



BULLETIN

Volume 67, Number 6 | June 2024

Davey Leaves, Crichlow Named Interim President of NYCT

On May 29, MTA Chair and CEO Jano Lieber appointed Demetrius Crichlow as Interim President of New York City Transit, effective June 14. Crichlow will succeed Richard Davey, who served as president of NYCT from May 2022 until announcing his departure the week of May 9. Davey accepted the position of Chief Executive Officer and Executive Director of the Massachusetts Port Authority. Crichlow has led New York City Transit's Department of Subways as its Senior Vice President since July 2021.

Crichlow is a lifelong New Yorker who started his career with the MTA in 1997 as an assistant signal maintainer at the Long Island Rail Road, rising through the ranks at the LIRR to become Train Movement Supervisor overseeing operations at Penn Station



Central Control. In 2007 he transferred to MTA Headquarters to become Special Assistant for Operations for then-Executive Director Elliot G. Sander. While Crichlow started his career at the LIRR, his father — who retired as a car inspector for Subways — had always hoped he would continue the family tradition of working at NYCT. When Crichlow became Deputy General Manager for the L Line, it solidified three generations of service that began with his grandfather. Since then, he took on increased responsibility within NYCT, including Chief Officer of Field Operations, Chief Officer of the Operations Control Center and Vice President & Chief Officer of Staten Island Railway. [MTA PRESS RELEASE](#), May 29



A Message from President Bob Newhouser

ERA is pleased to announce its first 2024 in-person meeting of the year on Friday, July 19, 2024 at:

Manducatis Restaurant
13-27 Jackson Avenue
Long Island City, N.Y. 11102

Doors open at 6 PM and feature a cash bar, followed by dinner at 6:30 PM. Following dinner we will be treated to a presentation by Board Director and *Bulletin* Editor Jeffrey Erlitz. His presentation will cover his recent travels to Scandinavia.

The price is right for this meeting — free to all paid up ERA members. Any attending member may bring one guest.

We have a maximum of 50 places for dinner so reserve your spot by emailing Treasurer Mike Glikin at trnsper@aol.com or call him at (917) 714-7087. The deadline for reservations is Friday, July 12 or when all places are reserved, whichever comes first. So don't delay, book today!

Our second and final in-person meeting for 2024 will be on Friday, November 22, at Manducatis, in conjunction with ERA's 90th Anniversary celebration. ERA has planned three days of exciting activities on November 22, 23 and 24, all in the New York/Connecticut region. Watch the *Bulletin* or the www.erausa.org website for details in the coming weeks!

Worldwide Suburban Electric Railway, Metro and Tramway Openings in May 2024

Date	Country	City	Segment	Distance (miles)	Rail/Metro/Tram
5/1	China	Hefei	Line 4: Beiyanhui to Shaomaigang	7.5	M
5/6	France	Paris	Line E: Haussmann St-Lazare to Nanterre La Folie	5.0	R
5/14	Poland	Warsaw	Line 11: Goworka to Sielce (Czerniakowska)	1.3	T
5/15	China	Dujiangyan	Lines 1 & 2: Bajiao Temple to Mt. Qingcheng/Zijingcheng	10.7	T
"	Egypt	Cairo	Line 3: Kit-Kat to Giza University	4.4	M
5/26	China	Guangzhou/Foshan	Guangdong Intercity: Foshan West to Dongguan West	?	R

URBAN RAIL NEWS, MAY 31

Rail News in Review

New York Metropolitan Area

METROPOLITAN TRANSPORTATION AUTHORITY (MTA)

Final Opportunity For Branded Collectible MetroCards

The MTA announced it is offering advertisers the last opportunity to create one of the final two "premium" custom MetroCards available to riders.

Since the inception of MetroCard in 1994, 400 different limited-edition cards have been produced. Recent releases include Supreme, David Bowie, Notorious B.I.G, Kate Spade, KISS, Law and Order, and Ice Spice.

This offer is designed to celebrate the retirement of MetroCard while reminding passengers to embrace tap and go payments by using a bank card, smartphone or wearable device.

Details on the program and how to apply can be found at <https://new.mta.info/doing-business-with-us/advertising/advertise-on-metrocard>.

MTA PRESS RELEASE, May 14

Commuter Rail Ridership Continues to Increase

Ridership on the commuter railroads continues to rebound after the pandemic. The LIRR carried 260,745 riders on Tuesday, May 14, the highest ridership for a single weekday since the pandemic. The ridership record coincided with a Grand Central Madison record — 41 percent of riders traveled to Grand Central Madison on that day, the highest split with Penn Station since the terminal opened for full service last February.

The LIRR record comes just one day after MNR had its best Monday since the pandemic, carrying 209,795 riders. Combined with Tuesday, MNR has carried nearly half a million riders through the first two days of the week. This record comes following strong ridership last week, with an average of 212,466 riders each day, the best weekday average since the pandemic. The average ridership for Tuesday through Thursday of that week was 222,244 riders, also a post-pandemic record.

Through the first three months of 2024, LIRR and MNR have each noted strong ridership, with each carrying approximately 1.4 million riders during the first full week in May. Building off a strong 2023 in which both LIRR and MNR saw non-commutation trips surpass 2019 levels, both railroads are

currently carrying an average of 200,000 riders.

MNR's record week, for the week of May 6, is the first time since the pandemic the railroad has averaged over 200,000 riders for a week.

[MTA PRESS RELEASE](#), May 15

OMNY Progress and Setbacks

The transition from MetroCard to OMNY, the contactless fare payment system, continues with a major push to expand the reach of OMNY to include all ridership groups by the end of 2024. This includes students, Reduced-Fare, Fair Fares, Access-a-Ride, and pre-tax commuter benefit riders, with substantial completion of the rollout across subway, bus, and paratransit services slated for the end of 2025. The rollout will also include upgrades and integrations with the TrainTime application for railroad ticketing and the implementation of modernized ticket machines on the LIRR and MNR, which will be substantially completed in early 2026. *(Editor's note: The inclusion of the LIRR and MNR, let alone the rest of the metropolitan region's transit operators, has been put off indefinitely.)*



One of the recently-installed OMNY vending machines, as seen on June 3. This one is located on the BMT Brighton Line at the Atlantic Avenue-Barclays Center Station in Fare Control Area B2 (at the bottom of the stairway leading to the LIRR's Tracks 1 and 2). Jeff Erlitz photo

All New York City school students will receive student specific OMNY cards instead of MetroCards at the start of the 2024-25 school year in September. OMNY pilots have also been launched for select paratransit and pre-tax commuter

benefit riders with a wide rollout to both groups expected by the end of 2024. All existing Reduced-Fare MetroCard riders, totaling more than 1.5 million riders, will receive an OMNY card mailed to them by end of 2024.

On LIRR and MNR, new modern ticket vending machines will be introduced across the commuter rail system by contractor Scheidt & Bachmann, with TrainTime continuing to service riders for contactless digital payment through contractor Masabi.

On April 29, the Authority announced the completion of its OMNY Card Vending Machine rollout pilot program. To date, crews have activated 70 machines at 37 stations with more activations scheduled systemwide as card vending machines are expected to be in all subway stations by mid-2025, providing additional ways all full fare riders with an OMNY card can reload their cards.

OMNY was previously rolled out on the Hudson Rail Link, Roosevelt Island Tramway, AirTrain JFK, and to reduced-fare passengers.

NYCT riders are choosing contactless fare payment with more than three quarters (76 percent) of regular fare riders now tapping in, a 10 percent increase in overall market share in the past year. Nearly 70 percent of OMNY users tap into the system with their smart device with the remaining using debit, credit or OMNY card.

[MTA PRESS RELEASE](#), May 20

NEW YORK CITY TRANSIT (NYCT)

IRT Broadway Line Station Work Update

Last month we mentioned the station renovation work that had been completed at 50 Street and begun, on the northbound platform, at 86 Street. That work was completed as scheduled on May 13. The southbound platform at 86 Street will be out of service from June 3 to June 24.

IRT Flushing Line CBTC Update

As most of our readers know, the IRT Flushing Line was the second subway line in New York whose signal system was modernized to operate under Communication-Based Train Control (CBTC).

The software that controls the signal system was provided by Thales and is marketed under their SelTrac brand.

Like the BMT Canarsie Line, the Flushing Line can be completely controlled from the Control Center. We recently learned, however, and to your Editor's surprise, that 34 Street-Hudson Yards and Flushing-Main Street are normally controlled locally from their respective dispatcher's offices. Having said that, both terminals have an "automatic" mode so that each train movement need not be manually entered. The interlockings between the terminals are normally controlled from the Control Center.

Unlike the Flushing Line, the terminal stations on the BMT Canarsie Line are normally controlled by the Control Center. At 8th Avenue, for example, one of the two computer



workstation screens displays the entire Canarsie Line while the other displays just the 8th Avenue Interlocking.

Summer Service to Rockaway Beach

As has been done for many years now, NYCT is operating enhanced service to Rockaway Park for the summer season.

There will be a slight change in the operation this year, however, at least from May 25 to June 29. Due to multiple General Orders necessitating relaying C train service to south of 80th Street, the H shuttle (which is advertised to the public as S) will operate full-length non-OPTO trains from about 9:00 AM to about 9:30 PM, but only to Broad Channel. In addition, these trips will be double-ended, with two train operators. This is a fairly labor-intensive operation, requiring seven extra train operators and conductors on Saturdays and six extra on Sundays.

From June 30 through September 2, the full-length H trains will be extended to Rockaway Boulevard, providing connections to Lefferts A train services. These trains will not be double-ended but will have conductors assigned. On Saturdays, seven extra train operators and 14 extra conductors are needed. On Sundays, five extra train operators and 11 extra conductors are needed.

IND Culver Line CBTC Progress

We missed reporting in the April issue of the Bulletin that the first section of CBTC signaling on the IND Culver Line was placed into revenue service. This took place at midnight on Monday, March 18 (Sunday into Monday). This first phase permits trains to operate in Automatic Train Protection Manual (ATPM) mode only, and not under Automatic Train Operation (ATO).

- The CBTC territory in this initial segment includes:
• Southbound local Track B1, Kings Highway to West 8th Street
• Middle Track B3/4, Kings Highway to Avenue X
• Culver Yard leads, Tracks B5 and B6

Each train's operating mode will transition automatically from Wayside Signal Protection (WSP) to ATPM when leaving Kings Highway southbound on Tracks B1 and B3 and when leaving Culver Yard northbound on Track B4. Likewise, trains will automatically transition from ATPM back to WSP when leaving West 8th Street southbound on Track A1/B1 or when leaving Avenue X into Culver Yard.

In preparation for the next CBTC cut-in scheduled for early June, over the Memorial Day weekend several automatic signals were removed from service on northbound local Track A2/B2 from West 8th Street to Avenue X. More automatic signals were removed on Track B2 the following weekend, May 28-June 1, from Avenue X to Kings Highway.

Progress on Reducing Subway Fare Evasion

In the year since the Blue Ribbon Panel on Fare Evasion issued a report outlining ways to reduce fare evasion, the MTA had advanced a host of initiatives outlined in the report. The MTA is pursuing these initiatives further and will introduce new ones in the year ahead.

Convened in the spring of 2022, the Blue-Ribbon Panel, consisting of education, social justice, business, and law enforcement experts, was given a mandate to investigate the root causes of fare and toll evasion and develop a comprehensive strategy to combat it.

According to the report, the situation has reached crisis levels, with the MTA losing an estimated \$690 million in unpaid fares and tolls in 2022, threatening the economics of mass transit in the New York metropolitan area. To drive down evasion, the panel proposed a refreshed strategy, which moves away from a sole focus on enforcement and, instead, responds to the root causes of fare and toll evasion through the four "E's" of Education, Equity, Environment and Enforcement.

Improving the Fare Control Environment

Turnstile Modifications: Steps have been taken to tackle evasion tactics at the turnstiles. Crews upgraded 1,400 turnstiles at more than 100 stations to prevent back-cocking and are on target to reach the goal of modifications at 60 percent of turnstiles by the end of the year. Turnstiles with those modifications have seen an 80 percent reduction in back-cocking. The Authority also installed turnstile fins at four pilot stations, observing a decrease in jumping by more than 20 percent at these fare control areas. The MTA plans to roll out fins at 10 more stations over the upcoming months.

