

Transit

Delivering future-ready networks

HATCH

Moving People. Strengthening Communities.

Helping agencies navigate complexity, manage risk, and deliver lasting value

Every day, millions of people rely on transit networks to access jobs, education, healthcare, and community services.

Transit agencies must balance maintaining aging infrastructure, improving accessibility, expanding networks, reducing emissions, and meeting evolving mobility needs. As systems become more interconnected and public expectations continue to rise, agencies need trusted partners who can help them make informed investment decisions, manage risk, and plan for long-term success.

Hatch supports clients across every stage of the transit life cycle, from early strategy and planning through design, delivery, and sustainable operations. Our multidisciplinary team brings experience across passenger rail and bus infrastructure, including regional and commuter rail, subways, light rail transit (LRT), bus rapid transit (BRT), tunnels, bridges, and transit-oriented development (TOD).

With a life-cycle perspective that considers passenger experience, operational performance, resilience, maintainability, and future growth from the outset, we help agencies deliver successful outcomes and maximize their transit investments.

Solutions

Modernizing aging systems and strengthening state of good repair

We provide highly specialized technical and management expertise to address our clients' toughest transit engineering challenges. With a century of hands-on experience and a global portfolio of passenger rail and bus transit projects, we develop strategies tailored to the needs of each system.

Aging infrastructure requires agencies to continually invest in upgrades that restore and maintain a strong state of good repair. We help clients identify renewal priorities, plan efficient maintenance programs, and integrate technologies that enhance safety and day-to-day performance. Our fit-for-purpose solutions improve resilience, reduce service disruptions, and ensure systems can meet growing demand and enable future expansion.

Expand networks to improve mobility and regional connectivity

As cities grow, communities need reliable transit systems that connect people to the places and resources they rely on every day. Drawing on deep multidisciplinary expertise, we help clients plan and deliver new subway, metro, LRT, BRT, commuter rail, and air/rail connection corridors that respond to ridership demand, land-use patterns, right-of-way constraints, accessibility requirements, and operational needs. Our solutions are customized to each system's unique constraints and goals, ensuring network expansion delivers lasting benefits for communities.

Transition to cleaner, low-carbon solutions

Decarbonization is reshaping transit as agencies adopt cleaner technologies and work toward ambitious sustainability goals. We help clients evaluate fleet options, plan charging and fueling infrastructure, and design energy-efficient solutions for rail and bus networks. Our approach balances technology readiness, operational impact, and life-cycle costs to help agencies adopt zero-emission and alternative-fuel systems with confidence.

