



BULLETIN

Volume 66, Number 6 | June 2023

Subway Service Enhancements Announced

A phased rollout of subway service enhancements, which are expected to begin this summer, was announced on May 4. With the passage of the FY 2024 New York State Budget, the MTA will receive an additional \$35 million for subway service enhancements. These planned enhancements will start with the first phase in July 2023, with the fourth phase expected to be implemented in July 2024.

The improvements focus on periods where subway ridership has recovered the highest from its pre-pandemic baseline. Subway ridership overall continues to recover, with the latest trend showing 3.84 million riders on an average weekday and 1.96 million riders on an average Saturday or Sunday. Weekend ridership has outpaced weekday ridership in its recovery, with weekend ridership nearing 80% of its pre-COVID baseline, compared to weekdays when ridership has been around 60% to 70% of the pre-COVID baseline.

Beginning in July, New York City Transit will begin its phased rollout with the following enhancements:

First Phase, July 2023

Weekend service frequency would increase on the **G**, **J** and **M** lines. Headways would drop to every 8 to 9 minutes from every 10 to 11 minutes.

Second Phase, August 2023

Weekday midday service on the **C**, **N** and **R** lines will see train frequencies increasing to every 8 minutes instead of every 10 minutes. On weekends, service on the **1** and **6** lines will increase, with trains arriving every 6 minutes instead of every 8 minutes.

Third Phase, December 2023

Evening service on weekdays will increase on the **C**, **N** and **R** lines and midday service will increase on the **G** line. Trains on those lines would arrive every 8 minutes under the enhanced service. Additionally, 6-minute service on the **1** and **6** lines during the weekend would be extended to include more hours of the day.

Continued on page 3



Electric Railroaders Association

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The *Bulletin* is published monthly and sent free to all ERA members.

Back Issues

PDFs of previous issues can be downloaded at erausa.org/bulletin

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Announcements

July 6-11: Annual Convention, Portland and Seattle
For details, point your browser to <https://erausa.org/conventions/2023/>

July 28: Our first in-person monthly meeting since 2020! Noah Caplin will have an unusual presentation showing aerial images taken in the late 1980s and 1990s in and around the New York metropolitan area. This will once again be held at Manducatis restaurant in Long Island City.

Cover Photo

On Thursday, May 25, for what may possibly have been the first time since 1972, a train of Staten Island equipment ran under their own power on the New York City subway system. The first set of R-211S cars, 100-104 (Kawasaki Rail Car, 2023) made a test trip from Coney Island Yard via the IND Culver and Prospect Park Lines to Bedford-Nostrand on the Crosstown Line. Your Editor-in-Chief was very lucky to catch the test train at Avenue X station on their return trip to Coney Island Yard. Jeff Erlitz photo

Dinner will be included and attendance is limited to 50 persons. For details, point your browser to <https://erausa.org/monthly-meetings/2023/07/>.

Donations

The ERA Board of Directors express their deepest appreciation for these member donations in April 2023.

\$50 to \$99

Vincent Stack

ERA is a 501(c)(3) tax exempt corporation. Your donations are fully tax deductible and can be made either with your membership renewal or using our donation form on our website: www.erausa.org/donate. Your donation helps to maintain ERA's 88-year long tradition of traction education and entertainment!

Monthly Zoom Meeting

Friday, June 16, 2023 at 7:30 PM.

Presenting This Month: Harvey Laner

Our June Zoom program, **Ralph Cantos' 1966 Eastern Traction Odyssey**, takes us on a most memorable eastern traction adventure as it existed over 56 years ago. The mid-'60s was a transitional time with several transit operations moving from private to public ownership. A Laner Rail Videos production, Ralph's historic 16mm film was edited and transferred to video by Harvey Laner and will be narrated by both men.

Native Southern California railfan Ralph Cantos made his first tour of the eastern U.S. and Toronto in September 1966. For three weeks, armed with a vintage 16mm movie camera and lots of film, he rode and filmed rail transit in and around Chicago, Toronto, Pittsburgh, Philadelphia, Newark, and Boston. Properties visited include:

- **Chicago:** CTA Ls, Illinois Central electric commuter trains, and the South Shore Line
 - **Toronto:** Subway and streetcars; CP and CN RDCs
 - **Pittsburgh:** PCC streetcars
 - **Philadelphia:** PCC streetcars, Philadelphia Suburban Transportation Co. including former CNS&M Electroliners, and the Reading Company electric operations
 - Newark City Subway PCCs, Pennsylvania Railroad Northeast Corridor GG-1s and commuter trains, and Erie-Lackawanna electric commuter operations
 - Boston PCCs and NYNH&H and B&M RDCs
- Video producer Harvey Laner grew up in Chicago. Soon after his family moved to Los Angeles in 1953, Harvey

joined the Southern California Division of the ERA (SC/ERA). He was also one of 14 founding members of the Orange Empire Traction Company in Perris, Calif., today's Southern California Railway Museum, and was a speaker at the ERA's 2022 Annual Convention in San Diego.

Ralph Cantos is a Los Angeles-based transit enthusiast. The Pacific Electric Railway Historical Society is home to the Ralph Cantos Collection of transit photography, and he has also amassed a significant private collection of vintage model buses. Ralph was a longtime friend to the late John Pappas, former

ERA first vice president and frequent *Headlights* contributor.

How to Join Our Zoom Meeting

A Zoom registration button will be posted on www.erausa.org about five days before Harveyt's presentation. You can sign in at 7:15 PM. The show begins at 7:30 PM. If you have any problems, email Bob Newhouser at bnnyc1955@aol.com, or on the night of the meeting, text or call Bob at 917-482-4235.

2024 Benelux Trip

ERA is planning a tour next year to Belgium, the Netherlands and Luxembourg. The tour will begin in Amsterdam on May 10 and end in Brussels on May 25. Pre and post tour days will be available. The tour will be based in Amsterdam and Brussels and we are planning to visit many tram operations and tram and railway museums in Amsterdam, Den Haag, Rotterdam, Arnhem, Utrecht, Brussels, Antwerp, the Oostende-Knokke Coastal Tram, Brugge, Gent, Charleroi, Thuin and Luxembourg. Group and optional sightseeing will be available. Included travel will be by rail and day passes will be provided for local transit. Baggage handling between our two hotels is included with a coach transfer. The dates are firm and booking will begin later this year in August or September.



Brussels PCC 7960 (La Brugeoise et Nivelles, 1978) is southbound on route 51 heading towards Van Haelen and is about to enter the Jupiter stop on May 3, 2019. Jeff Erlitz photo

Continued from page 1

Fourth Phase, July 2024

This final phase will provide weekday and evening service increases on the **B**, **D**, **J** and **M** lines. Headways would be reduced to every 8 minutes. Additionally, service would be added to the **3** and **5** lines on weekends, reducing headways from 12 to 10 minutes.

An estimated 2.9 million subway riders are expected to benefit from the enhanced service on weekends. In addition, about 800,000 riders are expected to benefit each weekday

from the off-peak service enhancements.

NYCT explored where additional off-peak service would have the most benefit, focusing primarily on lines with train frequencies of 10 to 12 minutes during off-peak hours. Planned work was taken into consideration when these enhancements were planned to ensure critical state of good repair work and capital work would not be affected.

Weekend service enhancements could also be added to select subway lines, depending on the timing of signal modernization and critical construction work.

Worldwide Suburban Electric Railway, Metro and Tramway Openings in May 2023

Date	Country	City	Segment	Distance (miles)	Rail/Metro/Tram
5/1	Iran	Tehran	Line 4: Eram-e Sabz to Allameh Ja'fari	0.9	M
5/2	Ecuador	Quito	Line 1: El Labrador - Quitumbe	14.0	M
5/12	China	Zhengzhou	Line 14: Olympic Sports Center to Lianhu	1.1	M
5/15	Poland	Wrocław	Lines 18/19: Dmowskiego to Wejherowska	2.2	T
5/19	U.S.A.	Washington, D.C.	Yellow/Blue Lines: Potomac Yard station	n/a	M
5/27	Czech Republic	Praha	Line 17: Levského to Libus	1.1	T

Rail News in Review

New York Metropolitan Area

NEW YORK CITY TRANSIT (NYCT)

BMT Myrtle Avenue Line Weekend Shutdowns

For eight weekends, from May 20 to July 9, the Track subdivision of Maintenance of Way will be installing new track panels on the Myrtle Avenue Line between Fresh Pond Road and Forest Avenue. In addition, the switches just outside of the Metropolitan Avenue terminal are being replaced.

On each weekend, work begins on Friday evening at 10:00 PM and continues to Monday morning at 5:00 AM. During those hours, **M** service is suspended and service is replaced by shuttle buses connecting at Myrtle Avenue with **J** trains. [MTA PRESS RELEASE](#), May 15

Station Re-NEW-Vation Progress

Over the weekend of April 29–30, the 21 St-Queensbridge **F** subway station in Long Island City joined the ranks of those stations which have been renovated in this program.

Crews renewed the main entrance awning, performed concrete and tile repairs on the platform, installed new LED fixtures in poorly lit areas of the station, and repaired damaged stairways. Crews also scraped, primed, and painted the entire station. Work was also completed to clean and rehabilitate critical back-of-house facilities utilized by NYCT employees.

The Re-NEW-Vation program continued over the following four weekends, May 6–7, May 13–14, May 20–21 and May 27–28, similar work was performed at the Sutphin Blvd–Archer Av JFK Airport **JZ**, Zerega Av **6**, Far Rockaway–Mott Av **A** and Pelham Bay Park **6** subway stations.

[MTA PRESS RELEASE](#), May 1

New Fare Gates Being Tested

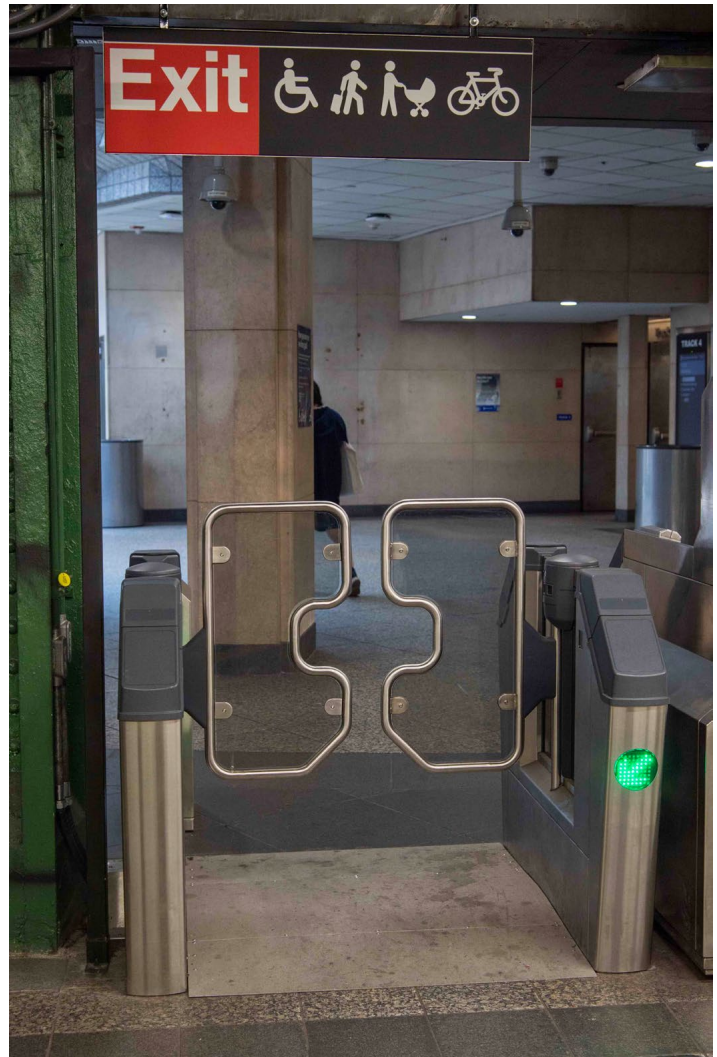
A new style of fare gate is currently undergoing testing, part of a pilot program exploring accessibility and passenger flow at fare control areas.