Time-Delay Emergency Exit Pilot: The MTA piloted delaying the opening of emergency exit gates by 15 seconds at three stations and observed a 38 percent decrease in evasion through the gate and a seven percent decrease in evasion overall at those fare control areas. The MTA is expanding the delayed egress pilot at new stations over the upcoming months and launching a system-wide study to analyze stations and implement delayed egress where it is safe to do so.

Modern Fare Gates: Crews replaced traditional emergency exit gates with new, accessible wide-aisle gates at Atlantic Avenue-Barclays Center, 34 Street-Penn station ACE and Astoria Blvd NW and introduced a new full array at Sutphin Blvd-Archer Avenue EJZ where fare payment increased by 20 percent compared to 2023. The MTA will expand the pilot — with improved design features like higher paddles and more sophisticated sensors — to at least 15 stations in 2024.

The first 10 stations are:

- 42 Street-Port Authority Bus Terminal ACE
• 125 Street 2 3
• 149 Street-3 Avenue 2 5
• Bowling Green 4 5
• Crown Heights-Utica Avenue 3 4
• Delancey Street-Essex Street F J M Z
• East 180 Street 2 5
• Flushing-Main Street 7
• Forest Hills-71 Avenue E F M R
• Kingsbridge Road B D

Long Term Investments

The new gates are a first step towards modernizing the



fare control area. In December 2023, the MTA released a Request for Information (RFI) to qualify the next generation of secure, accessible, and modern fare gates. After receiving and evaluating 12 responses from gate vendors, the MTA will begin in-lab testing of promising gate technology in summer 2024 and in-system testing in 2025.

The MTA is launching a Fare Evasion Lab as a test bed for new fare compliance technologies, including modern fare gates that will be evaluated as part of the RFI.

[MTA PRESS RELEASE](#), May 22

LONG ISLAND RAIL ROAD (LIRR)

Summer Timetable Changes

New timetables started on all LIRR branches on Monday, May 20. They include off-peak and weekend changes on many branches to support station improvements and accessibility upgrades at Babylon, Hollis, and Valley Stream. While there are no major changes to rush-hour service, some morning rush-hour trains will make additional stops to provide more options for riders.

Added morning rush-hour stops

- The 4:54 AM train from Huntington to Atlantic Terminal will add a stop at Hicksville at 5:12 AM
- The 5:30 AM train from Ronkonkoma to Atlantic Terminal will add stops at Deer Park (5:46) and Wyandanch (5:51)
- The 7:49 AM train from Freeport to Grand Central will add a stop at Jamaica at 8:14 AM

Off-peak changes

Babylon Branch

- Weekday midday trains to and from Grand Central will only run as far as Massapequa. Express trains to and from Penn Station will make all stops between Massapequa and Babylon, providing a total of two trains per hour at those stations.
- At St. Albans, midday service will return to being provided by West Hempstead Branch trains.

Hollis, Queens Village, and Elmont-UBS Arena riders

- On weekdays starting at 10 PM when there are no events, westbound trains from Huntington and Ronkonkoma will not stop at Elmont-UBS Arena. Hourly westbound service will still be available on trains from Hempstead.
- The weekday train from Ronkonkoma to Penn Station that currently stops at Queens Village at 2:45 AM and Hollis at 2:47 AM will bypass those stations.
- At these stations, westbound overnight trains may arrive on Platform B/Track 4. Please allow enough time to check the TrainTime app or station signs and move to the proper platform.
- For several weeks this summer, midday weekday trains will not stop at these stations in one direction.

Summer service

Extra summer service on the Montauk, Ronkonkoma,

and Long Beach branches returns for the season on May 23. There are a few notable changes from last summer:

- The 5:13 PM train from Penn Station to Speonk will be extended to Montauk on Thursdays as well as Fridays
- The 7:19 PM Friday train from Jamaica to Montauk will not run except on holiday weekends
- The 1:17 PM Sunday train from Montauk to Jamaica will leave at 1:47 PM
- The 8:22 PM Sunday train from Montauk to Jamaica will not run except on holiday weekends

[MTA ARTICLE](#), May 7

New Interlocking In Service

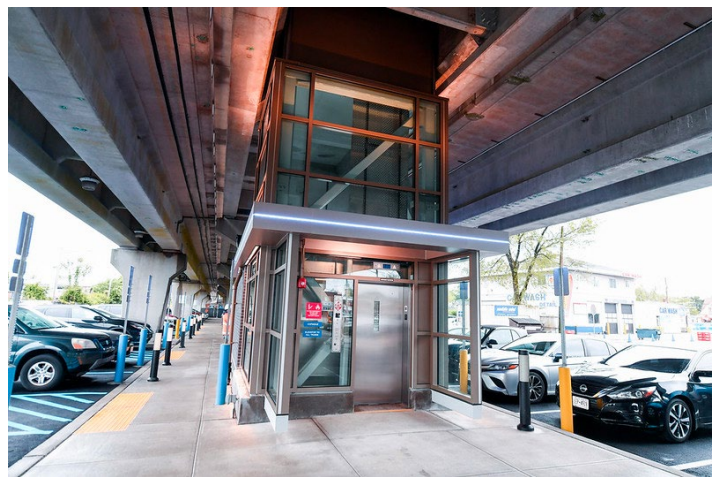
Though not directly a part of the railroad's Main Line Third Track project, a new interlocking was placed into service (at least partially) early on Saturday, May 11 between Floral Park and New Hyde Park Stations. It is identified as Park 3, so it is actually a part of the existing Park Interlocking, which consists of Park 1 on the Main Line and Park 2 on the Hempstead Branch.

Park 3 consists of one single crossover, facing eastward from Track 1 (the middle track) to Track 2 (the normally-eastbound local track). Only the four home signals were actually placed in service on May 11. The crossover switch will be installed over two weekends in June.

There already is a crossover from Track 1 to Track 2 just east of the Elmont-UBS Arena Station but the new one will reduce conflicting moves between eastbound Main Line and westbound Hempstead Branch trains.

Copiague Station Now Fully Accessible

The new elevator at the Copiague Station was placed in service on May 16. This station is the first of three Montauk Branch stations that will be made fully accessible in the next few weeks. Amityville and Lindenhurst are expected to join Copiague with accessibility upgrades before the end of June.



The new elevator at Copiague on May 16, opening day.

Marc A. Hermann/MTA photo

The LIRR received \$18 million in federal formula funds which supported the \$169 million, design-build stations

upgrade package. These nine stations included Copiague, Amityville, Lindenhurst, Massapequa Park, St. Albans, Laurelton, and Locust Manor. Valley Stream will receive escalator replacements and elevator replacements and Auburndale will receive an elevator replacement.

The package includes additional station enhancements including parking and electrical and mechanical improvements, new platform tactile strips and communication and safety security systems, better wayfinding, and new LED lighting and Help Points.

[MTA PRESS RELEASE](#), May 16

METRO-NORTH RAILROAD (MNR)

Harmon Shop Reconstruction Completed

The completion of upgrades to MNR's maintenance and operations hub at Croton-on-Hudson, NY, was announced on May 10. With the opening of the new 400,000 square foot facility, known as the Harmon Shop, MNR should be able to maintain train reliability and meet the maintenance needs of its operations for decades to come.

The project, which includes state and federal funding, modernized the railroad's heart of operations. When MNR inherited the site from Conrail in 1983, it was immediately recognized as inadequate to meet the needs of crews who would maintain the railroad's passenger cars and locomotives. The MTA identified capital funds to make upgrades in the late 1990s, and work had been underway since 2001 to make the necessary upgrades.

The final phase of the project included the construction of a new facility that included repair and support shops. The state-of-the-art facility allows MNR to perform its Reliability Centered Maintenance program and account for unscheduled repairs on the entire electric fleet. The facility has been equipped with a dozen car-hoists, four pedestal tracks, and multiple door level and roof level platforms to assist in preventive maintenance. The second floor is designed to streamline the parts distribution between the new electric shop and adjacent support shops and the consist maintenance shop by integrating a service corridor connecting all three buildings.

For over 100 years the Harmon Yard has played a vital role in the railroad's daily operations. The project was completed over 23 years in five phases:

- Phase 1: Crews built service tracks, a new employee overpass, and provided wayside power to the yard to significantly reduce the idling of engines in the yard.
- Phase 2: Crews built Communication & Maintenance of Way buildings and made modifications to the Material Distribution Center.
- Phase 3: Crews built a new Coach Shop and new Locomotive Shop as well as a new wheel truing facility with a tandem underfloor wheel lathe designed to maintain MNR's fleet of EMUs and future fleets.
- Phase 4: Provided for priority repairs in a multi-purpose

building, primarily on the western section of the shop, that remained operational during construction, as well as the construction of a new wheel storage canopy in the north yard.

- Phase 5: Provided the complete replacement of the multi-purpose building in two stages. The first stage provided the construction of a new double-ended Consist Shop with two tracks each ten cars long. The second stage included construction of the EMU Running Repair and Support shops.

[MTA PRESS RELEASE](#), May 10

New Dual-Mode Locomotives

The first of MNR's new dual-mode locomotives has been seen outside of the Siemens Mobility plant in Sacramento, Calif. In the first photo, taken on March 7, the locomotive was still in the testing/assembly phase and was missing a few cosmetic and functional parts at the time, such as the third rail shoe beams, cooling tower access door and the HEP cooling unit grill. The engine compartment access door had also not been wrapped yet.



SC42-DM 301 on March 7, 2024. Photographer unknown



SC42-DM 301+302 on May 16. Alex Marcopulos photo



The second photo was taken on May 16, a few minutes prior to departure from the Siemens facility via a Union Pacific special to the Pueblo, Colo. test facility. Both locomotives are complete except for the third rail shoe beams, which had been temporarily removed to ensure adequate track clearances during shipment.

NEW JERSEY TRANSIT (NJT)

Seasonal Service to Monmouth Park Starts

Starting in May and running every weekend until September 15, NJT is headed to Monmouth Park Racetrack with a discount package. Beginning Saturday, May 11, passengers can take North Jersey Coast Line trains to Monmouth Park Station on days when the track is open for live racing during the 2024 season.

NJT's Monmouth Park Package, which includes round-trip transportation, general admission, and an official racing program, costs only the price of the round-trip fare plus \$3.50, a total savings of \$6.50 off the face value if purchased separately.

Purchase the package from a Ticket Vending Machine or any NJT train station ticket office, excluding Atlantic City Rail Line stations. Monmouth Park Packages cannot be purchased on board trains or with the NJT mobile app.

Rail service to Monmouth Park will operate on the following days:

- Saturdays, Sundays, and holidays: May 11 thru September 15
- Fridays: June 21 thru August 23

[NJ TRANSIT PRESS RELEASE](#), May 7

Portal North Bridge Project Update

The Portal North Bridge over the Hackensack River has reached 50 percent completion. At a ceremony at the construction site, the agencies marked the halfway point of the project. The new bridge will replace the current 114-year-old swing bridge, which opens for maritime traffic resulting in a bottleneck along the busiest stretch of passenger rail in the country. The new bridge is a fixed span that eliminates the need to open and close.

The bridge is a new modern two-track, high-level, fixed-span that will improve service and capacity along this section of the Northeast Corridor. The new bridge will rise 50 feet over the Hackensack River, nearly doubling the height clearance of the existing bridge and will allow marine traffic to pass underneath without interrupting rail traffic.

The Portal North Bridge project will eliminate the 114-year-old swing bridge, which has been the enduring source of major service disruptions for NJT and Amtrak passengers traveling on the Northeast Corridor.

The project is being funded by the U.S. Department of Transportation, New Jersey, New York, and Amtrak. In January 2021, Governor Murphy announced the signing of a Full Funding Grant Agreement which secured \$766.5 million in Federal Transit Administration funding to support the project's construction.

In October 2021, a \$1,559,993,000 construction contract

was awarded to Skanska/Traylor Bros PNB Joint Venture (STJV) for the construction of the new Portal North Bridge. The contract represents the single largest construction award in NJT's history. The project spans 2.44 miles of the Northeast Corridor Line and includes construction of retaining walls, deep foundations, concrete piers, structural steel bridge spans, rail systems, demolition of the existing bridge, and related incidental works.

