

Transit



Y UM
CH
SIAL
-3 P M
COME
ENJOY

Photo: Jared Murray

GRADE
COMPARISON

2025: D

2021: D-



TRANSIT

EXECUTIVE SUMMARY

Public transit is essential to America’s transportation network, with residents taking 34 million trips each weekday in 2023. However, ongoing and unexpected circumstances have positioned transit for a hard-to-predict future. The pandemic caused steep declines in ridership, as much as 80% in April 2020. By 2023, transit ridership only increased to 73% of pre-pandemic levels.^{1,2} Both federal pandemic aid and infrastructure investment were pivotal in maintaining transit services. The Infrastructure Investment and Jobs Act (IIJA) provided transit with \$108 billion in support, which is being used to address deferred maintenance and break ground on long-sought capital projects. However, due to years of deferred maintenance, a funding gap of \$152 billion still exists over the next ten years for the nation’s transit systems.³ In addition, while states and localities are working to expand transit access, rising costs, a lack of support for operations, and the impact of work-from-home jobs create challenges. Greater transit access, reliable service, and increased ridership will depend on sustainable funding and communities incorporating transit into multimodal transportation plans.

BACKGROUND

Public transportation in the U.S. has a rich and extensive history. From the first public ferry in the 1600s era Boston harbor to streetcar and rail operations in the 1800s, early advancements allowed mass movement of people in the nation’s urban centers and beyond. In the 21st century, federally initiated policies such as the Fixing America’s Surface Transportation (FAST) Act and Federal Transit Administration (FTA)-directed Transit Asset Management (TAM) Plans have led to comprehensive improvements across transit planning and development. As IIJA injected robust resources into the nation’s infrastructure, local and regional transit agencies received critical support to advance transit facilities throughout the nation.⁵



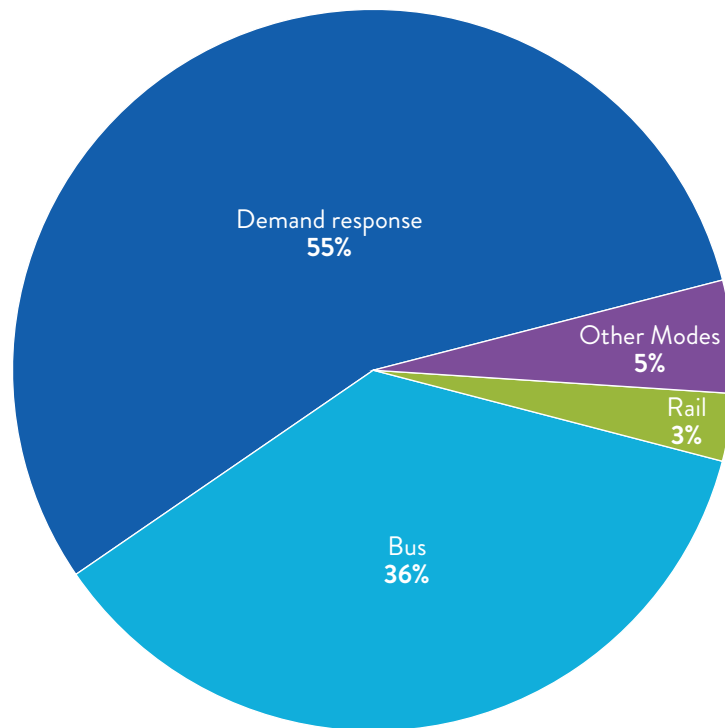
According to the U.S. Census Bureau’s 2023 national survey, 42% of respondents said they have access to bus, subway, or commuter bus service compared with 51% who reported a lack of access.⁴

CAPACITY AND CONDITION

There are 6,800 FTA-supported agencies responsible for providing public transportation in the U.S. The majority (4,850) are nonprofit organizations. Of the 2,210 National Transit Database reporting systems connected to federal programs—either through the Urbanized Area Formula Program or Rural Formula Program—1,281 are in rural areas and 929 are in urban areas. Most

systems are demand response (1,797), followed by bus (1,182), rail (97), and other modes (173, i.e., made up of trolleybus, vanpool, ferryboat, and other fixed-guideway modes).⁶ Despite this network of systems throughout the country, 51% of Americans report inadequate bus, subway, or commuter bus service.⁷

Transit Systems in the US



Source: American Public Transportation Association, “2023 Public Transportation Fact Book,” 74th edition, March 2024

The top 15 metro areas have the largest share of transit riders in the nation. Based on ridership, MTA New York City Transit is well ahead of all other metro agencies with more trips reported than the next 14 agencies combined. In 2023, MTA NYC Transit reported 1.15 billion subway

rides, up 14% from 2022, yet considerably below pre-pandemic levels. Meanwhile, bus ridership for MTA NYC Transit totaled 427 million trips in 2023, nearly identical to 2022’s 426 million trips.⁸

Ridership in New York City Public Transit 2018–2023

Compared with airline passengers annually

Year	Subway	NYC Transit Bus	MTA Bus	Airport Security Screenings Nationwide (approx.)
2018	1,680,060,402	569,361,220	121,448,276	813,791,287
2019	1,697,787,002	557,036,504	120,551,580	824,000,000
2020	639,541,029	316,768,454	65,655,990	324,000,000
2021	759,976,721	311,893,583	71,431,466	585,300,000
2022	1,013,425,465	343,092,963	82,609,386	736,000,000
2023	1,151,998,158	340,766,398	86,216,666	858,000,000