Improve system performance with digital integrated tools

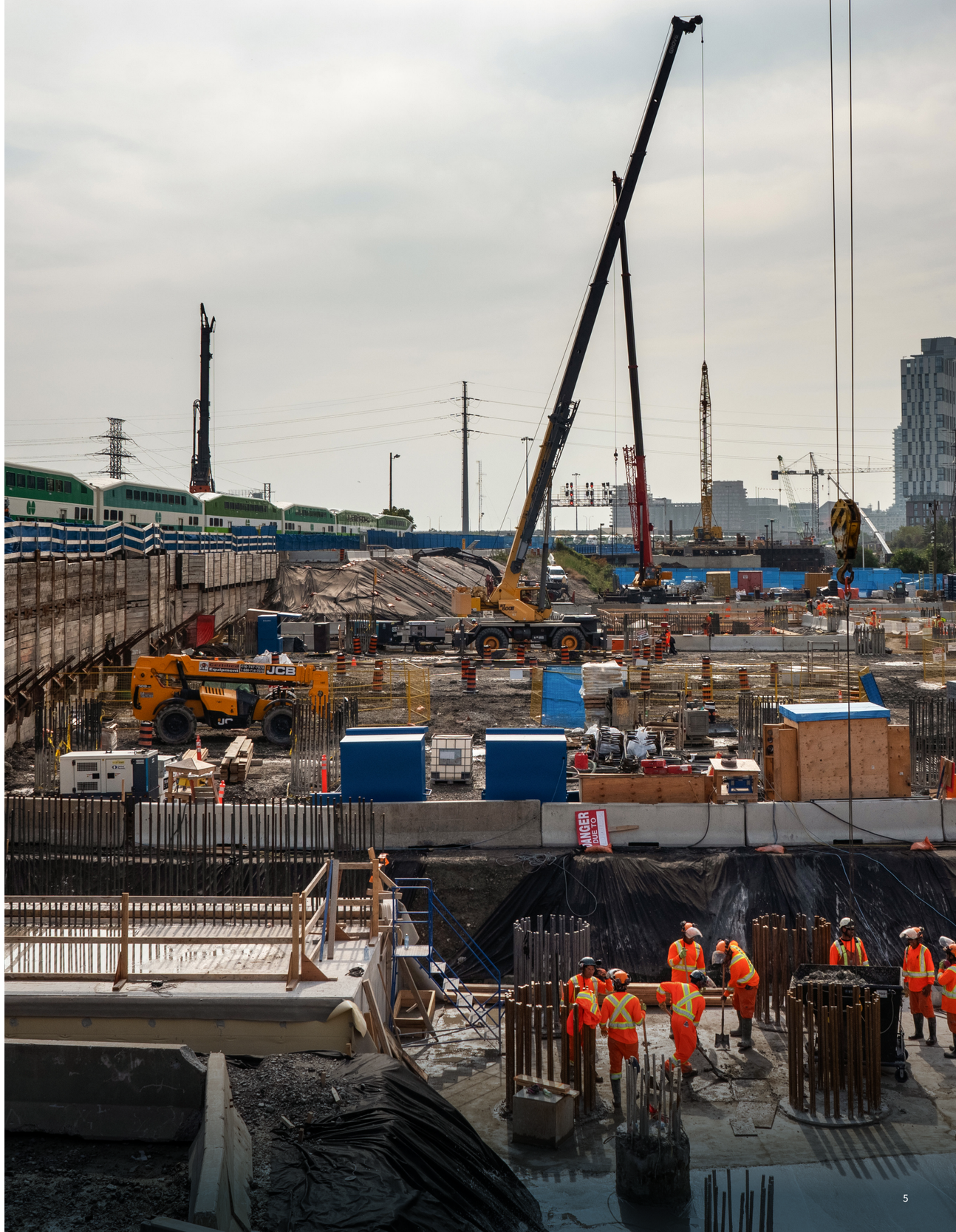
Agencies need clear insight into how their networks behave under current and future operating conditions. Our team applies advanced analytics and operational modeling to optimize service, reduce delays, and improve reliability. Tools like TrainOps®, our proprietary rail simulation software that models train performance, signaling interactions, fleet behavior, and traction power demands, help clients test operating strategies and identify system improvements.

Project Integrated Delivery (Civils and Systems)

Large transit programs involve many moving parts, stakeholders, and contracts. Through our engineering, procurement, and construction management experience in other sectors, Hatch acts as the overall project integrator, coordinating engineering, procurement, construction inputs, testing & commissioning, assurance, and safety case requirements to help projects move forward efficiently. We manage interfaces across teams, contractors, and project phases, helping clients improve coordination, reduce risk, and maintain alignment from design through delivery.

Transit-Oriented Development

We help clients maximize transit investments by integrating infrastructure with the communities they serve. We develop planning and design strategies that align transportation networks with land use objectives, accessibility goals, and future growth. By considering mobility, public spaces, urban development, and operational requirements together, we help create connected and sustainable environments that encourage transit use. Working closely with agencies, municipalities, developers, and stakeholders, we deliver solutions that strengthen community connectivity, support economic development, and improve the overall passenger experience.





Capabilities

We provide a full range of services that support agencies at every stage of project development, delivery, and operations.

- Core areas of experience:
- Integrated program and project delivery
- Rail systems integration and assurance
- Operations planning, simulation, and digital optimization
- State of good repair and asset life-cycle management
- Alternative delivery, commercial advisory, and funding strategy
- Zero-emission fleet and energy transition
- Stations, facilities, and operational readiness
- Transit-oriented communities and development integration
- Design execution for extreme weather resilience
- Passenger experience, revenue management, and mobility systems
- Complex corridor, tunnel, bridge, and linear infrastructure delivery
- Supporting experience:
- Intercity and high-speed rail
- Commuter rail
- Light rail and streetcars
- Subways and heavy rail
- Bus rapid transit and zero-emission fleets
- Stations, stops, maintenance facilities, and operations centers
- Air/rail connections and multimodal hubs
- Tunnels, bridges, viaducts, grade separations, and rail corridors



Commuter Rail

Regional rail networks need to do more with the infrastructure they already have. Capacity, reliability, passenger experience, and state of good repair must all improve without compromising daily operations.

