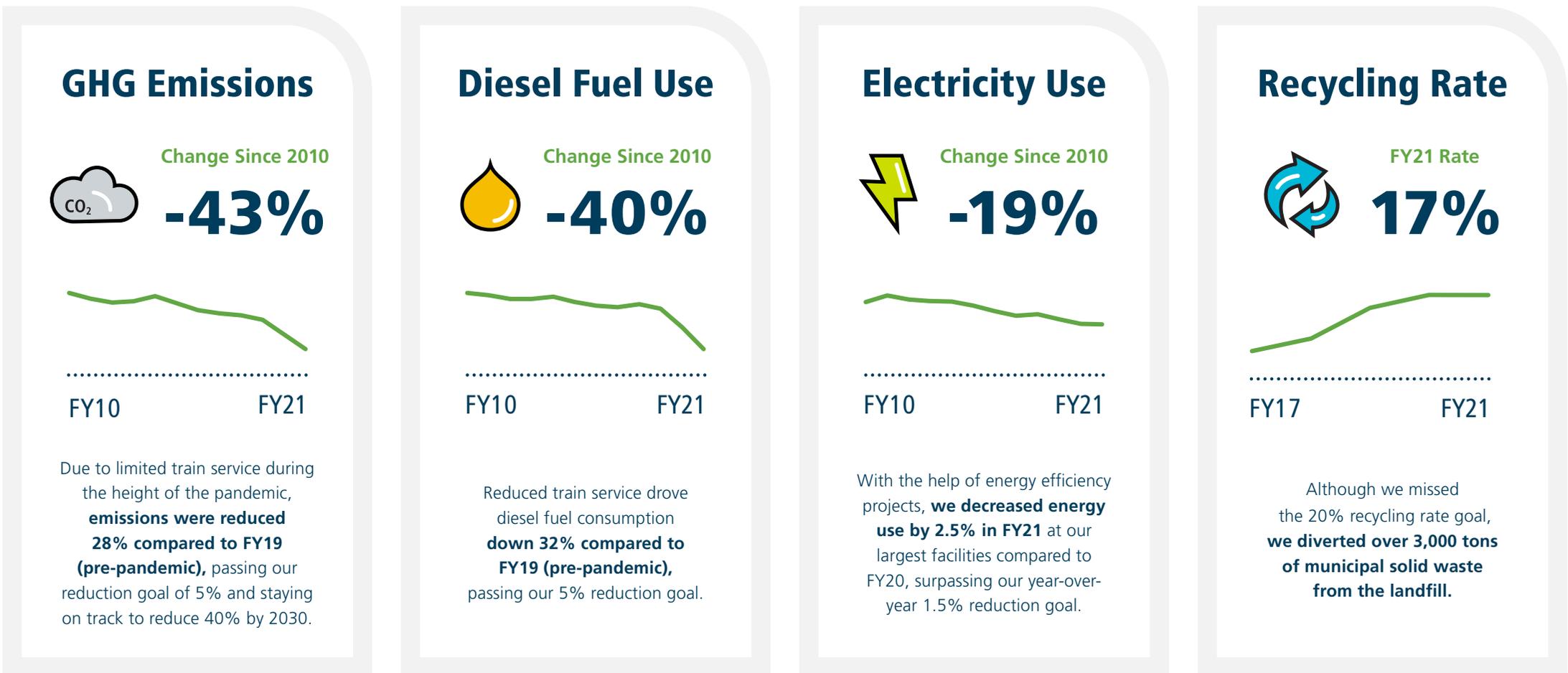
impacts of climate change on our NEC. Climate resilience actions were developed and prioritized using input from a strategic planning team, cross-departmental roundtable discussions, and interviews with key employees.

We are currently exploring options to align future sustainability reports with widely accepted reporting frameworks, such as the Sustainability Accounting Standards Board (SASB) or the Global Reporting Initiative (GRI). On the following pages, you will read about the grit and innovation of our workforce and the progress we have made to reduce our resource use and greenhouse gas emissions. ■

1. Emissions total reflects location-based accounting method based on WRI/WBCSD GHG Protocol. Both Location- and Market-based approaches are reported in the scorecard on page 5.

FY21 Sustainability Goals and Progress

With four targets as part of our Sustainability Strategic Plan and long-term goal, Amtrak aims to reduce our Scope 1² and 2³ emissions 40% by 2030⁴. In FY21, we established interim goals of reducing fuel usage and greenhouse gas emissions by 5% from 2019 (pre-pandemic) and reducing electricity consumption by 1.5% from 2020. We recently set a goal to procure 100% carbon-free electricity in our operations by 2030, and we continue to progress towards more ambitious targets.