Installed at the end of March, these new gates are located at Atlantic Avenue–Barclays Center **23** at Control Area R610 and Sutphin Blvd–Archer Ave **EJZ** at Control Area N605.

Control Area R610 is the one between the LIRR waiting area and the northbound **23** platform. Control Area N605 is on the south side of the mezzanine, leading directly to the elevators up to the street and LIRR mezzanine.

These new gates have replaced the AutoGates to provide better accessibility for people traveling with mobility devices, service animals, strollers, luggage, or others who have trouble using turnstiles.

These experimental fare gates, like all of the turnstiles currently installed across the subway system, were



New fare gate at Atlantic Avenue-Barclays Center on May 8
Jeff Erlitz photo

manufactured by Cubic.
[MTA PRESS RELEASE](#), March 30

36th Street **M R** Station Work

Starting on June 5 and lasting for two weeks straight, northbound M and R trains will be bypassing 36th Street to enable M. Bhuiyan Construction Co. Inc., under Contract A-36986, to undertake station rehabilitation work.

Crews will be repainting station surfaces, performing lead-based paint abatement, renovating ADA-compliant platforms, repairing structural steel and tiles, performing surface cleaning and painting, drainage work and replacing doors, frames and gates. New communication and public safety systems will also be installed.

[MTA PRESS RELEASE](#), May 30

LONG ISLAND RAIL ROAD (LIRR)

Summer Timetable Change

In order to accommodate planned work this summer, new schedules took effect on Monday, May 22, which adjusted train departure times during weekday midday off-peak periods on the Montauk Branch west of Babylon and between Atlantic Terminal and East New York, and during weekday overnights on the Montauk Branch between Babylon and Sayville. Train schedules on other branches did not change significantly.

Montauk Branch West of Babylon

Crews will renew third rail between Amityville and Babylon and perform additional track maintenance activities during weekday midday periods and one of the branch's two tracks will be out of service during these times.

Scheduled train departure times will be adjusted approximately 20 minutes earlier. Some Babylon trains will terminate/originate at Massapequa, where transfer opportunities will be available for those traveling to or from Massapequa Park, Amityville, Copiague, Lindenhurst or Babylon.

City Terminal Zone

Crews will replace tracks and perform additional track maintenance activities between Atlantic Terminal and East New York during weekday midday periods, and one of the Atlantic Branch's two tracks will be out of service during these times.

Scheduled departure times for trains from Jamaica to Atlantic Terminal will be adjusted up to 18 minutes earlier and some trains from Atlantic Terminal to Jamaica will be adjusted up to 11 minutes later, while others will be adjusted up to six minutes earlier. Service at Nostrand Avenue and East New York will be reduced from three trains an hour to two trains an hour.

Montauk Branch

Crews will perform signal system upgrades by building trackside signal control huts between Babylon and Sayville during overnight periods and one of the Montauk Branch's two tracks through this area will be out of service during these times. Scheduled departure times for train #2, currently the 12:40 AM departure from Jamaica, due into Montauk at 3:34 AM, and train #3, currently the 12:41 AM departure from Montauk, due into Jamaica at 3:32 AM, will be adjusted approximately 20 minutes later.

[MTA PRESS RELEASE](#), April 24

METRO-NORTH RAILROAD (MNR)

Heritage Unit Introduced

MNR has unveiled the first heritage unit in a series of locomotives that will be released this year to commemorate the agency's 40th anniversary. P32AC-DM 208, a dual-mode diesel-electric locomotive built by General Electric in February 1998, has been outfitted with a vinyl wrap that pays homage

to the red, blue and silver paint scheme that was applied to the railroad's EMD FL9 locomotives back in the 1980s and 1990s.

Locomotive 208 was selected because FL9 2008 was the last of the iconic cab units to be retired from regular service in April 2007. The dual-mode GE is one of 31 P32AC-DMs used by MNR in New York and Connecticut.



P32AC-DM 208 is seen at Grand Central Terminal on May 23, after its inaugural revenue trip on train #728 from Croton-Harmon. This was taken after the train had been looped so that the locomotive was back on the usual north end. It had come down from Harmon with the locomotive on the south end, contrary to MNR's usual operation.
Subutay Musluoglu photo

The new heritage scheme generally stays true to the original. A 40th-anniversary logo has been added to the rear of the locomotive as well. The wrap was applied by the craft workers at the shops in North White Plains, N.Y., as part of the unit's regular maintenance routine.

[RAILFAN & RAILROAD](#), May 15

Ridership Continues to Recover

MNR set pandemic-era ridership records in May in three categories: Average Weekday; Average Tuesday-Thursday; and Average Weekend. For the first time since March 2020 the railroad carried over 200,000 three consecutive days on May 9-11, recording a pandemic-era high on May 9 with 205,069 riders. On Sunday, May 14, the railroad carried 101,089 people, marking the first time since pre-COVID that Sunday ridership has exceeded 100,000.

[MTA PRESS RELEASE](#), May 15

Other U.S. Systems

AUSTIN, TEXAS

First Phase Alignment Recommended

Austin Transit Partnership (ATP) light-rail staff recommended that the 38th Street to Oltorf to Yellow Jacket



option will serve as the first phase of the Austin Light Rail Implementation Plan. The recommendation is based on the professional expertise of the ATP team and partners at the city of Austin and CapMetro.

Prior to making its recommendation, ATP presented the five proposed options on March 21 to the public, followed by a robust, six-week long, community engagement process. During that time, ATP interacted with over 8,000 community members through 90 in-person and virtual events. Key findings of the feedback show support for the advancement of a light-rail project that prioritizes ridership, connectivity and access to opportunities and also maximizes coverage and seamless integration into other transportation systems.

The 38th Street to Oltorf to Yellow Jacket option is an on-street, two-track alignment that will cross Lady Bird Lake at Trinity Street. This is the most balanced option between north, east and south Austin and will give the opportunity to connect historically underserved communities to the east, high ridership stations to the south and also connect highest ridership stations north of the river, including the University of Texas and downtown Austin areas. Additionally, the option will leverage existing locations that already have high-capacity public transportation users, including Metro Rapid riders.

[MASS TRANSIT](#), May 24

BOSTON

June Service Changes

Shuttle bus service will replace evening weekday Red Line trains between JFK/UMass and North Quincy Stations beginning at approximately 8:45 PM on May 30-June 1 and June 5-8. This service change allows crews to perform rail and tie replacement work that will alleviate speed restrictions. Additional Red Line service changes will take place later in June.

Shuttle bus service will replace Green Line trains on both GLX branches between Government Center and Union Square as well as Medford/Tufts Stations during the weekends of June 3-4 and June 10-11. During these weekends, B and C branch trolleys will terminate at Park Street, and D and E branch trolleys will terminate at Government Center. Riders at Government Center can board the same shuttle bus for service to Union Square and Medford/Tufts. Due to traffic configurations in the area, outbound shuttle buses will not stop at Haymarket (inbound shuttles will make stops at Haymarket). This service change allows the GLX team to complete final finishing work, including track and drainage work around the Red Bridge, Inner Belt Yard, and other locations. MBTA crews will also perform additional work along the East Cambridge Viaduct. Additional Green Line service changes may take place later in June.

Due to the continued demolition of the Government Center Garage by private developer HYM Construction, Orange and Green Line service changes will take place in the downtown Boston area all day for 14 days from June 12-25:

- Orange Line trains will bypass Haymarket Station. Orange Line riders should instead exit at North Station or State, which are less than a half-mile from Haymarket (or a four- to eight-minute walk) and travel to the Haymarket area;
- Green Line service will be suspended between North Station and Government Center Station with riders instead asked to walk above ground between these stations, Government Center, Haymarket, and North Station are each less than a half mile from each other (about a five- to 10-minute walk), and the distance between Government Center to North Station is about three-quarters of a mile (about a 13-minute walk).

[MBTA PRESS RELEASE](#), May 25

CHICAGO

Funding Approved for New Rolling Stock

Federal funding, in the amount of \$200,000,000, has been secured for the Chicago Transit Authority's (CTA) railcar replacement efforts. This funding comes through the Department of Transportation Federal Transit Administration's (FTA) Fiscal Year 2022 and 2023 Rail Vehicle Replacement Program, helping transit systems with much-needed capital improvements to replace rail rolling stock.

The CTA rail fleet of nearly 1,500 cars is composed of three different models purchased between 1981 and 2015.

Funding provided to CTA through this FTA grant program will support the commutes and travel of the millions who use the CTA and allow the agency to begin planning and designing for the future procurement of its next generation of railcars, the 9000-Series. This next generation of railcars would replace CTA's oldest railcars that were manufactured more than 40 years ago.

[CTA PRESS RELEASE](#), May 5

Red Line Extension Progress

The CTA continues to advance the Red Line Extension (RLE) project with the announcement that it has selected three prequalified teams to submit proposals to extend rail service to Chicago's Far South Side.

The \$3.6 billion RLE project will extend the Red Line from the existing southern terminal at 95th Street to 130th Street. As part of this project, four new, fully-accessible rail stations will be added, plus a new, modern, efficient railcar storage yard and maintenance facility. The 5.6-mile extension will provide long-awaited and much needed connection to jobs, education, commerce, and opportunity, while also serving as a catalyst for economic development that benefits the entire City of Chicago.

In October of last year, CTA issued a Request for Qualifications asking firms to submit their qualifications. After considering a pool of potential candidates, CTA selected the most qualified teams that have demonstrated the ability to design and build the rail extension. The three entities selected are: FH Paschen, Ragnar Benson, Milhouse and BOWA Joint Venture; Kiewit



Infrastructure; and Walsh VINCI Transit Community Partners. These entities are representative of a variety of local, national and international businesses.

This selected pool of candidates will move into the next phase of the competitive procurement process and CTA will decide which contracting team will ultimately be chosen to design and build the RLE project based on their submitted proposals. Project proposals will be due early 2024 with an expected execution by the end of 2024.

The contracting teams' proposals will be considered on a variety of criteria, including experience, price, diversity outreach plans, and other factors. CTA expects major construction of this project to begin in late 2025, and is dependent on securing full project funding.

The RLE project is expected to create 2,500 direct and indirect construction jobs annually. The Final RFP will include aggressive workforce goals and will require significant participation by Disadvantaged Business Enterprise (DBE)-certified firms and career-seekers from underrepresented communities and economically disadvantaged areas. In alignment with CTA's goals, the RLE project will help strengthen economic prospects for members of the surrounding communities, both through career and business/contracting opportunities.

CTA will be hosting numerous outreach events leading up to the start of project work to encourage participation by DBE-certified firms and other minority owned firms that wish to participate in the project to meet the DBE goals that will be assessed. CTA will also host various outreach events to connect career-seekers with resources and opportunities in the construction industry.

[CTA PRESS RELEASE](#), May 12

CLEVELAND

New Equipment Getting Closer

The Federal Transit Administration announced a grant award of \$130 million to the Greater Cleveland Regional Transit Authority (GCRTA). This grant award of \$130 million will be leveraged with \$213 million GCRTA has secured to date to finance the Rail Car Replacement Program that has a projected price tag of \$393 million.

The new rail car fleet will save the GCRTA \$7 million per year, by reducing repair costs and provide more comfortable and reliable service for passengers. GCRTA is studying four new routes and travel options. The new rail cars are high floor light rail vehicles with doors that allow access from existing heavy rail platforms and street level light rail platforms. Thus, enabling the rail cars to operate across the authority's entire rail network.