Our work spans every stage of the project life cycle, from early planning through delivery and into operation. We help agencies look at corridor constraints, fleet needs, station access, asset renewal, and operational requirements as connected decisions rather than separate workstreams. Instead of treating modernization as a series of isolated upgrades, we help clients prioritize investments that improve how the network functions and how it can grow over time.

Our approach is practical and grounded in the realities of delivery. We focus on improvements that strengthen reliability, make assets easier to maintain, accommodate future demand, and create a better experience for the people who use regional rail every day.

Réseau Express Métropolitain

Designed as the backbone of Greater Montréal's transit network, the Réseau express métropolitain (REM) is a 67-kilometer automated light rail system connecting downtown Montréal with the South Shore, North Shore, West Island, and Montréal-Trudeau International Airport. As one of the largest automated transit networks in the world, it represents a transformational investment in regional mobility. We have supported the REM since its earliest stages as Owner's Engineer, helping define the vision for the system, develop procurement strategies, coordinate complex rail interfaces, and provide engineering services throughout planning, design, delivery, testing, and commissioning.

Sound Transit's System Expansion

Few transit programs have reshaped a region as significantly as Sound Transit's expansion across the Puget Sound area. What began with a single streetcar project has grown into a multi-decade program delivering new commuter rail, light rail, and regional transit connections, including the first light rail system in the world to cross a floating bridge. We have partnered with Sound Transit since 1998, providing systems engineering, vehicle, communications, traction power, and operational expertise across multiple expansion projects. Today, the network serves more than 41.7 million passengers annually and averages over 134,000 weekday riders, helping connect communities across one of North America's fastest-growing regions.

Light rail and streetcars

Transit investments often shape more than the transportation network. Delivering light rail and streetcar corridors means balancing mobility goals with the needs of the communities they serve. Corridors need to fit within existing neighborhoods, enable safe and reliable operations, and create space for future growth. These projects are often highly visible, making it important to consider not only how the system functions, but how it is experienced by the people who live, work, and travel around it.

Transit-oriented design is built into how these projects are planned. We consider how corridor decisions influence access, walkability, public space, future development, and connections to surrounding communities. This helps agencies deliver systems that do more than move people. They foster sustainable growth, improve local mobility, and create transit investments that become part of the community fabric.



Calgary West LRT

The Calgary West LRT project expanded Calgary's CTrain network through a landmark extension featuring stations, park-and-ride facilities, grade separations, and a mix of at-grade, elevated, and tunneled infrastructure. Recognized with multiple industry awards and delivered as the city's first design-build LRT project, it set a new benchmark for transit delivery in Calgary. As Owner's Engineer, we helped shape the project from concept through procurement, guiding route development, design advancement, stakeholder engagement, and the creation of the design-build program that facilitated successful project delivery.



Newcastle Light Rail

The Newcastle Light Rail project is a key part of the New South Wales Government's effort to revitalize Newcastle's city center, delivering a 2.7 km light rail network that improves connectivity and accommodates future growth. We served as Technical Advisor to Transport for New South Wales, providing vehicle and depot planning, rolling stock review, operations analysis, testing and commissioning support, and operational readiness services. Our team also oversaw quality assurance activities and managed vehicle delivery through to successful handover for passenger operations.

Heavy rail and subways

Keeping a metro system moving while modernizing critical infrastructure leaves little margin for error. Service continuity, passenger impacts, access constraints, and operational requirements must be addressed long before work begins.

Our teams work across stations, tunnels, traction power, train control, communications, systems integration, safety assurance, commissioning, and operational readiness. By coordinating these disciplines from the outset, we help agencies deliver upgrades that are practical to construct, maintain, and operate within active transit environments.

Whether renewing aging assets or preparing for future expansion, the focus remains the same: improving reliability, strengthening resilience, and ensuring the network can continue meeting growing demand over the long term.

R262/R268 Subway Car Program

The R262/R268 Subway Car Program represents one of the largest rolling stock procurements in North American transit history, modernizing New York City's subway fleet with a new generation of more accessible, reliable, and technologically advanced vehicles. We are helping New York City Transit by providing the technical leadership needed to guide vehicle procurement, oversee manufacturing and testing, and ensure the new fleet is ready to meet the demands of one of the world's busiest transit systems. The program includes a base order of 1,140 new subway cars, with options for up to 2,390 vehicles, representing a transformational investment in the future of New York's transit network.