2. Scope 1 emissions are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). 3. Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. 4. Amtrak's carbon emission baseline year is 2010.

FY21 Performance Scorecard

As travel rebounded and customers returned to ride our trains, Amtrak emphasized safety and sustainability as a core focus of our operations. We track our progress with multiple key performance indicators to show our achievements, while leaving room for constant improvement. These indicators encompass environmental, social, and economic competencies of our business.

Strategic Sustainability Goals

Resource Use and Emissions	FY 2021	FY 2020	FY 2019	Comment
Locomotive Diesel Fuel	40.2 million gallons (-21% YOY)	50.6 million gallons	59.3 million gallons	The total train fuel purchased in FY21 was approximately 19 million gallons less than FY19. This reduction was beyond our goal of reducing fuel by 5% compared to FY19 levels, similar to the GHG goal. Reduced train service due to the COVID-19 pandemic resulted in the significant reduction of fuel; however, while our people kept trains running they remained focused on the importance of fuel conservations.
Electricity (non-propulsion) - Top 40 Locations	192.1 million kWh (-2.5% YOY)	197.0 million kWh ⁵	206.4 million kWh	Annually, Amtrak's Utilities Management group invests in high yield energy efficiency projects to drive down consumption at our stations, offices, and facilities. The FY21 figures reflect savings from the completed energy projects and overall electricity use at the Top 40 locations. Due to these measures, Amtrak exceeded the -1.5% reduction goal.
Scope 1 Emissions	480,940 MT CO ₂ e (-19% YOY)	593,042 MT CO ₂ e	686,984 MT CO ₂ e	Amtrak Scope 1 emissions are the majority portion of our overall emissions and a result of diesel fuel used to run our trains. Fuel reduction and conservation efforts drive reductions in our Scope 1 emissions.
Scope 2 Emissions (Location-based)	191,793 MT CO ₂ e (-9% YOY)	209,966 MT CO ₂ e	247,054 MT CO ₂ e	Location-based emissions are calculated using the average grid emissions intensity on which energy is consumed.
Scope 2 Emissions (Market-based)	101,294 MT CO ₂ e (-33% YOY)	150,108 MT CO ₂ e	237,138 MT CO ₂ e	Market-based emissions are calculated using the supplier-specific information from electricity that companies have intentionally chosen to consume, often through contracts or instruments (i.e. energy attribute certificates).
Biogenic Emissions	6,479 MT CO ₂ e	390 MT CO ₂ e	310 MT CO ₂ e	Biogenic emissions in Amtrak's inventory are emitted from burning fuels that are produced from biomass or plant materials. Following GHG Protocol, CO ₂ emissions from biogenic sources are reported separately from Scope 1 and 2 emissions. The increase in FY21 was due to renewable diesel testing and increased use of E85.
Offsets	1,100 MT CO ₂ e (28% YOY)	864 MT CO ₂ e		Carbon offsets are emissions voluntarily offset by passengers through redemption of Amtrak Guest Rewards points, via Amtrak's partnership with Carbonfund.org .

5. Minor change in FY20 kWh amount from last year due to changes in the Top 40 locations tracked.



FY21 Performance Scorecard (Continued)

Environmental

Metric	FY 2021	FY 2020	Comment
Industrial Recycling (GT)	11,217 GT (2% YOY)	10,970 GT	Every year, Amtrak diverts materials away from landfills and into the hands of vendors and scrappers, who then use the materials for recycling or upcycling purposes. These materials include rail, pallets, windows, wire, wheel shavings, copper, general scrap metal, and sometimes even equipment.
Municipal Recycling (Tons)	3,086 tons (-19% YOY)	3,800 tons	While our mechanical facilities and backshops exceed in recycling, we are still working on improving availability of recycling on board. We have been ensuring that the design of future fleets including our new <i>Acela</i> service and Intercity trainsets have collocated trash and recycling to facilitate proper waste management onboard and at our end locations. Since FY17, we doubled our recycling rate from 8.3% to 17%.
Recycling Rate	17.0% (No change YOY)	17.0%	
Environmental Audit Score	89.7/100 (-3% YOY)	92.3/100	Amtrak facilities exceeded the corporate audit score goal of no departments below 80, achieving a score of 89.7. This performance was based on a total of 14 comprehensive environmental audits completed at sites including mechanical maintenance facilities, engineering maintenance-of-way bases and large stations. The score represents the level of conformance with environmental regulatory programs and Amtrak procedure.

