



H.R. 8870: BUILD AMERICA 250 ACT
FIVE-YEAR SURFACE TRANSPORTATION REAUTHORIZATION (FY 2027-2031)
OVERVIEW & FUNDING



8 BETTER DECISIONS,
BETTER JOURNEYS

22 AMERICA 250 AND
AMERICAN RAILROADS

40 HIGH-SPEED RAIL
CONNECTIONS TO AIRPORTS

High-Speed Intercity Passenger Rail

SPEEDLINES

OCTOBER 2026

ISSUE #45



CONTENTS



Pg. 18

ABOVE:

AN AMTRAK CASCADES TRAINSET RECENTLY WHIZZED THROUGH THE PHILADELPHIA SUBURBS FOR TESTING. THE RARE EAST COAST VISIT COINCIDES WITH THE WASHINGTON STATE DOT RECEIVING FEDERAL APPROVAL FOR PHASE 3 OF THE CASCADIA HIGH-SPEED RAIL PROGRAM, WHICH WILL MAP OUT DEDICATED-TRACK ROUTES DESIGNED FOR SPEEDS OVER 160 MPH.

ON THE FRONT COVER:

NEW DATA REVEALS A MASSIVE GAP IN HOW CITIES USE HSR. BY USING MACHINE LEARNING TO COMPARE OFFICIAL TRANSIT DOCUMENTS WITH FUTURE PROJECTIONS FOR 2035 AND 2050, RESEARCHERS UNCOVERED CRITICAL PLANNING INCONSISTENCIES. THESE FINDINGS EXPOSE A WILDLY UNEVEN UTILIZATION OF RAIL NETWORKS, OFFERING ESSENTIAL GUIDANCE TO HELP POLICYMAKERS FIX CURRENT GAPS AND OPTIMIZE FUTURE EXPANSIONS.

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- 3 CHAIRMAN'S LETTER
Greetings from our Chair, Julie White
- 4 UPCOMING APTA CONFERENCES
- 5 RECAP OF APTA RAIL CONFERENCE
- 8 BETTER DECISIONS, BETTER JOURNEYS
- 18 HSR NETWORK PACIFIC NORTHWEST
- 22 AMERICA 250 & AMERICAN RAILROADS
- 26 MASTERING SINGAPORE'S TRANSIT
- 30 BOARDING TIMES ON LONG-DISTANCE
- 32 2026 SNIPPETS
- 34 FEDERAL INFRASTRUCTURE AWARD
- 36 B&P TUNNEL & WEST BALTIMORE
- 39 POEM: WE RAILROAD JUNKIES
- 40 HSR AND AIRPORT CONNECTIONS
- 46 INTERNATIONAL HSR EXPERIENCE
- 56 THE CORRIDOR ID PROGRAM





HS&IPR Committee & Friends

CHAIRMAN'S LETTER

A MESSAGE FROM JULIE WHITE

Dear High-Speed & Intercity Passenger Rail Committee Members,

It is a tremendous honor to serve as Chair of APTA's High-Speed & Intercity Passenger Rail Committee. I am grateful for the confidence you have placed in me, and I look forward to working alongside each of you as we continue advancing passenger rail across North America.

Before looking ahead, I want to recognize and thank our outgoing Chair, Chad Edison, for his exceptional leadership. Throughout his tenure, Chad strengthened this committee by fostering thoughtful dialogue, expanding opportunities to share best practices, and reinvigorating our regular meetings as a forum where agencies, operators, consultants, suppliers, and partners could learn from one another. His collaborative leadership has positioned our committee well for the important work ahead, and we are grateful for his service.

This comes at a pivotal time for passenger rail.

As Congress begins work on surface transportation reauthorization, our industry has a unique opportunity—and responsibility—to help shape the future of passenger rail. The historic investments made in recent years have demonstrated what is possible when federal, state, local, and private partners work together. Now, we must continue building the case for sustained investment, modern policies, and a national passenger rail vision that expands mobility, strengthens our economy, improves safety, and connects communities of every size.

Our committee has an important role to play in that effort.

The High-Speed & Intercity Passenger Rail Committee brings together one of the most experienced and knowledgeable groups of rail professionals in the industry. Through this committee, we can exchange ideas, share lessons learned, identify emerging challenges, and help develop the policies and best practices that move our industry forward. We also serve as an important resource to APTA leadership as they advocate for passenger rail in Washington and across the country.

While reauthorization will undoubtedly be a major focus this year, I also want to ensure that our committee's work reflects the priorities of our members.

Over the coming weeks, the Executive Committee will distribute a brief survey asking for your thoughts on the issues, topics, technical discussions, and initiatives you would like this committee to emphasize during the coming year.

Whether your interests are project delivery, planning, operations, funding, corridor development, high-speed rail, station development, partnerships, innovation, workforce, or another emerging issue, we want to hear from you. Your input will help shape our meeting agendas, educational programming, and committee priorities.

I also encourage you to become actively involved. Attend our meetings, participate in discussions, share your successes and lessons learned, volunteer for working groups, and bring forward ideas that can benefit the broader industry. The strength of this committee has always been the willingness of its members to learn from one another and work together toward common goals.

I am excited to work alongside our outstanding officers, Executive Committee, APTA staff, and each of you as we build on the strong foundation established by those who have led before us.

Thank you for your continued commitment to advancing passenger rail. I look forward to an exciting and productive year together.

Sincerely,

JULIE WHITE

Chair, APTA High-Speed & Intercity Passenger Rail Committee

Deputy Secretary for Multimodal Transportation

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

APTA TRANSform & EXPO:
October 4–7, 2026, in Chicago, IL

UPCOMING CONFERENCES

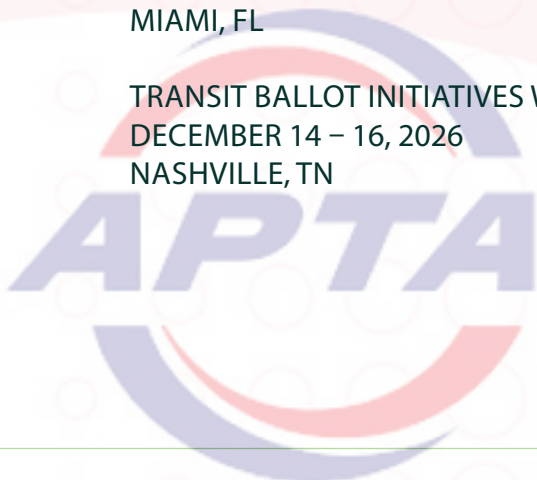
START PLANNING YOUR SCHEDULES

SAFETY AND RISK MANAGEMENT SEMINAR
DECEMBER 6 – 9, 2026
MIAMI, FL

BUSINESS MEMBERS ANNUAL MEETING
JANUARY 19 – 22, 2027
SCOTTSDALE, AZ

TRANSIT BALLOT INITIATIVES WORKSHOP
DECEMBER 14 – 16, 2026
NASHVILLE, TN

LEGISLATIVE CONFERENCE
FEBRUARY 28 – MARCH 2, 2027
WASHINGTON, DC



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2026 APTA RAIL CONFERENCE

HIGH-SPEED RAIL TAKES CENTER STAGE

Contributed by: SPEEDLINES STAFF

Through educational sessions, committee meetings, and technical presentations, the 2026 APTA Rail Conference highlighted the growing momentum behind high-speed and intercity passenger rail across North America and around the world. Attendees explored international best practices, infrastructure development strategies, and the future role of passenger rail in a modern transportation network.

The educational session “International Developments and New Ideas for Passenger Rail” brought global perspectives to the conference. Moderator Chris Brady of US-Japan Infrastructure Advisors led a panel featuring Naohisa Kitada of Central Japan Railway Company; Damian Carey of Jacobs; Luigi Rosa of Amtrak; and Karla Avis-Birch of Arup.

Avis-Birch presented Canada’s Alto High-Speed Rail Project, one of the largest infrastructure programs currently under development in Canada. She outlined plans for a high-speed corridor connecting Toronto, Ottawa, Montréal, and Québec City, spanning more than 1,000 kilometers and designed to reduce congestion, lower carbon emissions, stimulate economic development, and create new workforce opportunities.

A second intercity passenger rail related education session “State Supported Rail Corridors: An Update” provided an overview of intercity passenger rail development from the state’s perspectives. The session was moderated by Sandy Bushue of GGI Federal, Inc. and included presentations from Julie White North Carolina Department of Trans-

portation, Nicole Bucich, Amtrak, Allan Fye of the Virginia Department of Rail and Public Transportation and David Wilcock VHB. Julie spoke about NCDOT’s ongoing investment in passenger rail and Allan updated attendees on the Transforming Rail in Virginia program. Nicole provided attendees updates on numerous Amtrak initiatives and David summarized the status of the Corridor Identification and Development program. Attendees took away a better understanding of the state of intercity passenger rail in the US as well as the many opportunities and challenges of corridor development.

Conference attendees also learned about the challenges and opportunities associated with developing Megaprojects such as modern high-speed rail network in North America. Topics included corridor planning, stakeholder engagement, procurement strategies, governance models, electrification, and integration with existing rail services. Presenters emphasized that successful megaproject delivery requires sustained leadership, strong public-private partnerships, workforce development, and maintaining public confidence throughout lengthy project timelines.

The conference also provided a forum for broader discussions about the future of passenger rail in the United States. During the meeting of the APTA High-Speed



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HS&IPR *Objectives*

THE HIGH-SPEED & INTERCITY PASSENGER RAIL (HS&IPR) COMMITTEE MET DURING THE AMERICAN PUBLIC TRANSPORTATION ASSOCIATION'S (APTA) 2026 RAIL CONFERENCE HELD IN BALTIMORE, MARYLAND FROM JUNE 29 TO JULY 1, 2026.



WHAT WE
PROUDLY DO

MORE

& Intercity Passenger Rail Committee, participants heard updates from Karl Alexy of the Federal Railroad Administration and Amtrak Updates from Jennifer Mitchell and Luigi Rosa of Amtrak also spotlighted the B&P Tunnel Program. The meeting covered rail safety, infrastructure investment, major capital projects, governance, international best practices, and strategies for expanding passenger rail service.

The conference also highlighted high-speed rail as a platform for resilient, zero-emission mobility. A technical presentation on California High-Speed Rail described how efficient electric rolling stock, regenerative braking, renewable-energy integration, and a meshed overhead power system could support zero-net-energy operations. The concept also included distributed solar generation, battery storage, and microgrid controls intended to keep trains and stations operating during grid outages while extending clean power to maintenance facilities and electric buses serving stations.

Across the sessions at APTA Rail in Baltimore, several common themes emerged:

- *Successful delivery of major rail programs depends on strong governance, effective*

stakeholder engagement, and innovative project delivery approaches.

- *International collaboration provides valuable lessons for North American rail development, particularly as agencies pursue larger and more complex passenger rail investments.*

The 2026 APTA Rail Conference demonstrated that interest in high-speed and intercity passenger rail continues to grow. Through technical education, international case studies, and discussions among industry leaders, the conference showcased how passenger rail can support economic growth, environmental sustainability, and enhanced mobility while preparing the industry for the challenges and opportunities ahead. heard updates from Karl Alexy of the Federal Railroad Administration and Amtrak Updates from Jennifer Mitchell and Luigi Rosa of Amtrak also spotlighted the B&P Tunnel Program. The meeting covered rail safety, infrastructure investment, major capital projects, governance, international best practices, and strategies for expanding passenger rail service.



BETTER DECISIONS, BETTER JOURNEYS

HOW AI CAN MOVE RAILWAY STATIONS FROM REACTIVE TO ANTICIPATIVE MANAGEMENT

Contributed by: Joaquín Botella, MSc Civil Engineer,
Chief Technical Engineer Railways – Sener Mobility, Spain

Railway stations generate vast amounts of operational data, yet their performance still depends on people making sound decisions under pressure. Artificial intelligence can help operators recognize emerging conditions, evaluate possible responses and act before local problems affect passengers and the wider network. Its greatest value is not autonomous operation, but better-informed human judgment.

INTRODUCTION

Every day, a major railway station depends on thousands of decisions made by people. While artificial intelligence is not changing either of those facts, it is changing the information available to decision-makers, the speed at which emerging conditions can be understood, and the range of consequences that can be considered before action is taken.

At 8:15 on a Monday morning, Train 782 is approaching a major station behind schedule. The number of passengers at the station is growing, an escalator near the assigned platform for the delayed train is out of service and several passengers waiting to board the train require mobility assistance. Reassigning the train to another platform could support service recovery, but the consequences would extend well beyond simply getting the train back on schedule.

While none of these conditions is exceptional, the challenge lies in their interaction, as a single platform decision can change passenger distribution, accessible routes, transfer times, dwell time, passenger information requirements, and conditions elsewhere on the network. Station teams manage these interactions under time pressure and often with incomplete or fragmented information. They must balance objectives that may reinforce one another in one situation and conflict in another. The difficulty is no longer simply obtaining more data. Major stations already produce information through cameras, sensors, ticketing systems, passenger information platforms, mainte-

nance applications, building management systems and connected assets. The more important challenge is turning that information into an operational picture that helps station personnel answer four key questions:

- What is happening?
- What is likely to happen next?
- What options are available?
- What consequences could each option create for operations and passengers?

This is where artificial intelligence can create operational value. AI can help integrate information, identify or quantify relationships that are difficult to detect consistently in real time, forecast developing conditions and evaluate possible responses. It can give station teams more time to intervene and a clearer understanding of the trade-offs involved. It should not, however, be treated as a substitute for operational responsibility. Data may be incomplete, predictions contain uncertainty and railway decisions must remain subject to safety rules, operating procedures, local knowledge and clearly assigned authority. AI is most valuable when it supports professional judgment rather than attempting to remove it from the process.

The central question for station operators is therefore not how much AI they can deploy. It is whether AI can help their people make earlier,



FIGURE 1. ONE STATION DECISION, MULTIPLE OPERATIONAL CONSEQUENCES.

better-informed and more accountable decisions. When that transformation is achieved, passengers may never notice the technology. They will notice its operational consequences: more reliable journeys, clearer information, safer and more accessible stations, and fewer disruptions allowed to escalate.

1. RAILWAY STATIONS AS COMPLEX OPERATIONAL SYSTEMS

A railway station can appear to be a collection of identifiable functions: platforms, passenger circulation, information, security, accessibility, maintenance, retail and connections with other modes. Each function has its own assets, procedures, teams and performance requirements. Operationally, however, these functions cannot be managed in isolation. Train movements influence passenger arrivals and departures. Passenger distribution affects available platform space impacting boarding

and alighting dwell times, accessible routes and the deployment of station staff. Asset availability changes how people move through the station. The defining characteristic of a major station is therefore not simply the number of passengers, assets or systems it contains. It is the number and operational significance of the interactions among them.

These interactions are not always linear. A minor asset failure may have little effect under normal conditions but become operationally significant during a service disruption, a special event or a period of high passenger demand. Operational consequences depend on context, timing and the condition of the system as a whole.

This is why managing a station differs from monitoring its individual components. Knowing that an escalator has failed, that a train is delayed or that passenger density is increasing is necessary, but it is not sufficient. The operational question is how those conditions interact, what may happen next and whether intervention is required before performance or passenger journeys are affected.

THE VALUE OF AI IN RAILWAY STATIONS SHOULD BE MEASURED NOT BY THE DEGREE OF AUTOMATION IT ACHIEVES, BUT BY THE QUALITY, TIMING AND ACCOUNTABILITY OF THE DECISIONS IT SUPPORTS.

The challenge extends beyond the station boundary. Major stations are critical network and multi-modal interfaces, and a local disruption can affect transfers, onward journeys and the reliability perceived across the complete journey. Station management must therefore consider two operational perspectives simultaneously:

- the internal performance of the station, including passenger movement, asset availability, safety, accessibility, information and resource deployment; and
- the station's contribution to network performance, including platform capacity impacting dwell time, service recovery, connections and the propagation of disruption.

These perspectives are closely related. A decision that appears effective within one part of the station may create a problem elsewhere. An action that supports train service recovery may increase crowding or reduce connection time. A measure that protects passenger flow may require coordination with network control or changes to passenger information. Operational success depends on recognizing these trade-offs early enough to act.

That requires a shared operational picture. Station teams need more than separate views of trains, passengers, assets and incidents. They need to understand how a change in one part of the system may alter conditions in another, which objectives are at risk and where human attention is most urgently required.

If AI produces additional alerts without establishing relevance, priority or operational consequence, it increases cognitive workload rather than reducing it. Its value begins when it helps connect fragmented information and supports a more complete interpretation of the station's changing operational state.

2. THE OPERATIONAL DECISION PROBLEM

Railway stations have long been managed through a combination of operating procedures, professional experience, local knowledge and specialized systems. These remain essential. Artificial intelligence does not remove the need for any of them.

The difficulty is that operational decisions increasingly depend on information distributed across

specialized systems. Each may provide an accurate view of one part of the operation, but no single system necessarily explains how conditions are interacting or what their combined consequences may be. For a station team, the problem is not simply the volume of available data. It is the effort required to identify what matters, reconcile different sources and interpret the operational significance before the decision window closes. Opera-

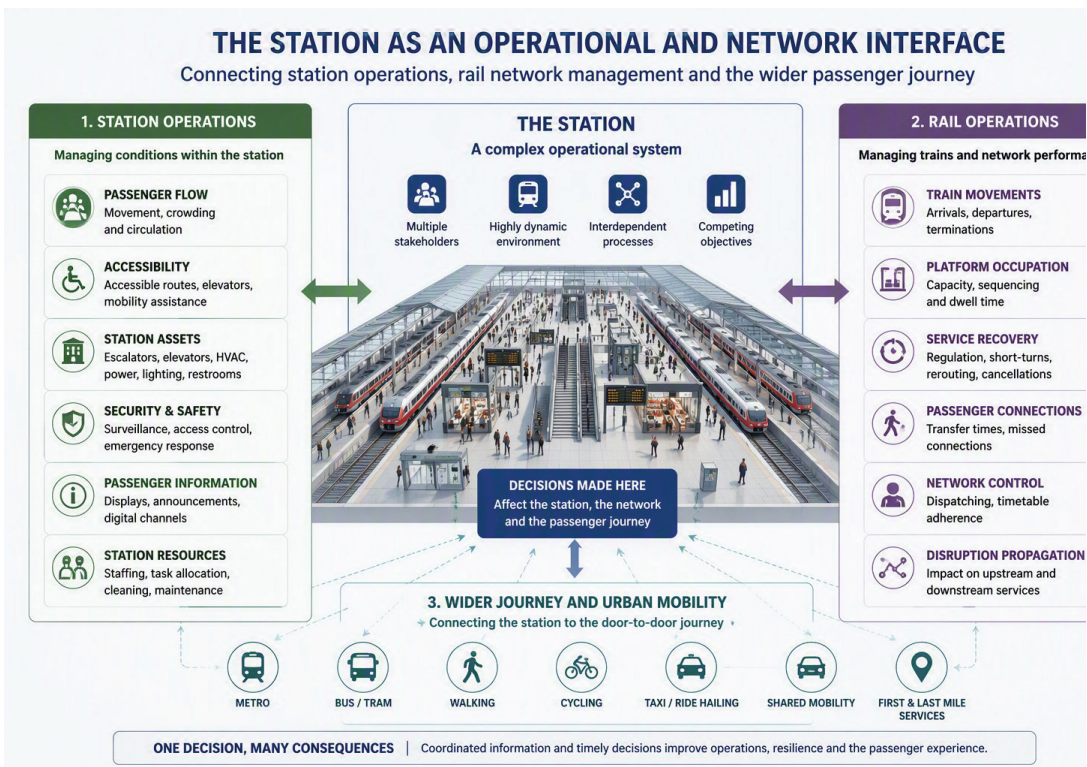


FIGURE 2. THE STATION AS AN OPERATIONAL AND NETWORK INTERFACE.