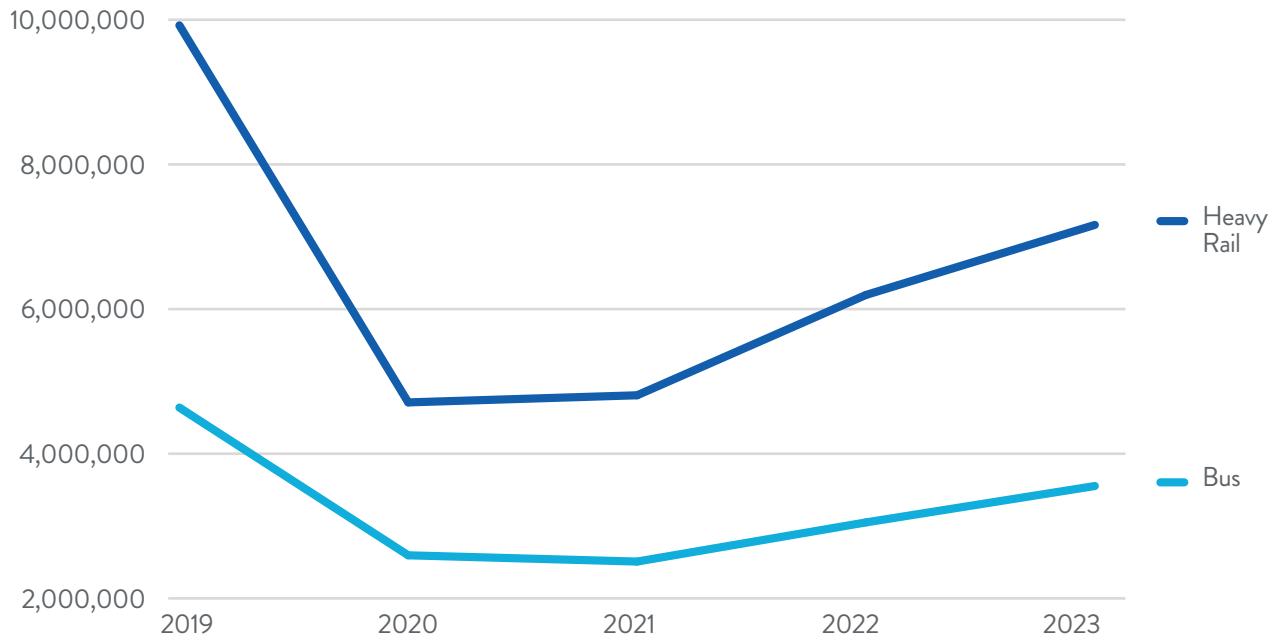
*Note: Rail (68%) and bus (63%) of pre-pandemic levels compared w. Passengers Annually, Airport Security.
Source: Metropolitan Transportation Authority, and Transportation Security Administration*

Largest Transit Agencies

TRANSIT AGENCY	URBANIZED AREA	UNLINKED PASSENGER TRIPS (THOUSANDS)		PASSENGER MILES (THOUSANDS)	
		2020	2021	2020	2021
MTA New York City Transit	New York, NY	1,540,475.1	1,727,404.3	5,683,892.6	6,723,530.9
Chicago Transit Authority	Chicago, IL	197,499.8	195,980.6	781,888.7	798,583.3
Los Angeles County Metro. Transp. Auth.	Los Angeles, CA	305,907.0	194,719.8	1,523,635.3	752,826.9
Massachusetts Bay Transportation Authority	Boston, MA	277,410.8	120,951.8	1,273,921.3	483,531.5
New Jersey Transit Corporation	New York, NY	205,926.7	109,762.0	2,438,549.9	1,128,298.6
Southeastern Pennsylvania Transp. Auth.	Philadelphia, PA	241,553.2	105,812.1	1,092,751.8	432,509.8
Washington Metro. Area Transit Authority	Washington, DC	273,545.9	89,940.4	1,282,228.3	371,231.4
MTA Bus Company	New York, NY	72,562.2	82,347.8	202,709.6	230,457.7
City and County of San Francisco	San Francisco, CA	170,594.3	61,756.7	344,878.6	112,158.7
King County Department of Metro Transit	Seattle, WA	60,165.9	52,698.4	259,894.7	207,901.5
County of Miami-Dade	Miami, FL	56,397.2	51,159.8	313,635.8	289,879.9
MTA Long Island Rail Road	New York, NY	43,484.9	49,167.6	1,229,284.5	1,420,978.6
Denver Regional Transportation District	Denver, CO	52,314.7	48,777.2	290,743.3	291,260.3
Metropolitan Atlanta Rapid Transit Auth.	Atlanta, GA	90,827.8	46,393.8	534,601.9	250,586.3
Metro. Transit Auth. of Harris County, Texas	Houston, TX	65,047.5	44,914.3	388,402.4	254,476.5