Social

Railroad Safety	FY 2021	FY 2020	Comment
Customer Injury Rate (Per 100 million train miles)	15.47 incidents (-1% YOY)	15.62 incidents	Amtrak further progressed a car vestibule modification on Amfleet I and Amfleet II passenger cars to apply an epoxy coating to enhance customer footing while boarding, alighting and traversing the train.
Employee Injury Rate (Per 200,000 working hours)	3.25 incidents (17% YOY)	2.78 incidents	Amtrak rolled out the Mobile Document Compliance System (MDCS), distributed tablets across the Northeast Division and will continue to rollout across the system. The Employee Safety Rules were published and supersede seven safety rulebooks, creating one consolidated book to govern all employees at Amtrak.
National Transportation Safety Board (NTSB) Accidents	1 incident	0 incidents	Amtrak supported NTSB in their investigation of the Train 7 derailment in the vicinity of Joplin, Montana (ongoing) and worked to advance Voluntary Safety Reporting culture across the network through promotion and procurement of safety risk management software.
Trespasser and Grade Crossings Incidents (Per 100 million train miles)	8.48 incidents (-23% YOY)	11.02 incidents	To reduce trespasser and grade crossing incidents, Amtrak conducted grade crossing Risk Assessments with subject matter experts from Safety and Operations resulting in four Signal Suspensions and subsequent Risk Assessments.
Positive Train Control (PTC)		Completed all PTC implementation	Amtrak completed all PTC implementation required for compliance before the start of FY21, in advance of the Federal Railroad Administration (FRA)'s regulatory deadline in 2020. Amtrak remains compliant with the FRA's PTC regulatory requirements, and PTC related delays have been declining since February 2022. This corresponds with the focus being placed on reducing PTC related delays by the PTC Director and AVP Operations.

Supplier Diversity	FY 2021	FY 2020	Comment
Suppliers Meeting Diversity Criteria	11.1% (-8% YOY)	12%	We have increased our Supplier Diversity staff that has enabled us to provide more engagement with the diverse communities of suppliers. In FY21, our office participated in approximately 12 virtual outreach events. Our Amtrak Diverse Vendor Database added almost 300 new diverse vendor profiles to the more than 2,650 listings in FY21. This tool is a resource that can be used internally and externally to quickly identify diverse firms for opportunities.

Service to Communities	FY 2021	FY 2020	Comment
Accessibility Projects Designed	29 designed; \$2.04M	N/A	In FY21, Amtrak made 18 stations fully compliant with the Americans with Disabilities Act (ADA) standards and started construction on another 21 stations. Design compliance efforts were completed on 29 stations and started on an additional 44 stations. Amtrak's ADA station compliance program strives to achieve universal accessibility and improve the customer experience for all passengers while preserving the historic nature of its registered stations.
Accessibility Projects Constructed	18 completed; \$14.5M	41 completed; \$103.4M	



Philadelphia's William H. Gray III 30th Street Station

FY21 Performance Scorecard (Continued)

Economic

Revenue	FY 2021	FY 2020	Comment
Total GAAP Revenue	\$2.1 Billion (-13% YOY)	\$2.4 Billion	In FY21, Amtrak earned approximately \$2.1 billion in GAAP (Generally Accepted Accounting Principles) revenue and incurred approximately \$5.2 billion in capital and operating expense. No country in the world operates a passenger rail system without some form of public support for capital costs and/or operating expenses.
Total Operating Cost Recovery	64% (-14% YOY)	74%	Amtrak recovered 64% of operating costs in FY21 with ticket sales, payments from state partners and agencies, and other operating revenue.

“In FY21, Amtrak advanced designs for the comprehensive redevelopment and expansion of Baltimore Penn Station, and the redevelopment of William H. Gray III 30th Street Station in Philadelphia. This work includes plans to increase facility energy efficiency, reduce water consumption, and improve station resiliency. Construction of these improvements is planned for FY22-25.”

Brian Taylor, Director, Major Stations Planning and Development



Executive Q&A: Dennis Newman

Executive Vice President, Strategy,
Planning & Accessibility

In FY21, Amtrak released a corridor vision plan called *Amtrak Connects US*, to develop and expand intercity passenger rail corridors around the nation in collaboration with our existing and new state partners. We spoke with Dennis Newman on how *Amtrak Connects US* will address environmental, social, and economic concerns in the United States.

What was the catalyst for *Amtrak Connects US* and what purpose does it serve?