From Distributed Information to Coordinated Operational Action

Making better decisions in complex and time-sensitive environments

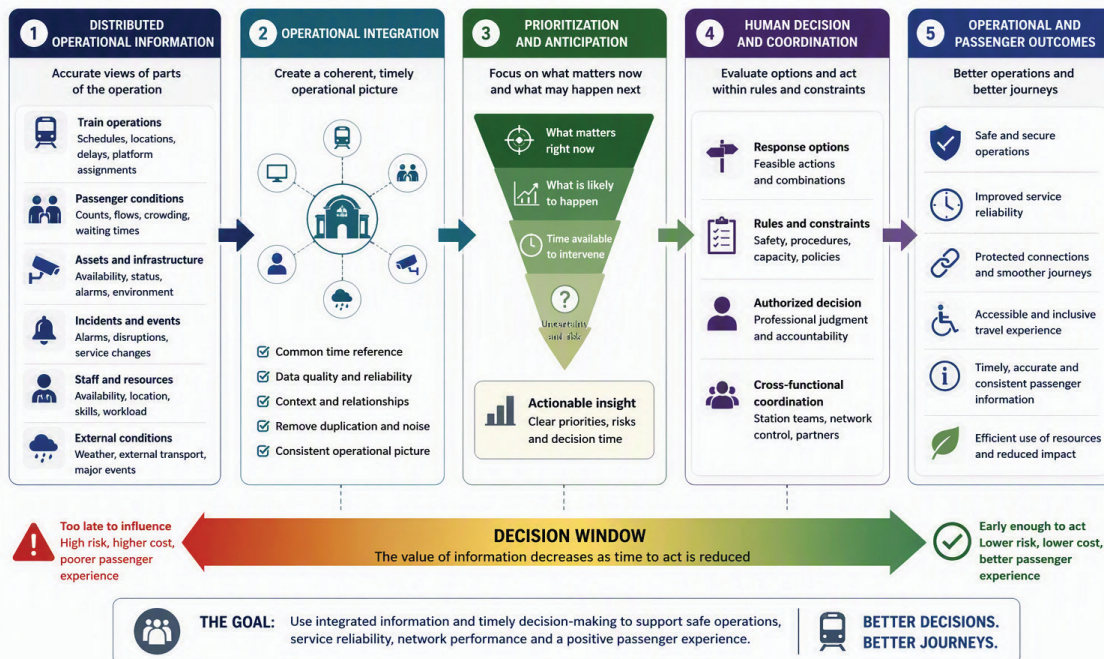


FIGURE 3. TURNING DISTRIBUTED INFORMATION INTO COORDINATED OPERATIONAL ACTION.

tors must therefore work with an operational picture that is both incomplete and continuously changing.

Traditional monitoring systems are effective at reporting states and events: a delayed train, an unavailable asset, increasing passenger density, a platform change or an activated alarm. These observations are necessary, but they do not by themselves establish how events are related, what may happen next or which action should receive priority.

Because time is critical to that distinction, the value of information depends not only on its accuracy but also on whether it reaches the appropriate decision-maker early enough to influence the outcome, meaning a reliable crowding forecast delivered after a platform has become congested has limited operational value, just as passenger information is most effective when it allows passengers to adjust before uncertainty becomes confusion.

The operational value of AI therefore lies partly in extending the decision window: detecting develop-

ing conditions earlier, assessing their significance more quickly and giving teams additional time to coordinate a response. It also depends on understanding the relationship between local and network performance. A station decision can affect dwell time, platform availability, train sequencing, service recovery and passenger connections. Similarly, a network-control decision can quickly change passenger demand, information requirements and resource priorities within the station.

A useful decision-support capability must connect the current operational state with what may happen next, the time available to intervene, the applicable constraints, the feasible response options and the potential consequences for the station, the network and passengers. The value of decision support lies not only in integrating operational information, but in establishing relevance, anticipating consequences and presenting feasible options while there is still time for authorized personnel to act.

Operational decisions remain subject to safety requirements, delegated authority and professional judgment. Railway operations rarely allow decisions to wait for complete certainty. The objective is not a theoretically perfect answer, but a safe, workable and well-informed decision within the time available. That is the operational decision problem: converting fragmented and time-sensitive information into coordinated action before local conditions affect service reliability, network performance or the passenger journey.

3. AI AS DECISION SUPPORT, NOT AUTONOMOUS DECISION-MAKING

Artificial intelligence is often discussed in terms of how many tasks it can automate. For railway station operations, that is not the most useful starting point.

MONITORING IDENTIFIES A CONDITION. DECISION SUPPORT ESTABLISHES ITS RELEVANCE, LIKELY DEVELOPMENT AND OPERATIONAL CONSEQUENCES.

FROM AI ANALYSIS TO ACCOUNTABLE OPERATIONAL ACTION

AI as Decision Support, Not Autonomous Decision-Making

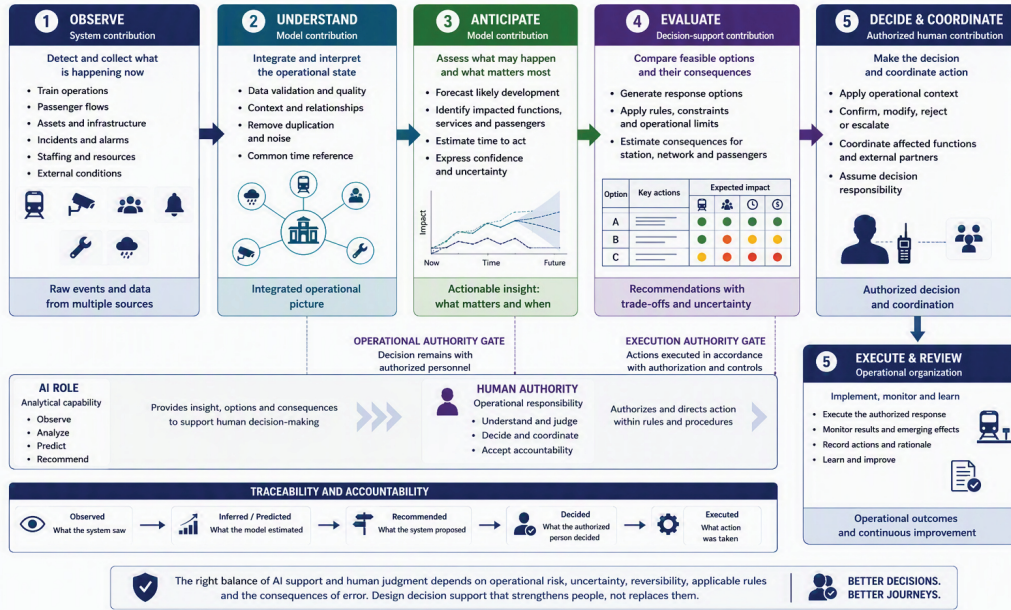


FIGURE 4. FROM AI ANALYSIS TO ACCOUNTABLE OPERATIONAL ACTION.

The more important question is whether AI can help authorized personnel understand a developing situation, evaluate feasible responses and make a safe, timely and accountable decision.

Railway operations already use automation extensively. Systems monitor assets, control equipment, trigger alarms and execute predefined actions within established parameters. These capabilities are valuable when conditions, rules and permitted responses can be specified in advance.

Operational decision-making becomes more difficult when conditions are uncertain, objectives conflict or the consequences extend across several functions. A platform change or disruption response may require teams to consider train performance, passenger distribution, accessibility, staffing, connections, information and network effects simultaneously. The appropriate action depends on context, not solely on detecting an event.

AI can support this process by integrating operational information, detecting developing conditions, anticipating possible consequences and presenting feasible response options. Its purpose is to strengthen human decision-making, not to assume operational authority. These capabilities do not constitute a decision. A forecast indicates what

may happen. A risk score indicates the relative significance assigned by a model. A recommendation presents an analyzed course of action. None automatically establishes what the railway should do.

Analytical capability does not confer operational authority. AI may identify, predict and recommend; the railway must define who decides, who acts and who remains accountable. Decision support must preserve the distinction between observation,

inference, recommendation, authorized decision and executed action. A useful recommendation must communicate uncertainty. Predictions are not facts, and confidence may vary with data quality, operating conditions and how closely the current situation resembles the conditions under which the model was developed or validated.

A recommendation should show its operational trigger, principal evidence, applicable constraints, expected consequences and associated uncertainty.

The information presented must remain proportionate to the decision. During a rapidly developing incident, operators cannot examine a lengthy technical explanation before acting. The system should provide a concise recommendation, the principal reason for it, the most important consequences and any critical uncertainty. Explainability must support action, not merely satisfy documentation requirements.

A common operational picture does not mean that every function receives the same screen, alert or recommendation. It means that station, maintenance, security and network-control teams work from consistent information while seeing the detail relevant to their responsibilities. Some predefined actions may be automated when operating conditions, authority and safeguards are

THE CONTINUOUS OPERATIONAL DECISION-SUPPORT CYCLE

Turning information into better operational and passenger outcomes



FIGURE 5. THE CONTINUOUS OPERATIONAL DECISION-SUPPORT CYCLE.

clear. Actions with significant safety, service or passenger consequences require the authorization and oversight defined by the railway organization. The boundary should depend on operational risk, uncertainty, reversibility, applicable rules and the consequences of error, not simply on whether the technology can perform the task.

Human oversight is meaningful only when authorized personnel understand the recommendation sufficiently to challenge it, can identify material uncertainty, and have the practical authority to confirm, modify, reject or escalate it. Personnel must also be able to intervene when the model, its data or the operating context is unreliable.

AI should reduce cognitive workload, not transfer hidden complexity to the operator. Additional alerts, unexplained scores or repeated recommendations may increase workload even when individual outputs are technically accurate. Decision support creates value when it filters noise, directs attention to material changes and presents information in a form aligned with the operating task.

Professional judgment remains essential because railway decisions are made within safety obligations,

operating procedures, local conditions, passenger needs and organizational responsibilities. Experienced personnel may recognize relevant conditions that are absent from the available data or insufficiently represented by the model. Judgment is not infallible, however: decisions should be reviewable, outcomes measured and recurring differences between recommendations and operational choices examined.

AI can contribute speed, consistency and analytical reach. People contrib-

ute authority, contextual judgment, coordination and accountability. The objective is not an autonomous station, but a station in which authorized teams can make better-informed decisions and act while there is still time to improve the operational and passenger outcome.

4. FROM OBSERVATION TO BETTER DECISIONS

A station does not improve its performance simply by observing more of what is happening. Operational value is created when observation leads to understanding, anticipation, coordinated action and learning. Operational decision support is a continuous process. Observations are placed in context, future conditions are assessed, feasible responses are evaluated, authorized actions are coordinated and outcomes are reviewed to improve both operational performance and future decisions. The stages are connected, but they do not always occur as a simple linear sequence. New information may require a forecast to be revised, an option to be reconsidered or a decision to be adapted while it is being implemented. Human authority, operational rules and traceability must apply throughout the cycle.

OBSERVE

Because observation establishes the current operational state, its objective is not to collect every

available data point, but rather to identify the conditions that are material to decisions that may need to be made. Furthermore, the quality of this observation depends on more than sensor coverage; information must be sufficiently timely, reliable, and consistent for its intended operational use, meaning missing, delayed, or contradictory information should be visible rather than concealed within an apparently complete operational picture, where AI can help by detecting and prioritizing changes that require investigation or intervention.

UNDERSTAND

While understanding places observations in operational context and AI can help connect information from different sources, decision support must distinguish evidence from inference and avoid presenting statistical correlation as operational cause. At this stage, station teams need to answer three questions:

- Why does this condition matter now?
- Which functions, services or passengers may be affected?
- Which operational objectives or constraints are at risk?

ANTICIPATE

Anticipation examines how a situation may develop if existing conditions continue or if no intervention is made. Every forecast should include a time horizon and an indication of uncertainty. A crowding forecast covering the next few minutes supports a different decision from an estimate of asset failure over several days. Anticipation does not eliminate uncertainty; it helps authorized personnel determine whether early action, further information or continued monitoring is appropriate.

EVALUATE

Evaluation connects the expected development of the situation with feasible response options. The relevant question is not simply, "What is the optimal response?" Railway operations rarely involve a single objective. Every option must balance safety, operating rules, available resources, accessibility, network conditions and the time remaining to act. Decision support should also consider the consequences of inaction. Not every prediction requires immediate intervention, and acting too early may introduce unnecessary disruption or consume limited resources. The preferred recommendation

is therefore not always the one with the highest modeled benefit. It is the option that can be implemented safely, reliably and effectively under real operating conditions.

DECIDE AND COMMUNICATE

A decision creates operational value only when it can be authorized, coordinated, executed and communicated. Authorized personnel must determine whether to accept, modify, reject or escalate a recommendation. Rather than being the final step after an operational decision, communication is an integral part of the decision's execution that determines whether staff and passengers can respond effectively.

Different audiences require different levels of detail, but the underlying operational message must remain aligned. A passenger display, mobile notification, public announcement, staff briefing and control-room instruction should not present conflicting versions of the same situation. Control functions may require assumptions and constraints, while passengers need concise, accessible and actionable guidance. Information should reflect different passenger needs, but essential messages must remain available through accessible station channels and informed staff.

Passenger information should also account for different needs and circumstances. A platform change may have a different impact on a daily commuter, a passenger making a short connection, a family traveling with luggage or a passenger requiring a step-free route or mobility assistance. Digital personalization may support some passengers, but essential information must remain available through accessible station channels and staff. Timeliness is as important as accuracy. Information delivered after passengers have committed to an unsuitable route or missed a viable alternative connection may be factually correct but operationally ineffective. Communication should therefore be evaluated as part of decision quality, not only as a customer-service output.

LEARN

The cycle is incomplete until the outcome is reviewed. After a decision has been implemented, the railway should be able to determine:

- Whether the expected condition occurred;

- Whether the response was executed as intended;
- Whether the anticipated benefits were achieved;
- Which unintended consequences emerged;
- Whether passengers received timely, accessible and consistent information;
- Whether the data, model, procedure or operational response should be adjusted.

Learning requires a record of what was observed, what the model inferred or predicted, what the system recommended, what authorized personnel decided and what action was executed. Without that traceability, it may be difficult to determine whether an unsatisfactory outcome resulted from the data, the model, the recommendation, the decision, implementation or a subsequent change in operating conditions. Outcomes should be assessed through operational and passenger measures appropriate to the decision, including intervention time, service recovery, crowding, connections, accessibility and passenger-information performance.

These measures should not be considered independently. A response that improves service recovery but creates unacceptable crowding, disrupts accessible routes or provides passengers with insufficient time to adapt cannot be considered fully successful. Likewise, a passenger-facing intervention that improves perceived convenience while weakening operational resilience may not be sustainable. Passenger perception may also differ from measured operational performance. A service may recover according to the operating plan while passengers continue to experience uncertainty, inconsistent information or missed connections. Reviewing both operational results and passenger outcomes helps identify this difference.

Human decisions should form part of the review. A recurring operational decision to reject or modify a recommendation may indicate that experienced personnel are applying relevant information that the model does not contain. It may also reveal that the recommendation is poorly explained, impractical, overly sensitive to uncertain assumptions or inconsistent with operating procedures.

Conversely, repeated acceptance of a recommendation does not demonstrate that the decision-support capability is effective unless the resulting operational and passenger outcomes are also

measured. Learning may require changes to data, models, procedures, interfaces, responsibilities, staff competence, coordination or the response itself. Ultimately, the result is not a station without disruption or uncertainty, but rather a station better equipped to recognize emerging problems, act while options remain available, and continuously improve the decisions that shape the passenger journey.

5. WHERE AI IS CREATING OPERATIONAL VALUE

Artificial intelligence creates operational value only when it improves a defined decision. The examples below illustrate different applications, but they share the same principle: AI is useful when it helps people understand changing conditions, act within the available time and improve a measurable operational or passenger outcome.

ACCESSIBLE INFORMATION: VISUALFY

Accessibility is not separate from station operations. Operational information is effective only if affected passengers can receive, understand and act on it.

Visualfy is a startup specializing in accessibility for people with hearing impairments. Its technology uses artificial intelligence to recognize sounds in the station environment and transform alarms and public announcements into visual notifications. Adapted to the railway environment through Renfe's TrenLab program, the system has been deployed at a number of commuter stations in Madrid. The operational significance extends beyond converting sound into another format. During a disruption or platform change, an announcement may affect whether a passenger remains on the correct route, reaches the intended service or knows that assistance is required. By making operational messages accessible, the system helps passengers with hearing impairments respond to changing conditions with greater independence. Accessibility is not an additional layer of station management. It is one of the conditions that determines whether an operational response works for every affected passenger.

ENVIRONMENTAL MANAGEMENT: RESPIRA®

Station environmental systems must balance energy consumption with thermal comfort, air quality and changing operating conditions. Static schedules or isolated thresholds cannot always reflect variations in passenger demand, weather, equipment status and station activity.

From Predominantly Reactive to Increasingly Anticipative Station Management

Extending the decision window to improve operational and passenger outcomes

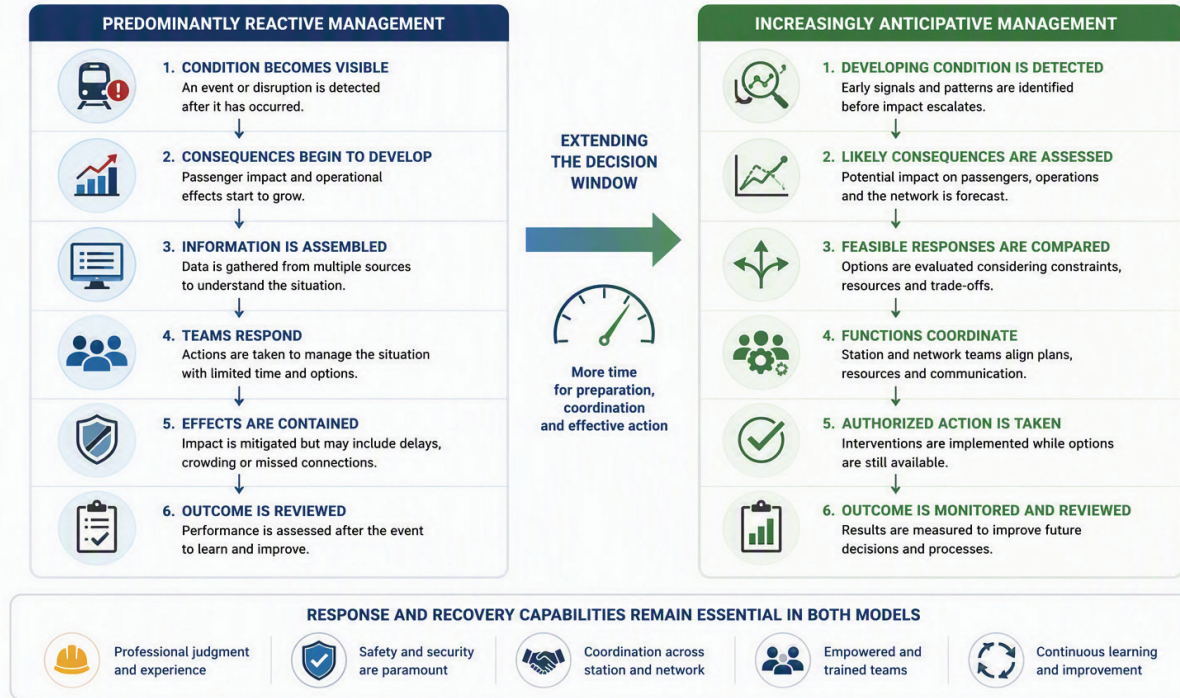


FIGURE 6. ANTICIPATIVE MANAGEMENT EXTENDS THE DECISION WINDOW WHILE PRESERVING ESSENTIAL RESPONSE AND RECOVERY CAPABILITIES.