GCRTA has been working since 2017 to fund its rail car replacement program. Prior to this grant award announcement GCRTA had received a variety of grants and commitments to fund \$213 million of the \$393 million total program cost. These funds have come from the

Northeast Ohio Areawide Coordinating Agency, the Ohio Department of Transportation, a United States Department of Transportation BUILD grant, Congressionally Directed Spending, Community Project Funding, Federal Formula Funds and the GCRTA Rolling Stock Reserve Fund.

[RTA PRESS RELEASE](#), May 5

HONOLULU

Opening Date Set

The initial segment of Honolulu's rail system will open June 30. The definitive opening date will bring the long-awaited line into service after financial and construction challenges changed its scope, threatened its financial resiliency and impacted its delivery schedule.

Honolulu Authority for Rapid Transportation CEO Lori Kahikina offered her gratitude toward the community for its patience and called the opening day announcement "a long time coming." She also noted the project's delivery progress during the past two and a half years is due to the support of the project's partners at the municipal and federal levels.

The initial 11-mile segment will open with a celebration at the Hālawala rail station featuring dignitaries and entertainment. Officials intend to offer free transit service the first four days of operation, but riders will still need a HOLO card to access the system.

Extensions of the rail line are planned with the Airport Extension planned to open in 2025 that will connect Aloha Stadium with four additional stations to Middle Street-Kalihi Transit Center and the City Center Extension that will open in 2031 and add six stations to Civic Center.

[MASS TRANSIT](#), May 22

LOS ANGELES

Regional Connector Set to Open

The Los Angeles County Metropolitan Transportation Authority (Metro) announced it will officially open the Regional Connector transit project to the public on June 16.

The ambitious, complex project, which began in 2013, is unique among rail projects in the United States. The 1.9 miles of new track laid for the project will allow light rail trains to travel between Union Station and the busy 7th Street/Metro Center Station in Downtown's Financial District. Before the Regional Connector, that's a journey only Metro's heavy rail lines could make. Bridging this gap allows Metro to merge the hook-shaped L (Gold) line with the A (Blue) and E (Expo) lines, creating two through-routed train lines where there were once three. The Regional Connector includes three new underground stations:

- **Little Tokyo/Arts District Station** where riders will have easy access to historically rich and vibrant neighborhoods and cultural institutions;
- **Historic Broadway Station** features two nationally registered



An updated map of the Regional Connector from the version seen in the May 2022 Bulletin. LACMTA

districts: the Broadway Theater District, with 12 original theaters within seven blocks and Old Spring Street, known as the original Financial District of Downtown Los Angeles;

- **Grand Avenue Arts/Bunker Hill Station** connects riders to downtown’s performing arts institutions, museums, fine dining experiences and more.

These new stations will transform the way many riders can experience the Metro system, provide riders a seamless, one-seat journey from as far as Azusa to Long Beach and from East L.A. to Santa Monica with no transfers required.

To mark this historic milestone, Metro will provide free rides on the entire Metro transit system including Metro bus and rail lines as well as Metro Bike Share services, during opening weekend. Metro encourages Angelenos and visitors alike to rediscover downtown and explore the fun, food, shopping, and cultural landmarks now accessible via the three stations on Regional Connector line and beyond.

The completion of the Regional Connector project improves connections by bringing together the Metro L (Gold), A (Blue), E (Expo), B (Red) and D (Purple) lines at the 7th Street/Metro Center Station. The new A and E lines will share five downtown Los Angeles stations giving travelers plenty of transfer options along the way. Some riders traveling to and through downtown Los Angeles could save up to 20 minutes by eliminating the need to transfer. Metro will launch the Regional Connector with the existing 10-minute peak and 12-minute midday and weekend service frequencies for the A and E lines.

As with previous construction projects, the Regional Connector line was designed and built with the help of community input and local voices. In addition, this project

benefited from Metro’s Board approved small business mitigation programs: the Business Interruption Fund and Eat Shop Play which helped support small businesses in the areas along this project during construction. The Business Interruption Fund provided support for businesses around the Little Tokyo/Arts District and History Broadway stations- \$3.3 million was awarded to 56 small “mom and pop” shops and the Eat Shop Play program provided free marketing assistance to 102 businesses along the Regional Connector line.

Metro contracted with Regional Connector Constructors, a joint venture between Skanska USA Civil West California District, Inc., and Traylor Brothers, Inc., to design and build the \$1.8 billion Regional Connector. Metro’s contractor has been able to achieve one of the best safety records of all Metro construction projects, with more than 7.7 million hours worked without any lost time due to injury or incident. This is a testament to all the dedicated men and women working on this project representing one of the best safety records in the construction field.

[LA METRO PRESS RELEASE](#), May 22

OMAHA, NEBRASKA

Streetcar Project Advances

The Omaha Streetcar Authority has selected HDR to deliver the final design for Omaha’s 3.2-mile streetcar project, connecting downtown Omaha to the University of Nebraska Medical Center.

HDR previously led preliminary design, defining the streetcar’s route, stop locations, vehicle specifications and more.

The Omaha Streetcar project will connect neighborhoods and drive opportunities through infill development. It features 23 stops, two bridge replacements, a new vehicle maintenance facility and more. Multiple major employers are located along the corridor and an economic benefits analysis predicted an increase of more than 16,000 jobs along the streetcar route. Similar projects in communities such as Kansas City and Milwaukee have generated billions in economic development and re-energized downtown neighborhoods.

HDR is an industry leader in modern streetcar planning, design and program management. This expertise includes items critical to the success of the Omaha Streetcar project, such as utility coordination, leveraging the benefits of CMAR project delivery and understanding operational needs for a starter system.

The design phase is expected to be complete in mid-2024, with streetcar service anticipated to open in 2027.

[MASS TRANSIT](#), May 9

SACRAMENTO, CALIFORNIA

New Low-Floor Cars

SacRT has purchased 28 new S700 trains from Siemens Mobility with the option to purchase up to 76 new trains. Siemens has already delivered six new low-floor trains with SacRT receiving about two per month over the next few years.



Sacramento's first new S700 low-floor car. SacRT photo

The new low-floor vehicles will provide easier access at every doorway, a spacious seating design, and large windows for better light and views. They will feature improved accessibility with wider aisles and areas for passengers using mobility devices, including wheelchairs and bicycles. The new low-floor vehicles will increase overall operational flexibility by providing more access to passengers with disabilities at the platform level instead of having to use the mini-high ramps at the end of the station.

Riders won't get a chance to ride the new low-floor trains yet, as each train must first be put through a rigorous phased testing process, which includes testing all the electrical functions onboard, braking and propulsion, and operating a minimum of 1,000 miles of pre-revenue service without any major failure.

Starting May 3, at 11 PM, the first train began the dynamic testing phase, which means different weights are added to the train car to test braking with different loads, to ensure the train is working properly simulating the number of riders onboard. The dynamic testing will take place Monday through Friday on the north area Blue Line between Watt/I-80 and Swanston stations, from 11 PM through the end of service each weekday.

These new low-floor trains will start passenger service on the Gold Line, once the station platform modifications are completed, which is expected by summer 2024.

[SACRT PRESS RELEASE](#), May 3

WASHINGTON, D.C.

Yellow Line Service Resumes

The Washington Metropolitan Area Transit Authority (WMATA) resumed service on its Yellow Line across the Potomac River on May 7 following an eight-month, on-time and anticipated to be under budget rehabilitation project to repair the deteriorating 1970s tunnel and bridge.

The reopening will provide a faster, more direct connection for riders between Virginia and downtown Washington D.C., including travel to and from Washington National Airport.

Yellow Line trains will initially operate every eight minutes weekdays from 6 AM until 9 PM for the first month between Huntington and Mount Vernon Square and every 12 minutes all other times and on weekends, a 60 percent increase in train service than before the closure in fall 2022. In June, service will improve to eight minutes all day, seven days a week.

The Yellow Line had been closed since September to allow for major construction on the tunnel and bridge. The \$384 million project included replacing more than 1,000 individual steel plates held together by more than 12,000 bolts and mitigating water intrusion in the tunnel.

On the 3,000-foot Charles R. Fenwick Bridge spanning the Potomac River, much of the repairs occurred beneath the bridge. The work required barges and heavy-duty equipment to lift the bridge from the steel girders to remove and replace 88 bearings on the bridge. The project also upgraded the fire suppression system on the bridge and removed and replaced miles of critical communications cables used by multiple regional partners.

During the closure, Yellow Line stations have been served by additional Green Line trains, with special Blue+ service operating between Huntington and New Carrollton. Blue+ service was discontinued when the Yellow Line reopened. Free shuttle buses are also no longer in operation.

WMATA is continuing bus service between Mt. Vernon and Potomac Park (VA-DC Shuttle 3 route), using the existing schedule until new Route 11Y service begins on June 26. Normal express bus fares will apply.

[MASS TRANSIT](#), May 8

Potomac Yard-VT Station Opens

The new Potomac Yard-VT Metrorail Station opened on

Friday, May 19 at 5 AM, connecting one of Alexandria's fastest growing communities to the region. Less than 15 minutes to the nation's capital, Potomac Yard-VT, on the Blue and Yellow lines, is the 98th station in the Metrorail system.

Metro and the City of Alexandria first announced the opening date last month, following more than three years of construction. A team of Metro staff were on hand throughout the day to welcome riders to Potomac Yard-VT Station for the first time and gave away commemorative opening day pennants. The station's fare vending machines were also stocked with limited-edition Potomac Yard SmarTrip cards in honor of Metro's newest station.

The new station anchors new development in the surrounding community, including housing, retail, commercial space and the new Virginia Tech Innovation Campus expected to open next year. Long-term, it is expected to support 26,000 new jobs and 13,000 new residents.

The station was initiated by the City of Alexandria and is funded by tax revenues, developer contributions, federal and state grants, loans, and regional sources. It is Metro's second infill station since NoMa-Gallaudet U, built between two existing stations, Braddock Road and Washington National Airport.



Potomac Yard-VT Station on opening day. WMATA photo

Potomac Yard-VT Station will provide riders with convenient access to Metroway and Alexandria DASH bus service and connect to other regional transportation systems, a Bike & Ride facility, and walking paths to the station from the surrounding area. The station does not have parking facilities but is accessible via two pavilions, one on the north side and another to the south.

Sustainability was a focal point in the design including the artwork. It was built to LEED Silver green building standards with advanced rainwater management, energy efficient lighting and water use systems, uses low emitting and recycled materials in construction and minimizes the impact on the surrounding wetlands.

Artwork featured on the exterior of the two entrance pavilions recognizes the station's Virginia roots and the proximity to the nation's capital. Created by artist Rob Ley, the south pavilion features a representation of Virginia blue bells with the famed cherry blossoms on the north pavilion.

Riders may still see some ongoing work after the station opens. This includes architectural details, installation of the

South Pavilion artwork, and setting up the secure bike and ride facility which will initially open as covered bike storage. [WMATA PRESS RELEASE](#), May 18

International

BOLOGNA

Red Line Construction Begins

Construction work has started on Bologna's 16.5-kilometer (10.3-mile) Red Line light rail route, the first of four lines planned in a 57-kilometer (35-mile) network for the Italian city.



An impression of how a Bologna Red Line LRV will look running through a modern section of the city. Comune Bologna

The Red Line will run from Emilio Lepido in the west to Bologna Centrale mainline station. From there it will turn north with two branches, one running to Parcheggio Michelino and the other to Facoltà di Agraria/CAAB, serving the city's school of agriculture and veterinary medicine.

Ceremonies were held to mark the start of construction at the site of the future depot at Borgo Panigale, which is planned to provide storage for 60 LRVs as well as providing maintenance facilities, and at the future Michelino-Fiera terminus.

Design work for the Red Line was carried out by Systra and a joint venture comprising Sotecni, Architecna, Studio Mattioli, Aegis and Cooperativa Archeologia. The route was approved by the city council in April 2021 and declared to be of public utility in July 2021. In August 2021, tenders were called for a contract to design and build the project, which was awarded for €320.5 million to a consortium led by CMB and also comprising Alstom Ferroviaria, Amplia and Alstom Transport in July 2022.