Close to **half** of Americans have no access to public transportation, despite it being a safe, clean method of travel. Intercity passenger rail provides efficient, convenient service to millions of Americans today, but offers the opportunity to do so much more to provide mobility benefits and promote economic development by connecting cities and intermediate areas with growing populations around the country. America's intercity passenger rail network hasn't changed much since the 1970s, while the country's population has grown significantly. *Amtrak Connects US* outlines a vision of how Amtrak service could be expanded if Congress and the Administration made funding available.

How will the *Amtrak Connects US* vision work in conjunction with the Infrastructure Investment and Jobs Act (IIJA)?

The IIJA **provides** \$12 billion in grants to fund national network expansion and improvement like that envisioned in *Amtrak Connects US*. The Federal Railroad Administration recently published the Corridor Identification Program, which outlines the

process for developing new intercity passenger rail services that the IIJA will help fund. This program, along with \$16 billion in direct grants provided by the IIJA to Amtrak for the National Network, will enable Amtrak to expand services in areas of high need, provide jobs, and upgrade and invest in equipment to increase efficiency and reduce energy consumption.

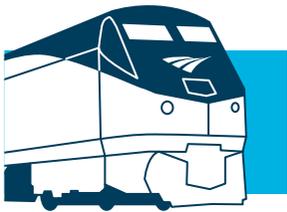
Are there regions that could really benefit from more Amtrak service?

The U.S. has grown by nearly 130 million people in the half century since Amtrak began operations, and much of that population growth has been concentrated in cities and megaregions in the South and West, where Amtrak currently offers limited service. Texas and Florida, the nation's second and third most populous states, have a combined population of just over 50 million, but each is served by just six Amtrak trains, some of which do not even operate every day. In contrast, on the Northeast Corridor between Washington and Boston, Amtrak offers more than 100 weekday trains. Houston, Texas, the fifth largest metropolitan area in the nation, and Phoenix, Arizona, the eleventh largest, have Amtrak service just three days per week, and the nearest station to Phoenix is actually in Maricopa, 36 miles from downtown. Atlanta, Georgia, the tenth-largest metropolitan area in the nation, is served by just a single daily long-distance train in each direction.

With the proper levels of investment, these are examples of the opportunities for Amtrak to improve regional mobility around the nation. Major cities such as Cleveland and Cincinnati, Ohio, are served exclusively during the middle of the night. While retaining the existing Amtrak network serving over 525 locations, Amtrak has a vision to add service to 160 new communities, add 39 new routes and enhance 25 routes providing intercity passenger rail service to the 50 largest metropolitan areas.

Energy Consumption by Transportation Mode (BTU/PM)

Nationwide, Amtrak trains consume less energy on a per passenger mile basis than other modes.



Amtrak
1,506



Airplane
2,243



Automobile
2,787



Truck
3,212

Energy measured in British Thermal Units per Passenger Mile (BTU/PM)
Source: Transportation Energy Data Book, Edition 40, June 2022

Q&A with Dennis Newman (Continued)

How do *Amtrak Connects US* and *Amtrak's Five-Year Plans* contribute to Social, Environmental, and Economic goals?

Amtrak Connects US and *Amtrak's Five-Year Plans* both advance our mission to serve communities across the country—communities with many members of underrepresented⁶ populations or communities that have been traditionally underserved by passenger rail and other transportation modes. Over forty-five percent of Amtrak's workforce identify as underrepresented. We are continuously investing in growing our workforce over the next 15 years, with a focus on Diversity and Inclusion in our hiring process. We want our employees to reflect the diversity of the communities we serve. The envisioned expansion of Amtrak corridor service to the South and the Southwest means a significant proportion of the newly-served population will include Black, Indigenous, and people of color communities.

On page 19 of *Amtrak's FY22 Five-Year Plans* (and at left), readers can see the emissions comparison between transportation modes. Taking people out of cars and planes is the most efficient way to drive emissions reductions. It increases passenger capacity, reduces congestion, minimizes air pollution, and slows carbon emissions. The net economic benefit of this investment from an operations perspective is expected to reach \$1.6 billion annually by 2035, with an additional \$39 billion in economic activity generated by additional capital investments during 2021-2035. We are adding thousands of permanent jobs and thousands more in temporary employment created by capital investments during 2021-2035 to realize our vision.

6. Amtrak defines underrepresented as "non-White".

If there was one thing you would want Amtrak riders to know from the Plan, what would it be?