[NJ TRANSIT PRESS RELEASE](#), May 13

Brick Church Station Modernization

The Federal Transit Administration (FTA) announced that it has awarded an \$83.3 million grant to NJT to transform the historic Brick Church station in East Orange into a modern, fully accessible station that preserves historic features and improves the passenger experience. Highlights include replacing the current low-level platforms with accessible high-level platforms and adding elevators in accordance with the Americans with Disabilities Act (ADA). New security cameras and other safety measures will also be included. The work also includes restoring historic features in accordance with the station's status on the New Jersey and National Register of Historic Places.

The funds are part of the FTA's All Stations Accessibility Program (ASAP), which makes competitive funding available to assist in the financing of capital projects. The FTA awarded a total of \$343 million in ASAP grants for 2024 to eight transit agencies in eight states, of which NJT received the second highest award.

Other improvements already underway through state-funded initiatives include upgrading signage and communication systems, new historic replica lights, repairing the historic benches and terrazzo floor, installing an art installation on windows, converting the former baggage room to leasable commercial office space as well as stairwell, restroom, and security upgrades.

[NJ TRANSIT PRESS RELEASE](#), May 28

PORT AUTHORITY TRANS-HUDSON (PATH)

AirTrain JFK Resumes Normal Service

On or before April 30, AirTrain JFK resumed its normal service around the entire terminal loop. As noted in the February 2023 *Bulletin*, service was suspended between Terminals 1 and 4 to permit the start of construction of the new Terminal 1 which, as was done at Terminal 4, will enclose the AirTrain right-of-way.

With the resumption of normal service, the clockwise-running inter-terminal loop service resumed.

TAPP Now Available in All Stations

PATH's new contactless fare payment system, TAPP, is now available at all stations systemwide in both New York and New Jersey with the activation of new TAPP readers at the Christopher Street and 9 Street Stations. As PATH adds more

TAPP readers, turnstiles at all stations will continue to accept TAPP, SmartLink, and MetroCards as fare payment.

With the installation and activation of TAPP readers at the Christopher Street and 9 Street Stations, riders at all New York stations can now pay for PATH rides using any contactless credit/debit card or a digital wallet on their smartphones. PATH installed TAPP readers at the 14 Street and 23 Street Stations in Manhattan earlier this month, and all PATH stations in New Jersey were outfitted in April. TAPP, which is short for Total Access PATH Payment, is an open-loop contactless payment system, allowing riders to use their own preferred method of contactless payment instead of a specific PATH-issued SmartLink card or a pay-per-ride MetroCard. Existing PATH discounts for SmartLink users remain in effect and will be available when PATH issues a TAPP fare card.

The Port Authority introduced the new contactless fare system in December 2023 during a pilot program at the Journal Square and 33 Street Stations. After this week's TAPP reader activations in New York, almost 120 PATH turnstiles now are TAPP-enabled. So far, riders have TAPPED into the system nearly five million times, with an average of nearly 70,000 weekday riders and more than 40,000 weekend riders using TAPP. Equipment supporting both SmartLink and MetroCard as PATH fare payment remains operational as more passengers adopt TAPP as their preferred payment method and PATH continues to phase in the remaining turnstiles systemwide with TAPP-enabled technology. The system has a total of 341 active turnstiles.

[PORT AUTHORITY PRESS RELEASE](#), May 22

Other U.S. Systems

ATLANTA, GA.

Airport Station Reopens

The Metropolitan Atlanta Rapid Transit Authority (MARTA) Airport Station reopened on May 20 after a six-week closure to renovate the concourse and platform levels. The following work was completed during a temporary station closure from April 8 through May 19:

- Installation of new terrazzo flooring in the concourse
- Installation of new platform pavers
- Repair, sealing and painting of track and concourse walls
- Preparation for installation of the new canopy

During the closure, MARTA provided bus shuttle service between College Park Station and Hartsfield-Jackson Atlanta International Airport 22 hours a day. The agency notes shuttle ridership was approximately 320,000 during the 42-day period. Airport Station serves on average 11,000 riders daily.

The Airport Station Project is part of MARTA's approximately \$1 billion multi-year Station Rehabilitation Program and primarily paid for with State of Good Repair Funds in the capital budget. The total project cost is \$55 million.



MARTA's Airport Station at the South Airport Terminal on April 29, 2006. DeKalb photo via Wikimedia Commons

MARTA began station rehabilitation work at Airport Station in June 2022. Prior to this most recent round of construction, teams completed structural work in preparation for the new elevator installation, replaced the south vestibule, and progressed electrical upgrades. Other planned improvements include replacement of ceilings and lighting, a new RideStore, full rehabilitation of the existing elevator, a public art installation, replacement of all signage, and full renovation of employee spaces.

The agency notes additional service impacts may follow as the project reaches its conclusion, including nightly closures and another temporary closure at the end of construction to install the new canopy.

MARTA has also upgraded digital sign content at Airport Station and at all 38 rail stations systemwide to display more service information, including real-time train arrivals and scheduled train arrivals up to 30 minutes out. Real-time arrivals will be denoted with an icon and update every 10 seconds. Scheduled arrivals will account for single tracking and special rail service. Other digital sign upgrades planned for this year include repairs to non-functioning station screens, adding live bus departures and cancellations to the screens, and enhancement to MARTA's website.

[MASS TRANSIT](#), May 21

AUSTIN, TEX.

Austin Light Rail Phase 1 Advances

The Austin Transit Partnership (ATP) has entered the project development phase for its Austin Light Rail Phase 1 Project under the Federal Transit Administration's Capital Investment Grants (CIG) New Starts program — the competitive grant program that funds transit capital investments.

ATP is now eligible for future reimbursement of allowable costs incurred for the planning and design work to develop



Rendering of the station at Pleasant Valley. Austin Transit Partnership

the project. This project development phase is an initial step towards the execution of a final grant agreement with the FTA.

During the next two years, ATP will complete the project development phase, to include completing National Environmental Policy Act requirements and advancing architectural and engineering design of the system. Completing these and other activities will ensure sufficient information for FTA to evaluate and rate the light-rail project under the CIG criteria. FTA will remain in contact with ATP, providing technical assistance and project oversight as Austin Light Rail Phase I moves through project development. [AUSTIN TRANSIT PARTNERSHIP PRESS RELEASE](#), May 28

BOSTON, MASS.

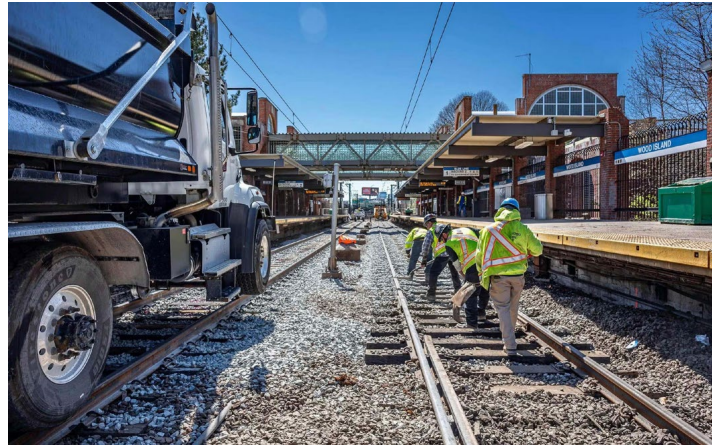
Blue Line Construction Progress

The Massachusetts Bay Transportation Authority (MBTA) has completed critical track work on the Blue Line. Crews were able to lift 19 safety-related speed restrictions along more than five miles of the Blue Line, gaining back more than three minutes of travel time for riders. The Blue Line is now free of all speed restrictions and there are now less than 100 speed restrictions across the MBTA system for the first time since March 2023.

The success of this Blue Line diversion was achieved through a collaborative effort between contractor crews and the MBTA workforce – much of the work was able to be successfully completed due to the assistance and expertise of the MBTA's Maintenance of Way Department. During the height of the work performed, more than 200 workers from five contractor groups alongside MBTA track maintenance, signals, capital, power, facilities, and logistics forces all

worked across the Blue Line.

To accomplish this work, Blue Line service was replaced with shuttle buses between Maverick and Wonderland every day from April 17 to April 21. Beginning April 22, the Blue Line service suspension was shifted between Airport and Wonderland. It was previously anticipated that Blue Line train service would resume on April 28 but the service suspension was extended two days to April 30 to allow crews additional time to complete the promised work. Evening Blue Line service was also suspended between Bowdoin and Orient Heights April 9 through April 11.



A recent view of the track work on the Blue Line, at Wood Island. MBTA photo

The work consisted of:

- Replaced 22,500 feet of rail
 - Replaced more than 9,000 feet of overhead catenary wire
 - Replaced more than 10,000 crossties
 - Installed 48 composite ties at trip stops
 - Approximately 41,000 feet of track was surfaced and tamped
 - Replaced approximately 1,000 feet of full depth track
 - Replaced approximately 700 feet of restraining rail
 - Installed approximately 35 switch timbers
 - Repaired stairways at Wonderland, Orient Heights, and Wood Island
 - Performed station inspections and standpipe testing
 - Repaired the operator's platform within the non-passenger area on Wonderland and operator's walkway at Orient Heights
 - Replaced approximately 500 feet of fencing between Beachmont and Revere Beach
 - Repaired roof canopies at Wood Island, Orient Heights, and Suffolk Downs
- Additional in-station work was "piggy-backed" onto the above:
- Cleaning, sanding, and painting wooden station benches
 - Painting doors, sign frames, barrels, sand boxes, and fences
 - Door repairs
 - Yellow tactile edging repairs to platforms
 - Flooring repairs to prevent tripping hazards
 - Concrete repairs
 - Wall repairs

- Stairway upgrades and repairs, including handrail repairs
- Waste receptacle replacements
- Pump room, plumbing, and HVAC maintenance and repairs
- Cleaning and replacement of mile markers
- Powerwashing and cleaning work
- Installing/replacing station signage, including system maps.

[MASS TRANSIT](#), May 2

BRIGHTLINE WEST

Siemens to Supply High-Speed Trains

Private operator Brightline has selected Siemens Mobility as the preferred bidder for a contract to supply 10 seven-car American Pioneer 220 (AP220) high-speed EMUs. They will operate on the 350-kilometer, \$US 12 billion Brightline West high-speed line under construction between Las Vegas and southern California.

The contract includes 30 years of maintenance that will be performed at Brightline West's vehicle maintenance facility in Sloan, Nevada. Work includes both routine daily maintenance as well as long-term overhauls and repairs.

Siemens plans to establish a new U.S. facility to build the AP220, complying with the Buy America requirements of the contract. It will announce the location of America's first true high-speed rail production center when the contract is finalized.

The AP220 is described as an evolution of the Siemens Velaro high-speed train platform. The 350 km/h trains will be built specifically for the U.S. market and will be the first very high-speed trains built in the United States, according to Brightline.

Separately, Siemens has been shortlisted, along with Alstom, for a contract to supply six 350 km/h trains for the publicly-funded California high-speed project, the first phase of which will run between Bakersfield and Merced. This contract is expected to be awarded by the end of the year.

The trains will have capacity for 434-450 passengers, depending on final configuration, and will enable end-to-end journey times of less than two hours on the line, which is scheduled to open in 2028.



Rendering of Siemens' AP220 train for Brightline West. Brightline

Siemens says the AP220 will feature an ultrawide carbody designed for "unparalleled passenger comfort and to be the most accessible train on the market," exceeding Americans with Disabilities Act (ADA) requirements and enabling passengers in wheelchairs to move with ease from car to car.

Brightline says it conducted an extensive competitive procurement process involving multiple international suppliers and selected Siemens based on "specific criteria" that included price, manufacturing schedule, train performance including speed, ADA compliance, passenger amenities and total passenger capacity. The criteria considered future interoperability with the California high-speed project.

Siemens also supplied the diesel Venture push-pull trains that operate on Brightline's Florida service, which began in 2018.