RESPIRA®, developed by Sener, is an intelligent ventilation-control system designed for complex and connected spaces, including railway and metro networks. It uses dynamic algorithms to consider variables including temperature, humidity, air quality, comfort and electrical consumption. According to defined operating criteria and real-time readings, it modifies parameters in existing installations, including fan setpoints. The system offers different operating modes so that efficiency, comfort or other defined objectives can be prioritized.

One documented deployment covers the conventional Barcelona Metro network: 125 stations across five lines and 91 kilometers, with 324 axial fans managed through the centralized system. The available reference also reports energy savings of approximately 20 to 30 percent for this type of technology, depending on the building and the installation's starting condition. The case is relevant because it shows AI operating within an existing engineering and control environment. The system does not pursue lower energy consumption independently of other requirements. It evaluates several connected variables

and adjusts existing equipment according to the selected operating objective.

ANTICIPATING DISRUPTION

Forecasting passenger demand, crowding, connection risk or asset deterioration can give station teams additional time to intervene. Prediction alone, however, does not improve resilience. The decisive measure is not forecast accuracy in isolation. It is whether the forecast enables an earlier action that reduces crowding, protects connections, supports service recovery or prevents a local condition from escalating. Prediction becomes operational value only when it provides enough time and confidence for the railway to change the outcome.

PASSENGER INFORMATION AND JOURNEY CONTINUITY

Passengers rarely need more operational data. They need clear information that helps them make the next decision in their journey. Personalization must not create competing versions of operational reality. Displays, announcements, mobile notifications and station staff should work from the same authorized information. What may change is the language, format, sequence, level of detail or

relevance to a particular journey. Digital channels should also complement rather than replace accessible station information and informed staff. The value of the technology lies not in producing a more sophisticated message, but in helping passengers understand what has changed, identify a workable next step and act before the available alternatives disappear.

ONE TEST FOR EVERY APPLICATION

These applications address different station functions, but they should be judged by the same test:

- What operational decision is being improved?
- Who has authority to make or approve that decision?
- What action becomes possible earlier or with better information?
- What operational or passenger outcome improves?
- How is that improvement measured?

An application that cannot answer these questions may demonstrate technical capability, but it has not yet demonstrated operational value. AI becomes part of the railway's operating capability when it connects reliable information to a defined decision, supports accountable action and produces an outcome that matters to the station, the network or the passenger journey.

6. FROM REACTIVE TO ANTICIPATIVE STATION MANAGEMENT

Station teams frequently respond to conditions after they become visible: a train is delayed, passenger density increases, an asset becomes unavailable or a connection is placed at risk. Reactive management will always remain necessary. Not every disruption can be predicted or prevented, and railways must retain the competence, procedures and resources required to respond safely. Better-integrated information and artificial intelligence create an opportunity to move more decisions into the period before consequences become difficult to manage.

The transition should be measured through balanced operational and passenger outcomes, not by the number of AI applications deployed. These outcomes must be considered together. An action

that improves train performance while creating unacceptable crowding, weakens accessibility or reaches passengers too late cannot be considered fully successful. Anticipative management requires a balanced view of station performance, network consequences and the complete passenger journey. Technology alone cannot produce this transition. Station operations, network control, maintenance, security, accessibility and passenger-information functions need consistent information, defined responsibilities and prepared responses. Anticipative management depends on three organizational capabilities:

1. Operational readiness: defined responses, trained personnel and coordination across station and network functions.
2. Decision readiness: reliable information and feasible options presented with sufficient context and time to act.
3. Organizational learning: traceable decisions, measured outcomes and continued improvement of data, models, procedures and coordination.

The transition should be incremental. Railways should begin with decisions that have clear operational owners, feasible responses and measurable consequences, particularly where fragmented or delayed information currently limits action. This keeps investment focused on demonstrated operational and passenger value. The most valuable applications may not be visible to passengers. Passengers may never know that increasing demand was anticipated, that station resources were deployed earlier, that an accessible route was protected or that environmental systems were adjusted to changing conditions.

What passengers experience is the result: a connection preserved, an obstacle avoided, clearer information, a more reliable service and a journey that remains manageable when conditions change. Artificial intelligence is not the destination for better station management. It is one capability within an operating model built on reliable information, professional competence, coordinated action and accountable decisions.

The measure of success is not how intelligent the technology appears. It is whether the railway makes better decisions. Because passengers do not experience algorithms. They experience journeys.

THE REAL TRANSFORMATION IS NOT FROM HUMAN OPERATION TO AUTOMATED OPERATION. IT IS FROM REACTING AFTER CONSEQUENCES APPEAR TO ACTING WHILE BETTER OPTIONS REMAIN AVAILABLE.

PLANS FOR A TRANSFORMATIVE HSR NETWORK

CONNECTING THE PACIFIC NORTHWEST MOVING FORWARD.

Contributed by: Ken Sislak, AECOM

In September 2026, the Washington State Department of Transportation (WSDOT) shared a major project status update on the Cascadia High-Speed Rail initiative. The state has officially wrapped up the second of four phases of its planning roadmap and has secured critical federal approval to enter Phase 3, initiating the process to map out potential route alternatives for a bullet train spanning Oregon, Washington, and British Columbia.

THE MULTI-PHASE ROADMAP AND 2026 FOCUS

WSDOT's high-speed rail planning is broken down into structured technical and conceptual phases:

- PHASE 1 & 2 (COMPLETED): Established baseline feasibility and the initial framework. Assisted by the FRA grants, WSDOT is currently assembling its comprehensive Service Development Plan.
- PHASE 3 (ACTIVE LATE 2026): Focuses on identifying broad geographic route corridors. Engineers must navigate the complex terrain of the Pacific Northwest, assessing factors such as employment centers, travel demand, environmental impacts, protected lands, waterways, and active volcanic zones. Because bullet trains function optimally on flat, straight trajectories, analyzing these natural hazards is critical.
- PHASE 4 (UPCOMING): Will narrow down the selected routes to exact alignments and solidify conceptual engineering designs, business models, funding configurations, and international governance agreements.

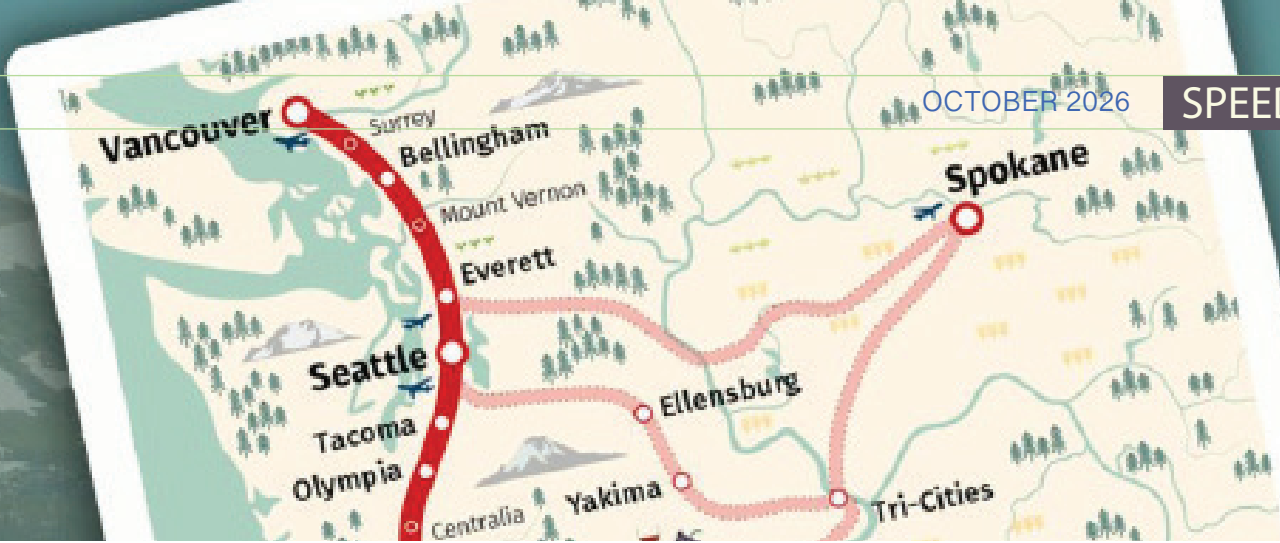
THE PURPOSE: RELIEVING THE I-5 CORRIDOR

As population growth and bumper-to-bumper traffic congestion threaten mobility across the Pacific Northwest, transportation officials recognize that widening highways is an unsustainable and costly approach. The Cascadia mega-region is projected to gain an additional 3 to 4 million residents by 2050. Under the direction of Program Administrator Ben Tripousis, the WSDOT Cascadia High-Speed Rail and I-5 Program is tackling these future gridlocks simultaneously.

Proponents point out that adding a single lane in each direction to Interstate 5 would cost an estimated \$108 billion and succumb to induced demand almost immediately. Conversely, building a brand-new high-speed rail line is estimated to cost between \$24 billion and \$42 billion (in 2017 dollars) while generating up to \$355 billion in regional economic growth, delivering an exceptional 8:1 return on investment.

INTERNATIONAL AND REGIONAL COLLABORATION

Building a mega-region transit system across international borders is no small feat. To pull it off, WSDOT is collaborating deeply with ODOT, the British Columbia Ministry of Transportation and Transit, the Cascadia Innovation Corridor, and local planning boards. True to state directives upholding Tribal sovereignty, planners are also hosting quarterly consultations to en-



sure Tribal Nations and First Nations have a leading voice in early routing and environmental choices. While securing the necessary funding remains the next long-term hurdle, these deep-rooted partnerships are putting sustainable Pacific Northwest travel firmly on the horizon.

A HOLISTIC VISION: THE I-5 MASTER PLAN

To ensure Washington isn't planning its highways and railways in silos, WSDOT officially integrated the bullet train study with a border-to-border I-5 Master Plan. Funded heavily by the state's "Move Ahead Washington" transpor-

tation package, this unified mega-program looks at the corridor through a single multimodal lens.

The I-5 Master Plan aims to maximize the efficiency of the existing highway while the rail network is developed. Key late-2026 initiatives include finalizing new ramp metering configurations, exploring city-led "Reconnecting Communities" projects to heal neighborhoods divided by the interstate, and conducting rigorous seismic vulnerability assessments on older I-5 bridges. By modeling ridership data seamlessly across high-speed rail, Amtrak Cascades, and highway usage, WSDOT can deploy smarter long-term capital investments.

SPEED AND INFRASTRUCTURE: ON THE HORIZON

The proposed high-speed train system will operate on dedicated tracks separate from slow-moving freight lines, allowing speeds of at least 160 mph and up to 250 mph. By comparison, conventional Amtrak Cascades services top out between 53 and 79 mph due to shared track limitations.

Tripousis emphasized that high-speed rail is not meant to replace Amtrak Cascades. Instead, it will serve as the region's express spine, while Amtrak Cascades and local transit lines funnel passengers to intermediate stops to create a fully integrated, multimodal ecosystem.

SHRINKING THE MAP: PROJECTED TRAVEL TIMES

By taking advantage of fully dedicated tracks and aerodynamic infrastructure, the proposed system will drastically slash transit windows. While a standard drive down the I-5 corridor currently demands three or more hours per segment, ultra-high-speed



CASCADIES IN PHILADELPHIA

^The first two of six Amtrak Airo trainsets entered service on the Amtrak Cascades route on September 30th. The Cascades service offers four daily trips between Vancouver, British Columbia; Seattle, Washington; and Portland and Eugene, Oregon. PHOTO CREDIT STV

TRAVEL CORRIDOR	CURRENT DRIVING/ AMTRAK TIME	PROJECTED HSR TIME
Seattle to Portland	~3 to 3.5 hours	~50 to 60 minutes
Seattle to Vancouver, B.C.	~3 to 3.5 hours	~60 minutes
Everett to Seattle (Commute)	~56 to 87 minutes (Rush hour)	~15 minutes

rail targets an express under one hour benchmark between major hubs:

THE FUNDING ARCHITECTURE: OVERCOMING THE PRICE TAG

The multi-billion-dollar puzzle of funding the system utilizes a tiered strategy of immediate planning injections and long-term capital frameworks:

- **Current Planning Funds:** WSDOT is utilizing a massive \$49.7 million federal grant via the Federal Railroad Administration's (FRA) Corridor Identification and Development Program, matched by \$5.5 million in state funding via Washington's Climate Commitment Act. This \$55.2+ million pool funds Phase 3 corridor selection and the upcoming 2028 Service Development Plan.
- **Future Capital Models:** Moving from paper to tracks requires deep-pocketed infrastructure allocations. WSDOT and its interstate partners are researching a mix of federal mega-grants (such as those authorized under the Bipartisan Infrastructure Law), state-backed capital appropriations, and Public-Private Partnerships (P3) modeled after the Brightline West system. Additional mechanisms under review include cap-and-invest carbon market revenue infusions and regional transit district bonding.

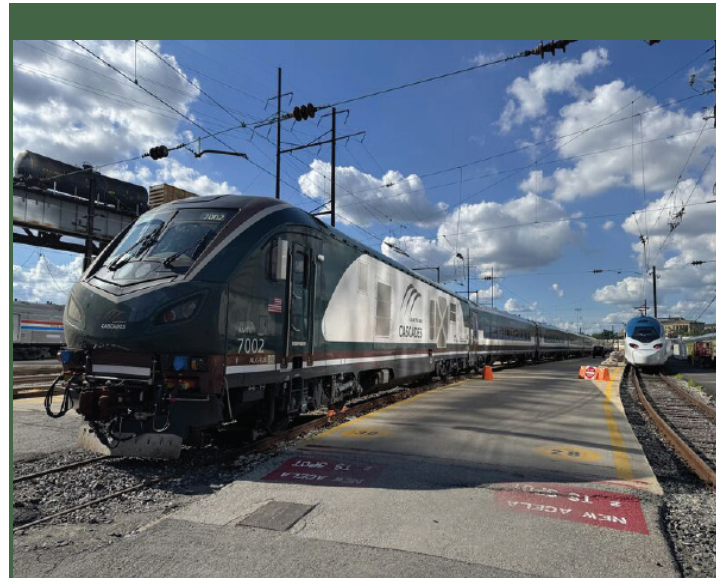
LOOMING CHALLENGES: FINANCIAL, POLITICAL, AND GEOGRAPHIC

Despite historic momentum, the path to a Pacific Northwest bullet train faces massive hurdles:

1. **The Inflation Explosion:** While initial 2017–2018 studies anticipated construction as high as \$42 billion, contemporary economic realities and skyrocketing construction costs have led independent analysts to estimate that the true price tag could easily soar past \$100 billion for the full line. Securing hundreds of billions in long-term funding remains an unresolved puzzle.
2. **Geographic and Urban Bottlenecks:** For trains to pull off 220+ mph speeds, the tracks must be incredibly straight. Forcing a straight alignment through the Cascade mountains, wide waterways, active seismic zones, and densely packed urban cores like downtown Seattle and Vancouver will require incredibly expensive tunneling and eminent domain challenges.

3. **The “Incremental” Debate:** Some regional pragmatists wonder if the “juice is worth the squeeze”. A vocal contingent argues that the region would be better served spending a fraction of that money on incremental upgrades to the existing WSDOT Amtrak Cascades Service Development Plan, such as bypassing freight bottlenecks to bring speeds up to 90–110 mph, which could shave 45 minutes off Seattle-to-Portland trips much sooner and at a lower cost.

4. **Cross-Border Governance:** Navigating the legalities, environmental standards, and political whims of two distinct U.S. states (Washington and Oregon) and a Canadian province (British Columbia) requires unprecedented, multi-layered international cooperation.



NORTHEAST CORRIDOR VISIT



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WHAT DOES THE FUTURE OF PASSENGER RAIL IN THE UNITED STATES LOOK LIKE?

At the 2026 APTA Rail Conference in Baltimore, Transit Authority explored that question during a live recording at the opening reception in the Products and Services Showcase. Former Amtrak President Roger Harris and Board Member Elaine Clegg recently joined APTA Vice President Art Guzzetti to discuss record ridership, major investments, and the evolving role of America's national passenger rail provider. While the full episode is well worth a listen, here are a few key highlights from their conversation.

The scale of current projects is significant. The Infrastructure Investment and Jobs Act allocated \$66 billion for rail, funding new trains, maintenance facilities, and major bridge and tunnel projects. Harris described it as "an incredibly exciting time to be at Amtrak and in passenger rail." He cited the recently completed Portal North Bridge near Newark, a partnership with NJ Transit, as a prime example. In Baltimore, early construction has started on the new Frederick Douglass Tunnel. Harris emphasized the importance of keeping trains running smoothly even while these major projects are underway, especially on the nation's busiest corridors, where construction can reduce capacity. Amtrak has managed this challenge successfully by relying on strong partnerships and innovative solutions.

The discussion also highlighted how rapidly travel patterns are evolving. For example, Amtrak's preparations for the 2026 FIFA World Cup demonstrate that intercity passenger rail can support major events and adapt to changing demand. Innovations such as cross-border preclearance facilities in the Pacific Northwest have improved the travel experience. Record ridership in Seattle and Los Angeles demonstrates that Amtrak's customer base includes

more than just traditional commuters. Clegg noted that event-driven and leisure travel are becoming increasingly important, as more people see rail as a convenient and even "cool" way to travel.

This growing interest is opening up opportunities for expansion. Amtrak has introduced or expanded service in Minnesota and Louisiana and is running more frequent trains on several routes. However, expansion also requires new equipment, making fleet renewal a major priority. Procurement of 800 new long-distance cars aims to modernize service nationwide, while new Acela and Airo trainsets will add capacity and advance accessibility.

Amtrak is also investing in predictive maintenance, improved communications, and better real-time information. The goal is to make all stations fully accessible by 2029, both physically and digitally, ensuring trips are more reliable and less stressful for everyone.

Harris and Clegg stressed that Amtrak cannot achieve these goals alone. Strong partnerships with suppliers, engineering firms, transit agencies, and communities are essential for building a resilient and sustainable rail network. Ongoing investment, innovation, and collaboration are needed to fulfill Amtrak's broader mission: giving Americans more transportation choices and creating a system that is stronger, more connected, and more inclusive. Their advice to the next generation of rail professionals was clear: follow your passion, stay curious, and help shape the future of rail.

AMERICA 250 AND AMERICAN RAILROADS

Contributed by: Ray B. Chambers, Association for Innovative Passenger Operations (AIPRO)

America 250 and its railroads grew in tandem. In 1764, the first “gravity railroad” began operations in Lewiston, New York. Here rails expedited movement of military loads. In 1776, the Declaration of Independence was adopted. As voting rights expanded, political parties emerged and the nation’s fragile democracy took hold. “Rail mania” began with the Massachusetts Granite Railway in 1826 and the Baltimore and Ohio Railroad and the South Carolina Railroad in 1827. By the 1830s, steam powered railroads spread rapidly across the East. In 1869, the driving of the Golden Spike completed the transcontinental railroad. That single act fundamentally reshaped the United States. Rail rapidly became the economic backbone that knit the new American Republic together.

Think about it, before the transcontinental railroad:

- Overland trips to the West by wagon train took 3-6 months depending on the route from Missouri (either the Oregon Trail or California Trail).
- Trips by sea took 3-5 months around Cape Horn.
- Early multimodal trips took about 6 weeks using a ship to Panama, crossing the isthmus by Panama Railroad, and completing the trip by ship.

These were lengthy and risky journeys. Instantaneously, with the completion of the transcontinental railroad, travelers could safely travel from New York or Baltimore to San Francisco in roughly 7-10 days. This radically changed how ordinary Americans moved, communicated, and settled, especially across the West. This continuous rail corridor allowed freight to move quickly between the industrial East and resource rich West. Agricultural products, minerals, and manufactured goods flowed through a new national market. Thus, a loose collection of regional economies became a single national economy.

The federal government could now deploy military power rapidly across the West and secure the Pacific coast politically and militarily. During World War I, after a brief struggle to stabilize rail, and then in World War II, America’s railroads became the logistical backbone of the ‘Arsenal of Democracy,’ carrying troops and military freight, enabling the rapid movement of soldiers, equipment, fuel, and raw materials. There is no question that rail was the central, indispensable subsystem that underpinned the allied victories.