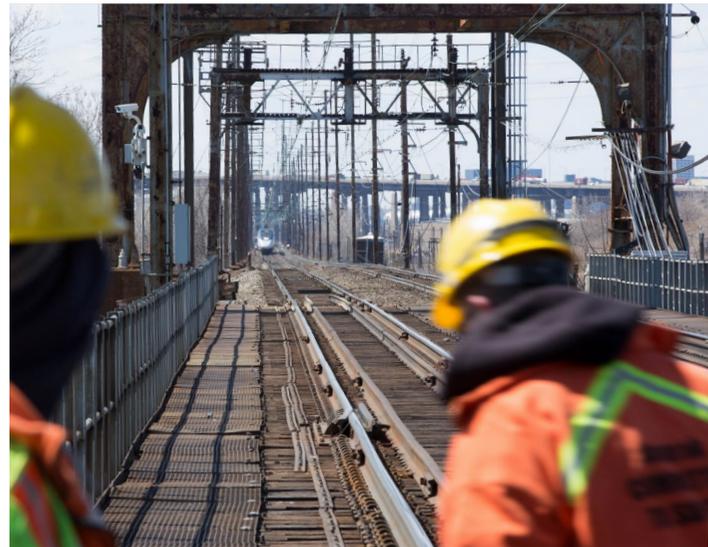
Amtrak Connects US is an investment in our ridership community. We are investing in the environment, in community, and economic opportunities that will result from the Plan. Our goal is to develop and expand our nation's transportation infrastructure, enhance mobility, drive economic growth, and meaningfully contribute to reducing greenhouse gas emissions.

How can community members get involved in the adoption and expansion of intercity passenger rail in their region?

When planning a trip, look to see if intercity passenger rail is an option and raise awareness with your friends of the benefits of passenger rail. Riders should look for ways to save such as student or corporate discounts and encourage those around them to explore passenger rail when travelling. Many of our riders care about sustainability and appreciate the fact that the entire Northeast Corridor is electrified and emits zero emissions at the source. Riders can also purchase carbon offsets to mitigate the carbon footprint of their trips. There is no action too small. Choosing public transportation over flying or driving one day a week, or even a month, can make a huge difference in the long run. We want people to be a part of our vision in any way they can. ■

Highlight Stories

Click on a gallery image to read more about each specific project.



Historic Investment in Amtrak: IJA

The Infrastructure Investment and Jobs Act (IIJA) allocates \$550 billion in new spending over 5 years for rail, roads, bridges, public transit, safety, and water infrastructure to make historic investments in the United States' core infrastructure priorities, including dedicated new funds for major projects. Notably, the bill allocates \$66 billion for intercity passenger and freight rail, which will benefit both Amtrak's Boston-to-Washington Northeast Corridor (NEC) and the non-NEC routes that make up Amtrak's National Network.

More specifically, the bill provides Amtrak with a direct \$22 billion investment to advance specified capital project types (including state-of-good-repair work, fleet acquisitions, and accessibility improvements), and it provides another \$44 billion in grant funding for a wider variety of railroad projects, including both improvements to the NEC and service expansions across the nation. Many grant dollars will flow to Amtrak's partners, or will support investments in "host railroad" infrastructure that Amtrak uses but doesn't own. However, most of these investments will still directly benefit Amtrak and its passengers, ultimately supporting improved, expanded service both along the NEC and across the country. ■



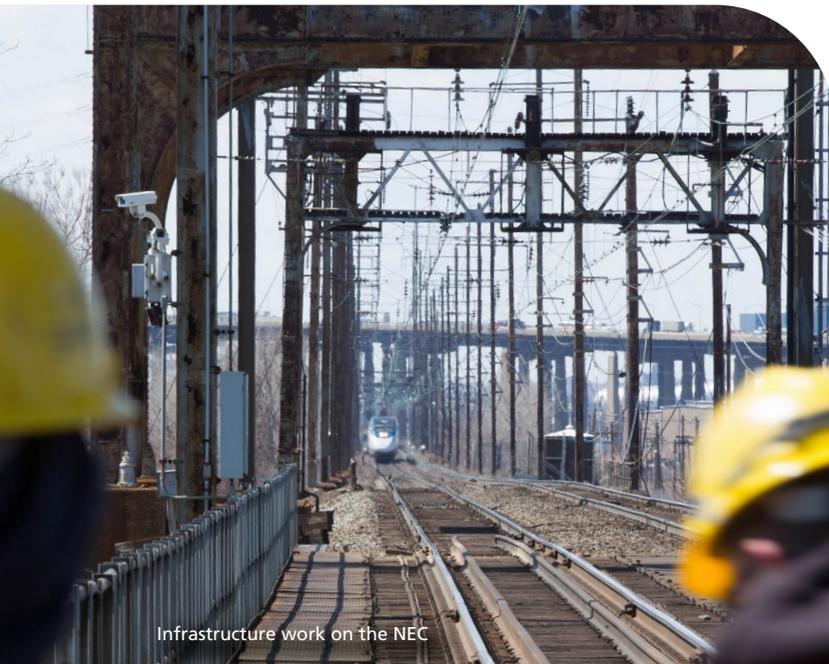
\$22 Billion in Direct Amtrak Funding Advances Key Capital Projects