The new line will run on an embedded rail system (ERS) and is to be largely powered by catenary, except for a two kilometer section where it is to be operated using battery-powered LRVs to avoid the need for catenary masts and wires in Bologna's historic city center. The line will also run on a segregated alignment and is expected to be completed in 2026.

The project is a part of the Urban Sustainable Mobility Plan

(Pums) adopted on November 27, 2018, which envisages the reintroduction of light rail in Bologna that will gradually replace the main bus and trolleybus network with four light rail lines: Red, Green, Yellow and Blue, plans for which were announced in 2019.

The 7.4-kilometer (4.6-mile) Green Line is expected to be the second line to be built, with the first phase connecting the Red Line, with which it will share a 1.5-kilometer (one-mile) section, with the northern municipalities of Corticella and Castel Maggiore. The second phase will run east to Due Madonne.

The Yellow Line will connect Casteldebole in the west with Rastginano in the southeast, while the Blue Line will link Casalecchio Garibaldi in the southwest to San Lazzaro di Savenna in the east.

The whole four-line network is expected to be completed by 2030 when it will carry 300,000 daily passengers.

[INTERNATIONAL RAILWAY JOURNAL](#), May 23

BRUSSELS

New Generation Flexity Tram Enters Service

Brussels transport operator STIB has put the first of its new generation Flexity trams into service on Route 51 between Midi and Stade on April 26.

The 100-percent low-floor Series 3200 vehicles are being supplied by Alstom under a €480 million framework contract which STIB awarded to Bombardier Transportation in April 2018.



The old and the new: PCC #7808 (La Brugeoise et Nivelles, 1973), operating on the 93 route, sits across the platform at the Stade terminal from nearly-brand-new TNG 3200 #3205 (Alstom, 2022), operating on route 51. The day is April 26, the first day of revenue service for this new generation Flexity Outlook. Michel Reys photo

This included a base order for 49 five-section vehicles 32 meters (105 feet) long and 11 seven-section cars of 43 meters (141 feet). STIB exercised an option for a further 30 of the five-section trams in June 2019. All 90 vehicles are expected to be delivered by April 2026.

STIB already has 220 earlier generation Flexity Outlook

trams supplied by Bombardier from 2005: these comprise 150 five-section cars of Series 3000 and 70 seven-section cars of Series 4000.

The new-generation trams have been styled by Axel Enthoven of Yellow Window, inspired by the city's Art Nouveau heritage. The short version can carry up to 182 passengers, including 47 seated, while the long version can carry 256 with 65 seats.

Each tram provides two multifunctional spaces for wheelchair users and passengers with strollers, while the seating arrangement has been reconfigured for more comfortable trips on longer journeys. Manually operated ramps are provided for use at stops that do not yet have level boarding.

Extra external cameras and mirrors have been incorporated to improve safety, while soft elements have been incorporated to reduce the impact in the event of event of a collision with cars or pedestrians. An anti-derailment monitoring system is also provided.

[METRO REPORT INTERNATIONAL](#), May 2

CZECH REPUBLIC

RegioJet Orders New Fleet

Czech open-access operator RegioJet has announced that it will shortly sign a contract with Pesa Bydgoszcz for the supply of 18 200kph (124 mph) EMUs to operate express services on line R9 from Praha to Havlíčkův Brod and Jihlava/Brno.



Rendering of PESA's EMU for Czech open-access operator RegioJet. PESA

RegioJet has now signed the 15-year R9 operating contract that was awarded by the Czech Ministry of Transport in March, having won the tender against the incumbent Czech Railways (ČD) with a bid of Koruna 4.93 billion (\$US 223.6 million) against ČD's offer of Koruna 5.86 billion.

For the start of RegioJet operations on line R9 in December 2026, Pesa is to supply 18 low-floor EMUs in two versions, seating a total of 200 and 300 passengers respectively. First class seating will make up 12 percent of total train capacity.

The new trains will be air-conditioned and equipped with free onboard passenger Wi-Fi. They will be fully compliant with the EU TSI for passengers with reduced mobility, with

toilets that are accessible to passengers in wheelchairs.

Infrastructure on the Praha-Brno route is to be upgraded over the coming years, and the government is currently taking forward a project to design, plan and build a high-speed line between the capital and Brno, the second-largest city in the Czech Republic.

At present Jihlava is not served by R9 trains, and when the new operating contract starts at the end of 2026 it will have a direct service to Praha. Both RegioJet's Praha-Brno and Praha-Jihlava services will operate to a regular interval pattern timetable of one train every two hours.

[INTERNATIONAL RAILWAY JOURNAL](#), May 3

DUISBURG

First Flexities Enter Service

DVG, the public transport operator in the German city of Duisburg, has placed into service the first eight of 49 Flexity Classic LRVs that are being supplied by Alstom.

The design received approval from the Technical Supervisory Authority for the Düsseldorf region on April 3, enabling DVG to place the first LRVs into service on line 903, which runs from Duisburg to Dinslaken.



An example of Duisburg's new Flexity GT8ND-NF4. Keith Fender photo

The new Flexity fleet will also be deployed on line 901 as deliveries progress.

The three-section, 70 percent low-floor LRVs are designated type GT8ND-NF4 by DVG, which ordered the new fleet in 2017 to replace Düwag GT 10 NC-DU LRVs built between 1986 and 1993.

The new LRVs have a maximum speed of 80kph (50 mph) and are 34 meters (111½ feet) long and 2.3 meters (7½ feet) wide. Each LRV has capacity for a total of 200 seated and standing passengers.

There are five doors per side, equipped with retractable flaps to bridge the gap between the LRV and platforms at stops which provide level boarding. Wheelchair space is provided in a multi-functional area that can also accommodate pushchairs and bicycles.

Energy recuperated during regenerative braking can be used to power the heating system or returned to the

overhead supply.

The new Flexity fleet has been supplied under a €132 million contract for 47 LRVs originally awarded to Bombardier, with production undertaken at the Bautzen plant in eastern Germany. The contract includes the provision of spare parts and maintenance services to support DVG staff employees over a term of 24 years, with an option for an eight-year extension.

Two prototypes were originally due for delivery by December 2019, although this was delayed until September 2020. The remainder of the fleet was due to be supplied to DVG by 2023. However, deliveries are not now expected to be concluded until after 2024.

The order quantity has been increased to 49 LRVs following contract signing and without any increase in the overall order price being disclosed.

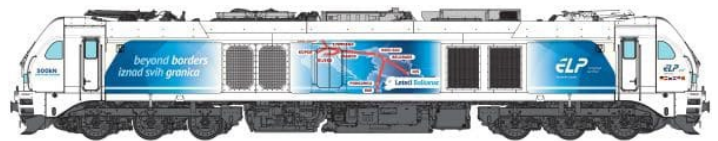
[INTERNATIONAL RAILWAY JOURNAL](#), May 2

EUROPE

EuroDual Testing Underway in the Balkans

European Loc Pool and Stadler Valencia, together with local partners, are conducting test runs of Stadler EuroDual locomotives in the Balkan countries of Slovenia, Croatia, Serbia and Montenegro. The purpose of the trials is to validate compatibility with local infrastructure and national requirements before obtaining authority for their use in general traffic. The test runs will take place in June and July and the next step is to conduct test runs in North Macedonia, Romania, Bulgaria and Greece. After completion of testing and review of documentation by the European Union Agency for Railways, approval for the locomotives' use in all these countries is expected before the end of this year.

[INTERNATIONAL RAILWAY JOURNAL](#), May 5



The Stadler EuroDual locomotives being tested by ELP in the Balkan countries carry special branding, including a map of the routes concerned. ELP image

GERMANY

More ICE 3neo High-Speed Trains

Siemens Mobility announced that it had received an order for an additional 17 ICE 3neo high-speed trains from German Rail (DB), worth €600 million and bringing the total of ICE 3neo trains ordered to 90.

DB placed its first €1 billion order for 30 ICE 3neo trains in July 2020 under a framework agreement for up to 90, and ordered a further 43 in January 2022 for €1.5 billion.

The first trains to be ordered entered service in December

2022 after being built at the Siemens Mobility plant in Krefeld in “record time,” according to the manufacturer. The latest batch of 17 is due to be delivered to DB by August 2028.

Based on the Velaro MS platform, the ICE 3neo has a maximum speed of 320 kph (200 mph) and is equipped to take traction current at 1.5kV DC, 3kV DC and 25kV 50Hz AC as well as 15kV 16.7Hz AC, enabling it to operate international services to Belgium and the Netherlands.



An ICE 3neo train set. DB photo

Each eight-car train has 439 seats and passenger amenities include special window glass for optimum mobile phone reception, redesigned luggage racks providing more space, and interior lighting levels that vary according to the time of the day.

Tablet holders and power outlets are provided at all seats and there are eight bicycle spaces on each train. Compared with previous ICE trains, there are more passenger doors for faster boarding and alighting at stations and a door lift provides easier access for wheelchair users.

[INTERNATIONAL RAILWAY JOURNAL](#), May 17

More ICE L Trains

Siemens Mobility also announced that it had received an order from DB for an additional 56 ICE L trains from Talgo for €1.4 billion, under a framework contract signed in February 2019 for a maximum of 100 trains.

Combined with the 23 trains ordered in 2019 that are currently in production, this brings the total number of ICE L trains ordered from Talgo to 79.

The ICE L, or Intercity Express Low-Floor, is due to enter service from autumn 2024. It will be fully accessible due to the low floor height of the Talgo coaches, which will provide level boarding from the standard station platform height of 760mm (2½ feet) above the top of the rail.

Each train comprises an electric locomotive, 16 coaches and a driving trailer car. In each formation there is a bistro/cafeteria car as well as a coach specifically designed to accommodate passengers with reduced mobility.

There are a total of 562 seats in each train, including 85 in first class. Talgo says that the new interior design scheme chosen for the ICE L combines functionality and durability with light and warm materials.

The ICE L is also fitted with window glass specially



ICE-L unit at the Talgo plant. Tobias-Holzer photo

designed to improve signal reception for mobile devices.

Each ICE L formation, including the 19.7 meter (64½ foot) locomotive, is 256 meters (840 feet) long and weighs 406 tons when empty. Maximum speed is 230 kph (143 mph).

The train’s multi-system locomotive, developed entirely by Talgo, will enable the ICE L to be deployed on the Berlin-Amsterdam route, and later on services to Copenhagen and Vienna, as well as throughout Germany.

The Talgo coaches are also compatible with other locomotives, according to the manufacturer, including diesel types from other suppliers for operation on non-electrified lines.

[INTERNATIONAL RAILWAY JOURNAL](#), May 18

INDONESIA

High-Speed Line Testing Underway

Infrastructure testing and commissioning commenced on the Jakarta-Bandung high-speed line in Indonesia on May 22.



The first high-speed EMU of the Jakarta-Bandung high-speed railway was received by Indonesia in August 2022.

China Railway Construction Corp. photo

According to China Railway International, which is leading the joint commissioning and testing program, work will ensure safe and stable operation of the high-speed train fleet on the new 142.3-kilometer (88.4-mile) line as well as the

performance of track, power supply, catenary, signaling and communication systems, as well as monitoring systems.

China Railway International is working with China Railway Beijing Bureau Group, the China Academy of Railway Sciences as well as local Indonesian companies on the testing and commissioning work.

Tracklaying was completed in March after construction commenced on June 9, 2018. The Indonesian government said in November 2022 that it hoped to open the line in June 2023.

The line will be operated using a fleet of 12 350 kph (218 mph) eight-car Yawan high-speed trains supplied by CRRC Qingdao, which will offer a journey time of 40 minutes between the two cities, down from around 3 hours 40 minutes at present.

Construction of the project was conducted by PT Kereta Cepat Indonesia-China (KCIC), which is a consortium of state-owned Indonesian companies (60 percent) and China Railway Engineering and other Chinese companies (40 percent). The line has entirely adopted Chinese railway equipment, the first time China has exported all of the technology for an international high-speed project.