Brightline West broke ground on the new line on April 22, the vast majority of which will be constructed in the median of the I-15 highway. The line will include stops in Las Vegas as well as Victor Valley, Hesperia, and Rancho Cucamonga in California. The project was awarded \$US 3 billion in funding from the Bipartisan Infrastructure Bill in December. Brightline says the remaining \$US 9 billion capital cost will be privately funded.

[INTERNATIONAL RAILWAY JOURNAL](#), May 2

CHICAGO, ILL. AREA

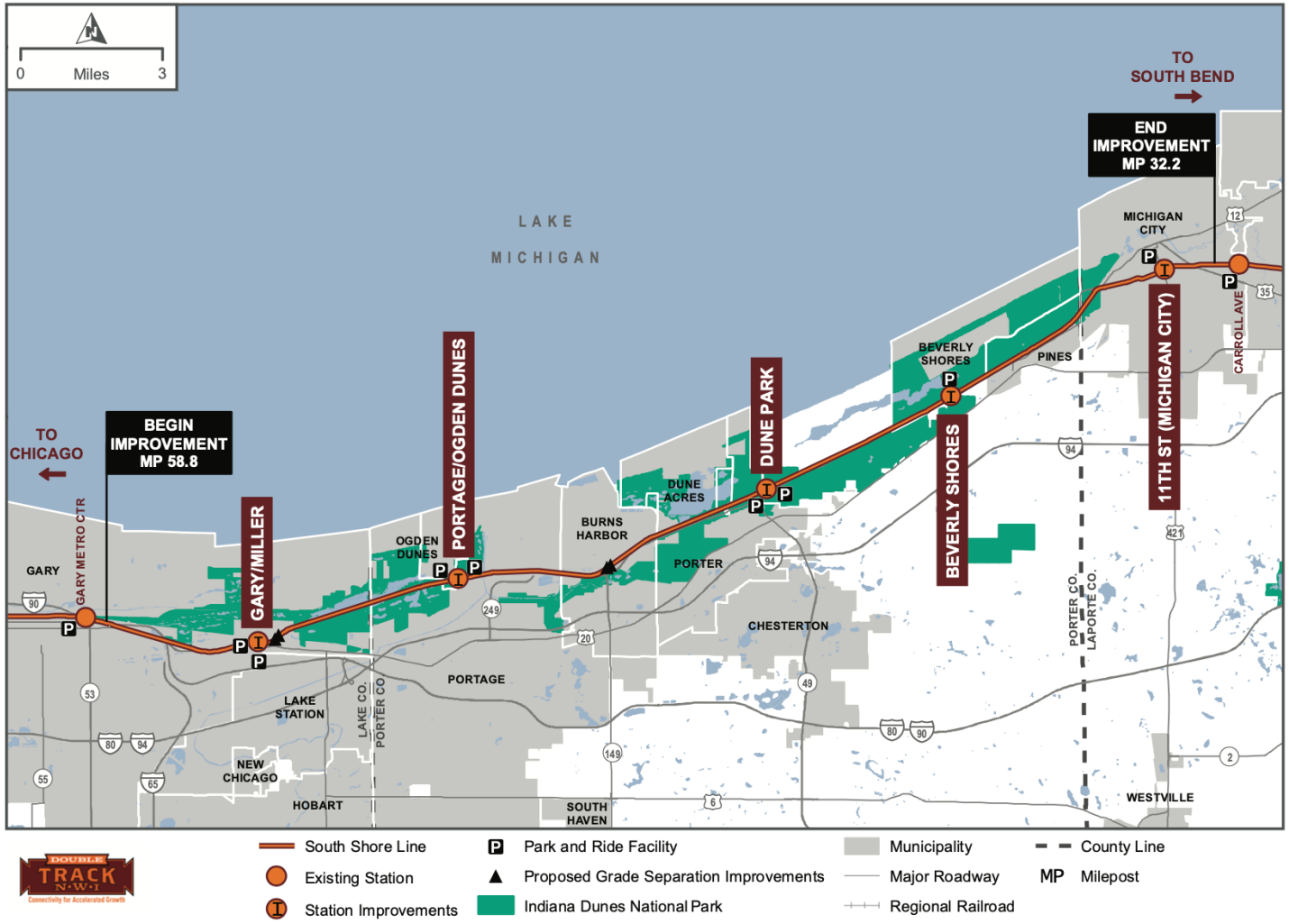
South Shore Line Milestone Reached

Officials gathered on May 13 to cut the ribbon on Northern Indiana Commuter Transportation District's (NICTD) Double Track Northwest Indiana project, which will expand passenger service on the South Shore Line and is one of the largest public transit investments in the state's history.

The project, which broke ground in June 2022, saw the construction of 26.6 miles of new second track between Gary and Michigan City, Ind., two miles of completely new right-of-way in Michigan City, platform reconfigurations at five stations, construction of 1,475 additional parking spaces, a new overhead catenary power system, and reconstruction of 22 at-grade crossings and 20 culverts. Safety along the entire alignment will be improved with the elimination of 20 at-grade crossings and removal of street-running track.

The \$650-million project was supported with a \$172.96 million Full Funding Grant Agreement awarded in January 2021. The project originally entered the Federal Transit Administration's Capital Investment Grants (CIG) Program as a Core Capacity Project, but left and re-entered the program as a New Starts Project in February 2020. The CIG Program project category switch was necessary because declining ridership in February 2019 would not make the Double Track project eligible for Core Capacity funding.

NICTD also secured a \$27.5 million Railroad Rehabilitation and Improvement Financing (RRIF) loan from the U.S. Department of Transportation (USDOT) Build America Bureau for the project in 2022. Additional funding for the project included \$24 million from the American Rescue



Map of the South Shore Line project area. NICTD

Plan, \$340 million from the state, \$80 million from local jurisdictions and \$30 million from NICTD.

Starting May 14, the rail line will implement a new schedule featuring a total of 53 trains to and from Chicago.

In addition to improved service and faster travel times, the Double Track project and its companion project, the West Lake Corridor project, are projected to attract approximately \$2.7 billion in private investment to Northwest Indiana, and result in more than 6,000 new jobs and \$5 billion in economic impact by 2048. The state reports nearly \$800 million in economic development is already underway on both project corridors.

[MASS TRANSIT](#), May 14

LOS ANGELES, CALIF.

Eastside Transit Corridor Phase 2 Progress

The Los Angeles County Metropolitan Transportation Authority (L.A. Metro) Board has voted to approve

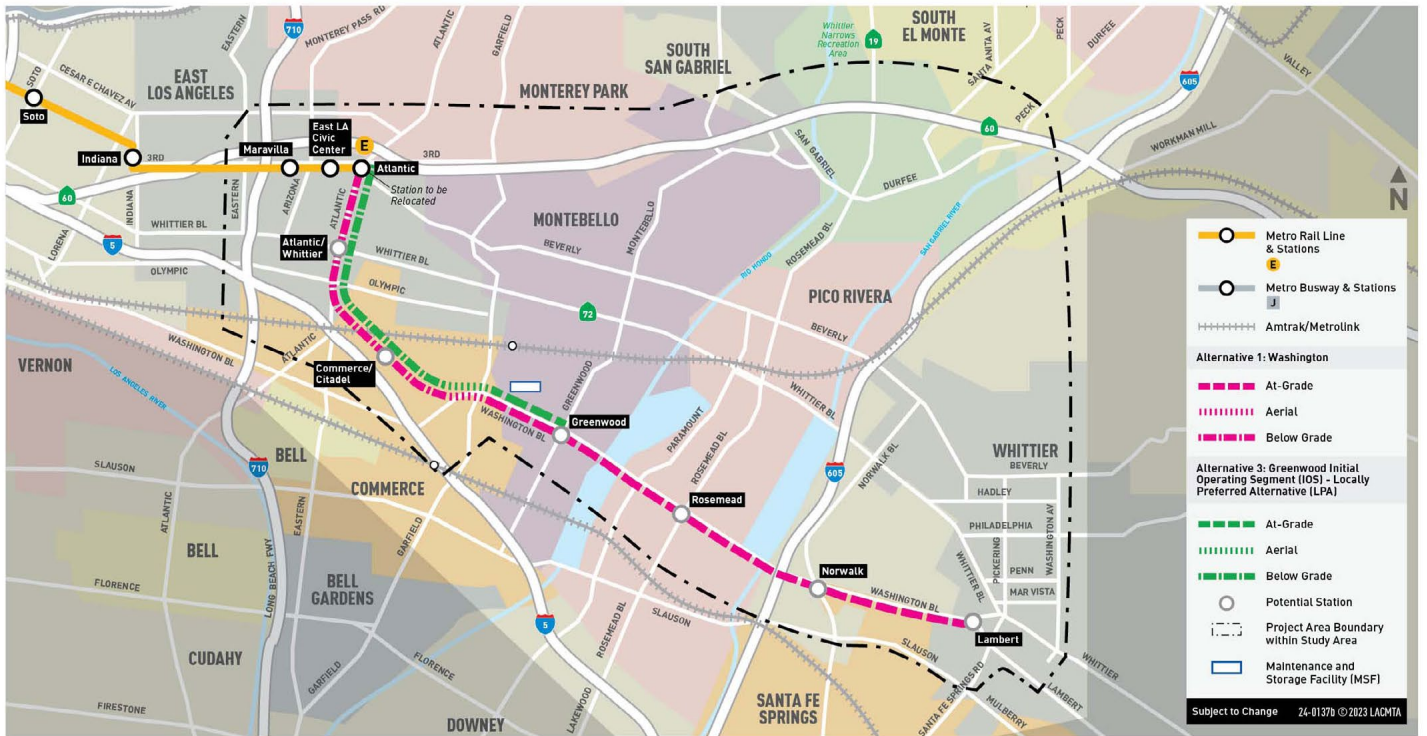
certification of the final Environmental Impact Report (EIR) for the Eastside Transit Corridor Phase 2 Project. The approval finalizes the EIR for the two-phased project that will extend the L.A. Metro E Line nine miles further east from its current terminus at Atlantic Station in east Los Angeles to Lambert Station in the city of Whittier.

As part of Phase 1 that is scheduled to start by 2029, according to the Initial Operating Segment, the line will extend from Pomona and Atlantic Boulevards to the city of Whittier via Washington Boulevard. The Eastside Extension will include three new rail stations, with the new Atlantic/Whittier and Commerce/Citadel stations underground and the Greenwood station at street level. Additionally, a new Maintenance and Storage Facility will also be added and located in the city of Montebello.

The Eastside Transit Corridor Phase 2 rail extension will provide commuters in a high travel-demand corridor relief to the limited transportation systems currently available.

The initial segment from east Los Angeles to Greenwood Station in Montebello will include approximately three miles of light-rail transit underground, a half mile of aerial transit, and 1.1 miles of track at street level, for a total of 4.6 miles of

Eastside Transit Corridor Phase 2 Project Map



new rail line from the current terminus at Atlantic Boulevard.

Funds for Phase 1 of the project comes from the Measure M transportation sales tax measure approved by voters in 2016. Measure M allocates \$6 billion for this project in two funding cycles. Cycle 1 allocates \$3 billion for the Washington Alternative beginning in 2029 and Cycle 2 allocates \$3 billion for the second alternative beginning in 2053. The second alternative is being evaluated through the San Gabriel Valley Transit Feasibility Study.

[MASS TRANSIT](#), May 24

NEW ORLEANS, LA.

More Streetcars to Become ADA-Compliant

The New Orleans Regional Transit Authority is getting more than \$5 million to make the St. Charles streetcar line accessible for riders with disabilities.

The federal government is giving the RTA \$5,492,524 to make the streetcar route comply with the Americans with Disabilities Act, or ADA. The funds came as a result of the Bipartisan Infrastructure Law in November 2021.

The federal funding for the streetcar line comes after a New Orleans family won a federal disability discrimination lawsuit against RTA. As a result, eight-year-old Oscar Edmunds, who uses a wheelchair, was provided expanded access to the St. Charles streetcar line.

The streetcars marked in red that travel the Canal Street, Rampart, and Riverfront routes are ADA compliant, according to the RTA website. Currently, only some of the



Double-truck motor 911 (Perley Thomas, 1923) is seen turning off Carondelet Street and onto Canal Street on May 11, 2014.