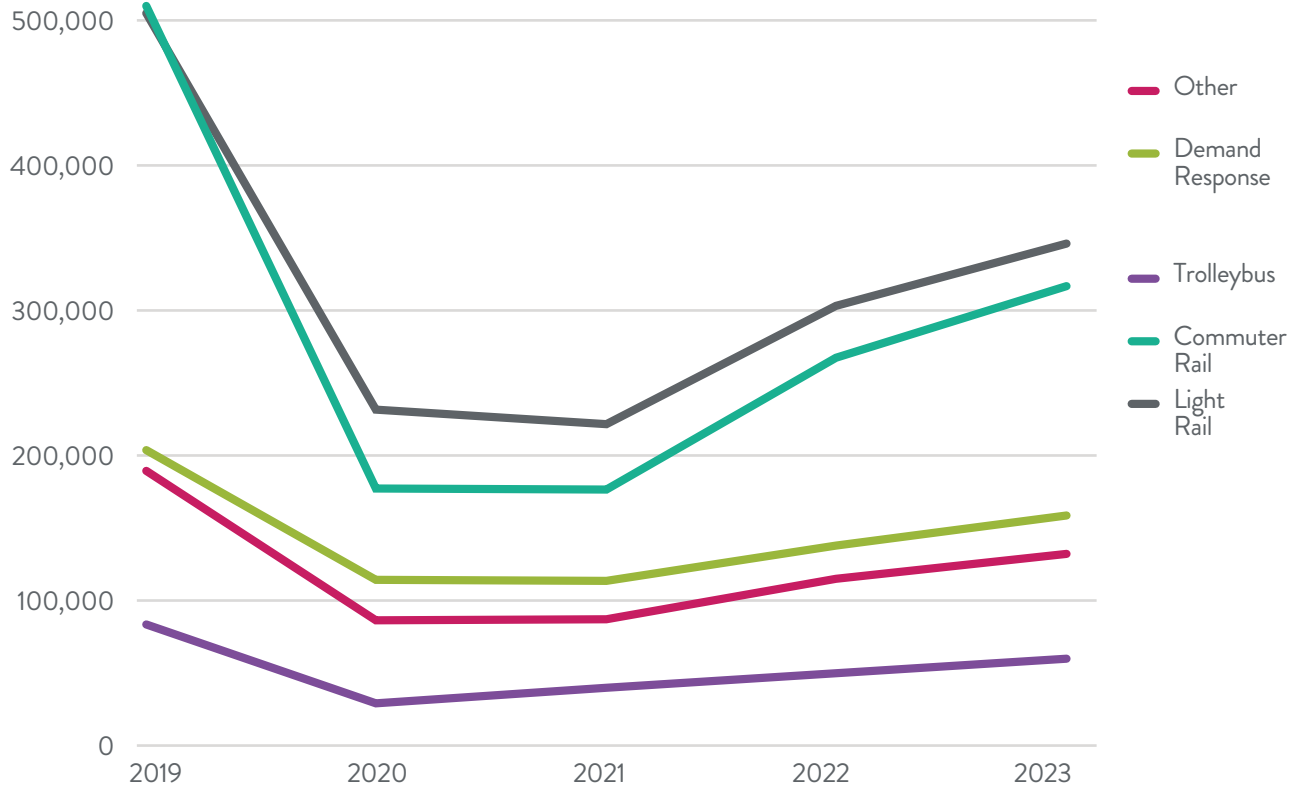
*Note: Unlinked passenger trips - passenger boardings on public transit.
Source: American Public Transportation Association, "Public Transportation Factbook," 2024*

Annual Ridership by Mode, 2019-2023 (per 1,000)



Note: Totals and individual modes over the last five years. Source: American Public Transportation Association, July 2024

Annual Ridership by Mode, 2019-2023 (per 1,000)



Note: Totals and individual modes over the last five years. Source: American Public Transportation Association, July 2024

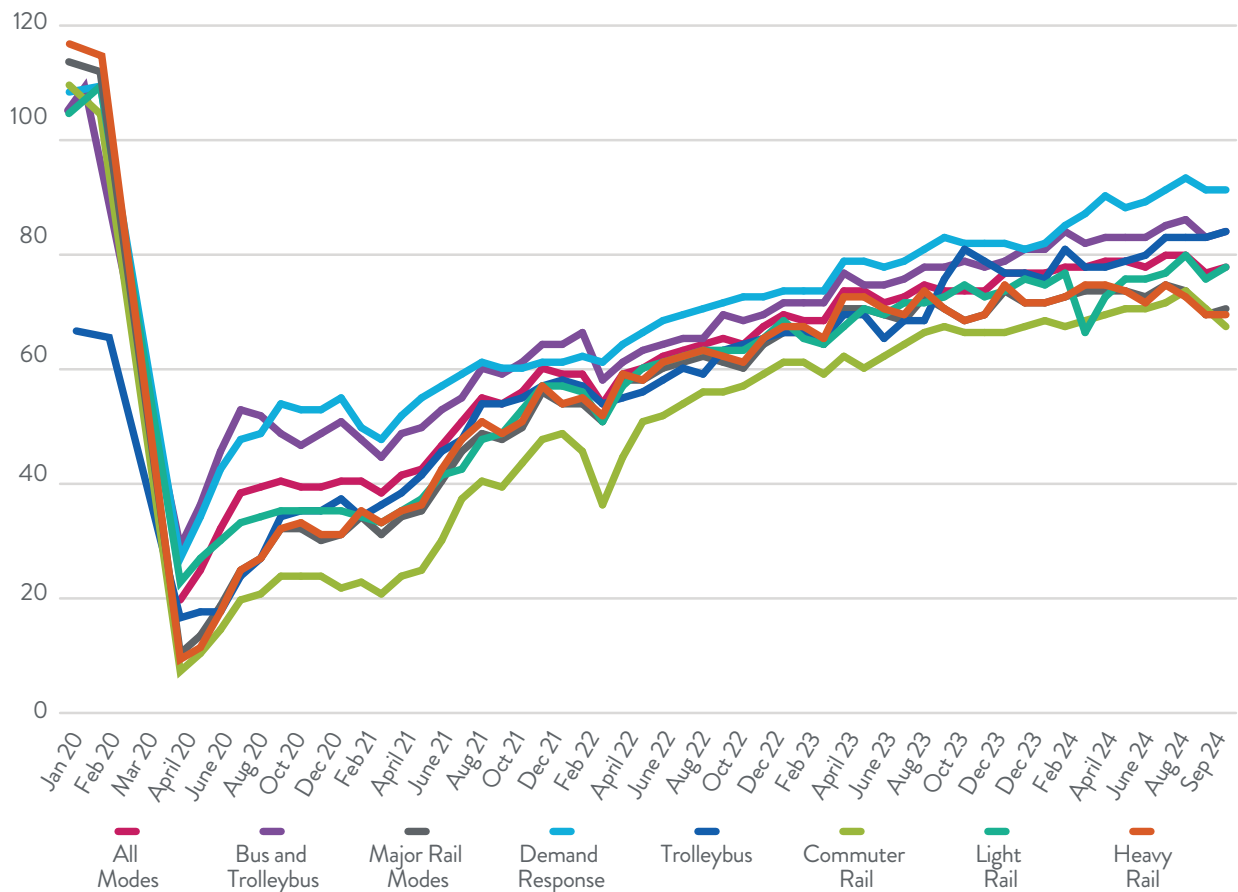
Despite ridership declining prior to the COVID-19 pandemic—and only partially rebounding in the aftermath—some transit system expansion is underway across the U.S. due to federal investment from the IIJA.^{9,10}