Government Intervention. President Woodrow Wilson, through a Proclamation, created the United States Railroad Administration (USRA) in 1917 because the U.S. railroad system was struggling to meet the demands of World War I after the United States entered the war. Before federal control, nearly all U.S. railroads were privately owned and operated. While this fostered competition, it also created major inefficiencies. Railroads often duplicated routes instead of coordinating with one another. Freight cars were not shared efficiently between companies, causing shortages in some areas and surpluses in others.

Congestion at major rail hubs delayed shipments of troops, coal, food, and military supplies. The USRA introduced several important operational reforms:

- Standardized railroad operations across competing companies.
- Coordinated scheduling and routing to reduce congestion.
- Pooled locomotives and freight cars so equipment could be used where needed.
- Prioritized military and essential freight shipments.
- Invested in maintenance and developed standardized locomotive and freight car designs.

Although the USRA ended federal control in 1920, many of its innovations that had long-term effects were institutionalized. Railroads continued cooperating more closely after returning to private management. The experience demonstrated the value of pooling freight cars and coordinating traffic nationally. USRA-designed steam locomotives became some of the most successful and widely copied locomotive designs in American history, influencing railroad equipment for decades. In fact, China adopted USRA standards for their railroad system. The USRA showed that centralized traffic control, standardized practices, and system-wide planning could dramatically improve efficiency.

The Decline. From the Golden Spike in 1869 through the 1950s, rail was a central structural support of the American economy. Then came along a cumulative erosion of traffic, revenues, and physical plant from the late 1940s through the 1970s. The rail system peaked in 1916 with 254,000 road miles. Today it is a 140,000-mile network. Heavy-handed economic regulation strangled rail and stimulated truck and barge competition. Massive federal trust funds subsidized the highway and aviation infrastructure. Freight shifted to highway and passengers to air and road. As revenues declined, railroads postponed track, bridge, and signal maintenance, leading to slower speeds, derailments, and declining service quality. Chronic rail under investment spread across America. No major railroad earned an adequate return. Declining passenger service, changing freight markets, aging infrastructure, and heavy regulation pushed many Northeastern and Midwestern railroads controlling over 20 percent of the nation's rail mileage into bankruptcy.

The Freight Fix. In response to the decline in railroad infrastructure and service reliability came the freight fix. The Regional Rail Reorganization Act of 1973 created the United States Railway Association (USRA) as well as the framework which rolled the Penn Central and five other Class 1 Northeast carriers and several smaller railroads into the federally owned Consolidated Railroad Corporation (Conrail). It worked. At the same time came a series of freight rail deregulation laws including the Staggers Act of 1980. Deregulation did the job and a profitable nationalized Conrail was later divided between privately owned CSX and NS in 1999. This expanded the Northeast competitive network. The Freight Fix saved the freight railroad industry, which has once again become a benchmark for the world.

Passenger Fix. From the late 1940s through the 1960s, freight railroads claimed they were losing hundreds of millions of dollars annually on operating passenger trains. Regulators and the courts, however, refused to allow discontinuance of unprofitable trains. Eventually, Congress agreed to relieve the privately-owned railroad companies of their common carrier obligation to carry passengers. This was accomplished by enactment of the Rail Passenger Service Act of 1970, which was signed by President Nixon. This Act created Amtrak. Under the Rail Passenger Service Act, most private railroads agreed to transfer responsibility for their intercity passenger trains to Amtrak. In return, they were relieved of the legal obligation to continue operating those services in exchange for providing Amtrak trains priority over the general railroad network. Amtrak commenced operations in May 1971. The participating railroads contributed locomotives, passenger cars, maintenance equipment, spare parts, and other assets to Amtrak. Much of this equipment was aging and in poor condition, so Amtrak initially operated a diverse fleet inherited from many different railroads before gradually replacing it with standardized equipment.

Later, the Northeast Rail Service Act of 1981 relieved Conrail of operating commuter rail services. From that point forward, rail passenger service was primarily a public responsibility.

Truth be told, preservation of some passenger rail was really a part of the freight fix designed to relieve freight railroads of the intercity passenger obligation. Amtrak was a policy stepchild with the wrong institutional design. It was handed old assets. It received no dedicated trust fund style revenue stream to support its infrastructure as is enjoyed by its American highway and aviation competitors. Thus, for five decades Amtrak appeared before Congress each year with tin cup in hand begging for funding appropriations. It rarely received enough to meet its minimal needs. In the negotiations for funds, route decisions were riddled by politics. Struggling to survive, Amtrak had a split personality swinging back and forth between a for-profit enterprise and government agency with forced access to private company property. The Amtrak stance depended on which yielded the most advantage in a given fight. There was combat with the freight network over "forced access" to track. This war was mired in the court system right up to the Supreme Court. Congress directed Amtrak to achieve "self-sufficiency." Impossible! For a half century this transportation orphan struggled to survive.

H.R. 8870: BUILD AMERICA 250 ACT

FIVE-YEAR SURFACE TRANSPORTATION REAUTHORIZATION (FY 2027-2031)



OVERVIEW & FUNDING

\$580 BILLION
TOTAL AUTHORIZED FUNDING
Guaranteed and Authorized
over Five Years

HIGHWAY TRUST FUND (HTF)
GUARANTEED FUNDING
**\$473.8 BILLION
TO \$475 BILLION**
Allocated for highways, roads, bridges,
transit, and safety programs

I am not a critic of Amtrak. I am a critic of the process that created it. From the beginning Amtrak has been an optional add-on to an overarching transportation policy. Over the decades, I have worked with many outstanding Amtrak managers who struggled to succeed. They did the best they could with what they had. They struggle still and seek reform. They will play a critical role in the drive toward a passenger rail revival.

Passenger Fix Redux. After fifty years of under investment and incrementalism, while Europe and Japan built world class rail systems, the United States has reached the point where there is a critical need for full-scale revitalization of intercity passenger rail. I lead the Association for Innovative Passenger Rail Operations (AIPRO) soon to be renamed the North American Passenger Rail Organization (NAPRO). Collaborating with other stakeholders we are finalizing a long-term framework to launch a passenger rail renaissance.

Our intent is to devise a plan that will inform the current Rail Title reauthorization process and guide the USDOT/FRA implementation over the next three years. The plan takes a multi-step approach that is organized into seven prongs. It is predicated on a robust Rail Title in the reauthorization of the Infrastructure Investment

and Jobs Act (IIJA) that expires this year. The elements are:

- Prong 1 - Apply commercial principles to intercity operations;
- Prong 2 - Create a National Passenger Equipment Program for Rolling Stock;
- Prong 3 - Reform liability, indemnification, and insurance requirements;
- Prong 4 - Accelerate permitting, land Acquisition and environmental processes;
- Prong 5 - Establish a sustainable Rail Capital Infrastructure Account;
- Prong 6 - Assure Labor safeguards across the various reforms; and
- Prong 7 - Adopt a plan to deploy high-speed rail in select mega-regions.

Within each prong we are recommending a variety of legislative and administrative proposals to implement the over arching plan.

I am pleased to say that there has been noteworthy progress. The IIJA signed by President Biden five years ago strengthens the role of States and allows competi-



CORE FUNDING BREAKDOWN



HIGHWAYS & ROADS

**ROUGHLY
\$375
BILLION**

Total for federal-aid
highway core
programs.



BRIDGES

\$45 BILLION

Total guaranteed bridge
funding (including
\$46B formula-focused
structure & \$10B
Bridge Completion).



PUBLIC TRANSIT

**\$87.5B TO
\$103.3B**

Over 5 years
(\$87.6B specifically
guaranteed).



PASSENGER RAIL

**\$64
BILLION**

Authorized for Amtrak
& competitive rail
grant programs.

tion across intercity routes. More federal funding was appropriated for passenger rail in the IIJA than committed in the last fifty years combined. This included “advance appropriations” of \$66 billion specifically for rail.

Under a new innovative program called the Corridor Identification and Development (CID) program 69 corridors have received federal inception grants to launch new projects. The Trump Administration is progressing the CID program slowly and deliberatively, but there are open questions as to whether it will continue in the future. This largely depends on whether a dependable source of federal funding will be made available. Further, USDOT is now pushing to restructure Amtrak in a way that will move it to commercial viability and Amtrak managers are in full cooperation.

With the IIJA expiring September 30th, the reauthorization is well under way. In May, the House Transportation and Infrastructure Committee reported a five-year proposed reauthorization to the Floor of the House. HR 8870 puts intercity passenger rail on the same playing field as highway and transit programs. In other words, passenger rail is part of the core federal surface transportation program rather than a peripheral add-on as it has been for the last five decades. HR 8870 includes many items proposed in the AIPRO Reform Plan. It establishes a national passenger equipment pool for rolling stock and streamlines permitting and land acquisition processes. The largest failure of the bill is that it continues the “tin cup” funding process. It does not reauthorize the “advance appropriations” of the IIJA. Worse, it does not create any sure long-term funding.

HR 8870 does lay the foundation for significant reforms and represents real progress. Again, it lacks the most critical element—the stable and continuous infrastructure funding provided for highway and aviation competition. Our 7-Prong Passenger Rail Fix goals cannot truly succeed without a long-term funding commitment. I am an optimist. We are just at the beginning of the process. HR 8870 is the opening bid. The IIJA reauthorization must pass the full House of Representatives. Then it must clear the Senate EPW Committee (Highway portion), Senate Commerce Committee (Rail portion), and the Senate Banking, Housing & Urban Affairs Committee (Transit portion). It must pass on the Senate Floor. It must then be reconciled in a House-Senate conference and signed into law by the President. Through each step, President Trump and his team will undoubtedly have a heavy influence on the bill.

Our goal is to produce a new Golden Age for American passenger railroading. This revival will deliver a bundle of benefits that will strengthen regional economies, produce cleaner transport, and reduce congestion. I argue that building a high-performance passenger rail system is now as important to America as similar projects have been to Europe or Asia. It is time to bring our once stellar rail passenger structure back to the future. Continuing the current “tip cup” annual appropriation can only have a bad result. Much of the groundwork has been laid with the IIJA. The single priority now is to create a significant passenger rail infrastructure fund. Only then can we renew the passenger rail dream in this 250-year-old American experience. We look forward to riding the rails through the next 250!

KEY POLICY CHANGES & PROVISIONS

NO ADVANCED APPROPRIATIONS



Unlike the previous IIJA package, this bill does not front-load advanced funding.

AMTRAK STRUCTURAL SHIFT



Amtrak funding moves to an annual review structure for the Northeast Corridor and National Network.

HIGH-SPEED RAIL MORATORIUM



Temporary freeze on federal funding for California High-Speed Rail pending review.

CARGO & RAIL SAFETY



Permanent authorization of the FRA blocked-rail crossing portal & a committee on cargo theft.

MASTERING SINGAPORE'S TRANSIT: A FIRST-TIMER'S FIELD GUIDE

Contributed by: Ryuichi Takagi, PE, PMP - Senior Researcher,
Mitsubishi Research Institute, Inc.

I recently had an opportunity to visit Singapore for the first time. During my stay, I was able to get around the city very efficiently thanks to the MRT rail network, a key component of Singapore's urban transportation system, as well as the ride-hailing service Grab. This visit offered a glimpse into how the city has designed mobility as an integral part of urban life.

My trip was a quick one - just two days and one night, about 40 hours in total. I arrived early in the morning on the first day and attended a conference, then returned the following morning before catching a 2:20 a.m. flight back to Japan. With such a tight schedule, it was essential to make every movement as efficient as possible. Precisely because of this limited time, the efficiency of Singapore's transport system became especially apparent.

After landing at Changi Airport at 6:35 a.m. and clearing immigration, I immediately used Grab. Perhaps because it was still early, the roughly 25 km journey to Sentosa Island, where the conference venue was located, took only about 25 minutes. Thanks to that, I made it in time for the conference starting at 8:30 a.m.

That evening, after the conference, I met up with a Singaporean friend from my time at MIT for dinner. It was right during rush hour, but he drove from downtown to Sentosa Island and arrived quickly. He had shared his location with me on WhatsApp, and I could see that he encountered no significant traffic delays.



As we caught up over local Singaporean food, the conversation naturally turned to everyday transportation. That was when he explained Singapore's vehicle ownership system. In Singapore, one cannot own a car without obtaining a Certificate of Entitlement (COE) issued by the government through a bidding process. Prices fluctuate based on demand and are far from inexpensive. He mentioned they can reach as high as 100,000 Singapore dollars. Singapore is a city-nation with a growing population fueled by immigration. The COE system, he explained, is designed to control congestion within limited road space. Furthermore, Singapore's Electronic Road Pricing (ERP) system has long been a central pillar of its congestion management strategy, using physical gantries to charge vehicles on busy roads. The country is now transitioning to a next-generation ERP based on satellite positioning, enabling a shift from fixed, location-based pricing to more flexible, distance and usage-based charging. This virtualization is achieved through the adoption of GNSS-enabled onboard units and digital mapping technologies, which allow vehicle movements to be tracked and priced while reducing reliance on physical gantry infrastructure. Together with the Certificate of Entitlement (COE) system, these measures have enabled Singapore to maintain smooth road traffic conditions, while public transportation has become the





Singapore's Changi Airport feels less like a terminal and more like a futuristic botanical garden with its 40m indoor waterfall. Found at Jewel, it's just a short walk away after landing: T1: Direct walk from Level 1 Arrivals. T2 & T3: 5-10 min walk via pedestrian bridges.

foundation of daily mobility. Understanding this system made it clear why trains and buses are the natural choice for getting around the city. He kindly drove me back to my hotel on Sentosa Island. I would have liked to continue our conversation in the car, but the return trip was just as smooth and quick. He told me on that return trip that there is also a cable car connecting to Sentosa Island. While it is primarily a tourist attraction, it is interesting as a form of three-dimensional transportation that links parts of the city across the water.

The following day, the conference ended around 6:00 p.m. My flight was after 2:00 a.m., so even allowing for an early arrival at the airport, I still had a couple of hours to explore the city center. Despite the limited time, I was able to visit landmarks such as Gardens by the Bay, Marina Bay Sands, and the Merlion before heading back to the airport. This was made possible not only by the city's compact design but also by the efficient use of transportation systems like Grab and MRT.

Singapore's MRT is an advanced rail system characterized by safety and automation. All stations are equipped with platform screen doors synchronized with train doors to prevent accidents. Lines such as the North East Line and the Circle Line are fully automated, with trains operating at high frequency. The system is also accessible, clean, and highly efficient. SMRT (Singapore Mass Rapid Transit) is a major rail operator, while the Land Transport Authority (LTA) oversees and plans the country's transport infrastructure.

One particularly impressive feature was the underground station connected to Changi Airport Terminal 3. The spacious concourse offered excellent visibility, and the signage was well organized. It was clear that the design

prioritizes smooth movement for a diverse range of travelers. The escalators from the underground platform to the airport were relatively fast, reinforcing the emphasis on seamless mobility.

To travel to Terminal 1, I used the airport's people mover system. The vehicles are manufactured by Mitsubishi Heavy Industries and provide stress-free transportation within the airport. This system reminded me of the people mover system that I experienced at Orlando International Airport in Florida in 2023, highlighting how such technologies are shared globally. Watching the people movers pass in front of the iconic indoor waterfall at Changi Airport was truly spectacular.

Singapore's urban transportation network continues to expand. For example, the Cross Island Line (CRL), a new subway line, is under construction to connect the Changi area with Jurong. In the western region, the Jurong Region Line (JRL) will further strengthen connectivity with existing lines, making the rail network even more comprehensive.

The integration of multiple modes of transportation, including railways, ride-hailing services, and more, illustrates a truly multimodal urban system. Singapore's Land Transport Master Plan aims for 90% of journeys to be completed within 45 minutes, even during peak hours, through a rail-centered multimodal transport network. Despite my brief 40-hour stay, I gained a strong appreciation of how strategically Singapore has designed the movement of people.

From the standpoint of intra-urban mobility, the system is highly advanced; however, when viewed from the perspective of connectivity with other cities, the picture is somewhat different. While its urban transport system is highly advanced, connectivity with major Malaysian cities still relies largely on air travel and express buses.

High-speed intercity rail can play a critical role in extending economic benefits across regions. In Japan, the Tokaido Shinkansen connects Tokyo, Nagoya, Kyoto, and Osaka, home to roughly half of the country's population, in less than 2.5 hours, and has long supported Japan's





MRT Experience at Changi Airport

economic growth since its opening in 1964. Similarly, the Taiwan High Speed Rail has strengthened connectivity along Taiwan's western corridor. In particular, Hsinchu has grown into a global semiconductor hub, anchored by TSMC, supported by improved accessibility to major cities.

The value of high-speed mobility goes beyond time savings; it integrates distant regions into unified economic zones and expands opportunities for businesses and individuals. For example, in both Japan and Taiwan, high-speed rail has significantly broadened commuting areas and enabled more frequent same-day business travel. By enlarging the effective size of accessible markets, such connectivity also enables new forms of innovation and industry to emerge.

In Singapore, the RTS Link, scheduled to open in 2026, is expected to significantly enhance cross-border connectivity with Johor Bahru. In addition, intercity rail services connecting Kuala Lumpur and Johor Bahru in approximately 4.5 hours are being improved, which could contribute to broader economic development across the Malay Peninsula, as improved connectivity with other cities in the region supports further growth.

It was a short but highly productive trip. I was reminded that a city's appeal is not defined solely by the height of its buildings or the number of its tourist attractions. The ease and efficiency with which people can move around and connect to other places also play a crucial role in shaping a city's attractiveness.

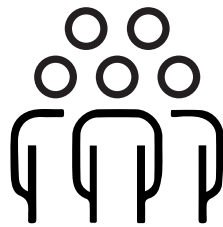


Public Transit Investment Drives Our Economy

APTA's 2026 Economic Impact Report shows how Federal investments in public transportation fuel economic growth nationwide.

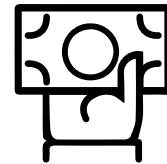
\$1 Billion in public transit investment generates:

\$5 Billion
IN ADDITIONAL GDP



41,400
Jobs

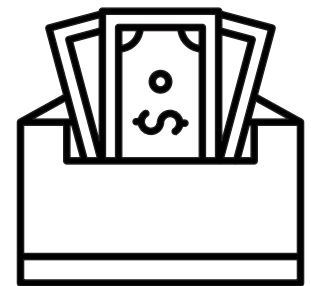
\$251
Million
IN TAX REVENUE



\$550 **Million**
IN SAFETY BENEFITS



\$3.1
Billion
IN WAGES



The *APTA Surface Transportation Authorization Recommendations* will create an additional **\$140 billion** in annual impacts on the economy.

BOARDING TIME ON LONG-DISTANCE TRAINS: USA vs. EUROPE AND JAPAN

At first glance, boarding a long-distance train in the United States and Europe appears similar: passengers gather on the platform, the train arrives, and within a few minutes it departs. But beneath that surface similarity lies a significant difference in how efficiently passengers are handled.

In the United States, Amtrak long-distance trains typically dwell for about 5–15 minutes or more at mid-sized stations such as Cleveland or Erie. During this time, passengers must board under the supervision of conductors through a limited number of doors, often just one or two per train. Because most Amtrak equipment requires passengers to climb steps from relatively low platforms, boarding is inherently slower and more sequential. The process also includes manual checks and occasional baggage handling, further constraining flow.

By contrast, European intercity and high-speed rail systems—such as those operated by Deutsche Bahn or SNCF—achieve much shorter dwell times, typically 1 to 3 minutes for high-speed trains and 2 to 5 minutes for conventional intercity services. The key difference is design: level boarding allows passengers to step directly onto trains, and multiple wide doors along each coach enable simultaneous boarding and alighting. With proof-of-payment ticketing systems, there is little need for staff to control access at the door, further speeding the process.