Across the **National Network**, \$16 billion was allocated for projects that include:

- Replacing obsolete equipment used on Amtrak's Long-Distance and State-Supported services, including the upgrade and expansion of related facilities, which will help ensure service is uninterrupted along the routes that run through smaller and more rural communities;
- Bringing Amtrak-served stations to full compliance with the Americans for Disabilities Act; and
- Modernizing obsolete Amtrak national system assets (e.g., systems for reservations, security, training centers, and technology).

Across the **Northeast Corridor**, \$6 billion was allocated for projects that include:

- Replacing single-level passenger cars used on the NEC (Amfleet I), including the upgrade and expansion of related storage and maintenance facilities;
- Addressing severe capital renewal backlogs (e.g., needs arising after Hurricane Sandy);
- Bringing Amtrak-served stations to full compliance with the Americans for Disabilities Act; and
- Helping to advance essential megaprojects and supporting work to rebuild and renew bridges, tunnels, and tracks to add capacity, improve the passenger experience, and strengthen our infrastructure.



Infrastructure work on the NEC



Amtrak's new ALC-42

Amtrak's Major IJA Initiatives

Today, intercity travel on Amtrak is already cleaner and more sustainable than most alternatives. On average, our service is 46% more energy efficient than travel by car, or 34% more efficient than domestic air travel. And on the electrified Northeast Corridor, where locomotives produce zero at-the-source greenhouse gas emissions, Amtrak travel emits up to 83% less GHG than car travel, and up to 72% less than flying.

Looking ahead, Amtrak is working hard to become even more climate-friendly over time. The funding that the IJA provides will support that effort, helping to make our existing service, infrastructure, and equipment more sustainable and resilient than ever—and bringing new service to communities where Amtrak isn't currently an option. Highlights include:

Cleaner, more climate-friendly equipment. A significant share of Amtrak's IJA-provided funding will support the procurement of new train equipment. On the NEC and various State-Supported routes, this equipment will include new intercity trainsets (ICTs), including dual-power equipment that will run on electricity where possible (Amtrak is aiming to source all electricity from carbon-free sources by 2030) and a number of hybrid trainsets that will be able to operate using electric battery power even over unelectrified tracks. On Long-Distance routes, IJA funds will support the continued procurement of fuel-efficient, Tier 4-compliant ALC-42 locomotives, which emit 89% less nitrogen oxide and 95% less particulate matter than the 1990s-vintage diesels that they are replacing. The first ALC-42s have already entered service, debuting on the Empire Builder (Seattle/Portland-Chicago) in February of 2022; the first ICTs could be delivered as soon as 2024.

Major expansion of energy-efficient passenger rail service. While intercity passenger rail is more energy-efficient than both car and plane travel, many parts of the country remain underserved—or have no rail service at all. The IJA aims to change that. The bill created a new Corridor Identification and Development program, by which the Federal Railroad Administration—in consultation with Amtrak and other stakeholders—will select intercity rail corridors to receive new or expanded service, and then arrange the necessary investments into a prioritized “project pipeline” to receive federal funding. Selected corridors will be eligible for unprecedented levels of grant support over the next five years, including up to \$12 billion for capital improvements and \$250 million in operating assistance.

Improved capacity, reliability, and performance on existing routes. The IJA is making billions of dollars available for capital improvements along existing routes—and in particular, to reduce the backlog of major projects along the NEC. Guided by the Northeast Corridor Commission's Connect NEC 2035 service development plan, these investments will make the Western Hemisphere's busiest, highest-speed rail corridor an even more efficient, effective, and resilient mode of transportation—taking countless cars off the road, driving down carbon emissions, and showing what sustained, robust funding for rail could achieve in other parts of the country over time. ■

Renewable and Carbon-Free Energy Plan

A 2021 International Energy Agency (IEA) **report** stated that electricity will need to become the core of our energy systems to reach net zero emissions by 2050. To do this efficiently, electricity generation will need to reach zero emissions globally by 2040 and be well on its way to supply almost half of total energy consumption. Electricity will be integrated across all sectors like transport and buildings, says the report, with the global energy sector based largely on renewables by 2050.