However, nationwide transit options have been growing unevenly. Expansion has happened in large metro regions—New York, Seattle, Washington, DC, and Los Angeles—but overall, the U.S. continues to fall behind other countries in accommodating people via public transit.¹¹ Planned expansions include New York Metropolitan Transit Authority’s five-year, \$55 billion capital improvement plan and Los Angeles Metropolitan Transit Authority’s 75 projects worth \$25 billion. In New York, a proposal to support transit projects through a congestion pricing

program was slated to go into effect in January 2025.^{12,13} In the Twin Cities for 2023, ridership was reported to be 16% above the previous year, owing in part to bus service enhancements, including more operators and increased safety measures for operators and passengers alike.¹⁴

Ridership continues to increase, but barriers exist. Ridership was declining even before the COVID-19 pandemic as the use of ride-hailing services grew and more employers offered remote work options; however, the pandemic significantly accelerated that momentum.¹⁵ Approximately 92% of federal aid for transit has been spent as of December 2024.¹⁶ Without new financing for operations, transit agencies may reduce service, increase fares, and suspend or cancel capital projects.¹⁷

Public Transit Ridership Recovery: January 2020 to September 2024



Source: American Public Transportation Association, 2024

Over the past several years, the percentage of revenue vehicles and infrastructure conditions considered in a state of good repair have been relatively level, with data showing a slight improvement for facilities. Going

forward, significant gaps remain to bring 100% of assets into a state of good repair, and future funding uncertainty and cost increases will challenge the industry to maintain positive trends.

Transit Assets in a State of Good Repair (SGR), 2023

	Revenue Vehicles (Transport of Passengers)	Equipment (Service Vehicles)	Facilities	Infrastructure (Track Miles)
Percentage of Assets in SGR (2023)	77.6%	60.5%	92.5%	96.9%
Trend from 2019	Slight decline in condition	Decline in condition	Improvement in condition	Improvement in condition

Source: Federal Transit Administration, National Transit Summaries and Trends, December 2024

Condition assessments extend to local transit agencies as well. NY DOT's latest TAM Plan revealed 35% of vehicles (bus, small passenger vehicles) and 39% of

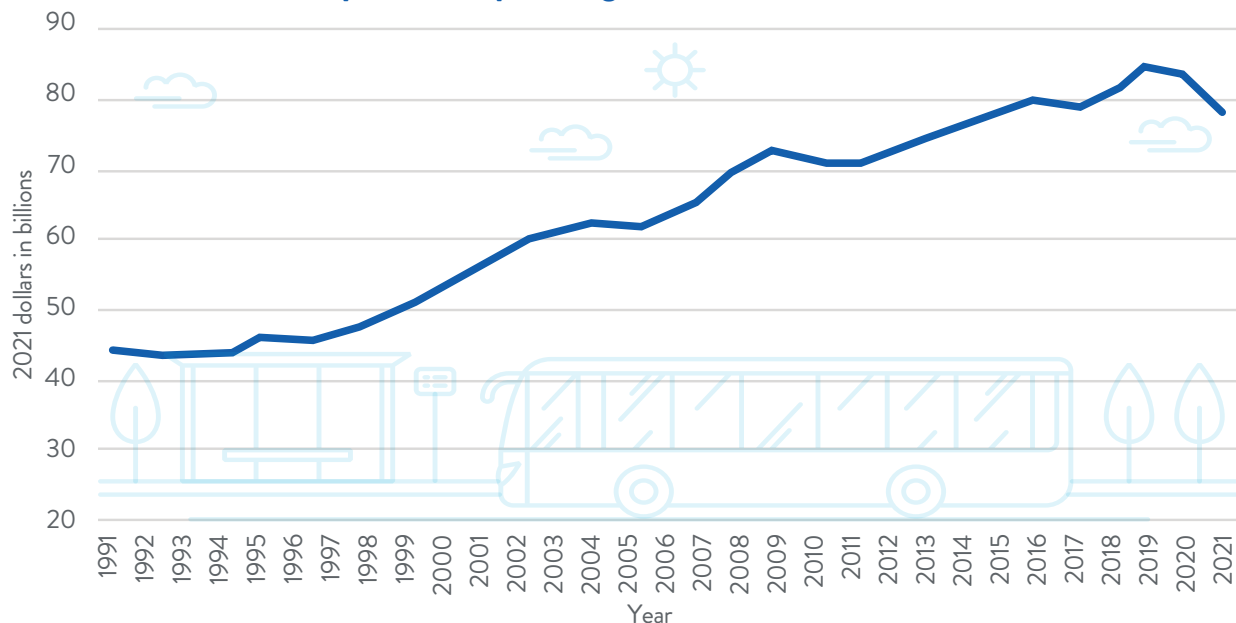
equipment are at or past their useful life, while the average age of facilities was nearly 40 years old.¹⁸

FUNDING AND FUTURE NEED

Public transit is funded by passenger fares, transit agency earnings, and support from federal, state, and local governments. Although overall funding for transit has increased over the last decade-plus, revenue generated has declined owing to the sharp decline in ridership in 2020 and subsequent years, as well as fare amounts remaining unchanged.¹⁹ It is estimated that the nation's transit programs will require \$20.3 billion annually to