SKPicture photo via Urban Electric Transit

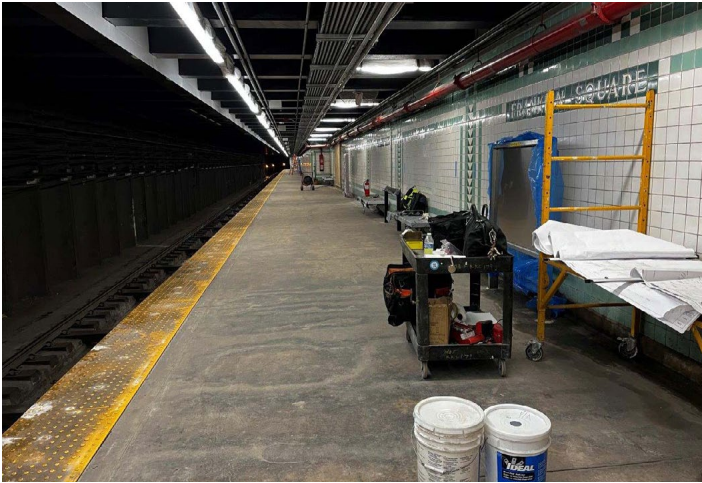
streetcars marked in green that travel the St. Charles Avenue line are ADA-accessible.

[MASS TRANSIT](#), May 28

PHILADELPHIA, PENN.

PATCO Franklin Square Station

As a result of development surrounding the Franklin Square area, the Franklin Square Station is returning. Since its opening in 1936, the station, located near Seventh and Race



The platform along Track 2 prior to floor coating, in a view taken in April. PATCO photo

Streets, has sporadically closed and reopened with the last period of passenger service between 1976 and 1979.

The project will address improvements to the station’s civil, structural, mechanical and electrical systems, and provide access in compliance with the current Americans with Disabilities Act standards.

[FRANKLIN SQUARE PROJECT WEBSITE](#)

SACRAMENTO, CALIF.

First New S700 Cars Arrive

The Sacramento Regional Transit District (SacRT) has received two of the 20 new S700 low-floor light-rail vehicles. The agency has also completed 1,000 miles of testing and is ready for passenger service.

The 1,000-mile testing process is the final step of testing that is required to ensure all safety and quality standards are met before the train can operate on SacRT’s tracks when service of the new low-floor trains begins later this summer. The other 18 vehicles are currently in different phases of testing.



New S700 No. 405 at Folsom. SACRT photo

SacRT’s Light Rail Modernization project is a major capital project in the Sacramento, Calif., region that includes the purchase and rollout of new accessible low-floor light rail vehicles, modifications to station platforms to meet the height requirements of the new vehicles and the addition of a passing track to allow for 15-minute frequency at all four Folsom area stations.

The first phase of station platform construction on the Gold Line is nearly complete and SacRT will begin phase two of construction on Blue Line stations in fall 2024.

[SACRAMENTO RT PRESS RELEASE](#), May 30

SAN FRANCISCO BAY AREA, CALIF.

Final Caltrain EMU Testing

Caltrain will be suspending all train service between San Francisco and San Jose on June 8 and 9 to accommodate the testing of the new electric fleet. This will be the final test of the electric fleet before the full rollout of electrified passenger service begins in September.

During the suspension of train service, Caltrain says limited capacity replacement bus service will stop at San Jose Diridon, Palo Alto, and Millbrae Stations. There will be no replacement bus or train service at other stations. Buses will have limited capacity for luggage and bikes and will be ADA accessible.

[CALTRAIN PRESS RELEASE](#), May 30

SAN JOSÉ, CALIF.

BART Silicon Valley Extension

The federal budget officially includes \$500 million allocated for a Full Funding Agreement through the Federal Transit Administration’s (FTA) Capital Investment Grants Program for the Santa Clara Valley Transportation Authority (VTA) BART Silicon Valley Extension project.



Map of the Santa Clara extension. VTA

The significant federal funding allocation is the first funding commitment for the project through the FTA's New Starts Funding Program. Santa Clara VTA will submit its formal request for approximately \$6 billion, roughly 50 percent of the project cost, through the FTA funding program later this summer, with the expectation of completing the FFGA with the FTA before the end of 2024. The FFGA will outline the terms, timeline, and annual allocations Santa Clara VTA will receive. The other half of the project cost is already committed with local and state funds.

The largest single public infrastructure project ever constructed in Santa Clara County, this project will extend Bay Area Rapid Transit service six miles from the Berryessa Transit Center into downtown San José with an underground tunnel, ending in the city of Santa Clara.

[MASS TRANSIT](#), May 10

WASHINGTON, D.C.

2000-Series Trains Retired

The Washington Metropolitan Area Transit Authority (WMATA) has retired its 2000-series trains to make room for updated vehicles.

According to the agency, the trains, introduced in the early 1980s, are past their useful life. WMATA trains are built to last generally around 40 years or so. Reliability has decreased over the years and parts are getting harder to procure.

WMATA's goal is to remove the aging trains that have more maintenance issues, leaving a more reliable fleet of newer vehicles resulting in fewer offloads and delays. The 2000-series had issues nearly four times as often as the agency's newer 7000-series trains.

The trains operated nearly 200 million miles and carried more than 775 million passengers. The 2000-series trains were manufactured by Breda in Italy and then assembled in Beech Grove, Ind. Their arrival was delayed about two years due to a factory breakdown in West Germany and a labor strike in a Wilmerding, Penn., brake factory.



One of the 2000-series Breda cars on delivery in around 1982. WMATA photo

WMATA says that while the train looked similar to the older 1000-series, they included new features like flip-dot destination signs instead of mylar roll signs that often malfunctioned, exterior speakers for announcements, and a dozen fewer seats than the 1000-series to allow more passengers per train.

In the early 2000s, the trains went through a mid-life rehabilitation replacing propulsion systems, adding new exterior and interior LED signs, and updating the seats with a new color motif: Colonial Burgundy, Potomac Blue, and Chesapeake Sand.

The trains were largely in storage during the pandemic but were used in recent years while WMATA addressed issues with the other fleet series. The removal of the 2000-series also marks the end of an era for WMATA, as carpet will no longer be on any of the WMATA's trains.

In the coming months, the cars will be decommissioned and WMATA will remove safety-sensitive parts and hazardous materials.

Two of the 76 train cars will be saved for preservation as part of WMATA's history. Two others are used as part of WMATA's money train that collects cash from fare machines around the system.

WMATA's long-term fleet strategy calls for phasing out the 3000-series trains starting in 2027. At the same time, WMATA will start to introduce the first of at least 256 new 8000-series Fleet of the Future train cars. The remaining fleet will be made up of 6000-series (with the classic brown stripe motif) and newer 7000-series and 8000-series trains.

Until the 8000-series arrive, WMATA will still have enough trains to accommodate current peak ridership and up to 33 percent more ridership growth before sustained crowding.

WMATA retired the 1000-series in 2016 and 2017, the 4000-series in 2017 and the 5000-series in 2018 and 2019.

[MASS TRANSIT](#), May 10

International

DNIPRO, UKRAINE

Leipzig Trams Donated

Dnipro is taking delivery of 26 modernized ČKD Tatra T4D-M1 trams donated by the German city of Leipzig. These are in addition to seven T4D-M1 trams which the Ukrainian city bought from Leipzig in 2019. All of the T4D trams were originally built between 1984 and 1986.

Dnipro's tram fleet is composed almost entirely of trams built in Czechoslovakia, most of which were acquired second-hand from eastern German cities including Schwerin, Dresden, Berlin, and Magdeburg.

The withdrawal of the last ČKD Tatra trams in Leipzig is currently planned for 2027-28.

[METRO REPORT INTERNATIONAL](#), May 21



Ex-Leipzig T4D-M1 2111 (ČKD Tatra, 1986) after its arrival in Dnipro, on May 8. This particular car had been renumbered from 2196 in 12/2001 and converted from a standard T4D in 12/1993.

DDA_PhotoGraphies photo via Urban Electric Transit

DUBLIN, IRELAND

First Battery-Electric Train Unveiled

The first battery-electric multiple-unit for the DART+ program to enhance commuter train services around Dublin has been unveiled at Alstom's Katowice factory in Poland.

DART+ will see the 1.5 kV DC overhead around Dublin extended from 50 to 150 kilometers, with trains using battery power to run beyond the wires until electrification is completed.

In December 2021 national railway Iarnród Éireann awarded Alstom a 10-year framework agreement covering the supply and 15 years of maintenance of up to 750 vehicles for the DART+ program, formed into five-car or 10-car sets and configured as either EMU or BEMU trainsets.

There was an initial firm order for six five-car EMUs to provide urgently needed extra capacity on the existing DART network, plus 13 five-car BEMUs to expand services. The first BEMU is scheduled to be delivered in September 2024. All the initial trains are scheduled to be in service by the end of 2025.

A second order placed in December 2022 covers 18 five-car BEMUs to enter service from autumn 2026 for full fleet operation by late spring 2027.

Services between Dublin and Drogheda will be the first to be worked by the BEMUs, with the sets running on battery power over the 37-kilometer unwired section north of Malahide. Charging will only be possible at special charging facilities, not from the 1.5 kV DC overhead, and Alstom is to install an initial three charging points at Drogheda.

The 145 km/h five-car articulated BEMU unveiled on April 29 is part of Alstom's X'trapolis modular commuter train platform.

It is 80 meters long with 204 seats and a nominal capacity of 551 passengers, and features air-conditioning, wide inter-car gangways, and ETCS. There is level access with automatic

retractable steps at each doorway leading into low floor sections, and short ramps leading to higher floor areas over the trucks.

The water-cooled lithium ion batteries are roof-mounted at the outer ends of both driving vehicles, with a capacity of 840 kWh per unit. The operator is expecting a range of 80 kilometers from batteries near the end of their operational life with 75 percent of initial capacity, when running fully loaded, with HVAC operating. This expectation includes requiring operation for a 90 minute period with all onboard equipment in use whilst not using the overhead power supply, for example during a layover in Dublin.

Ireland's 1,600 mm gauge means that all testing will have to be carried out on the Iarnród Éireann network rather than at a testing facility. The first trainset has been fully assembled and placed on trucks in Poland, but production of the rest of the fleet will see the bodies transferred to Dublin by road where they will be united with trucks delivered directly from France.

The battery packs will also be manufactured in Poland, but transport safety rules mean that they will be taken separately to Dublin for fitting to the trains at Iarnród Éireann's Inchicore depot, where a testing and commissioning facility has been constructed.

With some of its DMU fleets close to life-expiry, Iarnród Éireann says that the BEMU design would be an option for the Cork Area Commuter Rail program to enhance the local network, as well as for Galway and Limerick. As there is no electrification outside the Dublin area, these trains would operate solely in battery mode.

[METRO REPORT INTERNATIONAL](#), May 7

FRANCE

SNCF Unveils TGV-M Livery

SNCF Voyageurs and supplier Alstom have revealed the color scheme for the operator's future fleet of TGV-M trainsets.

At a presentation staged within Alstom's premises in Belfort on April 29, a fully-painted unit was rolled out to a display area for the benefit of photographers and journalists.



SNCF Voyageurs and supplier Alstom have revealed the color scheme for the operator's future fleet of TGV-M trainsets. Alstom photo

In marked contrast to earlier TGV liveries that ranged from bright orange for the first generation to blue and silver for later members of the family, TGV-M features a sober pale gray power car with a shade of white chosen for the double-deck trailers. The nose of the power cars has a black panel round the windscreen and headlights, while a dark gray low level band stretches over the bodyside above the trucks; this is continued on the trailer cars.

Entrance doors on the aluminum-bodied trailers are picked out in a dark red color described as “Frenchberry,” and the same shade is used for the TGV inOui logo on the power car sides.

SNCF placed the styling for TGV-M in the hands of French design agency AREP and Japanese house Nendo, both of which have also been involved in the interior decor of SNCF’s future high speed flagship.