Toronto-York Spadina Subway Extension

Extending Toronto's subway network into York Region, the Toronto-York Spadina Subway Extension added six new stations and 8.6 kilometers of rapid transit infrastructure, creating new connections between Toronto, York University, and Vaughan. We served in a leadership role on the integrated project team, managing design delivery and construction while overseeing the rail systems program through installation, testing, commissioning, and activation. As the largest subway expansion in TTC history at the time of its opening, the project transformed transit access for residents, students, and businesses across the northwestern Greater Toronto Area.



Intercity and high-speed

Major rail programs succeed when early decisions are tied to the service they are meant to deliver. Choices made during planning can influence operational performance, project costs, and flexibility for decades after opening day. The strongest programs begin with a clear understanding of what the railway needs to achieve and how it will ultimately operate.

We help clients move from early evaluation into delivery with a clear understanding of technical requirements, operational needs, and life-cycle performance. That often means evaluating trade-offs before they become constraints, giving decision-makers greater confidence in the path forward. The focus is on building stronger regional connections, improving travel choice, and creating rail investments that continue to provide value throughout their operating life. By aligning planning decisions with long-term service objectives, agencies can advance programs that are realistic to deliver, efficient to operate, and adaptable to future growth.

Amtrak's Avelia Next Gen High Speed Rail Project

A new generation of high-speed rail is transforming travel along the Northeast Corridor, connecting Boston, New York, Philadelphia, and Washington, DC with faster, more efficient passenger service. Designed for speeds of up to 160 mph, Amtrak's NextGen Acela fleet is helping redefine rail travel in the United States. Building on our experience with the original Acela program, we provided technical oversight throughout procurement and delivery, covering everything from specifications and design reviews to testing, safety planning, and regulatory compliance. The new fleet of 28 trainsets will enable more frequent service and increased passenger capacity across one of North America's busiest rail corridors.

Air/Rail connections

The best air/rail connections feel effortless. Passengers move between modes without thinking about what is happening behind the scenes. Yet delivering that experience requires careful coordination between infrastructure, operations, and the needs of multiple stakeholders. Airports, transit agencies, rail operators, and municipalities all have different priorities, and successful projects bring those perspectives together around a shared vision.

Our role is to help create connections that are intuitive for passengers and practical for operators. We work with clients to align station planning, passenger movement, accessibility, wayfinding, and operational requirements so every part of the journey supports the next. By keeping the focus on how people actually move through the network, we help develop connections that improve access, simplify transfers, and strengthen regional mobility.

Sydney Metro-Western Sydney Airport Project

Designed to advance the growth of Western Sydney and connect the region to the new Western Sydney International Airport, the Sydney Metro-Western Sydney Airport project will deliver a 23-kilometer metro corridor linking communities, employment centers, and the emerging Aerotropolis. We delivered the design of approximately 9.8 kilometers of twin-bore rail tunnels, 39 mined cross passages, the airport dive structure, and associated underground infrastructure that will enable safe, reliable metro operations along the new line. Our involvement also extended through construction-phase services, helping advance a key component of one of Australia's most significant transit investments.



Zero-emission fleets

The transition to lower-emission transit is forcing agencies to rethink how service is planned, powered, maintained, and delivered. Success depends on more than choosing the right vehicle technology. Utilities need to be engaged early, facilities need to be ready, and operating plans need to reflect how the system will perform in daily service.

We help agencies build transition strategies that are practical to implement and reliable over the long term. That includes evaluating technologies, planning charging and fueling infrastructure, coordinating procurement requirements, and understanding how new systems will affect maintenance, service delivery, and life-cycle performance. By connecting these decisions early, agencies can reduce risk, protect reliability, and move toward cleaner operations without compromising the service passengers depend on.



MaineDOT Bus Electrification Project

The MaineDOT Bus Electrification Project is helping agencies plan and implement the transition to zero-emission bus fleets as part of the state's broader carbon neutrality strategy. We worked with transit operators to develop practical pathways to fleet electrification that balanced operational needs, available funding, and future-focused service goals. By helping operators understand when, where, and how electrification could be successfully implemented, we enabled informed decision-making and reduced the risks associated with fleet transition. The program is projected to mitigate more than 10,000 metric tons of greenhouse gas emissions and includes customized plans for 12 transit agencies across the state.



MBTA Bus Electrification Program

This program supports the Massachusetts Bay Transportation Authority (MBTA) as it transitions to a zero-emission bus fleet as part of its vision for cleaner, more sustainable transit service. We worked with MBTA to evaluate how new vehicle technologies, charging infrastructure, and operating requirements would interact across the network, helping the agency build a practical roadmap for fleet electrification. By assessing real-world operational and maintenance needs, our team helped reduce implementation risk and inform investment decisions. The program contributes to MBTA's goal of operating a fully electric bus fleet by 2040.