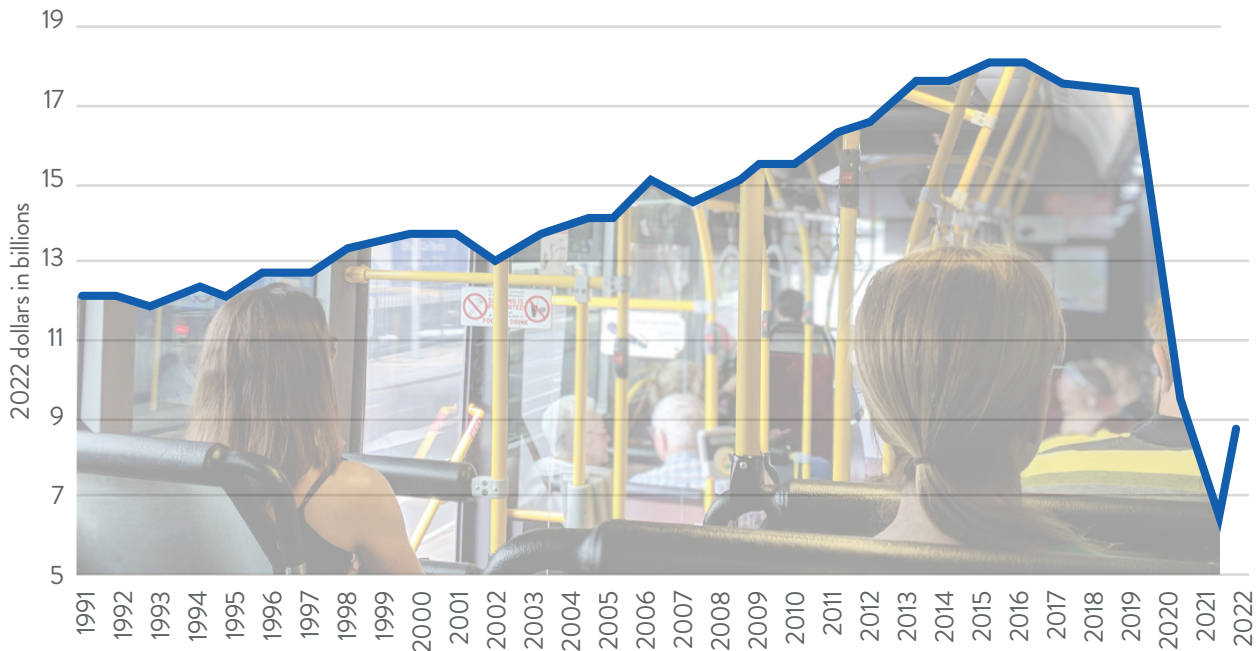
achieve a state of good repair (SGR) by 2038. Using 2014-2018 spending levels, the SGR is expected to increase slightly from \$101.4 billion in 2018 to \$106.2 billion in 2038.²⁰ **Total infrastructure needs for transit are estimated to be \$618 billion. If current funding levels continue from 2024 to 2033, expected funding would total \$466 billion resulting in an estimated gap of \$152 billion.**²¹

Total Funding for Public Transit (in 2021 Dollars): Capital and operating combined (in billions)



Source: American Public Transportation Association

Passenger Fare Revenue—All Modes (inflation adjusted in 2022 dollars)(in billions)

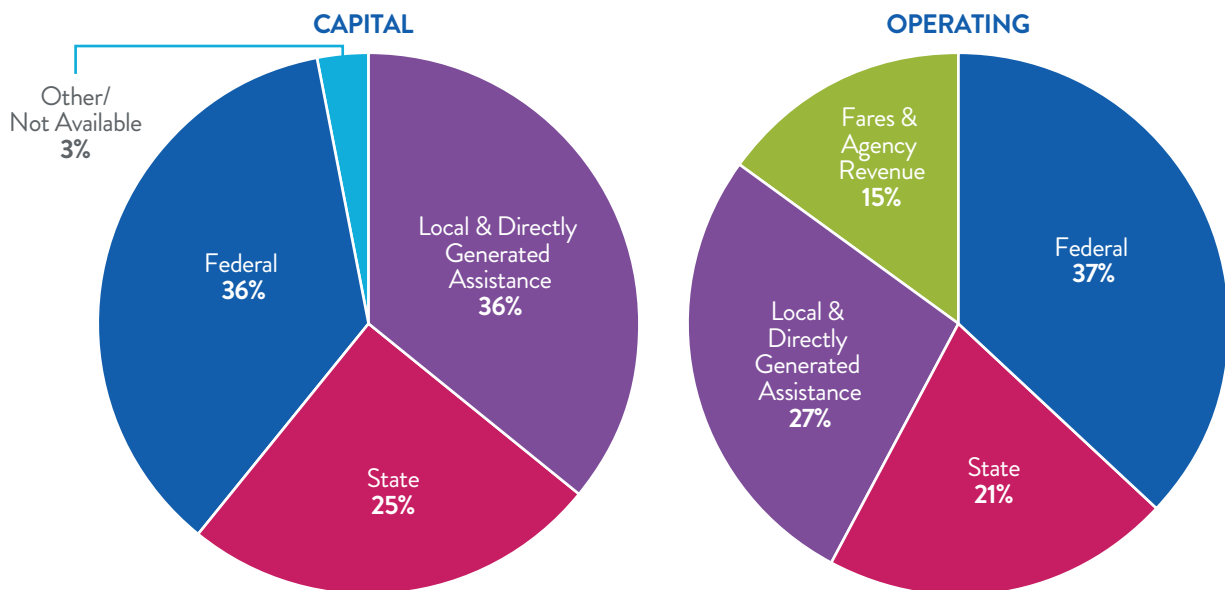


Source: American Public Transportation Association

For capital expenses in 2021, federal assistance contributed 36%, states provided 25%, and local and direct assistance funds supported 36%. Operating costs were split between federal (37%), local and directly

generated assistance (27%), state assistance (21%), and fares and agency revenues (15%). Since 2020, federal COVID-19 response aid totaling \$69 billion has been directed to both operating and capital expenses.²²

Capital & Operating Funding in 2021



Source: American Public Transportation Association, Public Transportation Fact Book, 2024

Supplemental investment from IIJA authorized \$108 billion for FTA programs from FY22–26, \$42 billion or 67% above previous annual spending levels.²³ Another \$14 billion and \$31 billion, respectively, in additional funds were provided to the FTA through the FY21 appropriations law and the 2021 American Rescue Plan, both of which prioritized operating and payroll expenses to avoid layoffs.²⁴ With FTA programs funded at \$20.8 billion for FY24, federal investment will match state and local funds to facilitate project completion.²⁵ These investments play a considerable role in enhancing transit service, especially in less-populated areas, which have experienced a greater increase in ridership since that pandemic than large metro areas.²⁶