The result is a striking contrast. Although scheduled dwell times may look similar, European trains can move far larger numbers of passengers in the same—or less—time. Amtrak's boarding process, while functional, is more labor-intensive and less scalable, mak-

ing it harder to maintain tight schedules as passenger volumes grow.

The contrast between Amtrak and Japanese trains is strikingly different. Although there is no single “average” dwell time across all Japanese intercity trains because it varies by service type, station importance, and whether the stop is primarily for passenger exchange or for timetable regulation, such as waiting for an overtaking train. However, typical scheduled dwell times are quite short by international standards and usually not more than two minutes. Most Shinkansen stops are scheduled for about 50–60 seconds, especially on fast services such as Nozomi. Passengers are expected to queue before arrival and to be waiting by the doors before their destination. Japanese intercity railways minimize dwell time through several operational practices:

- » Passengers line up precisely where each door will stop.
- » Alighting passengers exit first with little hesitation.
- » Boarding passengers wait until everyone has alighted.
- » Conductors give door-closing signals almost immediately after passenger movement finishes.
- » Travelers are expected to gather their belongings and move to the vestibule before the train stops.

Ultimately, boarding time is not just about how long a train stops, but how effectively that time is used. In this respect, European and Japanese railways demonstrate how infrastructure and operational design can transform a routine stop into a highly efficient flow of passenger movement and disciplined timetable adherence.

RAILWAY BOARDING FLOW & EFFICIENCY: US, EUROPE & JAPAN

How Infrastructure & Operational Design Transform Dwell Times

UNITED STATES

MANUAL & VARIABLE BOARDING



DWELL TIME: 10-20 MINUTES > **BUFFER FOR MANUAL LOADING**

EUROPE

OPEN-FLOW & SECTOR ALIGNMENT



DWELL TIME: 2-3 MINUTES > **SYSTEMIC SCHEDULE ADAPTABILITY**

JAPAN

CHOREOGRAPHED & MATHEMATICAL PRECISION



DWELL TIME: < 60 SECONDS > **STRICT SECOND-BY-SECOND ADHERENCE**

Boarding time is not just about how long a train stops, but how effectively that time is used.

2026

SNIPPETS



LOSSAN CORRIDOR STABILIZATION IMPROVEMENTS PLANNING CONTINUES

The Orange County Transportation Authority (OCTA) Board continues to work on plans to improve the resiliency of a seven mile stretch of the Los Angeles to San Diego (LOSSAN) corridor through Dana Point and San Clemente, Calif., to the Orange County-San Diego County line. The rail line runs along the shore line and has been subject to considerable erosion in recent years. Emergency stabilization measures have been taken to keep the line in-service and trains running. The OCTA Board is working to complete its Coastal Rail Resiliency Feasibility Report due to be published later this year. This study is examining approaches to stabilize the corridor over the next 30 years while the state conducts a study of longer term solutions.

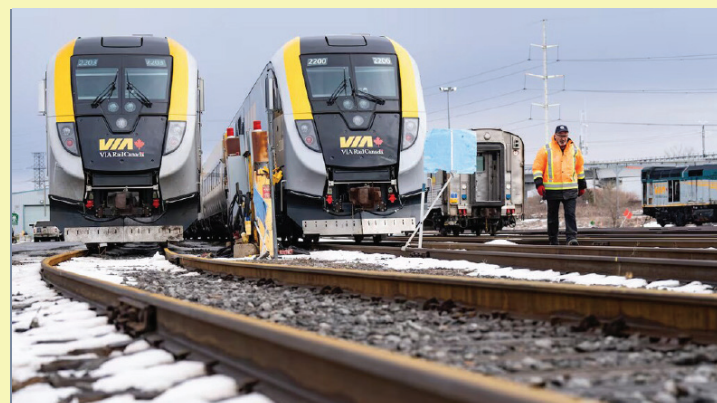
**CLICK TO READ: OCTA BOARD CONTINUES
PLANNING FOR COASTAL RAIL FORTIFICATION
ALONG LOSSAN CORRIDOR | MASS TRANSIT**

VIA RAIL SIGNS CONTRACT FOR NEW LONG DISTANCE COACHES

VIA Rail recently signed a \$4.7 billion (CAD) (\$3.41 billion (US)) agreement with Alstom to provide 313 new long distance passenger rail cars. The new equipment will be designed, manufactured and built exclusively in Canada. The new fleet will operate on eight long-distance, regional and rural routes across Canada replacing VIA Rail's existing long-distance passenger cars, some of which are more than 70 years old.

**CLICK TO READ: ALL ABOARD OHIO -
CANADA HAS JUST SIGNED A 4.7 BILLION
CAD... | FACEBOOK**

**CLICK TO READ: ALSTOM TO BUILD NEW
VIA RAIL CANADA TRAINS UNDER \$4.7
BILLION CONTRACT | RAILWAY-NEWS**



explore



HEARTLAND FLYER SERVICE FUNDED FOR ANOTHER YEAR



The Texas Legislature and DOT recently agreed to provide \$4.2 million in funding for another year to support the Amtrak operated Heartland Flyer. The service, which operates along a 206-mile long route between Fort Worth, Texas, and Oklahoma City, Okla, is jointly funded by the two states. One daily roundtrip serves four intermediate stations in Oklahoma and one in Texas. During the last Amtrak fiscal year ending September 2024, over 80,000 people rode the service which set a record for both ridership and revenue. The service continued last year after threat of its termination due to a lack of a funding line item in the Texas state legislative budget cycle. The service was continued when the Regional Transportation Council flexed the required funds to close the gap. Amtrak is currently investing over \$17 million in station improvements at the seven stations.

CLICK TO READ: TXDOT FUNDING FLEX KEEPS HEARTLAND FLYER SERVICE MOVING AFTER SECOND LEGISLATIVE OVERLOOK | MASS TRANSIT

travel



AMTRAK MARDI GRAS SERVICE A HUGE SUCCESS

Amtrak Mardi Gras Service, launched August 18, 2025 along the 145-mile corridor between New Orleans, LA and Mobile AL, has been a huge success. Over 150,000 people have ridden on the two daily roundtrips that serve four intermediate stations. These riders have generated over \$5.2 million in revenue. The service has provided a boost to regional tourism as well as encouraging signs of economic growth.

CLICK TO READ: A GOOD FIRST YEAR FOR MARDI GRAS SERVICE | RAILWAY AGE



discover



U.S. DOT

MASSIVE \$5.3 BILLION FEDERAL INFRASTRUCTURE AWARD TO MODERNIZE NATIONAL PASSENGER RAIL

Contributed by: Wendy Wenner

In a landmark initiative to revitalize the nation's passenger rail network, the Federal Railroad Administration (FRA) has finalized a \$5.3 Billion investment through the National Railroad Partnership Program (NRPP). The capital injection will fund 41 individual projects across 23 states, combining aggressive national rolling stock procurement with localized safety and infrastructure upgrades. U.S. Transportation Secretary Sean P. Duffy announced the program under the banner of a "Golden Age of Rail," framing it as a foundational step toward securing an efficient and technologically advanced future for American transit. Notably, approximately \$2 Billion of the overall package was derived from clawed-back federal funds originally designated for California's high-speed rail initiative, which federal officials criticized as an over-budget project. "Thanks to these new grants and continued support from Secretary Duffy and FRA Administrator David Fink, Amtrak is investing in vital projects that will drive economic growth, create jobs and improve and expand rail service for millions of Americans," stated Amtrak Interim President Byl Herrmann.

NATIONWIDE FLEET UPGRADES AND ASSET REINVESTMENT

A major portion of the allocation focuses directly on rolling stock modernization to resolve equipment deficits:

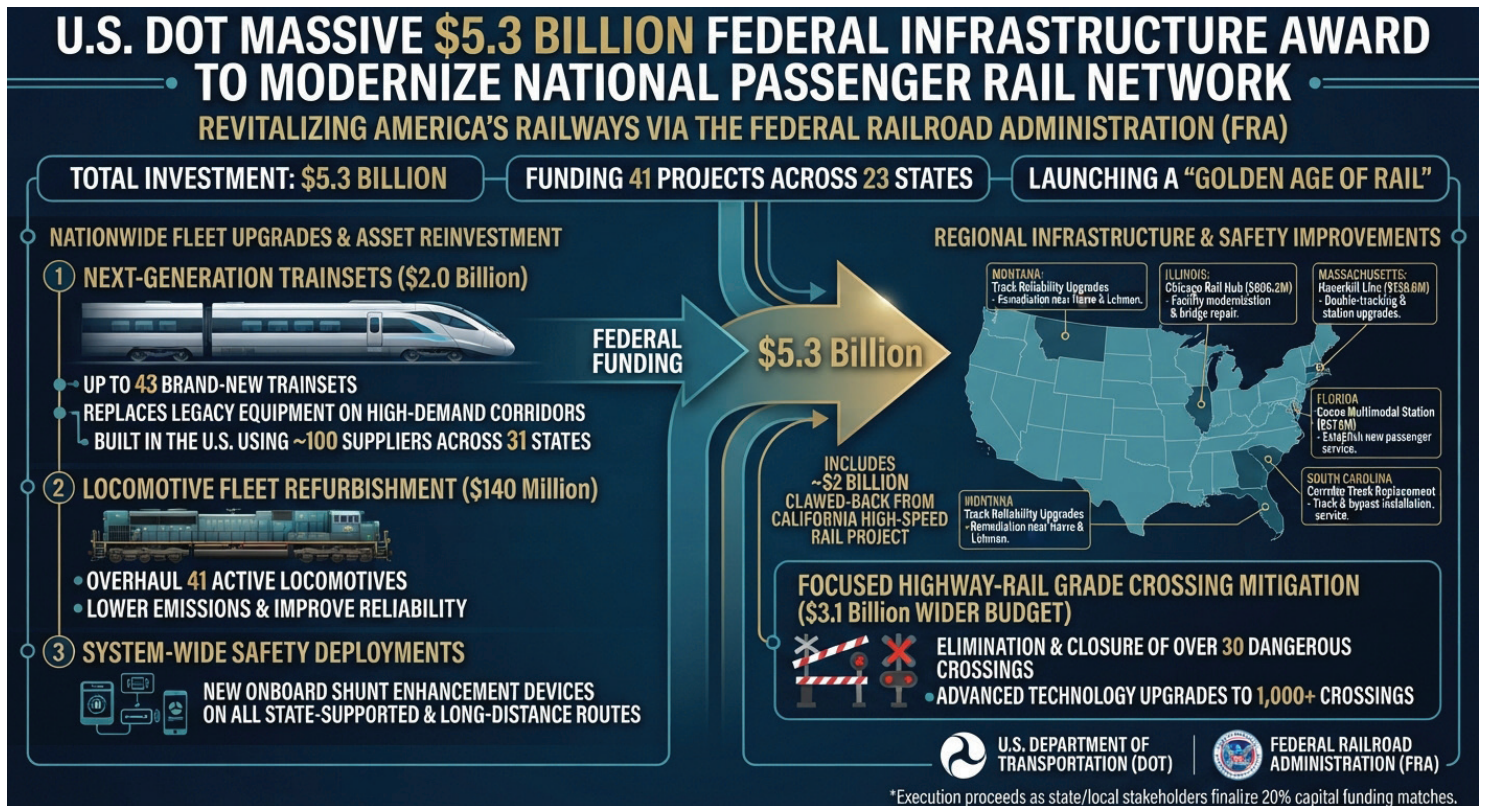
- **Next-Generation Domestic Trainsets (\$2.0 Billion):** Earmarked for the procurement of up to 43 brand-new, passenger trainsets to replace legacy equipment on high-demand State Supported corridors. Built entirely in the U.S. using nearly 100 suppliers across 31 states, the new fleet will bolster service on regional corridors like the Adirondack, Carolinian, Cascades, Downeaster, Blue Water, and Virginia lines.

- **Locomotive Fleet Refurbishment (\$140 Million):** Direct funding to overhaul 41 active locomotives operating across vital Midwest and Pacific networks to lower emissions and improve service reliability.
- **System-Wide Safety Deployments:** The package includes the integration of new onboard shunt enhancement devices across all 32 state-supported routes and all 15 long-distance lines to enhance track-signal connectivity and overall operational safety.

REGIONAL INFRASTRUCTURE AND STATE-SPECIFIC IMPROVEMENTS

The remaining capital utilizes local partnerships to target high-priority infrastructure corridors and engineering projects across multiple states:

- **Illinois** — Chicago Rail Hub Infrastructure (\$696.2 Million Total):
 - \$659 million is directed to Amtrak's largest long-distance hub for Maintenance Facility Modernization and viaduct rehabilitation. This features relocating maintenance facilities from the 14th Street Yard to the Canal Street Yard to accommodate ridership demand.
 - \$37.2 Million is allocated to the Chicago River South Branch Bridge Project to address reliability constraints on the 110-year-old structure serving Amtrak, Metra, commuter, and freight lines.
- **Massachusetts** — Haverhill Commuter Rail Line (\$139.6 Million): Awarded to the MBTA for final design and construction of the Haverhill Double-Track Project. The funding adds 6.8 miles of new track to eliminate single-track bottlenecks between Reading and Andover, installs 10 miles of safety fencing, modernizes crossing signals, and upgrades four stations with high-level, ADA-accessible platforms.
- **Florida** — Cocoa Multimodal Station (\$57.5 Million): Awarded to the City of Cocoa, in partnership with



Brightline and the Space Coast Transportation Planning Organization (SCTPO), to establish passenger service in Brevard County. Capital will fund an in-line station, localized parking infrastructure, and four additional miles of double track to optimize regional rail capacity.

- **South Carolina** — Corridor Track Replacement: In a joint initiative with CSX, funding will replace 31 miles of expired track, install 3,500 feet of bypass track, and construct dedicated station tracks for Florence Station.
- **Montana** — Track Reliability Upgrades: Infrastructure and track remediation near Havre and Lohman to minimize regional delays and improve long-distance freight and passenger transit sync.

FOCUSED HIGHWAY-RAIL GRADE CROSSING MITIGATION

Beyond specialized regional stations, over \$3.1 Billion of the wider safety budget addresses systemic physical rail risks. The FRA is prioritizing high-risk highway-rail grade crossings, specifically targeting intersections with a recurring accident history of three or more incidents, or multiple fatalities, over the last five years. Grade crossings remain the second leading cause of rail fatalities nationwide, accounting for over 2,000 inci-

dents and 200 deaths per year. The grant package mandates the complete closure and elimination of over 30 dangerous crossings, while deploying advanced technology upgrades to more than 1,000 others.

REORGANIZATION AND PROJECT MATCHING

Beyond capital expenditures, the scale of the fleet awards integrates directly with broader administrative objectives. The funding frameworks support project management provisions that assist Amtrak's ongoing operational review, following a recent Board of Directors decision to evaluate separating the carrier into distinct operational, infrastructure, and asset management bodies to establish an equitable pricing matrix for state partners.

Execution of the grants will proceed as state and local stakeholders finalize the mandated 20% capital funding matches, initiating localized procurement cycles and transit engineering hiring across the upcoming fiscal periods.

AMTRAK'S B&P TUNNEL REPLACEMENT PROGRAM

DEMONSTRATES GOOD NEIGHBOR MODEL

Contributed by: Liz Rotherham, Government Affairs Intern at Amtrak,
Student at the University of Virginia

The Baltimore & Potomac (B&P) Tunnel Replacement Program is one of the largest infrastructure investments currently underway on the nation's busiest passenger rail corridor. Built in 1873, the existing tunnel is a critical link for both Amtrak and MARC services, supporting over 14 million passengers annually. However, after more than 150 years of service, the tunnel has experienced significant deterioration, including water intrusion, structural deficiencies, and a sinking floor. Combined with geometric constraints and lack of redundant capacity, these conditions limit operational flexibility and service efficiency. As a result, trains are restricted to speeds as low as 30 mph, creating a major bottleneck along the Northeast Corridor and contributing to delays for more than 10% of weekday trains.

The effects of aging infrastructure extend beyond the tunnel itself. Along this vital corridor, the West Balti-

more MARC Station continues to serve passengers despite lacking many of the accessibility features and amenities expected of a modern transportation facility. The station currently has no elevators, ramps, indoor waiting areas, or public restrooms, creating challenges for riders, particularly those with mobility limitations and those traveling during severe weather.

To address these longstanding challenges, Amtrak is advancing the B&P Tunnel Replacement Program. At the heart of the program is the construction of the Frederick Douglass Tunnel, a modern, state-of-the-art tunnel designed for all-electric passenger trains. Once completed, the new tunnel will support speeds of up to 100 mph, significantly improving reliability and reducing travel times.

The program also includes the replacement of five bridges, including the Edmondson Avenue and Lafayette Avenue roadway bridges. They are being replaced to improve safety, enhance connectivity, and accommodate the new rail alignment.

Another major component of the program is the transformation of the West Baltimore MARC Station. Planned upgrades include enclosed waiting areas, ADA-accessible level-boarding platforms, new restrooms,





and elevators that will strengthen connections to local transit and Edmondson Avenue. Together, these enhancements will increase accessibility, elevate the passenger experience, and provide more convenient connections to regional transportation networks.

While the transportation benefits of the project are substantial, construction will inevitably affect surrounding neighborhoods. Recognizing these impacts, Amtrak has made community engagement a central component of the [B&P Tunnel Replacement Program](#). This commitment is reflected in several initiatives designed to support local priorities, expand economic opportunities, and enhance residents' quality of life.

One key initiative is the Community Investment Program, through which Amtrak has committed \$50 million in community grants to projects near the Program alignment over the life of the project. These investments support local priorities such as community development, workforce development, parks and recreation facilities, transportation improvements, open space, and historic preservation. The [Community Investment Program](#) includes a Direct Investment component for organizations that

may lack the staff, resources, or experience needed to manage a grant-funded project. Through this approach, Amtrak directly funds and manages eligible community improvements in partnership with local organizations. This allows important projects to move forward even when an organization does not have the capacity to administer a grant on its own.

Additionally, the B&P Program further promotes workforce development through partnerships with the Baltimore Mayor's Office of Employment Development, the Baltimore Workforce Funders Collaborative, and the Baltimore-DC Building Trades Council in which the program prioritizes local hiring, training, and apprenticeship opportunities. Under a Project Labor Agreement, Baltimore residents will complete at least 50% of apprentice hours and 20% of journey-level worker hours, with recruitment focused on communities most affected by construction.

Amtrak has also taken steps to minimize construction-related disruptions. Work crews are restricted to operating Monday through Saturday between 7 a.m. and 5 p.m. Additionally, sound barriers are being installed around project sites to help reduce noise levels and limit disruptions for residents.



An aerial architectural rendering shows the future West Baltimore MARC Station and surrounding neighborhood improvements as part of the Frederick Douglass Tunnel Program

Historic preservation and cultural resource mitigation are also important aspects of the program. As construction progresses, Amtrak has worked to salvage reusable materials from acquired properties and make them available for community benefit. These materials were first offered to affected and adjacent historic districts before being made available to the broader public. This effort supports both historic preservation and sustainable reuse within the Baltimore community.

Through BPTunnel.com, residents can stay informed about program developments by signing up for email notifications, text message alerts, or both. The website serves as a central hub for program updates, important information, and community announcements.

Infrastructure investments can strengthen both transportation systems and the communities they serve. By prioritizing neighborhood needs, creating economic opportunities, and maintaining open communication throughout construction, the project illustrates how large-scale infrastructure development can be balanced with community stewardship. Ultimately, the B&P Tunnel Replacement Program will modernize the NEC and create lasting benefits for Baltimore residents.