The project has ultimately come in nearly \$US 2 billion over the initial budget \$US 6.07 billion due to technical issues and the unstable nature of civil works.

[INTERNATIONAL RAILWAY JOURNAL](#), May 26

LONDON

Elizabeth Line Service Increased

Train frequency was increased from 22 to 24 trains per hour in peak periods on the core section of London's Elizabeth Line between Paddington and Whitechapel with the start of the new summer timetable on May 22.

In addition, Shenfield-Paddington trains were extended to Heathrow Airport for the first time to provide six trains/hour to Heathrow, while journey times from Reading into central London have been reduced by eliminating pauses in the timetable to the west of Paddington station.

There is an increase in peak services from Reading, with some trains that were previously operated by Great Western Railway transferring to become Elizabeth Line services with fewer stops. In the east, more peak services are now running between Liverpool Street main line station and Gidea Park.

The improvements mark the culmination of the Crossrail project to build a new, mainly underground line from Paddington to Stratford and Abbey Wood and connect it to existing lines to Reading and Heathrow in the west and Shenfield in the east.

May 24 will be the first anniversary of the opening of the Elizabeth Line.

Transport for London (TfL) figures suggest that the Elizabeth Line has attracted around 140,000 additional journeys in London each weekday.

TfL says that the Elizabeth Line is on course to break even by the end of the 2023-24 financial year, and it has already

become one of the most used railways in Britain.

[INTERNATIONAL RAILWAY JOURNAL](#), May 2

NETHERLANDS

Final New Generation Sprinters Delivered

Spanish rolling stock manufacturer CAF has completed the delivery of the 206th and final Sprinter New Generation EMU to Netherlands Railways (NS).

The trains are based on CAF's Civity platform, and the final four-car EMU operated its maiden trip between Amsterdam Centraal and Baarn on May 9.



NS's new CAF-built Sprinter EMU. Quintus Vosman photo

NS has invested around €900 million in the new fleet for its local services. The CAF trains have replaced the first-generation Sprinter EMU fleet dating from the 1970s and 1980s which was withdrawn in 2021.

The initial order comprised 68 three-car and 50 four-car EMUs and was placed with CAF in 2014. NS ordered an additional 50 three-car and 38 four-car trains in 2018.

NS launched a new tender for more Sprinter trains in summer 2022, indicating that it will not exercise further options with CAF.

The preferred bidder is expected to be announced in early 2024, with the new trains scheduled to enter service in 2027.

[INTERNATIONAL RAILWAY JOURNAL](#), May 17

PARIS

Operator Selected for Lines 16 and 17

Île-de-France Mobility has selected Keolis to operate the new automated Métro Lines 16 and 17 of the Paris metro, which are under construction as part of the Grand Paris Express project.

The seven-year contract includes an optional three-year extension as well as operation of the Saint-Denis Pleyel station, the largest on the network, from June 2024 ahead of the 2024 Summer Olympics, which Paris is hosting.

The metro lines are on course to open in October 2026. As well as operation, Keolis will be responsible for providing

travel information, and maintaining rolling stock and stations.

The 29-kilometer (18-mile) Line 16 will have 10 stations and 16 municipalities, running from Saint-Denis Pleyel and Nosiy-Champs, offering an end-to-end journey time of less than 30 minutes. The line shares a 6.4-kilometer (four-mile) section with Line 17, and is expected to carry 200,000 passengers a day when it opens.

The 26.5-kilometer (16.5-mile) Line 17 will serve nine stations and 13 municipalities, running from Sain-Denis Pleyel to Mesni-Amelot in less than 25 minutes. The line is expected to serve up to 60,000 passengers per day. It will also improve access to Paris Charles de Gaulle airport and will interchange with Métro Lines 14, 15, and 16, the RER Lines B and D, and T1 and T11 light rail lines.

The contract is the first competitively awarded to operate metro lines in Île-de-France.

[INTERNATIONAL RAILWAY JOURNAL](#), May 31



One of the CAF six-car trains operating on the newly-opened Quito Metro Line 1. IRJ photo

POLAND

More Vectrons for PKP Cargo

PKP Cargo has taken delivery of five Vectron MS locomotives from Siemens Mobility, ordered under an option within a contract for 15 locomotives originally signed in September 2015. The new locomotives bring PKP's Vectron fleet up to 25 and the agreement includes an eight-year maintenance contract. The multi-voltage locomotives will be used to haul intermodal freight between Poland and other European countries. The locomotives for PKP Cargo have a power output of 6.4MW under AC and 6.0MW under DC power and have been fitted with ETCS Baseline 3 onboard equipment. As well as Poland, they are approved for use in Germany, Austria, the Czech Republic, Slovakia and Hungary.

[INTERNATIONAL RAILWAY JOURNAL](#), May 5

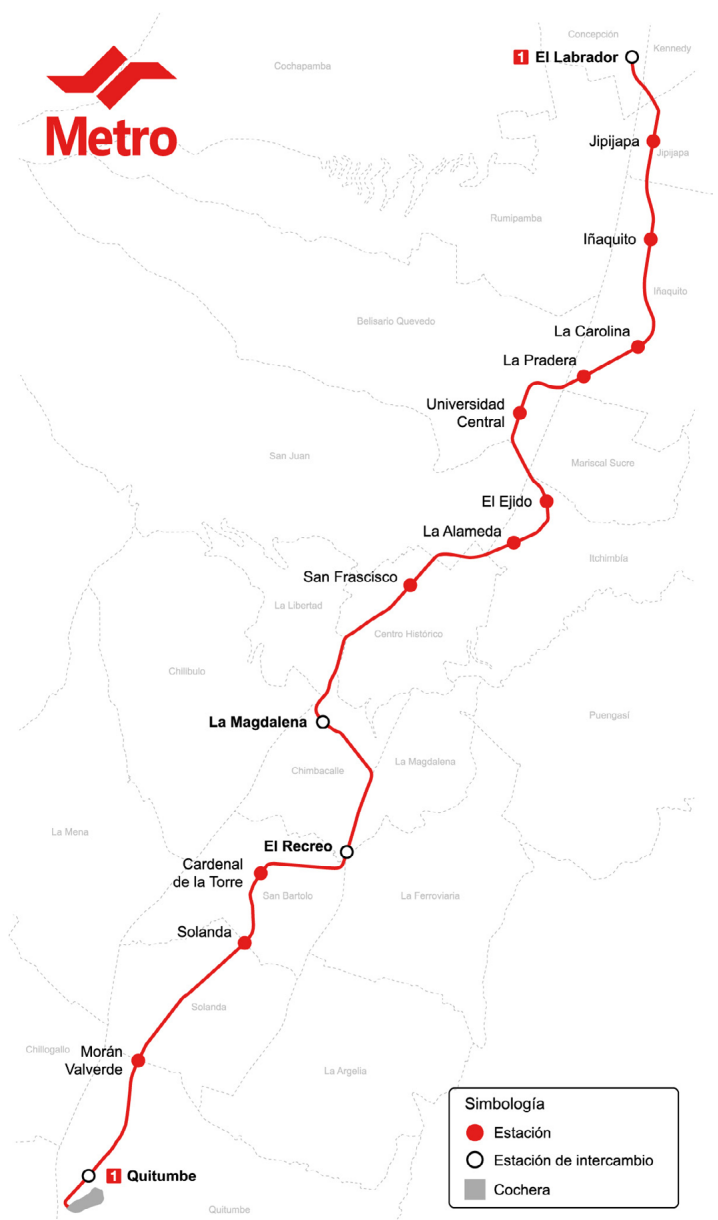


One of the five Vectron MS locomotives delivered to PKP Cargo. Siemens Mobility photo

QUITO

First Metro Line in Ecuador

May 2 saw the long-awaited start of revenue services on



Quito Metro Line 1, the first metro line to be built in Ecuador.

The 22.5 kilometer (13.7-mile) Line 1 runs from Quitumbe, south of Quito city center, to El Labrador in the north. There is a total of 15 stations along the line, 19.49 kilometers (12.1 miles) of which is underground.

Opening of the line has been repeatedly delayed. An official inauguration ceremony was held on December 21, 2022 in anticipation of preview passenger services beginning on January 5 and revenue services starting in early March. However, problems with the QR code ticketing system delayed the start of preview services until January 23, delaying the start of revenue-earning services until May 2.

Reports suggest that 180,000 people traveled on the line during the preview period. Nevertheless, the MercoPress news agency reports that the first day of revenue service did not run smoothly, due to a shortage of ticket office staff and failures in the system for printing QR code tickets. These problems reportedly led to numerous passenger complaints.

Quito Metro Metropolitan Public Company (EPMMQ) said in a statement that passenger demand at Quitumbe station on the first day had been triple that experienced during the preview phase, and this had played a part in the problems with the sale of tickets.

The network is not yet operating at full capacity, as six of the 15 stations have not opened. Trains are also operating to a reduced timetable during the peak periods of 7:00 to 10:00 AM and from 4:40 to 7:30 PM. However, it is hoped that full operation of the line will help to alleviate some of the chronic road traffic problems to which the Ecuadorian capital is prone.

In July 2022 EPMMQ selected a consortium of Metro Medellín of Colombia and Transdev to operate the line under a six-year contract. CAF has supplied a fleet of 18 six-car trains, each formed of four motor cars and two trailers and capable of accommodating up to 1,500 passengers. The overall journey time over the line from end to end is 34 minutes.

[INTERNATIONAL RAILWAY JOURNAL](#), May 5

SPAIN

New Locomotives for Captrain España/Alpha Trains

Captrain España has signed a contract with Stadler Valencia for the supply of eight Euro6000 electric locomotives able to run on both standard (1435mm) and wide (1668mm)-gauge infrastructure. When deliveries are completed in 2025, the new locomotives will bring the company's fleet of multi-system electric locomotives up to 24. The new locomotives have been funded in part by a €15 million grant from the Spanish government's Sustainable and Digital Transport Support Program within the Next Generation EU recovery plan for Europe.

Alpha Trains has announced a new partnership with freight operator Low Cost Rail and Stadler Valencia for the purchase and leasing of three Euro6000 electric locomotives. Low Cost Rail has received funding for the transaction from Spain's Ministry of Transport, Mobility and the Urban Agenda (Mitma) as part of the Sustainable and Digital



Captrain España has signed a contract with Stadler Valencia for the supply of eight Euro6000 electric locomotives able to run on both 1435mm and 1668mm-gauge infrastructure. Acentum photo

Transport Support Program.

[INTERNATIONAL RAILWAY JOURNAL](#), May 5

SWEDEN

Modernized X2000 Trainsets

Swedish operator SJ (Statens Järnvägar) has put its refurbished X2000 tilting 200 kph (124 mph) trains into service on the Södra main line from Stockholm to Malmö, extending the benefits of the upgraded fleet which have been operating on the Stockholm-Gothenburg route since autumn 2021.

On the Malmö line from the capital there are three daily departures on weekdays and one departure in each direction on weekends. All services stop at Lund, Hässleholm, Alvesta, Nässjö, Linköping and Norrköping, and some also stop at Älmhult, Mjölby and Södertälje.



A refurbished SJ X2000 train in the latest livery at Stockholm Central station. Officialworks/Wikipedia Commons photo

SJ says the goal of its extensive refurbishment of the X2000 fleet has been to increase passenger comfort in a sustainable way, with much effort being put into designing the new seats, interior fittings and technical equipment. In addition, a steel basket seat frame has been adopted to reduce the amount of new steel required.

Each upgraded train has around 15% more seats, with

the design work ensuring this has been achieved without affecting comfort. The new seats can be raised and lowered electrically and have new extendable tray tables allowing each passenger to adjust the configuration of their seat, armrests and table to suit their individual requirements.