In contrast to some earlier liveries that used adhesive panels, the full TGV-M livery is painted, which Alstom suggests will have better weather resistance. The very light tones will also reflect heat in the summer, reducing the load on air-conditioning equipment and contributing to the train’s climate-friendly attributes.

Alstom says that 10 days are required to paint the steel body of a TGV-M power car, a process carried out in eight stages. The drying process requires a further 14 days.

Entry into commercial service of the first TGV-M trainsets, originally envisaged in 2024, is now expected in the second half of 2025. Testing of the first production set and four pre-production units is currently in hand as part of the process needed to obtain authorization for commercial deployment from the European Agency for Railways.

[RAILWAY GAZETTE INTERNATIONAL](#), May 1

LIBEREC, CZECH REPUBLIC

Interurban Tram Line Reopens

Revenue services on the full length of inter-urban tram Route 11 between Liberec and Jablonec nad Nisou have restarted following a two-year rebuilding which included conversion from meter to standard gauge.

The reopening on May 1 completed a 30-year program to rebuild the tram network operated by DPMLJ. All regular services are now operated on standard-gauge tracks, although there is a section of dual gauge in the center of Liberec for heritage services.

The 12-kilometer interurban route opened in 1955 and carries around one million passengers per year.

The rebuilding included partial rerouting and segregation from road traffic, resignaling, drainage works, and construction of two bridges. The work was undertaken in four contractual packages.

Work on the section between Vratislavice and Jablonec began in April 2022 and had been scheduled for completion in summer 2023, but was delayed by legal issues around land acquisition and the impact of the pandemic. The cost came in at KC893 million.



Looking almost due north at the rebuilt Měnirna tram stop, three stops from the terminal in Jablonec nad Nisou on July 28, 2022 during the reconstruction and re-gauging of the line. Before the rebuild, this tram stop was to the photographer’s back.

Jan Šlehofer photo via Urban Electric Transit

Future plans include an 800-meter extension to ulice Kamenná in Jablonec.

[METRO REPORT INTERNATIONAL](#), May 3

MADRID, SPAIN

New Metro Trains Ordered

Madrid Metro has ordered 40 six-car trains from CAF for €450 million. They will be deployed on Lines 6 and 8 to replace some of the oldest rolling stock currently in service, such as the series 5000 trains.

The 23.5-kilometer circular Line 6 serves 28 stations and is the busiest on the Madrid Metro network. It carried 110 million passengers in 2023, an average of 618,000 every working day.



One of Madrid Metro’s oldest trainsets, from the 5000 series, M-5288 (CAF, 1983) is seen at Estación Príncipe Pío on Line 6 on February 17, 2011. Aare Olander photo via Urban Electric Transit

Line 8 runs for 16 kilometers from Nuevos Ministerios in the city center to Aeropuerto T4 station at Madrid Barajas Airport, serving a total of eight stations. Both Line 6 and Line 8 are to be converted to automatic train operation (ATO).

As well as increasing capacity on the network, Madrid Metro says that the new trains, which feature full-width open gangways between the cars, will enable it to meet increased demand when the extension of Line 11 to Conde de Casal is completed.

The contract awarded to CAF also includes technical assistance for fleet maintenance over 10 years.

Under the second phase of Madrid Metro's fleet renewal program, an additional 40 six-car trains will be ordered for €518.4 million in the next few months. They will be deployed on the 24-kilometer Line 1 which runs from Pinar de Chamartín to Valdecarros, serving 33 stations.

[INTERNATIONAL RAILWAY JOURNAL](#), May 1

MOSCOW, RUSSIA

Driverless LRV Under Test

Moscow Metro has announced the start of trials with driverless LRVs on Line 10 of the city's light rail network, a further milestone in the project.

A converted LRV is operating on the line, but not in passenger service. A driver is still present at the controls during this initial phase of the project, but the LRV operates completely autonomously in the depot.



Type 71-911EM No. 30630 (? , 6/2021), the car undergoing testing, is seen at Krasnopresnenskoye tram depot on May 30.

Moscow Metro photo

Moscow Metro says that at present the driverless system is automatically correcting any human error on the part of the driver. The LRV has been fitted with an advanced LiDAR system that provides highly accurate location data, while being able to detect objects in a 360° arc around the vehicle. Potential obstacles are detected and the LRV is brought to a stand in time if a pedestrian steps on the track, for example.

Moscow Metro says that the software for driverless operation has been developed by its own staff without external assistance. In the next phase, by the end of 2024, the LRV will begin fully controlling the driving process in test mode, with the driver serving as a backup. In the third and final phase, by the end of 2025, they plan to launch a fully unmanned LRV without a driver at the controls for passenger journeys.

[INTERNATIONAL RAILWAY JOURNAL](#), May 24

OSLO, NORWAY

New Metro Trains Ordered

Oslo transport operator Sporveien has awarded CAF a €150 million contract to supply 20 three-car metro trainsets to accommodate growing ridership and support expansion of the T-banen network. The order announced on May 8 includes spare parts, and there are options for a further 90 trainsets.

The M4000 trainsets from CAF's Inneo family will be adapted for Norway's weather including snow and temperature extremes. They will have three 1.4-meter-wide double doors on each side of the carbody for rapid passenger flows and short dwell times, with multi-functional areas in each car providing space for wheelchair users, baby carriages, and bicycles.

All trucks will be powered, and the trains will have onboard batteries to enable them to reach the next station in the event of a power loss and for depot movements. The trains will have passive provision for GoA4 driverless operation if required in the future.



Rendering of CAF's M4000 metro train for Oslo. Sporveien

Deliveries are due to start in late 2027, ahead of the opening of the eight-kilometer Fornebu Line in 2029, with all 20 sets to be in service in 2030. They will augment the current fleet of 115 MX3000 trainsets supplied by Siemens Mobility in 2006-14.

The order was confirmed after the city decided on May 2 to release an additional Nkr350 million of funding to cover cost increases resulting from a weak exchange rate and higher interest rates since the investment decision was made in February 2022. It is the third contract that CAF has been awarded in Oslo in recent years, following a 2022 order to supply 183 articulated electric buses and an order for 87

trams which are currently being delivered.

The metro carried 112 million passengers in 2023, and annual ridership is expected to increase by 30 million by 2030. [METRO REPORT INTERNATIONAL](#), May 8

SALZBURG, AUSTRIA

Stadtbahn Project to Go Ahead

The Federal Ministry for Transport & Environment has authorized the construction of a 15-kilometer Stadtbahn line running from the main station in Salzburg to the south of the city and on to the suburb of Hallein.

Dubbed S-Link, the project forms an end-on extension of the existing Salzburger Lokalbahn. It is due to be built in four stages, and has been granted a 99-year concession. Services would be run by the city's public transport operator Salzburg Linien Verkehrsbetriebe GmbH.

The first stage, which was endorsed by the city council in December 2020, will form a one-kilometer double-track underground extension of the Lokalbahn from its existing sub-surface terminus alongside the main station to Mirabellplatz, east of the city center. Preliminary works are expected to begin later this year with the main construction phase commencing in early 2025 for completion by 2028.



GT8NF 58 (SGP, 2002) at the terminal under the Hauptbahnhof in Salzburg on October 31, 2020. This car had been rebuilt from a GT6 in 2013. 21-72 photo via Urban Electric Transit

The second phase would continue the line from Mirabellplatz to Akademiestrasse, near the castle on the west side of the Salzach River. The third stage would see S-Link extended to Salzburg Süd, while the fourth would take it on to Anif and Hallein. Details of the alignment and station locations for the second, third, and fourth stages have yet to be finalized, with three route options being investigated. Completion of the project is not expected until around 2034.

Anticipated cost of the S-Link project ranges from €1.98

billion to €2.84 billion, depending on the final choice of alignment. The federal government has committed to covering half of the total capital investment.

In the longer term the S-Link may be connected to the city's S-Bahn network, potentially facilitating the operation of tram-train vehicles over tracks operated by Austrian Federal Railways.

Meanwhile, Salzburger Lokalbahn continues to invest in infrastructure and other improvements, following the completion last year of station modernization and reconstruction work at Oberndorf and Bürmoos. Track upgrades are currently in progress between Schlachthof and Anthering, while station improvements are being made at Schlachthof, Muntigl, Acharting, and Siggerwisen.

Further sections of the line are due to be double-tracked, with the 2.2 kilometers between Haidenöster and Bürmoos to be tackled in 2026 and the Eching to Irlach section in 2027. Station tracks at Bergheim and Anthering will also be extended. This will enable the introduction of a 15-minute interval service between Salzburg and Bürmoos from 2028.

A fleet of new rolling stock is being planned for delivery in 2027. Other improvements include a new train control center, the installation of GSM-R, and the roll-out of digital signaling with continuous train control.

[METRO REPORT INTERNATIONAL](#), May 23

TALLINN, ESTONIA

New Pesa Tram Arrives

Tallinn operator TLT has taken delivery of the first of 23 trams which Pesa Bydgoszcz is supplying under a €52 million order placed in 2022.

The three-section low-floor tram from the Polish manufacturer's Twist family has six doors and a capacity of up to 184 passengers, including 65 seated. It has air-conditioning, USB sockets, modern information systems, and a low entrance for wheelchair users and baby carriages.



Delivery of the first Pesa tram to Tallinn. TLT photo

It will undergo 1,000 kilometers of test running before entering service. The Pesa trams will be used on the city's Harbour tramway which is under construction for completion by the end of the summer.

Some of the aging KT4 trams which the new vehicles will replace are being offered for sale, with potential uses including cafés, offices, and shelters.

[METRO REPORT INTERNATIONAL](#), May 31

TEMIRTAU, KAZAKHSTAN

Tramway to Reopen

Steelmaker Qarmet has begun work to reopen the 11-kilometer tramway in Temirtau which was included in its acquisition of the local steelworks from ArcelorMittal Steel in December.

Tram operations has been suspended in February 2023 when the then owner said the line was unprofitable and required expensive infrastructure works which were beyond the means of the local council. The overhead electrification was removed after 600 meters was stolen, and bus services were provided for employees of the steelworks.



Before the system shut down, 71-605 (KTM-5M3) No. 24 (? 9/1989) is seen at the steel plant on route 4 on May 20, 2022. Routes 2 and 4 were all that remained after November 2005.

Petr Bystroň photo via Urban Electric Transit

An initial section of the tramway is expected to reopen this summer, with the full project to renew 30 kilometers of track and power supplies expected to take two to three years. The 10 billion tenge cost will be met by the owner.

Qarmet plans to procure an initial two vehicles to restart services, eventually increasing the fleet to 10 vehicles.

The mayor Temirtau stated the tramway rehabilitation is one of several development projects planned for the city.

[METRO REPORT INTERNATIONAL](#), May 6

TORONTO, CANADA

Light Rail Vehicles Tested on Finch West LRT

Metrolinx stated that this milestone brings it closer to the completion of the Finch West LRT. Currently, crews are assessing systems and their functions. These include examining how the vehicle moves, how communications systems perform, doors opening and closing properly, overhead electrical connectivity, and power transfers, as well as seeing how the vehicles perform while accelerating and braking.

While crews performed vehicle testing, there is other progress occurring on the project. Crews have completed work on the overhead catenary systems, and they have installed 116 pedestrian canopies. Additionally, 18 light rail vehicles were delivered to the site and are now housed at a maintenance and storage facility.

During this testing, Metrolinx has asked those traveling in the area to not enter the track area by foot, bike, or car as it is prohibited and to wait for passing light rail vehicles to clear the area before crossing.

[RT&S](#), May 29

VANCOUVER, CANADA

Surrey Langley SkyTrain Project

The Surrey Langley SkyTrain project has been launched with the government of British Columbia's selection of Transit Integrators BC to design and build the systems and track work.

The Transit Integrators BC team is comprised of:

- AtkinsRéalis Major Projects Inc.
- AtkinsRéalis Canada Inc.
- Western Pacific Enterprises Ltd.

Transit Integrators BC will start initial design work and planning for the systems and track work of the project. Western Pacific Enterprises Ltd. is a Surrey-based company that has contributed to previous SkyTrain projects, including the original Expo Line, Millennium Line, Canada Line, and the Evergreen extension.

Works related to the guideway and stations components of the project are underway along the new SkyTrain route, including work to relocate power lines and prepare for the start of major construction this year.