POEM

WE RAILROAD JUNKIES

BY: ERIKA MICHAEL, PH.D.

chunneled off on new track
wined, dined, bagpiped, and grooved
away on Eurostar's inaugural from Waterloo
to a red-carpet brass band greeting
by the mayor of Brussels
and a fine buffet

of Belgian gaufrettes!
Rail buffs know —
the old world-wide web feeds a hunger,
journeys of polyglot gluttony linking
stalls in halls that hawk the local chow like
Bahnhof München's Currywurst,

Zürich's cheesy Heischuechli and the much-loved
soft gelato at Milano Centrale
smoothing those grand delays in that vaulted hall
where lines spin north to Berlin's
crystalline construction — as byzantine as the old beer
flowing from Hopfingerbräu's keg with

salt-speckled pretzels.
No rails over the Atlantic yet,
so we contrail home for the specials at
Penn Station where fast grub satisfies a
grumbling gut until we get rollin'
on some of those best of trains, rockin' west on

the Lake Shore Limited to catch the smooth
Empire Builder plying roadbeds through
the continental divide from Windy City
to Emerald City
crossing plains and Rocky Mountain highs as we share
prime rib and berry pie with other track

junkies in this amethyst terrain, especially that well-loved
breakfast as the morning sky
shines on gold-yolked eggs and grits fixed
like they'd been ladled from some folks' farm kitchen
we'd just whizzed by,
like the speed of our years.



This poem is from her Erika's book
"Letting Gravity Speak," Finishing Line Press, 2023.

HIGH-SPEED RAIL CONNECTIONS TO AIRPORTS:

COMPLEMENTARITY AND COMPETITION BETWEEN AIR AND RAIL SERVICE

Contributed by:

Andrew R. Goetz, University of Denver,
Anthony D. Perl, Simon Fraser University,

Eric C. Bruun, Consultant,
Daniel Zimny-Schmitt, National Laboratory of the Rockies

This article is based on a study conducted for the High-Speed Rail Alliance (HSRA) to explore the untapped potential of providing intercity rail passenger service, including high speed rail (HSR), to Chicago's O'Hare International Airport.

The main objective of our research was to identify the effects of directly connecting major airports with intercity passenger rail systems, especially those that provide HSR service. We were interested in the effects that these air-rail linkages have on airports, air transport systems, rail transport systems and economic development for areas around airports and the regions that they serve. We focused mainly on the experiences of airports in Europe with intercity high-speed rail connections and identified lessons that can be drawn from these experiences that may be relevant to airports in the United States. We collected most of our evidence from a review of relevant literature on airport-intercity rail connections as well as three in-depth case study analyses of Frankfurt (FRA), Paris Charles de Gaulle (CDG) and Copenhagen Kastrup (CPH) airports. We selected these three airports as our cases due to their characteristics as major airports with direct on-site high-speed rail connections as well as available evidence from our initial screening.

In this article, we will focus on the following research questions:

- What are the effects of high-speed rail (HSR) linkages to airports on air and rail passenger traffic?

And, using Paris CDG, Frankfurt and Copenhagen Airports as case studies,

- Has there been a reduction in shorter-distance (under 500 km) and medium-distance (500-1000 km) flights for airports with HSR stations?
- Has there been an increase in longer-distance (over 1000 km) flights for airports with HSR stations?

REVIEW OF RELEVANT LITERATURE

There is considerable evidence in the literature confirming that HSR has been able to draw traffic away from airlines in intercity travel markets over short to medium distances (approximately 100-1,000 kilometers [km] or 60-600 miles [mi]), and even over longer distance trips (over 1,000 km or 600 mi) in China. This substitution effect occurs for both HSR services directly connected to airports as well as those which only serve train stations in a nearby metropolitan area.

Research from China shows a trend of declining numbers of air passengers from 2008 to 2014 after HSR began service in those city-pair markets (Li et al. 2019). In contrast, air travel for routes without HSR competition continued to grow. HSR affected not only short and medium-distance trips, but also longer-distance (over 900 km) routes (Zhang, et al. 2019). The market share for HSR in some city-pairs exceeded that for air transport up to 1500km (Yang, et al. 2022).

OUR MAIN OBJECTIVE: Analyze the effects of directly connecting major airports with intercity passenger rail systems, particularly **High-Speed Rail (HSR)**.

KEY AREAS OF INTEREST

EFFECTS ON AIRPORTS:

Integration with ground transport, passenger flow.

AIR TRANSPORT SYSTEMS:

Route optimization, hub connectivity, short-haul flight substitution.

RAIL TRANSPORT SYSTEMS:

Ridership growth, seamless transfers, network reach

ECONOMIC DEVELOPMENT:

Regional growth, accessibility around airports, business connectivity

European studies found that modal shift from air to rail after introduction of HSR can be considerable for specific routes. For the London-Paris route (straight-line distance of 341 kilometers), once the Channel Tunnel HSR connection was completed, the number of air transport passengers declined from 3.7m to 1.6m, while rail passengers grew from zero to 6.7m between 1993 and 2010 (Givoni and Dobruszkes 2013). The presence of HSR in an airport market had a negative impact on domestic airline traffic at that airport, ranging from -12% to -49% (Clewlow et al. 2014). Partial substitution of short-haul flights for HSR occurred at Frankfurt, Paris CDG and other major European airports (D'Alfonso et al. 2015).

While the substitution effect of rail for air in short and medium-distance markets is well-documented, there is also evidence that HSR can act as a feeder to longer-distance airline flights. Reduction in air services was found to be greater at airports that do not have an on-site HSR station as compared to those airports with HSR stations (Albalade, Bel, and Fageda 2015). This finding suggests that direct HSR connections may act as feeders to air services at hub airports with on-site HSR stations, such as Paris CDG and Frankfurt.

Additional studies have shown that the rail mode share of ground transport access to airports rose to 32% among airline passengers and 20% of employees at airports served by HSR (IARO 2018; EC 2021). These and other studies also revealed that the catchment area for airports directly connected to HSR increased over time.

LESSONS FROM SELECTED CASES

Based on initial screening and evidence compiled from our literature review, we selected three case

study airports for more in-depth analyses. The three airports are Frankfurt, Paris Charles de Gaulle and Copenhagen Kastrup. We selected these three airports for several reasons including:

- 1) High-speed and/or intercity rail station located on site at the airport
- 2) Frequent high-speed and/or conventional rail service provided at the airport
- 3) Large airport size based on total airline passenger traffic and revenues generated

FRANKFURT AIRPORT

Frankfurt Airport (IATA code: FRA) is the busiest airport in Germany and was the 6th busiest in Europe with over 63 million passengers in 2025. It is the major hub airport for Lufthansa (LH), Germany's principal airline and a founding member of the Star Alliance along with United Airlines, Scandinavian Air, Thai Airways and Air Canada.

During the 1990s, Deutsche Bahn (DB) developed and introduced high-speed rail as part of its InterCity Express (ICE) service. In 1999, a new long-distance rail station was opened at Frankfurt Airport featuring ICE high-speed rail service. Preparing to develop intermodal air-rail service at Frankfurt Airport, LH, DB, and Frankfurt Airport Company (Fraport) entered an AIRail Strategy of Cooperation agreement in 1998. A key feature of this agreement was to share infrastructure and intermodal service costs for some parts of the AIRail project equally among the three parties, while the key initial objective was to use rail to replace 20,000 short distance air traffic movements a year (Sharp 2020). Another objective was to increase the catchment area for Frankfurt Airport to 200 km (120 miles) which would become easier with

TABLE 1 CASE STUDY AIRPORTS: SUMMARY DATA

AIRPORT / CODE	DATE OF HSR ACCESS TO AIRPORT	PRINCIPAL RAIL OPERATORS	AIRPORT PASSENGER TRAFFIC 2002	AIRPORT PASSENGERS TRAFFIC 2025	PERCENT OF AIR PASSENGERS USING RAIL STATION	AIRPORT REVENUE 2019
Frankfurt (FRA)	1999	DB (German National Railway)	48.5m	63.2m	26	€3.7 billion
Paris, Charles de Gaulle (CDG)	1994	SNCF (French National Railway)	48.3m	72.0m	12	€4.7 billion
Copenhagen Kastrup (CPH)	2019	DSB (Danish State Railways)	17.6m	32.4m	60	DKK 4,346 billion
	2000	SJ (Swedish State Railways)				

Source: Airport websites and supporting studies.

frequent and reliable high-speed rail service (Vespermann and Wald 2011; Duarte Costa 2012). In 2018, LH announced a rebranding and expansion of this service into a program called Lufthansa Express Rail with an increase to 24 rail stations served by 2022. DB has also been offering a Rail and Fly program with other airlines that provides passengers with through-tickets to travel from an airport in Germany to any rail station on the DB network (Sharp 2020).

With the introduction and expansion of HSR service to Frankfurt Airport, including the AIRail, Rail & Fly, and Lufthansa Express Rail programs, the demand for short-haul air service to Frankfurt Airport from nearby cities declined. The clearest example has been on the Frankfurt-Cologne air route (135 km distance) which from the early 1990s to 2001 regularly served between 150,000 and 170,000 air passengers per year. Most of these air passengers connected to other flights at Frankfurt Airport; approximately 20-25% were origin-destination passengers (Grimme 2007). Between 1995 and 2006, LH offered 4-7 flights per day on this route (Duarte Costa 2012).

After the HSR line from Frankfurt to the Rhine-Ruhr region opened in 2002, rail passenger traffic between Frankfurt Airport and Cologne increased while air passenger traffic on this route declined. DB increased the frequency of HSR service over time; as of 2018, there were 24 round-trip trains per day on this line (Le Blond 2018). At the same time, the number of air passengers plummeted from a peak of 170,000 in 1996 to 50,000 by 2006. The number of airline seat offerings on this route also declined sharply from a high of 270,000 in 2000 to 100,000 by 2006 (Grimme 2007). By 2009, air services on this route were discontinued (Sharp 2020).

We conducted an analysis of airline data comparing daily flights departing from Frankfurt in September 1999 and September 2025. Our analysis showed that the number of daily flights under 500 km declined from 206 to 162 (see Table 2). The number of daily flights between 500-999 km increased from 146 to 171, and the number of daily flights over 1000 km increased from 237 to 333. This result supports the evidence already presented suggesting that increasing HSR service to and from Frankfurt Airport has contributed to fewer short-haul airline flights which has the effect of freeing up capacity to increase the number of longer-haul flights.

The sharpest drop in the number of flights was for those under 200 km in distance, while the declines were more modest in the 200-400 km range. The number of flights were about the same in the 400-699 km range, but increased for trips over 700 km. The total number of daily flights overall continued to increase from 589 in September 1999 to 666 in September 2025.

PARIS CHARLES DE GAULLE AIRPORT

Paris Charles de Gaulle Airport (IATA code: CDG) is the busiest airport in France and was the 3rd busiest in Europe with 72 million passengers in 2025. It is the major hub airport for Air France (AF), France's principal airline and now a subsidiary of the Air France-KLM Group. It is a founding member of the SkyTeam Alliance along with Delta Airlines, Korean Air, and Aeromexico.

The French National Railway, Société nationale des chemins de fer français (SNCF), developed the

TABLE 2 - COMPARISON OF NUMBER OF DAILY FLIGHTS FROM FRANKFURT BY DISTANCE RANGE, SEPTEMBER 1999 AND SEPTEMBER 2025.

DISTANCE RANGE	1999 DAILY FLIGHTS	2025 DAILY FLIGHTS
Up to 200km	39	19
200-299km	57	43
300-399km	39	28
400-499km	71	72
Subtotal up to 500 km	206	162
500-599km	34	34
600-699km	58	59
700-799km	21	27
800-899km	24	36
900-999km	9	15
Subtotal 500-999km	146	171
Subtotal up to 1000km	352	333
Over 1000km	237	333
Total	589	666

Source: OAG, Flight Guide Worldwide, September 1999, September 2025 and Authors' calculations.

Train a Grande Vitesse (TGV) and Ligne a Grande Vitesse (LGV) high-speed rail system during the 1980s. The first line connected the Gare de Lyon station in Paris with the city of Lyon in southeastern France commencing service in 1981. Since then, additional high-speed lines have been added in the form of a radial hub-and-spoke network with Paris at the center.

The high-speed rail station at Charles de Gaulle Airport opened in 1994 at Terminal 2. There is an automated people mover system that connects to other terminals. The HSR station is part of the LGV Interconnexion Est which is a set of high-speed rail connections that links the CDG airport to the rest of the HSR network. It provides connections to the LGV Nord to Lille and London, Brussels and Amsterdam on the Eurostar service, the LGV Est towards Strasbourg, Geneva and Zurich, and the LGV Sud-Est towards Lyon, Marseille and Milan. TGV Air is a code-sharing agreement between SNCF and Air France plus a few other airlines for passengers traveling through Paris-CDG and proceeding to several French cities by high-speed rail. It has an integrated ticket and end-to-end check-in at the railway station

with a 15-minute deadline to check-in before departure.

The introduction and expansion of HSR service in and beyond France have resulted in changes in short- and medium-distance airline service. An analysis of airline data comparing daily flights departing from Paris CDG Airport in September 1999 and September 2025 shows that the number of daily flights under 500 km declined from 214 to 107 and the number of daily flights between 500 and 1000 km also declined from 220 to 168. The number of daily flights over 1000 km increased from 260 to 369 (see Table 3). The largest drop in the number of flights was for those between 300 and 500 km in distance, which decreased from 199 daily flights in September 1999 to 103 daily flights in September 2025. The most notable examples are flights to London (341 km) which declined from 44 to 20, and flights to Brussels (271 km) which declined from 11 to 2. Because of the large decline in the number of flights under 1000 km, the total number of daily flights overall from Paris CDG dropped from 694 in September 1999 to 644 in September 2025.

TABLE 3

DISTANCE RANGE	1999 DAILY FLIGHTS	2025 DAILY FLIGHTS
Up to 200km	0	0
200-299km	15	4
300-399km	79	38
400-499km	120	65
Subtotal up to 500 km	214	107
500-599km	48	29
600-699km	71	68
700-799km	27	19
800-899km	69	50
900-999km	5	2
Subtotal 500-999km	220	168
Subtotal up to 1000km	434	275
Over 1000km	260	369
TOTAL	694	644

Source: OAG, *Flight Guide Worldwide*, September 1999, September 2025 and Authors' calculations.

COPENHAGEN KASTRUP AIRPORT

Copenhagen's Kastrup Airport (CPH) has long been the largest airport in the Nordic countries, with worldwide connections from more cities than any other airport in Scandinavia. It has been growing steadily for decades and served over 32 million passengers in 2025. About 10 percent of the trips are very long-haul transoceanic routes. As the largest hub for Scandinavian Airlines System (SAS), many of these routes use feeder flights on the same fare. SAS is a founding member of Star Alliance.

All train services from Norway, Sweden and Finland to Kastrup used to be exceptionally slow due to the water crossings where the entire train was loaded aboard a ferry across the Öresund strait. This changed with the opening of the Öresund bridge/tunnel in 2000. Kastrup is located along the route between the bridge/tunnel and the central train station in Copenhagen. Across the sound is Malmö, the third largest metro area in Sweden. From here there is a mainline northward towards the Gothenburg area, the second largest metro area and on towards Oslo, Norway. An-

other mainline goes northeast towards Stockholm, the largest metropolitan area in Sweden with several medium sized cities along the way. The Swedish X2000 is a 200 km per hour train operated by SJ, the primary Swedish passenger rail operator that provides service between Kastrup and Swedish cities to the north via the Öresund bridge/tunnel. DSB, the Danish State Railways, commenced high-speed rail service in 2019 in addition to higher-speed conventional rail service at Kastrup. Regular rail service to the Danish cities of Aarhus, Aalborg, and Odense from Kastrup has reduced demand for air service in these short-distance markets.

Kastrup airport, in partnership with the rail operators, has taken a series of measures to increase rail attractiveness as the preferred mode of transport to access flights, making it more appealing than the private car.

These include:

- Self-service check-in desks at Copenhagen Central Rail Station that allow passengers to check-in before reaching the airport and commence their journey by train without the hassle of carrying luggage, over-

coming one of the main barriers to rail adoption;

- Self-service check-in desks that are available at the airport railway station for over 30 airlines, allowing passengers to check-in their luggage and travel within the airport precinct more freely;
- A free shuttle bus links the airport railway station in one terminal to the other terminal

An analysis of airline data comparing daily flights departing from Copenhagen Kastrup Airport in September 1999 and September 2025 shows that the number of daily flights under 500 km declined from 164 to 78 and those between 500 km and 1000 km declined from 176 to 150. The number of daily flights over 1000 km increased from 77 to 126 (see Table 4). The largest drop in the number of flights was for those between 200 and 300 km in distance, which decreased from 64 daily flights in September 1999 to 30 daily flights in September 2025. There were also significant drops in the 500-600 km range and slight drops in most of the other distance categories under 1000km. Especially because of the large drop in the number of flights under 500 km, the total number of daily flights overall from Kastrup declined from 417 in September 1999 to 354 in September 2025.

CONCLUSIONS

Based on our research, there is considerable evidence for how HSR connections to airports affects both air and rail passenger traffic. For short-distance routes under 500 km, there is a competitive substitution effect where HSR introduction in these city-pair markets resulted in increased rail passenger traffic and declines in air passenger traffic. This effect is most noticeable for specific city-pairs, such as Paris-London, Paris-Brussels, and Frankfurt-Cologne which each experienced large declines in air traffic once HSR services were introduced. The evidence is less clear for medium-distance (500-1000 km) routes as the number of daily flights from 1999 to 2025 declined for Paris CDG and Copenhagen but increased for Frankfurt. During the same time, we found a strong increase in the number of daily flights over 1000 km from all three airports. This suggests that HSR may be serving as a complementary feeder to longer-distance air service at these hub airports. Due to the sharp declines in shorter-distance travel, the total number of daily flights over the 1999 to 2025 period declined for Paris CDG and Copenhagen. For Frankfurt, the declines in shorter-distance flights were offset by larger increases in the number of flights over 700km.

TABLE 4

DISTANCE RANGE	1999 DAILY FLIGHTS	2025 DAILY FLIGHTS
Up to 200km	24	9
200-299km	64	30
300-399km	31	9
400-499km	45	30
Subtotal up to 500 km	164	78
500-599km	47	30
600-699km	38	37
700-799km	24	17
800-899km	33	35
900-999km	34	31
Subtotal 500-999km	176	150
Subtotal up to 1000km	340	228
Over 1000km	77	126
TOTAL	417	354

Source: OAG, Flight Guide Worldwide, September 1999, September 2025 and Authors' calculations.

INTERNATIONAL HSR EXPERIENCE

Contributed by: SPEEDLINES Staff

Since the recovery from the COVID-19 pandemic, global high-speed rail (HSR) ridership has experienced strong and sustained growth. Ridership has been driven by the return of intercity travel, expanding rail networks, and increasing demand for low-carbon transportation. By 2024, global rail passenger traffic had fully recovered to pre-pandemic levels. Growth continued into 2025, with many major HSR operators reporting further increases in patronage. For example, Spain’s high-speed services continued to attract record passenger volumes, Taiwan High Speed Rail recorded a seven percent (7%) increase in ridership in 2024 and maintained strong demand into 2025, and several Asian and European networks reported double-digit growth on key corridors. Overall, the period from 2024

to 2025 marked a transition from post-pandemic recovery to sustained expansion, with high-speed rail consolidating its position as a leading mode of intercity travel in many regions.

The chart below shows ridership trends on high-speed rail systems worldwide that publish ridership data. The data in the chart has been collected by sifting through annual reports or other open sources available on the internet. Ridership for KTX is available in Korean language reports. Similarly, the French TGV data is available through an open data portal. SPEEDLINES staff was aided by AI to obtain and sift through the data.