In addition, accessibility for passengers with reduced mobility has been improved. Braille location markers have been provided and the disabled toilet compartment has a new, larger design. Luggage storage areas have been enhanced and second class now has twice as much luggage rack space as previously.

SJ has added an onboard 5G-based Wi-Fi system and has replaced the train windows with new radiolucent glass that improves mobile phone reception.

The 43 SJ X2000 EMUs (also known as X2s) were originally designed by ASEA and constructed in Sweden by Kalmar Verkstad. The trains were launched in 1990, initially operating first class-only services. Second class was introduced in 1995.

SJ first announced in January 2014 that it would be investing SKr 3.5 billion (\$US 342.7 million) in modernization and repowering of the X2000 fleet. This was with the

goal of extending the life of the trains by 20–25 years, with refurbishment costing one third of the price of replacement with new trains, as well as having a lower environmental impact. SJ awarded ABB a \$US 200 million contract to replace the traction converters, transformers, battery chargers, train control systems, and passenger information and entertainment equipment, and in 2016 signed a contract worth more than SKr 1 billion with Knorr-Bremse subsidiary Swedtrac to refurbish the interiors of 36 of the trains.

The X2000 refurbishment program is due for completion in 2027. (See the April 2022 *Bulletin* for further details).

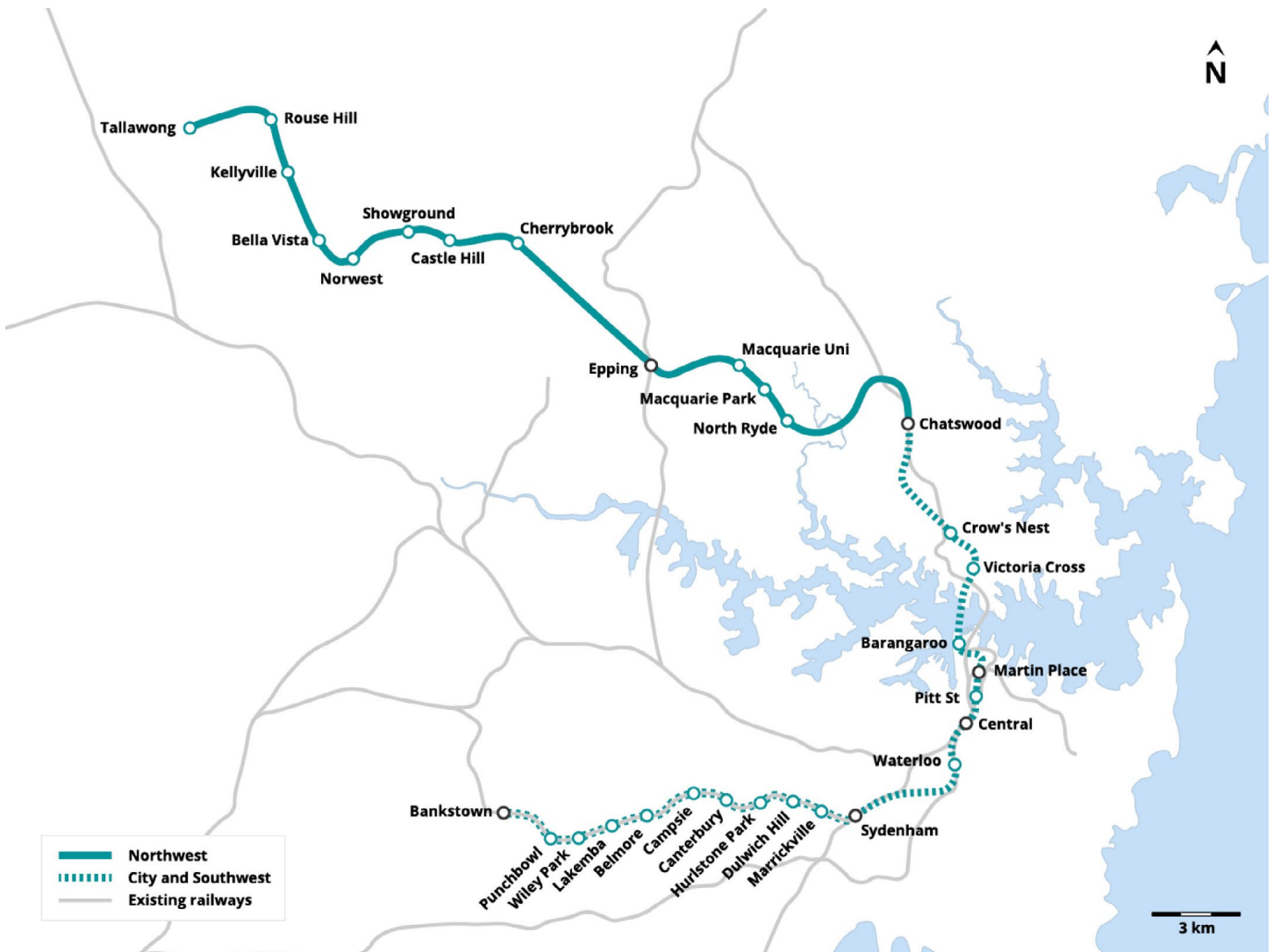
[INTERNATIONAL RAILWAY JOURNAL](#), May 10

SYDNEY

Testing Begins on Metro Line Under Sydney Harbor

History has been made in New South Wales as for the first time test trains are running deep below Sydney Harbor as the

(Below) Map of Sydney's metro, showing the City and Southwest extension. Sydney Metro



Sydney Metro City & Southwest project enters its latest stage.

As part of the testing and commissioning program for the new trains, they are traveling at an initial 25 kph (15½ mph) through the 15.5-kilometer-long (9.5-mile) twin tunnels which extend the Metro North West Line from Chatswood to Sydenham.

Train speeds will be gradually increased to a maximum of 110 kph (68 mph) and each train will also undergo acceleration, braking and systems checks on the newly-completed line to ensure reliable operation under normal service conditions.

On-track testing and commissioning will continue throughout this year, with scheduled passenger services expected to start through the Sydney central business district in 2024. After the line opens, it is estimated that the journey time from Central station to Chatswood will be 15 minutes, the time taken to travel from Martin Place to Sydenham will be 11 minutes, and the journey time from Victoria Cross station in North Sydney to Barangaroo will be only three minutes.

Meanwhile, all the platform screen doors for the new city stations forming part of the project have been installed, a total of 288 doors stretching 2.7 kilometers (1½ miles) over the eight stations of Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Central, Waterloo and Sydenham. The installation of the doors took over 36,700 hours with an average of 35 workers undertaking installation across the city stations each day.

[INTERNATIONAL RAILWAY JOURNAL](#), May 2

TAIWAN

High-Speed Trains Ordered

Taiwan High Speed Rail (THSR) signed a contract worth Yen 124 billion (\$US 898 million) in Tokyo on May 18 with the Hitachi Toshiba Supreme Consortium (HTSC) for the supply of 12 high-speed trains.

The THSR board had approved the award of the contract in March, following several years of protracted negotiations over the deal. The contract was originally planned to be awarded in 2019, but THSR was concerned that the price being quoted for the new fleet was higher than it would have been for a domestic customer in Japan. The difference in price was due to the modifications required to meet THSR specifications, according to HTSC.

The consortium will now supply a total of 144 cars, based on the latest N700S Shinkansen high-speed train in operation with Central Japan Railway (JR Central). Deliveries are due to start in 2026, with the new fleet entering service in 2027, according to THSR.

The new trains will be 300 meters (984 feet) long and will operate at up to 300 kph (186 mph). Compared with the existing 700T Shinkansen fleet in operation between Taipei and Kaohsiung, the new trains will be lighter and have better aerodynamic performance.

The compact traction system featuring silicon carbide technology and blowerless cooling will offer greater energy

efficiency. The new trains will be equipped with lithium-ion batteries to provide traction at low speed in the event of overhead power supply failures.

Onboard amenities will include LCD passenger information displays and a 110V charging socket at every seat.

The new fleet will enable THSR to increase passenger capacity to meet rising demand.

[INTERNATIONAL RAILWAY JOURNAL](#), May 19

TORONTO

504A Streetcar Service Resumes

The 504A King streetcar between Dundas West Station and Dufferin St will resumed service on May 7.

From January 2021 until May 2023, buses replaced the 504 King between Dundas West Station and Dufferin Street, including the intersection at King St. W., and Roncesvalles Ave., to accommodate major city works on water mains and sewers in the area, as well as streetcar track replacement, extension of a dedicated streetcar right-of-way, enhancements to streetcar stops and improved safety for pedestrians and cyclists.



Flexity Outlook 4467 (Bombardier, 2018) operating on King Street.
Mass Transit photo

The 501 Queen will continue to short-turn at Queen St. W., and Roncesvalles Ave., as construction continues in the area. 501L Queen buses operate from Queen St. W., and Dufferin St., to Long Branch.

[TTC PRESS RELEASE](#), May 5

VANCOUVER

Tunneling Progress

The second of two massive tunnel-boring machines (TBM) that are excavating twin tunnels for the government of British Columbia's Broadway Subway Project broke through to the future Broadway-City Hall Station, marking another milestone for the major rapid-transit project.

The TBM is named for Phyllis Munday, a passionate mountaineer best known for exploring and documenting the coast mountains and Mount Waddington and nurse and

founder of the Girl Guides in British Columbia. Phyllis has excavated 4,429 feet of tunnel and installed 884 liner rings since starting at the future Great Northern Way-Emily Carr Station in late November 2022.

The Broadway Subway Project is a 3.5-mile extension of the Millennium Line from VCC-Clark Station to West Broadway and Arbutus Street, which will provide people with fast, convenient SkyTrain service along the Broadway corridor. The corridor is home to British Columbia's second-largest jobs center, health-care services, an emerging innovation and research hub and growing residential communities.

Once in service, the trip from VCC-Clark to Arbutus Station will take 11 minutes, saving almost 30 minutes a day and relieving congestion along Broadway.

Phyllis has joined Elsie, the tunnel-boring machine named after notable British Columbia-born Elizabeth (Elsie) MacGill, the world's first female aeronautical engineer, at the future Broadway-City Hall Station for planned maintenance.

The new Broadway-City Hall Station is the deepest station along Broadway at more than 65 feet underground, so the Millennium Line extension can be built underneath the active Canada Line. The station stretches 689 feet over two blocks under Broadway between Alberta and Cambie streets to provide space for a crossover section of track where trains can switch directions when needed. The station will have additional capacity for the expected volume of transit users, including passenger connections being built underneath Cambie Street, for people to easily transfer between the north-south Canada Line and the east-west Millennium Line.

In May, at the Broadway-City Hall Station site, a pedestrian bridge was installed to reconnect the south sidewalk between Alberta and Yukon streets. It is one of several installed in the station blocks along Broadway that, combined with the traffic decks, keep people moving and preserve access to this transportation and retail corridor while work on the underground stations carries on below.

Progress continues to be made at the elevated guideway where crews are installing the deck on top of the completed girders that connect the 21 columns between VCC-Clark Station and the future Great Northern Way-Emily Carr Station. Construction is also ongoing at all six station locations with activities ranging from excavation, concrete pours, water-proofing, rebar installation and station wall construction.

[MASS TRANSIT](#), May 30

WELLINGTON

Funding Approved for Tri-Mode Fleet

The New Zealand government has announced it will invest in 18 new tri-mode four-car commuter trains for the Kāpiti Coast and Wairarapa lines into Wellington.

The trains will be powered from overhead electrification, batteries and diesel engines, replacing the existing fleet introduced in the 1970s.

The new fleet will support the introduction of express

services which are expected to increase traffic on the Kāpiti Coast Line, which runs from Waikanae to Wellington, and the Wairarapa Line, which runs from Masterton to Wellington.

Both lines are expected to exceed capacity by 2030, despite the current problems with service frequency, reliability and punctuality, which Wood says indicates significant untapped demand for these commuter services.