The good news is that renewable sources of energy continue to **grow rapidly**, setting yet another annual record in 2021 following a year of exceptional growth in 2020. The IEA Net Zero report calls for rapidly scaling up affordable renewable energy, such as solar and wind technologies, to meet future energy demands while staying on path to limit carbon emissions and keep the long-term increase in average global temperatures to 34.7° F. In FY21, Amtrak initiated the creation of a Renewable and Carbon-Free Energy Plan to lay out the foundation for a clean energy future.

The purpose of the Plan is to establish guidelines for the purchase of renewable and carbon-free energy for use within Amtrak operations, which supports the company's commitment to reduce greenhouse gas emissions 40% by 2030 and mitigate



the environmental impact from Amtrak operations. The Plan states that the procurement of power throughout the Amtrak system will be sourced from 100% carbon-free energy by 2030 and 100% renewable energy by 2035.

Renewable energy is produced from solar, wind, geothermal, biogas, eligible biomass, and low-impact small hydroelectric sources, and carbon-free energy is produced from sources that include renewable energy, nuclear, and large hydroelectric sources. The differentiation between carbon-free and renewable energy allows for the inclusion of clean energy sources that do not emit greenhouse gases but are not typically considered renewable by local or state laws.

The use of clean energy is an important goal to reduce greenhouse gas emissions, but also plays a role in reducing air pollution, a result of combusted fossil fuels that leads to dangerous health implications on communities in areas of poor air quality. In FY21, Amtrak sourced 51% of electricity from carbon-free sources with additional goals set to reduce electricity consumption. We remain committed to reducing our emissions, through several key initiatives like energy efficiency upgrades, using as little fuel as possible and running more efficient locomotives. ■

Recycled Soft Goods

With over 400,000 customers riding in sleeping cars annually, Amtrak values providing comfortable and quality sleeping accommodations. As part of a refresh program to replace bed linens, towels, and blankets, Amtrak donated over 100,000 items through Delivering Good, which helped serve families in need and diverted thousands of pounds of textiles away from landfills.

Improving the quality and longevity of each item, Amtrak replaced blankets made from modacrylic fiber with blankets made from polyester beginning in FY21 and continuing into FY22. Yet when the time came to replace the old soft goods, the Customer Experience team was mindful that simply disposing of the used items would result in a significant carbon footprint. The **Environmental Protection Agency** (EPA) estimates that in 2018 1.5 million tons of towels, sheets and pillowcases were generated as waste nationally, but only 15.8% (240,000 tons) of these were recycled. Another 16% was combusted with energy recovery, but most of these textile goods end up in landfills. A survey conducted by organic bedding company, Coyuchi, found that 72% of bed linens end up in landfills, with over half of respondents saying they buy new sheets and towels about once a year.

Since the used soft goods were still in good condition, the Customer Experience team saw an opportunity to divert waste from the landfill and direct the items into the hands of people who can make beneficial use of them. In partnership with the sustainability team, a plan was devised: donate used blankets, sheets, and towels through a key partnership with Delivering Good,

a New York-based non-profit organization that unites retailers, manufacturers, foundations, and individuals to support people affected by poverty and tragedy.

According to **Delivering Good**, 40% of adults reported that they and their families found it difficult to afford basic household necessities in the past year. The organization works to alleviate this strain by providing disaster and poverty relief with donations of valuable merchandise.

Delivering Good collected donated items from major Amtrak facility locations, such as Los Angeles, Oakland, Chicago, and Seattle. Over the course of the campaign, Amtrak donated 101,856 items to Delivering Good's Home Goods program.

Upgrading the old soft goods also ensured the latest items would last longer and be more efficient over time. In between each use, soft goods must go through an extensive wash to prepare for the next passenger, eventually wearing down the material. With more durability, the new soft goods are expected to last through more laundry cycles, known as "turns", making them more efficient and improving the life of the item. ■



“The Soft Goods Refresh project resulted in a significant improvement for our customers, but we knew from the outset of the project that we did not want the introduction of new goods to result in legacy items being dumped in a landfill. We were happy to find a great non-profit partner (Delivering Good) that was able to connect our legacy items with organizations that support those in need, giving them a ‘second life’.”