HSR	OPERATOR	ANNUAL PASSENGERS (MILLIONS)						
		2019	2020	2021	2022	2023	2024	2025
ACELA	AMTRAK	3.6	1.6	.9	2.1	3.0	3.2	3.2
NEC REG		8.9	4.5	3.5	7.1	9.1	10.8	12.0
TOTAL NEC		12.5	6.1	4.4	9.2	12.1	14.0	15.2
CHINA HSR	CRH	2,290.0	1560.0	1920.0	1228.8	2940.0	4080.0	4260.0
EUROSTAR/ THALYS	EUROSTAR	19.0	11.0	4.1	14.8	18.6	19.5	20.0
FRANCE TGV	SNCF	116.0	38.0	86.2	117.0	122.0	126.0	135.0
GERMANY ICE	DB	99.2	55.0	57.2	98.1	107.9	105.6	110.0
TOKAIDO SHINKANSEN	JR CENTRAL	161.0	53.0	75.6	126.0	156.0	158.0	160.0
KOREA KTX+SRT	KORAIL	101.5	58.2	70.0	90.0	110.0	116.6	118.7
SPAIN	RENFE	22.4	7.6	12.3	23.6	31.8	39.0	46.0

In 2025, global high-speed rail demand was overwhelmingly concentrated in China, which accounted for approximately 4.26 billion passenger trips. Japan's Shinkansen system carried about 325-365 million trips, while European high-speed rail systems such as France's TGV (~135 million), Spain's liberalized HSR market (~46 million), Germany's ICE-dominant high-speed subset (~110 million), and Eurostar (~20 million) collectively represented a much smaller but mature secondary market. Each high-speed rail market is described in more detail in the sections that follow organized by country alphabetically.

AMTRAK

Amtrak operates over 21,400 route miles (34,400 km) of intercity passenger rail service across the United States. Most of this network is owned by freight railroads. Amtrak trains are restricted to 79 mph or less while operating in mixed traffic on the freight railroad system except on a few routes where speeds are authorized up to 110 mph. The 457-mile Washington–New York–Boston Northeast Corridor (NEC) route is Amtrak's most important market, generating 58 percent of its ticket revenue and serving both the Acela and Northeast Regional services. The maximum authorized speed of the Acela high-speed trains on the NEC trains is 150 mph (240 km/h) on limited segments. The Next-generation Avelia Liberty can travel up to 160 mph (257 km/h) on the same limited track segments. The design speed capability of the new fleet is up to ~186 mph but is not achievable in service due to infrastructure limitations.

Amtrak Acela runs roughly every 1–2 hours during peak travel times on key segments, with wider gaps off-peak, totaling about 20 trains per day in each direction along the NEC. Ridership has grown on the NEC and has gone from 12.5 million riders in 2019 to 15.2 million in 2025, making it one of the strongest passenger rail recoveries in North America. The first available 2026 indicators suggest the corridor is still growing, with Northeast Regional demand setting records and additional train capacity beginning to enter service. A reasonable projection is that NEC ridership could finish 2026 in the 15.5–16.0 million passenger range, assuming no major economic downturns or infrastructure disruptions. That would extend the corridor's growth beyond its 2025 record. This estimate is an extrapolation from current trends rather than an official Amtrak forecast.

CHINA

China's staggering high-speed rail ridership had another extraordinary year in 2025. The most widely cited official figure is approximately 4.26 billion high-speed rail trips during 2025, based on data from the China State Railway Group. Continued expansion of infrastructure, increasing service frequencies, and strong domestic travel demand reinforced China's position as the world's largest and busiest high-speed rail system. Continuous investment in advanced EMU trains, control systems, and power supply keeps the system fast and reliable.

By far, the high-speed rail network in China is the world's largest with over 31,068 miles (50,000 km) of operational high-speed rail lines. The Chinese high-speed rail network connects almost every major city, including remote regions, making rail the most accessible mode of long-distance travel. High-speed rail has reduced domestic air travel by nearly 30 percent in some corridors.

Chinese high-speed trains run at maximum operating speeds of 155 – 220 mph (250–350 km/h), which reduces travel times between cities when compared to driving or flying. Some routes in China operate up to 54 trains per day or almost every 25 minutes on average.

EUROSTAR

Eurostar recorded a historic high of 20 million passengers in 2025, representing approximately 3 percent growth over 2024. Demand was led by strong growth in the following corridors:

- London–Amsterdam: +18.3%
- London–Germany (via Brussels): +10.0%
- London–Brussels: +5.8%
- London–Paris: +5.0%

The opening of the expanded Amsterdam terminal in 2025 significantly increased capacity on the London–Amsterdam route and was a major driver of growth. Eurostar's record ridership growth has been supported by its Club Eurostar loyalty program, which rewards frequent travelers with points redeemable for free tickets, upgrades, and discounts. The program's tiered structure provides additional incentives through lounge access, priority services, and bonus points, helping to strengthen customer retention as demand for international high-speed rail travel continues to expand.



FRANCE

In 2025, France's TGV network carried approximately 168 million passengers across domestic and international high-speed services, marking a new historical record and continuing steady post-pandemic growth of around 3–4 percent year-on-year. France's domestic high-speed rail network carried on the order of 135–145 million passengers, representing most of the SNCF's record 168 million TGV travelers, with the remainder generated by international high-speed services across Europe.

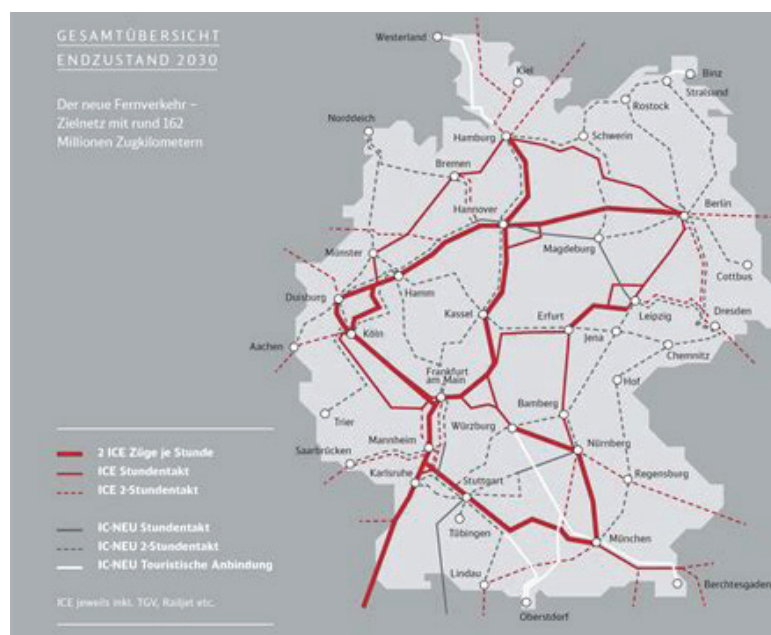
The growth in French TGV ridership in 2025 is driven primarily by the expansion of low-cost OUIGO services, sustained recovery and high occupancy in TGV INOUI operations. TGV INOUI is the premium high-speed rail service operated by SNCF in France. It is the successor to the traditional TGV brand and has gradually replaced most standard TGV services since 2017. The name "inOui" comes from the French word inouï, meaning "extraordinary" or "remarkable." OUIGO is its low-cost alternative. The ongoing modal shift from short-haul aviation to rail continues. Additional TGV growth has been supported by increased rail competition on high-speed corridors, which has lowered fares, increased frequencies and service offerings and expanded total market demand rather than simply redistributing passengers.

GERMANY

Germany is blessed with a fully integrated railway network and a fleet of 410 intercity express (ICE) high-speed trains. There are currently 35 scheduled ICE lines in Germany. This network connects major German cities and extends to neighboring countries like Austria, Belgium, France, the Netherlands, and Switzerland. Key domestic

routes include connections between major cities like Frankfurt, Hannover, Hamburg, Dortmund, Düsseldorf, Cologne, Stuttgart, Munich, Münster, Bremen, Nuremberg, Dresden, Berlin, Halle, and Erfurt. The ICE network is constantly evolving, with new trains being introduced and service adjustments happening regularly. You can learn more about the ICE network by [clicking this link to the Deutsche Bahn ICE/IC Network Map](#).

In 2025, Deutsche Bahn reported 135.8 million long-distance passengers on its DB Long-Distance (Fernverkehr) services, which include ICE, Intercity (IC), and EuroCity (EC) trains. This was up from 133.4 million in 2024, a 1.8 percent increase. Despite the slight increase in ridership, the broader rail network continues to face major operational hurdles. ICE trains accounted for approximately 100–115 million passengers of the total.



SHINKANSEN RIDERSHIP

LINE	ROUTE	2025 ESTIMATED RIDERSHIP IN MILLIONS	NOTES
HOKKAIDŌ	AOMORI – HAKODATE	~ 2–5	Still under expansion toward Sapporo
TŌHOKU	TOKYO – SENDAI – AOMORI	~ 20-25	Longest line; serves northern Honshu
JOETSU	TOKYO – KUMAGAYA - NIIGATA	~ 25–30	The line also stops at Echigo-Yuzawa, a popular gateway to ski areas.
TŌKAIDŌ	TOKYO – NAGOYA – OSAKA	~ 155-165	Oldest and busiest line
HOKURIKU	TOKYO – KANAZAWA	~ 30–40	Popular for tourism to Japan Alps
SANYŌ	OSAKA – HIROSHIMA – HAKATA	~ 50-65	Connects western Honshu to Kyushu
KYUSHU	HAKATA – KAGOSHIMA-CHŪŌ	~ 15–25	Southernmost line
TOTAL		~325-365	Figures are total boardings and include transfers. Total passengers using the system are about 110 million people annually.

As reported in a previous SPEEDLINES issue, German railway punctuality (defined as arriving within 6 minutes of schedule) continued to decline. The on-time performance of long-distance intercity and ICE trains plummeted from 73 percent in January 2023 to 60.1 percent in 2025. This marked an historic low by failing to reach DB's internal target of 65 percent. The decline in punctuality is attributed to aging infrastructure that needs to be renewed. Many parts of the network are outdated and prone to disruptions. There are numerous construction sites along many of the intercity lines as DB renews infrastructure. Punctuality peaked in distress during October 2025, when extensive infrastructure work dragged the on-time rate down to just 48.5 percent—meaning more than every second train was delayed. This 60.1 percent punctuality statistic does not factor in the roughly 480 long-distance trains that were completely or partially canceled each day. While long-distance express routes suffered heavily, regional rail routes remained significantly more reliable, averaging over 85 percent punctuality.

JAPAN

In 2025, Japan's Shinkansen network carried approximately 325–365 million passengers, heavily concentrated on the Tōkaidō Shinkansen corridor, which alone accounted

for nearly half of total ridership. Secondary trunk lines such as the Sanyo and Tōhoku Shinkansen each contributed roughly 15–18 percent of system demand, while regional extensions such as Kyushu and Hokkaidō carried comparatively small but strategically important volumes. Regional lines like Hokuriku and Kyushu serve fewer passengers but are vital for tourism and regional development. The Hokkaidō Shinkansen is expected to grow significantly once the extension to Sapporo opens, which has now been delayed to FY2038. Currently, there are seven companies governing the Shinkansen high-speed rail system serving seven different regions of Japan.

Shinkansen "boardings by line" in 2025 vary by corridor, with the Tōkaidō Shinkansen carrying roughly 155–165 million passengers and other major lines such as the Sanyo and Tōhoku routes carrying 50–65 million and 20–25 million respectively. These figures exceed the systemwide total because corridor boardings count overlapping unlinked journeys across multiple lines, whereas the official Shinkansen total (~100–110 million) measures unique linked passenger trips across the entire network. In 2025, the Tōkaidō Shinkansen had an average delay of just 1.6 minutes per train, which in-



cludes delay due to typhoons and earthquakes.

SOUTH KOREA

South Korea's high-speed rail network consists of two primary services. KTX (Korea Train eXpress) is the high-speed rail (HSR) services provided by the Korea Railroad Corporation (KORAIL), the national railway operator in South Korea. KORAIL operates intercity/regional, commuter/metro and freight trains throughout South Korea. The Korean Super Rapid Train (SRT) is a high-speed rail service in South Korea operated by SR Corporation and directly competes with KTX.

Since its launch in 2004, KTX has transformed intercity travel, reducing most major city pairs to journeys of under three hours. Trains operate at speeds up to 190 mph (305 km/h) today, with newer equipment designed for 198 mph (320 km/h) operation. There are five KTX lines in South Korea, which enables people to travel anywhere in the country within a half-day, subsequently altering people's lives and improving access.

SRT service in South Korea began operation on December 9, 2016. It was introduced to provide high-speed rail services from Suseo Station in Seoul to Busan and Mokpo, complementing the existing KTX network. The SRT offers a new high-speed rail experience, connecting the southeastern metropolitan area to other parts of the country. Unlike KTX trains that mainly depart from Seoul Station, the SRT departs from Suseo Station, located in southeastern Seoul, providing convenient access for those in the Gangnam area. SRT can be slightly faster on some routes due to its dedicated lines.

The SRT primarily operates on two main routes:

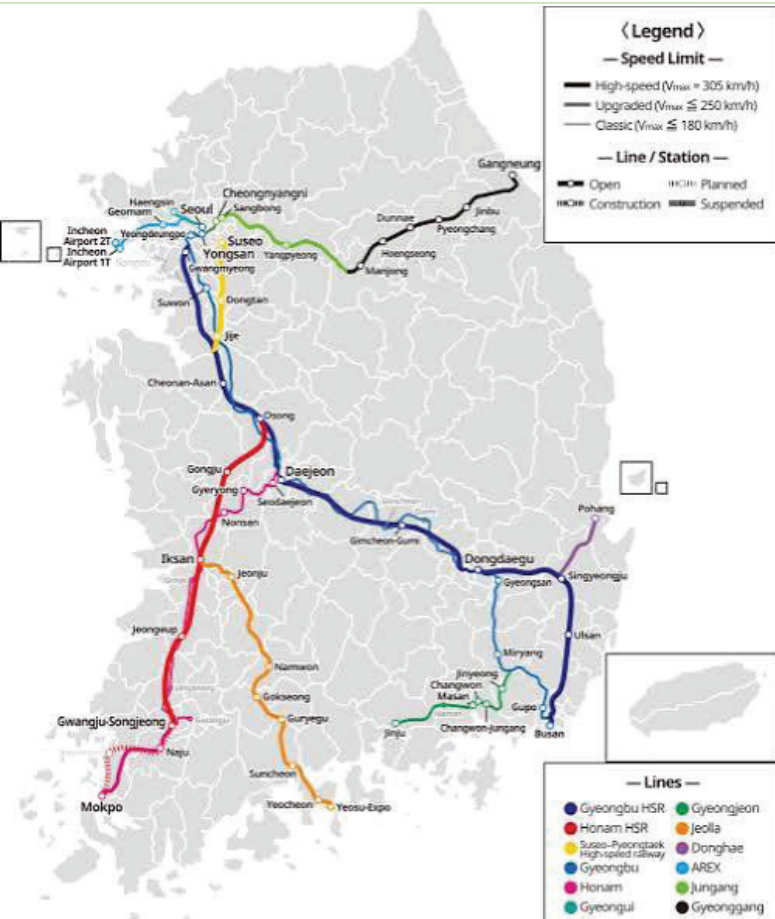
- Suseo (Seoul) to Busan.
- Suseo (Seoul) to Mokpo.

High-speed rail service in South Korea experienced a dramatic cycle of disruption and recovery between 2019 and 2025. Over the seven-year period, annual ridership initially fell sharply during the COVID-19 pandemic before rebounding to record levels, underscoring the resilience of rail travel and the growing importance of high-speed rail in the country's transportation system.

In 2019, the last full year before the pandemic, KTX and SRT carried approximately 101 million passengers. This represented a mature and well-established market, with KTX serving as the dominant operator and SRT continuing to expand its role on key corridors between Seoul and the southern part of the country. As experienced in the world, the outbreak of COVID-19 in 2020 caused an unprecedented decline in travel demand. Combined high-speed rail ridership dropped to approximately 61 million passengers, a decrease of nearly 40 percent from 2019 levels. Travel restrictions, social distancing measures, and reduced economic activity significantly affected both business and leisure travel throughout the year. Recovery began in 2021 as domestic travel restrictions gradually eased. Ridership increased to approximately 70 million passengers, reflecting renewed confidence in rail travel and the relative attractiveness of trains compared with other transport modes during the pandemic period. Nevertheless, passenger volumes remained well below pre-pandemic levels.

The recovery accelerated in 2022, when total KTX and SRT ridership reached roughly 90 million passengers. The return of business travel, growth in domestic tourism, and normalization of economic activity





helped restore demand across the national high-speed rail network. By this point, ridership had recovered to nearly 90 percent of its pre-pandemic level.

A significant milestone was achieved in 2023, when combined ridership surpassed 100 million passengers for the first time, reaching approximately 110 million. This performance exceeded the 2019 pre-pandemic benchmark and demonstrated the long-term strength of South Korea's high-speed rail market. Strong demand on the Seoul–Busan and Seoul–Gwangju corridors, along with continued population concentration in major metropolitan areas, supported this growth.

Growth continued in 2024, with total ridership reaching a record 116.6 million passengers. KTX carried approximately 90 million passengers while SRT accounted for about 26.6 million. Continued investments in rolling stock, service quality improvements, and the introduction of newer trainsets contributed to increasing pas-

senger volumes. The network also benefited from growing environmental awareness and sustained demand for efficient intercity transportation.

In 2025, Korean high-speed rail achieved another all-time record, carrying approximately 118.7 million passengers. KTX ridership reached roughly 93 million passengers, while SRT carried about 26 million. Although annual growth moderated compared with the rapid post-pandemic rebound years, the system continued to expand and solidified its position as one of the world's most heavily utilized high-speed rail networks.

Overall, combined KTX and SRT ridership increased from approximately 101 million passengers in 2019 to nearly 119 million passengers in 2025, representing growth of about 18 percent over the period despite the severe pandemic disruption. The recovery from the 2020 low point of 61 million passengers to 118.7 million in 2025 amounts to an increase of almost 95 percent. These results demonstrate both the resilience of South Korea's rail sector and the continued attractiveness of high-speed rail as the preferred mode of intercity travel for millions of passengers each year.

SPAIN

Alta Velocidad Española (AVE) is the high-speed rail service operated by Renfe, the Spanish state railway company. AVE high-speed rail service was inaugurated in 1992 connecting the cities of Madrid, Córdoba and Seville. After many years of consecutive growth, the num-



ber of passengers transported by AVE alone dropped abruptly from almost 22.4 million in 2019 to 7.6 million in 2020 due to the COVID-19 pandemic. Passenger volumes began exceeding pre-pandemic figures in 2022. AVE trains carried more than 21.5 million passengers in 2025, setting a record for the service. Spain's total high-speed market is larger than AVE alone.

Spain has become one of the world's most successful examples of open-access high-speed rail competition. Until 2021, the market was effectively dominated by Renfe's AVE services. Today, four brands compete on major corridors:

- AVE (Renfe premium service)
- Avlo (Renfe low-cost service)
- Iryo (Trenitalia-led private operator)
- Ouigo España (SNCF's low-cost subsidiary in Spain)

Rather than merely stealing passengers from one another, the competition has dramatically expanded the overall market. According to Spain's competition regulator (CNMC), high-speed ridership reached nearly 40 million passengers in 2024, making it one of the world's busiest HSR systems outside Asia. Spain's high-speed rail network continues to grow in popularity thanks to its speed, reliability, competition and expanding reach. Ticket prices fell by roughly one-third on average. Spain's high-speed rail market grew from approximately 22.6 million passengers in 2019 to nearly 40 million in 2024, representing a 77 percent increase despite the disruption caused by the COVID-19 pandemic. Preliminary data suggest that patronage continued to rise in 2025, likely surpassing 46 million passengers and further consolidating Spain's position as Europe's largest high-speed rail market.

TAIWAN

Taiwan High Speed Rail (THSR) is the high-speed rail-

way of Taiwan consisting of one line that runs approximately 350 km (217 mi) along the west coast, from the capital Taipei to the southern city of Kaohsiung. The railway opened in January 2007 reaching almost 90 percent of Taiwan's population. Construction and operations are managed by Taiwan High Speed Rail Corporation (THSRC). Taiwan High-Speed Rail (THSR) carried a record 82.07 million passengers in 2025, surpassing the previous record of 78.25 million passengers in 2024. This represents growth of about 4.9% year-over-year. In comparison, THSR carried more than 67.4 million passengers in 2019. Passenger volumes declined in 2020 to 57.2 million riders and falling to 43.4 million riders in 2021 because of the COVID pandemic. Ridership had fully recovered in 2023, with over 73.1 million annual riders on THSR trains setting a record.