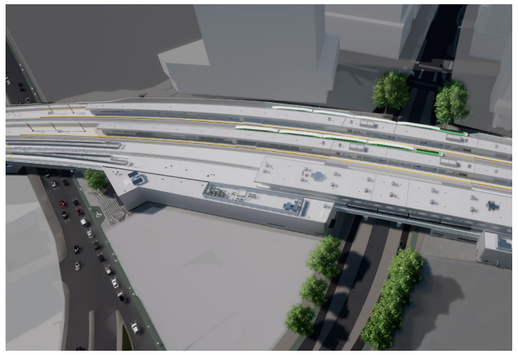
Stations and facilities

We design and deliver stations, maintenance facilities, and operations centers that improve passenger experience, strengthen operational performance, and support future growth. Stations are planned as hubs with seamless connections between rail services, buses, active transportation networks, and pick-up/drop-off facilities. Accessibility, safety, wayfinding, resiliency, and efficient passenger movement guide every design. Our teams combine architecture, engineering, fire and life safety, systems integration, and operational planning to create facilities that are intuitive to use, practical to maintain, and ready for expansion.

For operations and maintenance facilities, we apply industrial engineering, operational modeling, and digital tools to optimize workflows and improve service reliability. We integrate specialized maintenance systems, energy-efficient technologies, and operational readiness planning to enhance performance and adaptability.

East Harbour Transit Hub

East Harbour Transit Hub will reshape how people move through Toronto, connecting the GO Transit network with the future Ontario Line at one of Canada's largest transit-oriented developments. Our involvement spans the project lifecycle, from business case development, station strategy, stakeholder engagement, and urban planning to detailed design and delivery. The future multimodal hub will provide seamless connections between regional rail, rapid transit, and surface transit services. Expected to serve approximately 100,000 riders daily and become the GO network's second-busiest station, East Harbour will reduce pressure on Union Station and strengthen regional connectivity across the Greater Toronto Area.



Canary Wharf Station

This station was a key element of London's Crossrail program, improving accessibility to one of the city's largest business districts while supporting future growth at Canary Wharf. We worked with Canary Wharf Group to develop an alternative station design and delivery strategy for the 300-metre-long station, integrating the facility within the surrounding development and transportation network. Through design optimization and substantial value engineering, the project team delivered a more efficient station configuration that enhanced constructability while preserving the facility's functional and long-term capacity requirements.



Revenue management

Modern fare systems are part of the customer experience, but their value extends well beyond payment. They provide agencies with a clearer understanding of how people move through the network, where demand is changing, and how service can be planned more effectively.

Getting the most from these systems requires more than implementing new technology. Our approach is to align revenue management decisions with operational goals, customer needs, and long-term network planning. Whether modernizing existing platforms or introducing new payment solutions, the focus is on creating systems that are intuitive for riders, practical for operators, and flexible enough to evolve alongside the network. By connecting revenue systems with operational data and insights into travel behavior, service demand, and network performance, agencies can make more informed decisions, respond to changing travel patterns, and deliver a more connected experience across the system.

Operations planning and simulation

The most effective operational decisions are made before they affect the network. Service changes, infrastructure upgrades, fleet strategies, and planned outages all have ripple effects that can influence reliability, capacity, passenger experience, and performance.

Understanding those impacts before implementation reduces uncertainty and improves decision-making. Using operational modeling, analytics, and simulation, we help agencies test scenarios, identify constraints, and evaluate alternatives before changes enter service. TrainOps®, our proprietary rail simulation platform, allows agencies to model train movements, signaling interactions, fleet behavior, and traction power demands across an entire network. These insights can be used to assess capacity, optimize schedules, evaluate infrastructure investments, enhance operational readiness, and better understand how the network will perform under future service conditions. The result is greater confidence in investment decisions, stronger operational performance, and reduced implementation risk.



About Hatch

Hatch is a global engineering, project delivery, and professional services firm. Whatever our clients envision, our teams can design and build. With over seven decades of business and technical experience in the mining, energy, and infrastructure sectors, we know your business and understand that your challenges are changing rapidly. We respond quickly with solutions that are smarter, more efficient, and innovative. We draw upon our 11,000 staff with experience in over 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

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