Although ridership rates have increased since 2020's sharp decline, uncertainty remains on its ability to address costs and meet demand moving forward. Funding received through additional fares obtained by increased ridership is insufficient to address public transit costs alone. Beyond increased ridership, continued federal assistance and other financing options will be necessary for transit systems to remain solvent. Transit agencies will also need to diversify funding sources, strengthen operational efficiencies, and support rainy day funds.²⁷

OPERATION AND MAINTENANCE

Operation expenses are about two-thirds of all transit costs. Nationwide large budget gaps are expected for operations in FY24 and beyond.³⁵ Although the recent influx of federal assistance along with renewed funding from state and local governments has benefited transit networks, gaps remain in accommodating facilities and services. As federal programs address capital improvements, less support is typically available for operations. Increased costs associated with operations make it more difficult for systems to keep routes and trips consistent. Both conditions are predicted to cause hundreds of millions of dollars or more in deficits to individual U.S. transit networks in Philadelphia, Chicago, and Los Angeles.³⁶ In 2019, the 50 transit systems with the highest operating expenses had a farebox recovery rate of 36% with total revenue of \$13.5 billion.³⁷ While it makes up less than half of the generated revenue, transit agencies rely greatly on fares for their operating expenses. Large agencies rely considerably more on fares to support

Some states and localities are pursuing plans to aid struggling transit systems. The governors of Massachusetts and Pennsylvania are proposing an additional \$300 million in each state, supported by new taxes on high-income earners (MA) and an increase on the percentage of sales tax dedicated to transit (PA). At the direction of the Massachusetts governor, the state also established a commission to propose long-term solutions to budget shortfalls.

Ballot measures have also supported transit in recent years, with 46 transit ballot measures worth \$25 billion receiving approval in 2024 alone. Past successful examples include a 2020 local tax increase in Austin, TX, for transit operations, maintenance, and capital improvements; the approval of a three-eighths of a cent sales tax in Kansas City in 2023 for improvements to the area bus system; the passage of a half-cent sales tax in Fort Collins, CO, with 25% going to transit infrastructure; and a measure in Miami-Dade County in 2024 for an expanded passenger rail system estimated to cost \$6 billion. Consolidation is also being considered by the Illinois state legislature to avoid a \$730 million shortfall for Chicago area transit agencies after 2026.^{28,29,30,31,32,33,34}

operating expenses, whereas for midsize and small agencies, fares do not contribute as much.³⁸

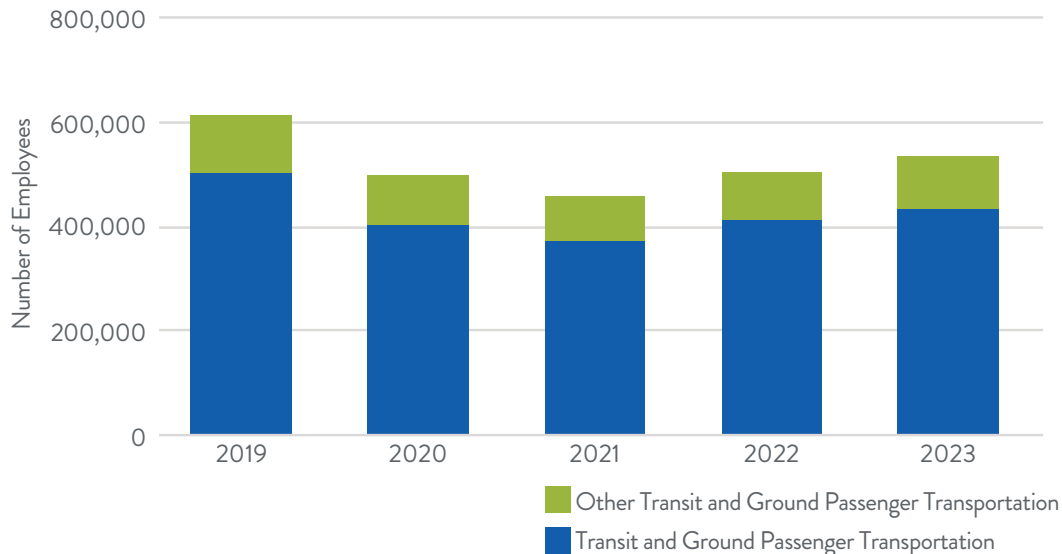
Congress eliminated transit operating assistance for large urban areas in the late 1990s, yet retained it for small urban (50,000–199,999 population) and rural areas. Large transit systems typically have greater ability to cover operating expenses since monies can be applied from available capital resources. On the other hand, small transit agencies rely more on the flexibility of federal assistance since capital expenses vary year by year and federal aid may need to be shifted to operations to mitigate changes in services.³⁹

Workforce needs are impacting operations as well. For 2023, an estimated 433,810 people worked in transit and ground passenger transportation, an increase from 411,670 in 2022 and 371,630 in 2021. While employment trended upward, many transit employees are near retirement age.

In 2023, 37.9% of transit workers were 55 and older; this is considerably higher than all transportation sectors (24.3%).⁴⁰ Also, compared to other industries, transit agencies receive a higher rejection rate for employment with many workers leaving for jobs outside of transit altogether versus retiring or leaving the workforce. Since compensation and schedules are recognized as the leading

challenges to attract and retain employees, agencies are identifying proactive steps to accommodate staff. For example, Central Ohio Transit implemented a system to better share scheduling information between the agency and operators. IndyGo in Indianapolis, IN, adopted four 10-hour schedules per week instead of the standard five 8-hour shifts.⁴¹

Transit Employment, 2019 to 2023



Source: Bureau of Transportation Statistics

Finally, to better gauge and support maintenance, FTA requires transit agencies that receive federal assistance to develop and update TAM plans every four years. Key

components of TAMs include inventory of capital assets, condition assessment, investment prioritization, and implementation strategy.⁴²