Alongside the introduction of the new fleet, associated network improvements will increase corridor capacity and resilience for both passenger and freight services. Stations will also be comprehensively refurbished to meet current accessibility and amenity standards.

The new fleet was announced as the Wellington rail network was hit by major disruption following the inability to complete track inspection before the expiry of the network's compliance certification. This resulted in major disruption for commuters across the city after temporary speed restrictions were introduced on the network.

The chief executive of national railway KiwiRail says a combination of factors led to the disruption, including a mechanical fault with a 41-year-old Track Evaluation Car (TEC) and scheduling problems.

The TEC completed its assessment of the Kāpiti Line the following day, meaning a blanket 70 kph (43½ mph) speed restriction could be lifted to allow operator Metlink to restore commuter services across Wellington to their normal timetable on May 4. The TEC is now assessing the Wairarapa, Johnsonville and Melling lines.

While separate reviews have been announced by KiwiRail and the government, KiwiRail says an initial review found that the TEC needed repair work before it could operate, which was scheduled for early May after the compliance period for the Kāpiti Line expired April 30.

According to the TEC's operating schedule, going back at least to mid-March, it was due to assess the Wellington network in May, also outside the Kāpiti Line compliance period. KiwiRail says the fact that the implications of this were not recognized in March appears to be a critical systems failure, which will be a focus of its review.

The inability of the TEC to assess the Kāpiti Line was only raised with KiwiRail's senior managers on April 26. After KiwiRail engineers examined options to stay within the conditions of the company's safe operating license, including imposing the 70 kph speed restriction, KiwiRail contacted Metlink on April 27 about the situation.

There are a number of elements that need to be aligned to ensure effective scheduling of line inspections using the TEC, including maintenance, operations and rostering.

KiwiRail has now gone to market for a replacement TEC and expects to award a contract later this year. The new TEC will require less time out of service for maintenance and will therefore achieve higher productivity rates, KiwiRail says. Given this, KiwiRail has concluded that a single new TEC will be able to meet work requirements on lines across New Zealand in combination with good schedule management.

[INTERNATIONAL RAILWAY JOURNAL](#), May 5

New Exhibit: Railway Electrification in the Netherlands — American Influence on Dutch Railway Development

By Paul Grether

A new temporary exhibit in the Spoorwegmuseum/National Railway Museum of the Netherlands has opened showcasing the history of the electrification of the Nederlandse Spoorwegen (NS)—Dutch National Railways. Interesting context for the exhibit is the significant root in American technology of the electrification.

In the late 1910s the Dutch railway system was at capacity on several of its major mainline routes. Traffic growth required investment. The network relied almost entirely on steam locomotives for propulsion. Coal was in short supply and the labor-intensive locomotive fleets were antiquated. Expansion of rights-of-way to add third or fourth mainline tracks were deemed economically infeasible.

In 1920 the decision was made to electrify an initial group of congested mainlines to add capacity and reduce operating costs. Steam would continue to operate freight and long-distance passenger trains; electric multiple units with trailers would take over local and regional services. An engineering commission was established by the Dutch Parliament to determine the electrification technology. The commission would gather information through international case studies.



A four-car set of 1924 stock leaving Amsterdam Centraal Station, March 26, 1953. Wikimedia Commons photo

The commission members initially studied and visited Switzerland and England. Swiss (and German) alternating current electrifications required very large locomotive traction motors deemed unsuitable for the proposed Dutch multiple-unit approach. A visit to England and the Southern Railway 660-volt DC third rail system south of London determined that a third rail system would prove problematic in the Netherlands with the frequent grade crossings and open rail yards. Finally, a trip to the U.S.A. was made and various American electrified railroads inspected. Chief Electrical Engineer Reinier Beeuwkes of the Chicago, Milwaukee and St.

Paul Railway (Milwaukee Road) convinced the commission that the direct current approach of the Milwaukee Road's Pacific Extension was the way to go. Based on his name, Mr. Beeuwkes was probably also a Dutchman. Smaller traction motors, automatic unstaffed substations that converted 10,000 volts three-phase commercially available power to the railroad's direct current, reduced interference with telephone, telegraph and signaling systems and finally the short distances in the Netherlands that offset the direct current approach's increased need for copper wire caused the commission to reach the conclusion to go with a reduced 1,500-volt direct current system. This decision for the reduced voltage versus the 3,000-volt Milwaukee Road line voltage was due to the belief that it would permit line maintenance using wooden ladders without de-energizing (!).

Westinghouse Pittsburgh supplied the electrical equipment for the first 1924 prototype Dutch electric multiple-unit rolling stock that included American vehicle design influence away from the traditional compartment door design to a lighter and faster vestibule/aisle layout door arrangement. Later, after the Second World War, under the Marshall Plan, the Dutch railways would continue electrification and purchase large electric locomotives designed by and built under license from Baldwin/Westinghouse and install American style searchlight signaling, NX-based CTC and grade crossing equipment from General Railway Signal Company.

Electric operations facilitated many innovations including the world's first implementation of "rigid" (clock-face) repeating timetables with coordinated transfers. The Netherlands was one of the first countries in the world to eliminate steam, in 1958.

The Spoorwegmuseum/National Railway Museum of the Netherlands is located in Utrecht in the former Maliebaan train station. The electrification exhibit "Onder Hoogspanning" (under high voltage) is scheduled to be in the museum from May 26 until November 26, 2023. The exhibit features as its centerpiece the newly immaculately restored NS 252 from the first series of streamlined 1936 NS multiple-unit stock. The museum collection also includes an operable two-car set of 1924 stock in addition to many other types of electric rolling stock and artifacts. The exhibit includes some text in English.

The museum's English language website is: <https://www.spoorwegmuseum.nl/en/> and the exhibit website is: <https://www.spoorwegmuseum.nl/ontdek/nu-in-het-museum/onder-hoogspanning/>.

Sources:

Veenendaal, Guus. *Spoorwegen in Nederland van 1834 tot Nu*. Boom Amsterdam, 2004.

Middleton, William D. *When the Steam Railroads Electrified*. Kalmbach Books, 1974.

Changes Coming to 207th Street Yard

By Jeff Erlitz (Photographs by the author)

When Superstorm Sandy hit New York City on October 29, 2012, NYCT's 207th Street Yard (among other locations, like Coney Island Yard and South Ferry Terminal) suffered some major damage.

The Capital Program project to correct that damage is, and this is a mouthful, "C-34838, Sandy Repair & Flood Mitigation: 207th Street Yard and 200th/207th Street Interlockings - Signal, Track, Switch, Perimeter Wall, Portal and Power Work."

The actual Capital Program description for this project is as follows:

"The work to be performed consists of signal system modernization at 207th Street Yard, rehabilitation of existing and construction of new facilities including relay rooms, train control and communications based train control (CBTC) rooms and restoration of track infrastructure on the IND Eighth Avenue Line in the Borough of Manhattan.



The 107-lever US&S Model 14 machine in Tower A. It was placed in service around 1931.



The old and the new. On the left is the new 207th Street Yard Master Tower, on the right, Tower A. This and all of the other photos were taken June 4.

"The contractor shall design, furnish, install, test and place in-service signal equipment required to replace the existing signal system for the 207th Street Yard Interlocking. The new interlocking shall be a modern solid state interlocking (SSI) designed in accordance with current NYCT standards, and shall be both CBTC and automatic train supervision (ATS) ready. The new system shall include a fully redundant vital SSI and non-vital SSI performing signal code systems at the relay rooms. The contractor shall also replace damaged track and switch components.

"In addition, the work also includes furnishing and installing flood mitigation and resiliency structures and measures, such as steel and concrete walls, flood gates, fabric portal flood gate, drainage improvement, replacement of track feeder, transposition cables and appurtenances at the 207th Street Yard."

TC Electric LLC is the subcontractor performing the signal

installation work. As of the beginning of June, the second of several phases of signal cut-ins is in progress. The first phase, from May 5 to June 2, started in the southwest corner of the yard and included Tracks 1 through 13. In addition, the three non-electrified tracks (61-63), used by work trains and located on the extreme west edge of the yard, were completed.

The second phase includes Tracks 15 through 29 and yard lead Track A7.



Tower B, at the extreme north end of the yard, is what occupies the third floor of this building, which houses the 215th Street Signal Shop.

The most interesting part of this signal work is NYCT's use of switch machines from two companies that they had not used before. Twinco Manufacturing Company, of Hauppauge, N.Y., is supplying their Model TMC-1 switch machine and voestalpine (their name is not capitalized) Railway Systems GmbH, of Leoben, Austria, is supplying their Unistar HR switch machine. Both of these models are submersible,



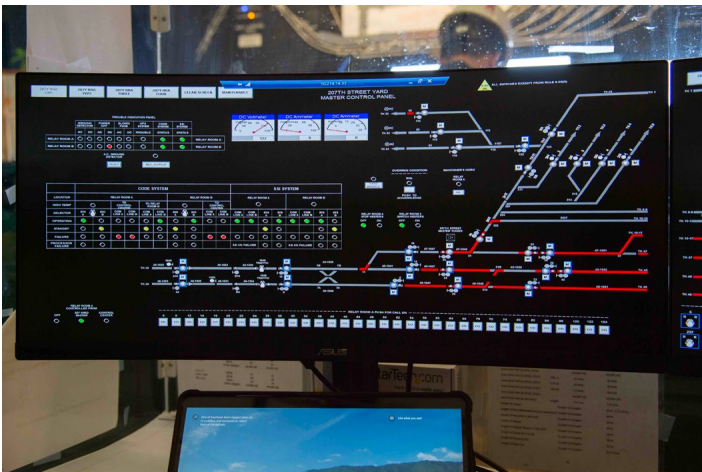
The 55-lever US&S Model 14 machine in Tower B.

should the yard ever again find itself under water.

The Twincos model has been under test since late September 2019 on one of the crossover switches (75A/B) just outside the Lefferts Boulevard **A** station.

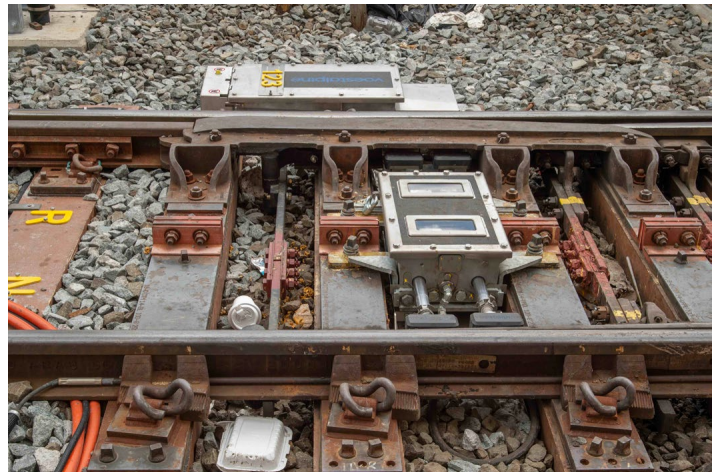
Twincos is a familiar name on the subway as they have been supplying automatic train stops for new signal projects for many years now. Voestalpine, however, is completely new to us.

As part of the signal portion of this project, both of the existing original 1931-era signal towers, Towers A and B, are being replaced with a new “master” tower. That new tower, however, is not ready to be occupied. Because of this, a computer workstation has been set up in the old Tower A to temporarily control the new signals and switches in the yard.



Close-up view of one of the temporary workstation screens in Tower A that is being used to control the yard's new signals and switches. The control software is Siemens' Citect SCADA 2018 application.

This workstation is remotely accessing the new relay rooms and using control software made by Siemens. That application is called Citect SCADA 2018. SCADA stands for “Supervisory Control and Data Acquisition” and is a method that is used across many industries, such as transportation and power generation. For a more in-depth explanation see



Certainly more radical looking than what we are used to seeing on our subway, this is the Voestalpine Unistar HR switch machine. Unlike all of the other switch machines used throughout the subway system, this one uses a center, between the rails, switch movement mechanism. New York hasn't used center-movement switch machines since the original installations under IRT Contracts 1 and 2.