The Surrey Langley SkyTrain project is a 16-kilometer (9.4-mile) extension of the Expo Line from King George Station to Langley City Center, the first rapid-transit expansion south of the Fraser River in 30 years.

Once complete, passengers will be able to travel between Langley City and Surrey Center in approximately 22 minutes and between Langley and downtown Vancouver in just more than an hour.

The Surrey Langley SkyTrain project is being delivered through three separate contracts. In April 2024, the government of British Columbia announced the selection of South Fraser Station Partners to design and build eight new stations for the project, including cycling and walking paths around the new stations.

In March 2024, the government of British Columbia announced that SkyLink Guideway Partners has been chosen

as the preferred proponent to design, build, and finance the elevated guideway and associated roadworks, utilities, and active transportation elements of the project.

Requests for proposals for all three phases were issued in early 2023 and formal contract announcements are anticipated in the coming months. Major construction on Surrey Langley Skytrain is expected to begin this year.

[MASS TRANSIT](#), May 1

Additional Mark V Trains Ordered

Alstom will supply six additional SkyTrain Mark V trains to TransLink under a contract valued around C\$123 million (US\$90 million).

The Mark V design features consist of five-car sets, all with open gangways. They have mostly forward-facing seating and include more space for bikes, luggage, and leaning pads. The new digital interior information displays will provide riders with improved onboard transit alerts. Strip indicator lights at the doors will assist people who have hearing loss by flashing when doors close, fault warnings are issued or when emergency brakes are deployed. The Mark V trains will operate with door chimes and on-train announcements to assist riders who are visually impaired.



Truck leaves from the Alstom plant in Kingston, Ontario with a Mark V SkyTrain car on December 11, 2023. Alstom photo

Alstom is currently supplying 41 Mark V trains to TransLink. The first trains were delivered to Vancouver in December 2023. [MASS TRANSIT](#), May 29

Paris RER Line E Extension Opens

By Subutay Musluoglu (ERA #6474)

After seven years of construction, the first westward extension of SNCF's RER Line E in Paris was opened for public use on May 6, following an inaugural ceremony on May 3. The eight-kilometer extension from the previous terminal at Haussmann-Saint Lazare features three new stations at Neuilly-Porte Maillot, La Défense, and Nanterre La-Folie.

The extension is almost entirely underground, emerging into daylight just east of the interim terminal at Nanterre La-Folie. Large cavernous spaces have become a common feature on several of the central Paris RER stations, and the two new underground stations on the Line E extension continue this tradition.

Neuilly-Porte Maillot was excavated partially as a deep box, which is easily visible in the verticality of the space above the platforms, culminating in a high ceiling penetrated by skylights. The station features transfers to Métro Line 1, RER Line C, and Tram Line T3b.

La Défense was fully mined deep beneath the Centre des Nouvelles Industries et Technologies (CNIT-Center of New Industries and Technologies) which had opened in 1958 as the first building at La Défense, which has now become Europe's largest commercial office district. The CNIT was underpinned with a massive concrete raft directly underneath the structure, supported by deep circular columns reaching down to bedrock. The station was excavated from the top down around these columns.

La Défense was already a major transport hub, with

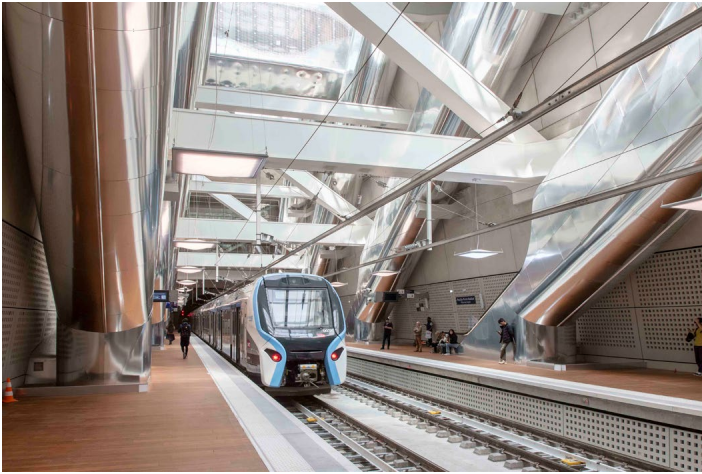
transfers available to RER Line A, Metro Line 1, Tram Line T2, and Transilien Lines L and U (regular suburban services out of Paris Saint-Lazare terminal). An additional future transfer will be available to Line 15.

The tunneled sections of the extension were tunneled with a single bore Tunnel Boring Machine which worked at depths ranging from 30 to 40 meters a day (98.42 to 131.23 feet) and advanced an average up to 50 feet a day.

Line E will be extended again in 2026 over the existing SNCF line to Mantes-la-Jolie. Included in this will be the takeover of RER Line A's Poissy branch, diverting up to 15 percent of Line A's 1.2 million daily riders and bringing much needed relief to the line. Upon completion the full length of the extension will be 34 miles.

Line E originally opened in July 1999, diverting some SNCF suburban services which terminated at Gare de l'Est into a center city tunnel with two stations at Magenta and Haussmann-Saint Lazare. Plans to extend the line to the west remained unsettled in the years that followed, as consensus could not be reached over which lines to the west would be absorbed. Meanwhile, other rail projects moved up in priority, including extensions to the Paris Metro and tram networks, as well as the start of work on the Grand Paris Express system of orbital metro lines around Paris (Lines 15, 16, 17, and 18).

Planning for extending Line E began anew in 2010. The Declaration of Public Utility was obtained in 2013, early construction activities started in 2017 and tunneling began in 2019.



Neully-Porte Maillot Station on May 7 with a new Class Z58000 train.
Arthur Weimann photo via Wikimedia Commons



A Class Z22500 train at La Défense Station on May 8.
Idris2000 photo via Wikimedia Commons

Line E was originally born as EOLE (Est-Ouest Liaison Express - East-West Express Link), a project meant to serve a dual purpose — routing select suburban services terminating at the Paris Gare de l’Est into a center city tunnel and eventually taking over some Paris Gare Saint Lazare services to the southwest, and in doing so relieve the congested Line A by providing a second east-west, cross region mainline rail link.

Line E’s relationship to Line A should be noted. First opened in 1969, and essentially completed by 1977, Line A eventually came to be rated as the busiest urban railway line in Europe, a distinction it has held since the late 1980s. Peak period overcrowding has been a regular characteristic on the line, which has led to crowded trains and platforms, and even the slightest delay can quickly become a major service disruption. It’s been considered a victim of its own success.

As such, over the last 30 years a variety of measures have been taken to alleviate the overcrowding and improve the line’s performance. This has included a series of signal upgrades culminating in the installation of CBTC, along with the replacement of the original single-deck EMU fleet with an all-bi-level fleet. The introduction of RER Line D through services across Paris in 1995 and the opening of Metro Line 14 in 1998 were also meant to serve as additional relief valves for Line A traffic.

Despite these efforts, Line A’s traffic levels have remained exceedingly high and only now is it hoped the full build-out of Line E will finally bring long-sought relief.

RER Line E is currently worked by three classes of EMUs: Class Z 22500 bi-levels introduced with the line’s 1999 opening (built by an Alstom-Bombardier partnership, a variant of the MI 2N class operating on Line A), Z 50000 Francilien (Bombardier-built single deck EMUs introduced on Transilien Lines starting in 2009), and the brand new Class Z 58000.

Built by Alstom, the Z 58000 trans are equipped for operation off of both 1.5 kV DC and 25 kV AC overhead catenary, and are being delivered in two configurations — six-car sets for Line E and seven-car sets for Line D.

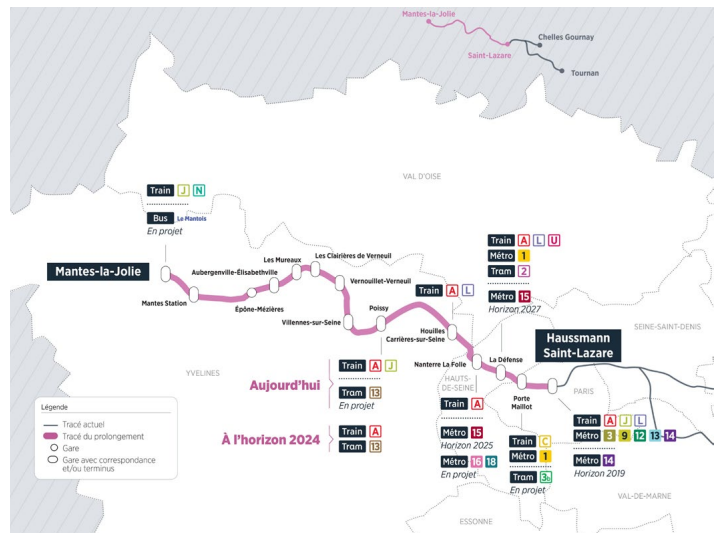
The Z 58000 is a unique train comprised of the two single-level driving motor, pantograph equipped end cars, two

bi-level intermediate motor cars, and two bi-level trailers at a total length of 112 meters (367 ft). The sets for Line D are essentially identical but for an extra intermediate trailer.

Line E will ultimately receive 130 six-car Z 58000 trainsets and upon completion of the full order, it is anticipated that Line E’s Z 50000 sets will be cascaded back to other SNCF Transilien services, while the Z 22500 will most likely be withdrawn entirely from use.

The Line E extension is the first of three passenger rail extensions scheduled to open in the Paris region this spring, as the city prepares to host this summer’s Olympics Games. Next up is the eastward extension of Métro Line 11 on June 13, to be followed by extensions of Métro Line 14 to both the north and south on June 24.

URBAN TRANSPORT MAGAZINE, May 6
INTERNATIONAL RAILWAY JOURNAL, May 7
RAILWAY GAZETTE INTERNATIONAL, May 8



Map of the complete RER Line E extension, including the line beyond Nanterre La-Folie to Mantes-la-Jolie. Île-de-France Mobilités

Book Review

By Jeffrey Mora (ERA #2347)

Frank K. Hain and the Manhattan Railway Company: The Elevated Railway, 1875-1903

by Peter Murray Hain, published by McFarland and Company, 2011, softcover, 176 pages, illustrated throughout with black & white photos, maps and diagrams. ISBN 978-0786464050.

There is a paucity of material in mass transit literature that covers in detail the development, operations, and personalities involved with Manhattan's elevated system. Peter M. Hain's book fills that gap. The author had something of a personal interest in writing the book since Frank K. Hain was the author's great grandfather's brother. The book is partly a biography of Frank Hain (1836-1896) and partly a history of the Manhattan Elevated Railway (MER).

Frank Hain's background is quite interesting. Before joining the MER, he worked for several railroads: Philadelphia and Reading, Keokuk and Des Moines (later Rock Island), and Erie. He also worked for Baldwin Locomotive Works and spent a short time in the Navy during the Civil War, becoming an honorary Colonel. Hain's working career with the MER (1880-1896) was always in the ranks of management, as general manager and late in his career, vice president and board member. It was a time of continual challenge and difficulty as the system steadily expanded. He managed a system that reached 102 track miles; 5,363 operating and management employees; 334 steam dummy 0-4-4T locomotives (built by Forney) and 1,122 passenger cars with over 500,000 daily passengers. During the period of Hain's leadership, the MER made money for its shareholders despite a major economic depression that started in 1893.

Hain worked closely with the MER's primary owners, the infamous financier Jay Gould, Cyrus Field, and Russell Sage. The railway's owners were not friendly to any attempt by operating employees to organize in unions despite their very strenuous working conditions. As an example, telegraphers considered a strike because they were unhappy with their pay and working conditions, e.g., \$2.25 a day, 12 hours a day, seven days a week. In addition, they were required to sell passenger tickets! It was Hain who had maintained strict discipline over his employees and kept the system running. New York's newspapers, especially the New York Times, were unrelentingly critical of the MER, especially after accidents.

The Times even hired a French journalist to write a lengthy critique of the system. In part he wrote "Amid horrible noises and diphtheria-inducing stenches, weak women, men young and old and helpless children are packed together until contact becomes indecent — Bodies wrenched and tortured as in the days of the Inquisition — Platforms jammed by passengers forced to violate the rules of the Company, risk physical disablement without legal redress... All because the Company cannot afford to keep a full force at work and run the necessary number of trains."