Patricia Orifini, Director of Product Development and Customer Experience

Acela Solar-Powered Gates

In 2021, Amtrak designed and deployed innovative, solar-powered technology to improve security along our Northeast Corridor (NEC) Right of Way (ROW), prior to the upcoming launch of the historic new *Acela* service. With a commitment to safety and security, Amtrak is mandated to comply with requirements from the Federal Railroad Administration to protect our rail infrastructure from physical and digital threats. To prevent trespassing or service disruption, the FRA required Amtrak to secure ROW vehicle access gates along the high speed sections of the NEC using electronic access control. This presented a unique set of challenges to Amtrak.

In most cases, the gates were in locations lacking power or network connectivity. Amtrak's Digital Technology and Innovation team designed a solar-powered technology kit that could be deployed virtually anywhere and rapidly at scale. As part of Amtrak's ongoing effort to continually improve security along the ROW, solar energy is becoming increasingly utilized to power technology solutions.

The Innovation team had to ensure the technology could withstand inclement weather, bringing another challenge to design the tool kits to operate in extreme temperatures anywhere from -4°F to 140°F. The tool kits were tested this past winter and proved to withstand all elements and uphold in severe conditions. In early 2022, the system successfully endured a New England blizzard dropping 2 feet of snow and 70mph winds.

As we progress the fencing and security of the NEC, we're using solar power and battery storage to create secure, carbon-free technology. The team is researching additional applications for this technology, such as video surveillance and WiFi. With the foundation laid for carbon-free IT tools, Amtrak maintains its commitment to sustainability and public safety throughout our operations. ■



“By leveraging tactical solar power at exactly where Amtrak needs it, we have unlocked a capability to deploy enterprise technology with unprecedented precision and speed with no carbon footprint.”

Jason Blevins, Director of Digital Technology and Innovation



Southwestern landscape viewed from aboard the Texas Eagle®, Amtrak's daily Long Distance service between Chicago and San Antonio.

Climate Resilience Update

Amtrak's vision is to become an industry leader in climate adaptation by substantially reducing climate-related losses, disruptions, and health and safety impacts while systematically implementing resiliency into business-wide operations. In FY21, we revised the existing Green Power Purchasing Policy, detailed in previous pages, and initiated the most focused and comprehensive climate resilience efforts to date, including the completion of a vulnerability assessment of Amtrak assets along the Northeast Corridor (NEC) and a Climate Resilience Strategic Plan.

The Climate Vulnerability Assessment (VA) was developed to inform the direction of Amtrak's Climate Resilience Strategic Plan. The VA was developed specifically for the NEC, as Amtrak is the owner of most assets within the corridor. Assets considered essential to operations were selected for inclusion in the VA such as: rail, buildings (including stations), tunnels, substations, catenary systems, and signals. Four climate stressors, which are climate variability conditions or trends that exacerbate hazards, were included in the VA. These climate stressors include: sea level rise (including storm surge); precipitation; temperature; and wind.

The four stressors evaluated in the VA were selected considering previous efforts, available data, and imminent threats to Amtrak operations, which are projected to worsen in coming years. The VA utilized exposure, sensitivity, and adaptive capacity analysis that resulted in asset-level vulnerability scoring for each stressor. This information is intended for decision makers, project managers, and engineers to evaluate and understand climate vulnerability in conjunction with asset lifespan and operational considerations.

Climate resilience actions were developed and prioritized using input from a strategic planning team, cross-departmental roundtable discussions, and interviews with key employees. This internal guide is designed to be actionable, and puts forth select, priority actions to be implemented over the next three years. Together, with the VA, Amtrak is actively addressing risk and identifying opportunities to amend existing business processes to prepare for the future. ■

Amtrak Across America

At Amtrak, we work with our partners to help move people, the economy and the nation forward. Our mission, as defined by the U.S. Congress, is to provide efficient and effective intercity passenger rail mobility consisting of high-quality service that is trip-time competitive with other intercity travel options. Amtrak operates a network of intercity passenger rail services spanning 46 states, the District of Columbia and three Canadian provinces.

Amtrak is a federally chartered corporation, operating as a for-profit company, with the federal government as majority stockholder. Members of the Amtrak Board of Directors are appointed by the President of the United States and confirmed by the U.S. Senate. The company was created by an act of Congress in 1970 to take control of the majority of the nation's intercity passenger rail services. We've been helping people go places since daily operations began in May 1971.

As Amtrak advanced its COVID-19 recovery efforts in FY21, customers took nearly 12.2 million trips across the Northeast Corridor, State Supported and Long-Distance service lines. Tens of millions of travelers from coast to coast also passed through shared intermodal stations or rode on commuter rail systems provided by 13 state and regional authorities that use Amtrak Infrastructure and/or operating and maintenance services.

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