PUBLIC SAFETY

Public transit is one of the safest modes of transportation. In 2023, there were 327 transit-related fatalities, compared to an estimated 40,990 highway fatalities. Among the transit fatalities, 210 were related to rail and 117 non-rail. Rail-related fatalities declined from 2022 (227), whereas non-rail fatalities remained level (117) compared to the previous year. Injuries in 2023 totaled 21,244 with 15,508 or 73% of these non-rail incidents.^{43,44,45}

Recipients of FTA formula grants are required to maintain agency safety plans to identify, assess, and mitigate risks and hazards; implement safety trainings; determine safety performance targets; and conduct annual reviews.⁴⁶ FTA also offers funding for safety through several programs, including – State Safety Oversight Program (SSO), Enhance Transit Safety and Crime Prevention Initiative, and Safety Research and Demonstration Program.⁴⁷

RESILIENCE AND INNOVATION

Rail and bus lines are frequently interrupted by extreme weather. MTA in New York reported that 200 subway stations—representing half of the total stations in the system—have flooded in recent years. In response, MTA is planning \$6 billion in improvements to protect facilities from weather-related events. TriMet in Portland, OR, suspended its light-rail service in January 2024 due to an unusual winter storm featuring freezing temperatures and snow. Extreme heat can also disrupt or damage transit infrastructure, such as creating rail damage, unsafe transit stops for riders, and damaged electrical lines.^{48,49}

FTA published its Transit Resilience Guidebook in May 2024, offering guidance for transit agencies to prepare for, anticipate, and recover from extreme weather and climate change impacts.⁵⁰ In addition, state and regional transportation agencies have produced plans to facilitate climate-related response. For example, the Virginia Department of Transportation issued its resilience plan in 2022 emphasizing enhanced data collection on assets including transit facilities.⁵¹ The National Capital Transportation Planning Board also published its Transportation Resilience Improvement Plan in 2024, which includes a risk-based vulnerability assessment and priority project list for the regional transportation network.⁵²

In practice, transit agencies have responded to natural disasters and maintain emergency response plans. **Transit is especially useful for evacuation and relief to vulnerable populations such as those without access to private vehicles or with special needs.** In 2017, Houston prepared for Hurricane Harvey by using 150 buses to transport citizens impacted by the storm. Several transit agencies maintain hurricane evacuation plans including the New Orleans Regional Transit Authority, which includes assigned routes and vehicle protection.^{53,54}

FTA is also focused on sustainability, creating programs incentivizing renewable energy and zero-carbon vehicles, as well as developing technical assistance and training programs for agencies across the country. For example, the Buses and Bus Facilities Program and Low and No Emission Bus Grants direct federal resources to the acquisition of cleaner American-made transit

buses as well as fueling and maintenance infrastructure improvements.⁵⁵ Because of programs like these, states and regional transit agencies are increasingly purchasing zero-emission buses (ZEBs). The number of full-size transit ZEBs is over 6,100 as of September 2023, with California and New York having the highest share of these vehicles.⁵⁶



Meanwhile, rural areas are addressing transit needs through new approaches. On-demand public transit or microtransit is increasingly in use in small communities where residents request a ride and in return pay a small fee.⁵⁷ A 2023 study of Wabasha, MN, offered a host of potential transit solutions, including using community members to offer underused buses and private cars.⁵⁸

New technologies also are promoting transit use. The ongoing transition from closed to open loop systems will allow electronic payments of fares, improving convenience and safety for customers. Open-looped cards are expected to grow from 1 million in 2020 to 13 million by 2025.⁵⁹ Boston's regional transit invested nearly \$1 billion in 2024 for contactless payment, joining other cities such as New York, Denver, Chicago, Baltimore, and San Francisco with similar automated platforms.⁶⁰ Agencies are also sharing payment methods such as TriMet and C-Trane between Portland, OR, and Vancouver, WA, and San Francisco's Bay Area Rapid Transit and other regional agencies in northern California.⁶¹ Virginia Railway Express and Maryland Transit Administration recently announced a cross-honor program allowing customers to purchase and use tickets between the two regional transit systems.⁶² Los Angeles Metro and other agencies are increasingly adopting fare capping as a way to bring down costs and improve access to transit.⁶³



RECOMMENDATIONS TO RAISE THE GRADE

- Support consistent and long-term financing approaches, including additional flexibility to use funds for planning, maintenance, state of good repair, and operations across all asset classes and types to align with local and regional transit plans.
- Prioritize network and multimodal connectivity, including emerging bikeshare and micromobility as well as regional and interagency connectivity to improve passenger experience, accessibility, functionality, service, and flexibility.
- Address workforce and staffing needs through community outreach and training programs to ensure operational resiliency, including operators, control center staff, and critical transit maintenance and operations personnel.
- Encourage good asset management practice to prioritize and address ongoing state of good repair needs, maximize the impact of available funds, and improve the overall condition of our systems.
- Embrace approaches to address and fund investments in sustainability, resiliency, and risk mitigation to effectively and proactively address challenges of climate change and economic shocks.
- Encourage collaboration between local and regional transportation planning for sustained capital improvements, maintenance, and operations.
- Identify, adopt, and invest in new and emerging technologies that improve service, deliver operational efficiencies, and improve safety.