The trend for THSR passenger volume in 2026 is again expected to be positive, continuing the growth trends observed in previous years. The observed upward trend in overall travel demand indicates continued strong demand for high-speed intercity rail travel in Taiwan. THSR introduced a significant service expansion starting July 1, 2025, adding 25 weekly trains, bringing the total to 1,128 weekly services. This expansion is a direct response to increased passenger volumes, especially during peak travel days like Fridays and Sundays. The added services are strategically designed to cater to the growing demand for weekend travel and intercity visits. The result of added frequencies has had a profound impact on ridership. The average daily ridership increased from about 214,000 in 2024 to 225,000 passengers per day in 2025. October 2025 set a monthly record with 7.35 million passengers, averaging 237,000 passengers per day.

THSR is implementing service enhancements in 2026, including timetable revisions, additional peak-period train services, and the arrival of the first N700S-based trainset for testing. The N700S Shinkansen-type train will be introduced into revenue service sometime in 2027. These measures are intended to expand capacity and prepare the network for continued ridership growth through the latter half of the decade. Based on the recent service expansion and the strong performance in 2024, THSR is expected to continue its growth trajectory in passenger volume throughout 2026 and into the future. Importantly though, the fact that there is so much uncertainty around the delivery



^ Japan Transport Engineering Company (Japan Sharyo) has shipped for the first time its new high-speed railway rolling stock, the "N700ST," which has been manufactured for Taiwan HSR.

of the U.S. rail megaprojects may lead some to suggest that U.S. engagement – while it may lead to close coordination and good relationships between project staff and the public – may ultimately not be that effective. If the ultimate goal of public engagement is to gather important feedback that will help shape and advance critical transportation projects that a majority of the public support, then one might argue that perhaps Americans might trade less wide-ranging public engagement on projects in favor of more decisive action and progress on projects.

Long-time NPR reporter Dan Brekke of KQED San Francisco, who recently announced his retirement, did an exit interview in which he reflected upon his many years covering transit issues, including transportation megaproject delivery. He shared his impression that in order for U.S. project sponsors to garner more public support for their projects, they need to deliver them more quickly and cost-effectively. It seems that the U.S. may have a thing or two to learn from France and Spain. In both France and Spain, project sponsors invest in comprehensive and colorful PR campaigns that highlight the benefits of rail, and they do it in ways that engage the public and build excitement. These are tools we could adapt in the U.S. to help build momentum for major rail investments.

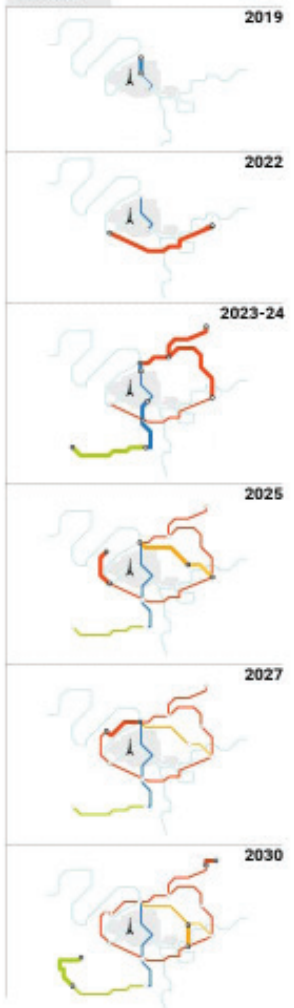
Lesson #8: Spain and France build transportation megaprojects faster and cheaper than the U.S. Members of the study trip were shocked by the low price tags of rail infrastructure projects. The world leader in efficient and cost-effective subway rail construction is Madrid. Between 1994 and 2007, the Madrid Metro network nearly tripled in size, expanding from about 71 miles (114 km) in 1995 to approximately 197 miles (317 km) by 2007, adding 126 miles of track and numerous stations. This significant expansion was part of an ambitious plan that included building a 25-mile circular line and a direct metro line to the airport, alongside other upgrades, making it one of the fastest-growing metro systems in the world at the time. Over this time period, the cost per mile of the metro expansion was \$95 million. By contrast, there are many U.S. transit expansion projects that have cost many times this amount per mile. Madrid may well be the world champion for cost-effectiveness, but even projects deemed expensive by European standards appear to be a relative bargain by U.S. standards.

THE GRAND PARIS EXPRESS



Source: Société du Grand Paris

STAGES



Other projects that seemed to offer good value by American standards include the Grand Paris metro expansion program, a program that will double the track mileage of the Paris Metro by 2030. It includes a total of 125 miles of new track– 90 percent of which will be underground. This network expansion will also include

68 new stations. The current cost estimate for this is \$49B or \$390M per mile. Though this is expensive by European standards, its cost pales in comparison to American projects like BART to San Jose, a 6-mile tunnel project that is estimated at \$12.7B. This equates to \$2.125B per mile. This is 5.5 times more expensive than the Grand Paris Express and roughly 23 as much per mile as the Madrid Metro. We won't go through all of the reasons here. One key difference though appears to be the existence of purpose-designed entities that are set up to carry out these projects. These public entities tend to have high levels of in-house capacity and are able to effectively direct projects.

When looking at model projects and programs like the Madrid Metro, a few other key factors stand out. One is the availability of sufficient and stable funding. Another is the use of tried-and-true construction methods, as well as modular station design.

Lesson #9. Not all impacts high-speed rail take form immediately. Some elements of stations and cities take time to evolve. The impacts of high-speed rail are not instantaneous or all-encompassing. Cities don't automatically reshape and optimize development around a high-speed line when it begins operation. It can take years, sometimes decades, for them to evolve.

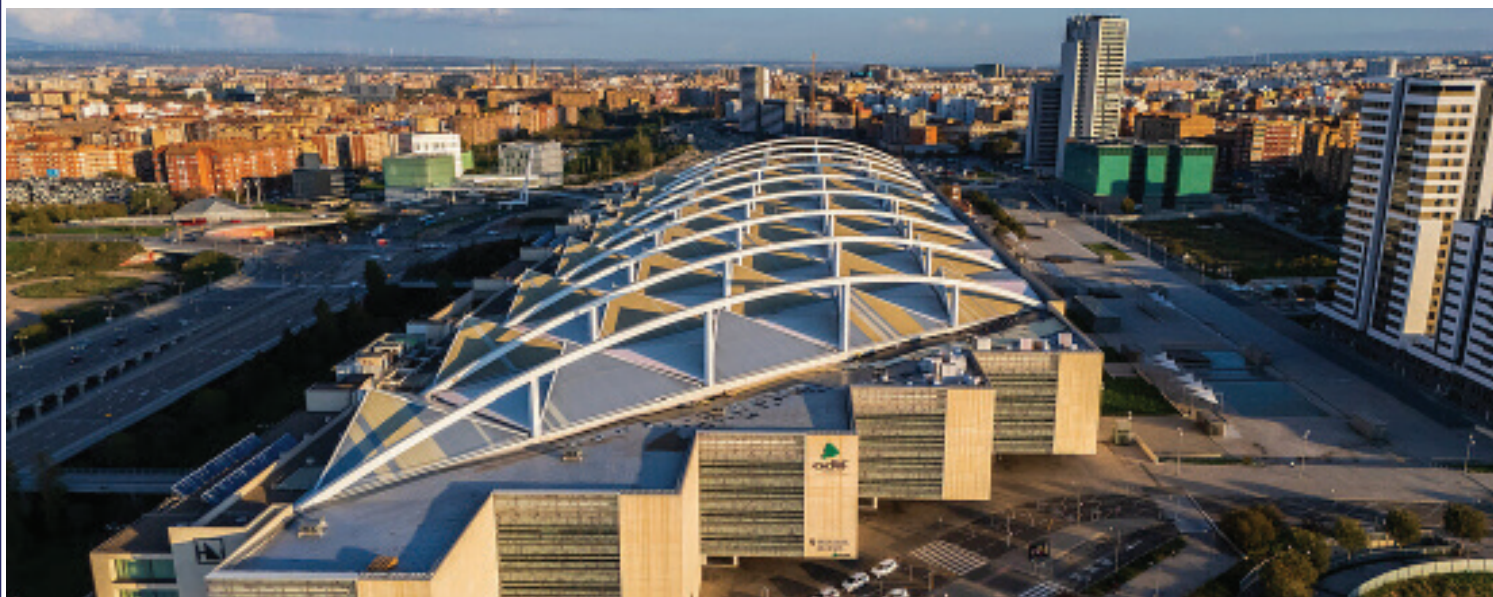
If we look at the cases of Part-Dieu and Sants again, we're reminded it took those station a few decades

to evolve from when they were originally built to the transformations that they are undergoing now. Lyon Part-Dieu was built in 1983, and its redevelopment began in the early 2010s. Barcelona-Sants was completed in the mid-1970s, and began its project in 2023, about half a century later.

The case of Zaragoza is an important one in this respect. We visited Zaragoza during this trip because we felt that it was similar in some ways to the cities in California's Central Valley where HSR is currently being constructed. Cities like Fresno and Bakersfield, for example, are similar to Zaragoza in the sense that they both occupy strategic midway locations between California's major economic centers (megaregions) along California's HSR route.

Upon arrival in Zaragoza, our first impression was that the station was very impressive. The spacious station building with its striking glass and metal roof was filled with ample natural light. It was easy to find one's way around the station. As we stepped outside, the station neighborhood felt very much unfinished. It also felt very far from the central city.

When the site was selected for Zaragoza Delicias, there were high hopes that development would sprout up around the underdeveloped area. However, development around the station site has been slower than expected due to the economic and real estate crisis following the 2008 Expo. Station area development that was planned in that timeframe did not materialize and has not yet returned.



Additionally, it seems in Zaragoza that prioritization of car access over other more sustainable and space-efficient modes around the station have made it hard to integrate the station into the existing urban fabric. At Zaragoza, the easiest way to access the station is via underground car parking, which lets out directly onto station platforms. Taking the bus to downtown, by contrast, means walking out of the far end of the station and crossing a wide roadway used by cars and taxis. When assessing the development of Zaragoza Delicias, it is important to bear in mind that Zaragoza was built much later than stations such as Barcelona-Sants and Lyon Part-Dieu, stations that were both built with auto-oriented assumptions. Now, forty years after their initial construction, these later two stations are undergoing transformations to bring them out of the auto age into a more pedestrian and people-friendly present. Perhaps we can hope that Zaragoza Delicias will undergo a similar transformation in the coming years and its station area matures.

KEY TAKEAWAYS FOR THE U.S.

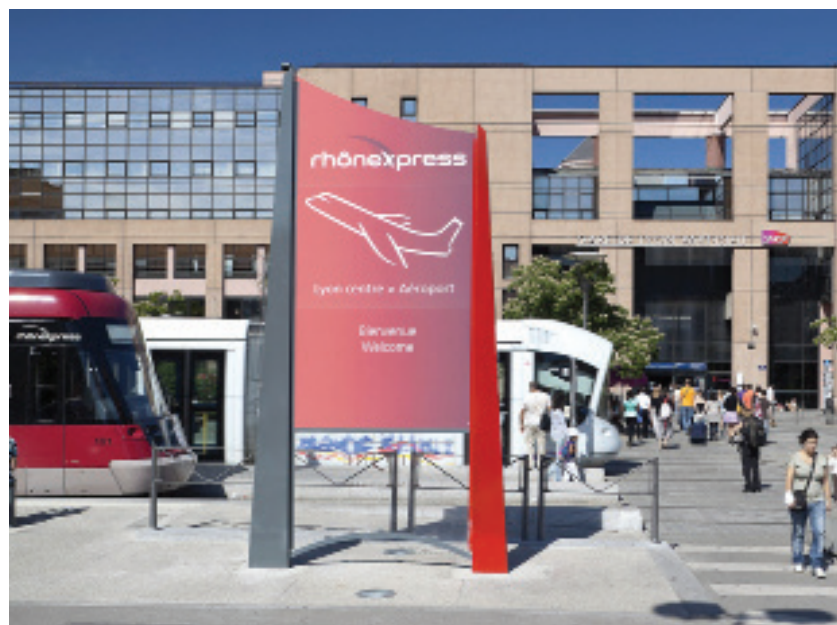
Our group's experience in Spain and France showed that high-speed rail (HSR) can be a highly competitive mode of travel, particularly in corridors of 100–500 miles, where it offers door-to-door travel times that rival air and automobile travel, while providing greater comfort and a travel experience that is superior overall. In these countries, great stations play a pivotal role in facilitating mobility across all scales. They enable strong local pedestrian connections between surrounding neighborhoods and ensure seamless integration between regional, statewide, and national rail networks. Some stations even function as intermodal air–rail hubs, linking rail systems directly with international air routes. Beyond their transportation function, great stations shape the neighborhoods and broader urban areas around them, often becoming destinations in their own right. They attract people not only as travelers but also as visitors, creating vibrant public spaces where rail and mass transit thrive on the density that benefits them, unlike autos or airplanes, which depend on dispersed, low-density networks.

High-speed rail does not transform cities overnight; many of its economic and urban effects unfold gradually as communities adapt to new patterns of mobility. For that reason, getting the least flexible design elements

right from the start—especially station location, track configuration, and platform layout—is essential. France and Spain also show the value of strong and consistent leadership by national rail authorities in station design on issues ranging from passenger facilities to wayfinding. This is something that remains uncommon in the more fragmented U.S. context.

While public engagement may be less extensive in Spain and France than in the U.S., it often includes effective, visually compelling communication that emphasizes long-term project benefits, a focus U.S. project sponsors could adopt more fully. Finally, France and Spain have demonstrated an ability to deliver large transportation projects more quickly and cost-effectively.

In summary, our experience in Spain and France revealed a broader theme: that in the U.S., we have often missed opportunities to realize the full potential of large rail and transportation megaprojects. These missed opportunities are not only about schedules and budgets, but also about the broader community and city-building benefits such projects can deliver—from economic development to urban design and placemaking. Yet, the examples of France and Spain show that these outcomes are within reach when projects are approached with clear vision, strong coordination, and a broader view of benefits that extends beyond transportation to include economic development, urban design, and placemaking. Finally, our trip also highlighted the need for the U.S. to deliver megaprojects more efficiently to realize their full potential as engines of urban and regional transformation.



THE CORRIDOR ID PROGRAM

2026 - OVERVIEW ON THE EXECUTION PIPELINE

Contributed by: APTA Staff

As part of the Infrastructure Investment and Jobs Act (IIJA) (P.L. 117-58), Congress sought to create a comprehensive intercity passenger rail development pipeline that would assist in the planning, design, and construction of new passenger rail routes across the country.

As part of this pipeline, the IIJA created the Corridor Identification and Development Program, or Corridor ID. The program, which is funded through a five percent set aside of funding made available to the Federal-State Partnership for Intercity Passenger Rail (FSP), created a three-step approach to preparing new corridor projects.

Step one involves the initiation of Corridor Development and the development of scope, schedule, and a cost estimate for preparing a Service Development Plan (SDP) for the Corridor. The Federal Railroad Administration (FRA) created a grant program to award eligible project sponsors \$500,000 for costs associated with step one, with no local match required.

Step two involves the preparation or updating of an SDP consistent with FRA's Guidance on Development and Implementation of Railroad Capital Projects. Award amounts for step two are not predetermined and require a minimum 10 percent local match.

Finally, step three involves the preparation of documentation to complete the project development work needed to prepare the Corridor for construction. Award amounts for step three are also not predetermined and require a 20 percent local match.

Since the IIJA passed in 2021, there has been one round of grant awards for the Corridor ID program in Fiscal Year (FY) 2022. More than 110 projects applied for funding and the FRA selected 69 projects for step one grants. Of these projects, seven have since entered step two of the program. One corridor project, the Dallas – Houston high speed rail project, advanced to step 3 before being cancelled.

APPROPRIATIONS HISTORY

The Corridor ID program is funded by an up-to-five percent set aside from FSP, which during the life of the IIJA was authorized to be appropriated \$8.7 billion per year. Of that amount, \$7.2 billion was provided through advance appropriations for FY 22-26, or a total of \$36 billion of guaranteed funding over five years.

From FY 2022 through FY 2026, Congress appropriated an additional \$415 million to FSP, with Congress appropriating \$65 million in FY 2026. While Congress has not yet passed an appropriations bill for FY 2027, the House-proposed legislation included a transfer of approximately \$5.1 billion in unobligated FSP funding to other initiatives, including the Railroad Crossing Elimination Program, Amtrak, and the Capital Investment Grant program.

On September 2, 2026, President Trump signed the Continuing Appropriations and Extensions Act, 2027 (P.L. 119-103) into law. The Act funds the Federal Government and provides a short-term Surface Transportation Authorization extension through December 11, 2026.

However, the Continuing Resolution (CR) does not include the IIJA's advance appropriations, resulting in a \$7.2 billion cut from the Federal-State Partnership for Intercity Passenger Rail.

BUILD AMERICA 250 ACT

On May 19, 2026, the Chairman Sam Graves (R-MO) of the House Committee on Transportation and Infrastructure introduced H.R. 8870, the BUILD America 250 Act, as the next Surface Transportation Authorization legislation. On May 22, the committee approved H.R. 8870, as amended, by a recorded vote of 62-2. The bill has not yet been brought to the House floor, and no Surface Transportation Authorization bill has been introduced in the Senate. The bill requires the Secretary to allow eligible entities that the Secretary determines to have capability, authority, and experience to concurrently prepare an SDP while undertaking project development work such as preliminary engineering and environmental activities.

H.R. 8870, as amended, also includes a heightened focus on financing in the Corridor ID program. It requires SDPs to include projected operating revenue, financial contingency plans for project cost increases and delays, proposed modal alternatives to the Corridor, descriptions of methodologies used to determine the project's financial plan, the effect

of Corridor service on freight rail, and an analysis of the amounts and source of non-Federal financial support for operations and maintenance.

The bill requires the Secretary review the methodologies and assumptions made in developing a project's financial plan and to require the project sponsor to update the plans if they are partially or not supported by a Department of Transportation analysis. Project sponsors can engage a third-party review of their financial plans to rebut the Secretary's decision.

The BUILD America 250 Act also requires the Secretary to consider financial commitment when determining the order in which projects receive Federal financial assistance. Under the bill, the Secretary will send a yearly report to relevant Congressional committees concerning the obligation of funding to projects.

Finally the bill does not allow new entrants to the Corridor ID program after October 1, 2031. The bill authorizes a total of \$18,500,000 over five years to the FSP program (renamed to the National Intercity Passenger Railroad Partnership Grants program), starting with \$3,500,000,000 in FY 2027, and increasing to \$3,900,000 in FY 2031. The bill does not provide guaranteed funding to the program.

Fast-Tracking America's Rail Expansion

The Federal Railroad Administration's (FRA) Corridor ID Program enters a pivotal execution phase in 2026, advancing a robust pipeline of 69 passenger rail corridors across 44 states. Having completed initial scoping (Step 1) to establish budgets and timelines, regional projects are moving into the intensive project planning stage (Step 2) to build federally recognized Service Development Plans (SDPs) covering critical metrics like ridership modeling, environmental clearances, and cost-benefit analyses. To mitigate administrative bottlenecks caused by the massive scale of the initiative, the FRA updated its framework in 2026 to split planning into "Core" and "Near-Term" SDP tracks, utilizing streamlined parametric models to fast-track shovel-ready infrastructure. Completed plans secure highly coveted selection priority for construction funding under the Federal-State Partnership for Intercity Passenger Rail. Meanwhile, the FRA is expanding the national rail network further by launching a new application window in late 2026 for new corridor proposals.