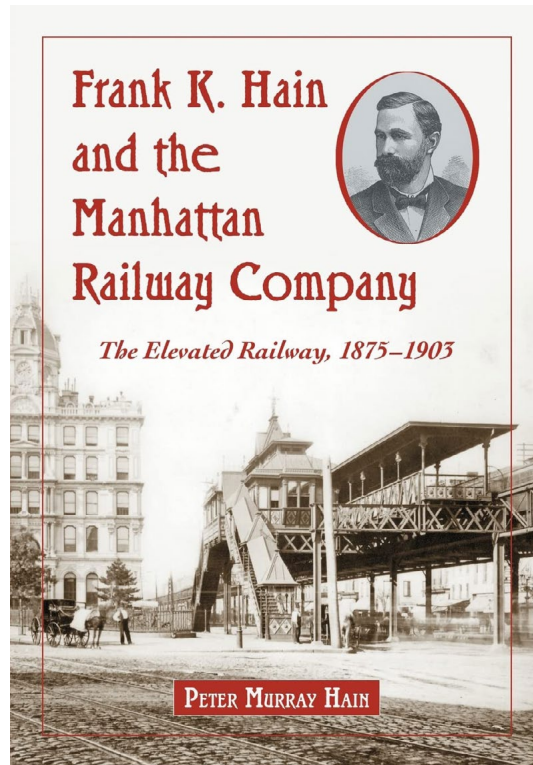
Hain was a tough general manager. He was a strict disciplinarian with his employees, and he "stonewalled" the press, particularly after accidents. Clearly, he had an

excellent working relationship with Jay Gould. He and Gould collaborated in adding a third track on the Ninth Avenue Elevated without the needed permission from the Rapid Transit Commission, the late 1800's version of New York City's transit regulatory agency. The new track added much needed capacity and express service to that line. He also supported his management by not adopting the new electric technology until after it was proven in operation, safety, and efficiency in Chicago in 1895, when the Metropolitan West Side Elevated Line began electrified revenue service. The author devotes one interesting chapter to the steam versus electric motive power technology controversy in the 1890s.

Hain's life came to an unexpected end on May 9, 1896, when he committed suicide under a New York Central freight train. His health had been failing from the effects of malaria and tuberculosis and possibly

he was burned-out from years of a very demanding position as the MER's general manager. It's possible that he caught TB from Jay Gould, or from the many citizens who suffered from the diseases in the New York region at the time. Although he was considered a tough disciplinarian, 4,000 employees of the MER donated funds for his monument in Danville, Penn. as a "...tribute to a true and considerate friend."

This book is well worth reading as a fascinating study of evolution of rail rapid transit technology and operations in the 1880s-1890s and of a little-known general manager in one of America's most important cities who worked closely with one of the country's most well-known financiers and railroad magnates.



Travels with Jack May

Britain and the Baltics — Part XXVIII

By Jack May (ERA #2275, photographs by the author)

Tuesday, August 29

Tuesday morning dawned bright and sunny, but the forecast indicated that clouds and rain might follow in the afternoon. After a fine buffet breakfast in the Radisson's lobby we gathered at 8:30 AM for the group's activities of the day, which would start with a morning fantrip, and then later would involve a ride on the Metro and a visit to the Metro's shops and carhouse.

Our "tram of the day" was stored at Koskela carhouse, located in the far northeastern end of the system, on a branch running off routes 6 and 8 that is used only for pull-outs and pull-ins. So this trip over non-revenue trackage was a bonus for mileage collectors and those who love to tour depots. We first rode a modern low-floor Škoda-built chartered car to Vallila, the main tramway shop, where our schedule set aside 45 minutes to inspect the facility. We then proceeded aboard the same unit to Koskela depot for another 45 minutes of inspection and photographs, prior to the 10:45 start of our charter. (See <http://www.gleisplanweb.eu/Maps/Helsinki.pdf> for a track map, which includes track not used for scheduled services.)

There are three service facilities on the Helsinki meter-gauge tramway, Toolo carhouse, which we visited on the previous day, plus Vallila shop and Koskela carhouse. Vallila is used for major maintenance and repair work, as well as being the administrative center for the rail system, while the other two are used to store trams and perform day-to-day upkeep and repairs. We had the opportunity to photograph cars outside the depot as well as work equipment stored within.

A knowledgeable member of the tramway's staff answered questions, including some pointed ones about Helsinki's Variotrams, which have been a disaster for both the transit operator (HKL-Helsinki City Transport) and Bombardier, which acquired Adtranz, the builder of these 40 units (200-series cars). It's a complicated story, so here is an abridged version, which I hope is correct. The generic version of the Variotram, specifically built for the meter-gauge market, was introduced by ABB in 1993 for the tramway in Chemnitz (the city named Karl-Marx-Stadt during the DDR years). ABB's rail division was merged into Adtranz in 1995. Just under 90 of these cars were in operation in various cities when Helsinki ordered 40 in 1998. They were assembled under contract in Finland by Transtech. (Author's Note: Transtech, a Finnish company, was created in 1985, and in 1991 purchased the transportation division of Valmet, which had constructed most of Helsinki's modern trams (as well as many Finnish Railways locomotives and passenger cars). The company was sold to Talgo in 1999, but was later acquired by Finnish interests. After Transtech built two prototype "Artic" cars and obtained



No. 431 was our first chartered car of the day. It was a recently-delivered Škoda ForCity Smart unit (also known locally as an "Artic") and is shown displaying "Test Car" in Finnish and Swedish on its destination display. Its route number is KOE, which means Test. The 100-percent low-floor three-section articulated is part of a fleet that will reach 60 when current deliveries are completed. The 90-foot-long Škoda-Transtech cars have fully pivoting trucks, especially desirable for a system that has a large number of curves and corners. Two prototypes were delivered in 2013 and the rollout of the remaining 68 units began in 2016. A 113-foot-long prototype of similar units were delivered starting in 2021 for a fleet of cars for the circumferential route 15, which opened October 21, 2023.



A rear view of one of the 40 Bombardier Variotrams that has caused so much consternation for Helsinki City Transport. The unreliable 80-foot-long, 100-percent low-floor five-section articulated cars were assembled by Transtech between 1998 and 2003, removed from service in 2018 and are (or were) in dead storage.

a contract for 38 more, Škoda purchased a majority interest in the firm at the end of 2015, and the 40 cars, whose deliveries were coming to an end while we were in Helsinki, are now branded Škoda ForCity Smart (they are similar to the new cars in Bratislava). Options in the contract have been exercised, and a



Work car 2012 is undergoing maintenance in this view inside Koskela carhouse. It is principally a rail grinder but is also used as a snowplow and for towing. The four-axle car was built by Windhoff in Germany in 2012. Virtually identical unit 2010 is also on the roster. It is not difficult to guess what year it was constructed.

further 20 Artic cars are now starting to be delivered, allowing the Variotrams to be sent back to Bombardier (as mentioned above). Škoda-Transtech supplied 29 longer cars for Helsinki's abuilding circumferential light rail line (see Part XXVII) and has also received an order for the 26 cars to be used by the new tramway currently being built in another Finnish city, Tampere.)

It turned out they spent a great deal of time in the shops, perhaps more often than on the road; in fact, cracks in both the rolling stock's bodies and trucks developed. An agreement was reached between HKL and Bombardier in 2007, providing the carbuilder with the responsibility for maintaining the units, but if more than four of the 40 were not in working condition on a given day, they would have to pay a large penalty for each car and each day, and if eight were not able to run, the contract could be cancelled. As much as it tried, Bombardier could not get the cars to operate reliably. It reached the point that riders (and many employees) began calling the cars Vauriotrams, as "vaurio" is the Finnish word for damage. Earlier in August (2017) a final solution was implemented that allows the tramway to send the cars back to Bombardier, for which it will receive payments of €33 million (the original cost was 76 million). The trams were be sent back in conjunction with the last 20 of the 70 ForCity Smart cars from Škoda-Transtech being delivered. Presumably, only 20 will be needed to replace the 40 Bombardiers, as one good tram is equivalent to two that run only 50 percent of the time. Interestingly, Bombardier sold its Variotram manufacturing capability to Stadler in 2001. The Swiss company then renamed the vehicle Variobahn, and has since sold over 200 such cars to more than 10 properties, including Croydon (London) Tramlink and Bergen, Norway.

Soon it was time for the fantrip to begin, and we all boarded our sparkling clean and shiny eight-axle articulated car from the 1960s. Our predominantly German group was looking forward to riding in No. 150, as the handsome classic Düwag unit was constructed in their native country and is



(Above and below) Views of Düwag car 150 at two of our excellent photo stops along track that is usually not used in revenue service, but rather for access to shops and emergencies (and fantrips). The upper photo shows the traditional articulated car on Somerontie between Paavaliin kirkko and Vallian variko on routes 6 and 8. The lower photo shows the car just prior to the end of the charter, along Castreninkatu near the Kallion virastotalo stop on routes 3 and 9 just north of Hakaniemi (metro).



an iconic symbol of postwar Germany's mastery of tram building technology and engineering. Manufactured for Ludwigshafen in 1967 as a two-section six-axle unit (GT6), but later expanded to its current eight-axle configuration (GT8) by adding a middle section, it was acquired from the Rhein-Neckar tramway system in 2004, ostensibly to test the concept of similarly lengthening Helsinki's Valmet units. (By the time this was accomplished the middle sections to be added had low floors.) Apparently the Finns liked the car so much that four similar six-axle units were obtained from Mannheim-Ludwigshafen in 2005, followed by six eight-axle cars two years later. The last of the units were sent to Łódź, Poland in 2015, where they continue to operate. Here are a number of images of No. 150, taken in brilliant sunlight at various photo stops.

We also had the opportunity to photograph regular service cars before our charter returned to Hakaniemi, which is where Karl-Heinz and I abandoned the fantrip, as we were not particularly interested in lunch followed by a tour of



(Above and below) The one-way loop along city streets to the east of Central Station is not used in revenue service. Both photos face northward alongside Rautatienori. The upper view shows our chartered car paused for a photo stop. The lower picture was taken in 2016 when Clare and I cruised the Baltic, and shows the four-axle Koff Beer tram laying over between trips a few yards south. SparaKoff (Koff Beer) converted No. 175 into a pub, and charters it for two-hour tours of the city. The staff serves beer, cider and other refreshments to up to 30 lucky riders on each circuit. Unfortunately, it is not open to individuals, so they have to satisfy their thirst elsewhere. No. 175 was built in 1959 as part of an order of 15 such units by Finnish carbuilder Karia/SAT and is equipped with Stromberg electrical equipment (No. 1-15). Car 15 was renumbered and converted to a rolling tavern in 1995 (Stromberg was taken over by ASEA in 1987). Unfortunately, as much as I've tried, so far I've never ridden in any of these 4-axle cars. They (and 15 similar Valmet-built cars) were still on Helsinki's active roster the first two times I visited Helsinki, but after new articulated rolling stock began to arrive, they were relegated to service only during peak periods. That shouldn't have been a problem for me, but it was, because most tram service in Scandinavian cities is significantly curtailed during the summer vacation period. And that meant car requirements were lower; and since I traveled to the Finnish capital in July, the older four-axle units were also on vacation. They would go back into service in late August (for many years), but that was too late for me.

(Above and below) Service cars taking the loop at Merisotilaantori, the terminal of route 4 on the island of Katajanokka, directly east of the city center. Valmet car 102, in the upper photo, was built in 1986, and had its center low-floor section added in 2009. The lower view shows Variotram 223, built in 2001, which will be shipped back to Bombardier in the next year or so.



the Metro shops. Instead, we continued onto the Metro on our own, and then also looked at rail operations at Central Station and even rode a suburban EMU. These afternoon activities are the subject of upcoming Part XXIX.

Helsinki Cathedral at Senate Square (constructed between 1830 and 1850) looms above our motor-trailer set circumscribing an on-street loop during a run-by centered on our Kauppatori layover point.
Karl-Heinz Röber photo