Photo: Сергей Кураженко



SOURCES

1. METRO, "Public Transit Ridership Continues Post-COVID Bounce Back," 2024.
2. American Society of Civil Engineers, "Bridging the Gap: Economic Impacts of National Infrastructure Investment 2024 – 2043," 2024.
3. Ibid.
4. U.S. Census Bureau, "American Housing Survey," 2023.
5. Federal Transit Administration, "History of the National Transit Database and Transit in the United States," 2024.
6. American Public Transportation Association, "2023 Public Transportation Fact Book," 2024.
7. U.S. Census Bureau, "American Housing Survey," 2023.
8. New York City Transit, "Subway and Bus Ridership for 2023," 2023.
9. Congressional Research Service, "Public Transportation Ridership: Implications of Recent Trends for Public Policy," 2022.
10. U.S. Department of Transportation, Federal Transit Administration, "Building Better Transit," 2022.
11. The Transport Politic, "Historical Trends Show a Decline in High Quality Transit in the US – And an Uptick Elsewhere," 2023.
12. American Society of Civil Engineering, Civil Engineering Source, "Public Transit's Future Is Bright, Technological, Equitable," 2023.
13. New York State Office of Governor Kathy Hochul, "Putting Commuters First, Keeping Costs Down: Governor Hochul Unveils Plans for Future of Transit and Traffic in New York City, Including a 40 Percent Reduction in Congestion Pricing Tolls," 2024.
14. Metropolitan Council, "Annual Transit Ridership Grows 16% as Bus Service Expands," 2024.
15. American Public Transportation Association, Transit Ridership Report, 2024.
16. Department of Transportation, USDOT COVID-19 Relief Funding Status as of 9/30/24 for Federal Transit Administration, 2024.
17. Federal Transit Administration, "Effects of the COVID-19 Pandemic on Transit Ridership and Accessibility," 2024.
18. New York Department of Transportation, "Group Transit Asset Management (TAM) Plan for Federal Transit Administration (FTA) Grantees," 2023.
19. American Public Transportation Association, "New APTA Report Says Public Transit Users Can Save \$13,000 Annually," 2023.
20. Department of Transportation, "Status of the Nation's Highways, Bridges, and Transit Conditions and Performance Report," 2024.



SOURCES (cont.)

21. American Society of Civil Engineers, "Bridging the Gap: Economic Impacts of National Infrastructure Investment 2024 – 2043," 2024.
22. American Public Transportation Association, "2023 Public Transportation Fact Book," 2024.
23. American Public Transportation Association, "Summary of Public Transit Programs and Funding," 2023.
24. Congressional Budget Office, "Federal Financial Support for Public Transportation," 2022.
25. Federal Register. Vol. 89, No. 106. Federal Transit Administration, "Fiscal Year 2024 Apportionments, Allocations, and Program Information," 2024.
26. American Society of Civil Engineers, "Bridging the Gap: Economic Impacts of National Infrastructure Investment 2024 – 2043," 2024.
27. Urban Institute, "Surmounting the Fiscal Cliff: Identifying Stable Funding Solutions for Public Transportation Systems," 2023.
28. APTA Center for Transportation Excellence, "Voters Across the Country Support Public Transportation at the Ballot Box," 2022.
29. Governing Magazine, "With Public Transit on the Brink, Some States Prepare to Boost Funding," 2024.
30. Eno Center on Transportation, "Saving Time and Making Sense: A Blueprint for Building Better Transit," 2021.
31. CBS News Miami, "After Vote to Expand Rapid Mass Transit in Miami-Dade Residents Ask What Comes Next," 2024.
32. Chicago Reader, "No New Revenue Without Reform," 2024.
33. American Public Transportation Association, "Post-Election Snapshot: Voters Greenlight \$25+ Billion in Public Transportation Ballot Measures in 2024," 2024.
34. Eno Center on Transportation, "Saving Time and Making Sense: A Blueprint for Building Better Transit," 2021.
35. Congressional Research Service, "Federal Support for Public Transportation Operating Expenses," 2024.
36. CNBC, "Here's Why Public Transit Keeps Running Out of Money," 2023.
37. Eno Center for Transportation, "The Mass Transit Fiscal Cliff: Estimating the Size and Scope of the Problem," 2022.
38. Ibid.
39. Congressional Research Service, "Federal Support for Public Transportation Operating Expenses," 2024.
40. Bureau of Transportation Statistics, Employment in Transportation: Annual Employment in Transportation and Related Industries, 2023 Year in Review.



SOURCES (cont.)

41. American Public Transit Association, “Transit Workforce Shortage Synthesis Report,” 2023.
42. Federal Transit Administration, “TAM Plans,” updated August 30, 2023.
43. U.S. Department of Transportation, Bureau of Transportation Statistics, “Transportation Fatalities by Mode,” 2024.
44. National Highway Traffic Safety Administration, “Early Estimate of Motor Vehicle Traffic Fatalities in 2023,” 2024.
45. Federal Transit Administration, “National Transit Summaries and Trends (NTST),” 2024.
46. Federal Transit Administration, “Public Transportation Agency Safety Plans (PTASP) Frequently Asked Questions.”
47. Federal Transit Administration, “State Safety Oversight, Enhanced Safety and Crime Prevention Initiative & Safety Research and Demonstration.”
48. WEF, “\$6 Billion Plan Aims to Flood-Proof New York City’s Transit System,” 2024.
49. The Oregonian, “All MAX Lines Suspended, but TriMet Buses Still Running for Now as Downed Trees, Freezing Temps Disrupt Service,” January 13, 2024.
50. Federal Transit Administration, “Transit Resilience Guidebook,” 2024.
51. Virginia Department of Transportation, “Resilience Plan,” 2022.
52. National Capital Region Transportation Planning Board, “National Capital Region Transportation Resilience Improvement Plan,” 2024.
53. Route Fifty, “Houston Metro Adapts Winter-Weather Tactic to Save Its Buses From Harvey’s Flooding,” 2017.
54. New Orleans Regional Transit Authority, “2024 Hurricane Preparedness Guide.”
55. Federal Transit Administration, “Bus Procurement,” 2024.
56. CALSTART, “Zeroing In on Zero-Emission Buses,” 2024.
57. American Planning Association, “On Demand Microtransit: A Rural Solution to Public Transit?,” 2022.
58. Minnesota Department of Transportation, “Rural Community Transit Strategies: Building on, Expanding, and Enhancing Existing Assets and Programs,” 2023.
59. Enghouse Transportation and Public Safety, “As Transit Agencies Migrate to Open-Loop Payments, Some Cities Struggle,” 2022.
60. Governing, “Contactless Payment Arrives for Boston Transit in August,” 2024.
61. TriMET, C-Trane, & Metropolitan Transportation Commission.
62. Maryland Transit Administration, “MARC and Virginia Railway Express Cross-Honor Program Advances Regional Connectivity,” 2024.
63. Government Technology, “Fare Capping Is Being Adopted by Transit Agencies of All Sizes,” 2023.