More traditional looking are the Twincos Model TMC-1 switch machines, which are mounted on either side of a switch, the usual standard practice.

the Wikipedia article at <https://en.wikipedia.org/wiki/SCADA>.

Tower A currently contains the largest interlocking machine left on the entire subway system, a 107-lever Union Switch & Signal (US&S) Model 14 machine. Tower B's machine is roughly half that size, a 55-lever US&S Model 14.

Work on this project started on July 18, 2018, with Walsh Construction Company as the prime contractor. Two of the main sub-contractors are J-Track LLC for the track work and TC Electric LLC for signal and electrical work.

Some of the early work on this project included the complete removal of Tracks 3 and 5 north of the Main Overhaul Shop and all of Track 55, all, located in the northwest corner of the yard. That was done over the weekend of March 28–29, 2019.

Track 64, located at the extreme northwest corner of the yard, was completely removed May 4–15, 2020.

Book Review

By Paul Grether

Philadelphia Commuter Rails: A 40-year Retrospective

by Steve Barry, published in 2022 by Daylight Images, softcover, 186 pages, all color.

Steve Barry is the editor of *Railfan & Railroad* magazine and a prolific author and photographer. He grew up and lives in New Jersey. This gave him access to the Philadelphia area where he gained a major interest in all things transit which

he fortunately documented as an accomplished photographer.

While the title references “Commuter Rails” this is not intended to mean “Commuter Rail.” The book covers rail transit modes in depth in all its forms in Philadelphia including the commuter (Regional) rail, streetcars, heavy rail (subway and elevated) and the Red Arrow Division. PATCO is included along with a chapter documenting preserved Philadelphia rail equipment at various museums. The subject is (almost)

exclusively electric railways.

The book is a photo book with caption information that is very detailed and includes dates, locations and technical information about the subject. Each chapter includes introductory text with background historical context for the photos. Chapters are divided by mode and include sub-headings. The time period covered is from 1976 until the present which provides many generations of equipment and historical urban scenes mostly in typical workaday contexts. The technical quality of the photographs is high and the reproduction in the printing does them justice.

Philadelphia has an amazing transit system with a diversity of rail modes. Readers with an interest in Philadelphia transit, photography or more recent transit history will enjoy this volume.

Lately Steve Barry has been self-publishing books through Daylight Images. This volume is one of several recent titles. Additionally, Steve hosts regular “Wednesday Evening Slides” sessions live via Facebook which are archived on his YouTube channel:

<https://www.youtube.com/@stevebarryphotography168>

Philadelphia Commuter Rails



A 40-Year Retrospective

Photography by Steve Barry



Travels with Jack May

Britain and the Baltics — Part XVI

By Jack May (Photographs by the author)

Monday, August 21

I awoke at 4:45 AM to get ready for my 7:00 Ryanair flight to Riga. As mentioned in the initial part of this report, the second half of my trip would involve joining the VDVA (Verband Deutscher Verkehrs-Amateure), a German railfan organization, on its tour of the Baltic States. I was bypassing the Lithuanian portion of the trip (Lithuania does not have streetcars), but would meet up with the group in Riga in the evening. While my Holiday Inn Express in Castle Donington did not have a Business Center, it certainly had an excellent breakfast policy aimed at its clients heading for East Midlands Airport, with fresh food (fruit and pastries) and hot beverages available starting at 4 AM, and a full breakfast buffet at 6:00. I finished my “continental” breakfast at 5:35 and then began my trip to the Continent.

Skylink, the bus company that delivered me to the Holiday Inn, has a robust early morning timetable serving the airport, with six departures from the Pegasus Business Park between 5:42 and 6:32 AM.

I was able to catch the 5:42, which arrived at 5:44. The airport was an organized mad house, and security lines were very long. I was glad (at the time) that I got there early, especially as the hike to my [furthest] gate was incredibly long. It was a beautiful cloudless morning, and all the flights (and there were lots of them, mostly to resort cities) were on time, except my 7:20 departure. There were few seats in the Ryanair “bull pen” and I remained on line for the flight as the departure board changed the departure time from 8:00 to 8:30 to 9:00 and finally to 9:40.

As mentioned in Part XV, I had not paid for a seat on the aircraft, and when I received my boarding pass, found that I was assigned to 2E, presumably a middle seat on the Boeing 737. But when I finally boarded, by climbing a portable stairway at 8:15, I found that there was no row 1 on my side of the aircraft, nor was there a 2D seat (there was a 2A, 2B and 2C across the aisle) and the 2F window seat was empty. I was in an emergency exit row and I had to promise to help if the aircraft experienced any problems. I was quite happy I didn’t pay for the privilege of selecting my seat, and as a result ended up with a 2-seat row with gobs of legroom all to myself. I couldn’t ask for anything better, and the plane was crowded, with almost all every seat taken. I recalled that I had gotten a multiplicity of emails from Ryanair before the flight, urging me to buy a seat, including the warning that I could be assigned to a “dreaded middle seat,” which technically I was.

We rolled onto the runway at 8:39 (1:19 late) and left the

tarmac at 8:52. It was a smooth flight with unobtrusive sales pitches for food, drink and tax-free products. The sky was interesting, looking like pools of water or lakes and mountains for most of the journey.

We landed at 1:08 PM, reaching our spot near a gate at 1:12, a little over an hour late. It could have been a lot worse. Weather was comfortably warm (in the 70s) and the skies were a mix of sun and clouds. After navigating the stairs (I was one of the first out because of the location of my seat) it was a short walk to the terminal and customs and immigration were perfunctory. There was a Tourist Information Office (without any transit maps), but I was able to get a city map and buy a 24-hour transit ticket for €5.

Bus route 22 connects the airport with the city center, stopping near the railway station. It runs on a frequent headway, but had to fight a large amount of traffic, so I didn’t arrive in downtown until about 2:00. It was an easy walk to the VDVA’s hotel, the Ibis, and they were expecting me. My roommate Karl-Heinz had not arrived yet. He too was skipping Lithuania, as was John Wilkins and Dick Aaron, who appeared at the hotel (by taxi from the airport) at roughly the same time as I did.

With the weather so nice, I told them I wanted to get moving as fast as possible and suggested they have lunch without me, but before I finished freshening up, I changed my mind as I began to get hungry. Having traveled with John and Dick before, I knew exactly where they could be found, and caught up to them at the McDonald’s down the street from the hotel. After obtaining 24-hour tickets for them and taking a few photos in the downtown area, we began riding, stopping off here and there for photos.

The countries of Lithuania, Latvia and Estonia (working south to north), lying on the eastern edge of the Baltic Sea, are often referred to as the Baltic states, but are settled by distinct ethnic groups. The populations of each of the countries and their capitals are:

Lithuania	2.8 million	Vilnius	575,000	20.5 percent
Latvia	2.0 million	Riga	650,000	30.7 percent
Estonia	1.3 million	Tallinn	430,000	30.2 percent

As you can see, the number of people in each country, is less than those in the two biggest cities in the U. S., with population concentrated in their capitals, especially in Latvia and Estonia. In fact, the population of all three Baltic states combined is less than New York City’s. Until the beginning of the 18th century, the region now comprising Lithuania was controlled by Poland, while the present Latvia and Estonia were under Swedish

influence (which explains why most Lithuanians are Catholic and those residing to the north are Lutheran). The three became part of Russia during the 1700s and remained that way until the end of the First World War, when they were awarded their independence. That was not to last, as they were occupied by Russia after the Hitler-Stalin pact and then by Germany during most of World War II. After being overrun again by Russia they became part of the postwar Soviet Union. During the Gorbachev era the three countries regained their independence (peacefully) and now have democratically-elected governments, allied with Western Europe.

Riga itself is a lovely city. Clare and I recognized that when we visited in 1997, when our daughter-in-law was pregnant with our first granddaughter in St. Petersburg (Nastya is now 21 and a sophomore at the University of Wisconsin.) We traveled by rail from Riga to St. Petersburg to Moscow to Bryansk (where Paul's wife Irina grew up and her family still lives) to Kiev. Riga reminds me of many cities in western Europe (that were not destroyed in World War II), including Paris and Madrid, with a downtown area populated by substantial buildings, many of them in art-deco style. In the oldest part of the city there are some magnificent churches (mostly Lutheran, but also Catholic and Anglican), and one can get some fantastic views from their observation platforms.

The Riga tramway system is unusual in that it does not carry the bulk of the city's passengers, as more patronize the larger network of trolleybuses. Although there are officially only eight lines (while there are 17 trolleybus routes), the tramway nevertheless plays a significant role in serving Riga's citizens. The number of tram routes is deceiving however, because if you look at the map (https://www.rigassatiksmelv/files/rs_karte_2021_10_2_37b4f.pdf) you will see eight lines radiating from the center. But two are through routed (1 and 5), while four have terminal loops in the city center (2, 7, 10 and 11). That only accounts for six of the eight lines, as the remaining two (routes 3 and 9) overlap the other lines and have infrequent headways. (This past August there were two more low-frequency overlapping routes, the 4 and 6, but they're gone as a result of recent rationalization.) Only the 1, 5, 7 and 11 have really good frequencies (five to eight minutes in rush hours), while the 2 and 10, because of some bi-directional single track, have their best headways limited to 12 to 20 minutes.

The well-maintained system is broad gauge, 5 feet (1424 mm), which is very common in the former Soviet Union, especially on its mainline railway network. Riga is also noteworthy because it still uses trolley poles for current collection, although once its older cars are replaced with low-floor equipment the poles will be retired. (The use of trolley poles in Latvia, of course, was one of the main reasons I decided to go on this tour. We would also visit Daugavpils, which uses trolley poles as well.)

Back to the rolling stock, which provided the lively and dependable operation we experienced. There are three basic types of cars, all single-ended (although you could say four if you count the differing number of sections in the articulated cars separately). The roster includes the ubiquitous streamlined

ČKD-Tatra T3 PCC and its upgraded version, the angular T6 (formerly the T3M in Soviet nomenclature), plus new 100 percent low-floor Škoda 15T models. All were built in what is now the Czech Republic. The photos below illustrate those cars and are followed by the narration of the day's activities.



A 1988-built Tatra T6 on the spaghetti of tracks that weave through Riga's downtown. The tramway has 48 of these PCCs on its roster, and they are usually found on routes 3 and 7.



This train of Tatra T3s goes back to 1981 and is representative of the majority of cars operating on Riga's tramway system, all with trolley poles. The location is the Imantas iela stop along Bebru iela, a wide suburban-like arterial with a grassed center reservation. There are 134 of these fine PCCs on the roster. At the time of my visit route number 4 was assigned to tripper cars that beefed up rush hour service on the western end of route 1, but this route designation is no longer used.

We first rode across the Daugava River and stopped for photos as soon as we turned northward onto center reservation. We then rode T3 cars on the 5 out to its end point at Ilguciems, headed back to its junction with the 1, and then concentrated on the new Škoda units that were operating out to Imanta. As it turned out, all we saw were three-section articulateds. The next day we noticed that some Škoda cars were also running on the 11. Otherwise the system was all Tatra.

The weather turned partly cloudy and we headed back to the Ibis, where I found that Karl-Heinz had arrived. We all

went out to the Forest restaurant, recommended by the desk clerk, where I had an excellently prepared roast duck as a main course. The group, which included other Americans including Frank and Carol Graham, Julien Wolfe and Tomasz

Palkon, would not arrive until about 9:30. It had been a long day, but I was looking forward to our first fantrip the following morning, which will be covered in Part XVII.



(Above and below) Two views of Škoda 15T trams near Kleistu iela along Anninmuizas bulvaris, another of Riga's wide thoroughfares, only one stop beyond the location of the previous photo. The extension of tramway service through these "wide open spaces" was accomplished in 1984. Because of the location of the sun, the lower view is my only photo showing the door side of these cars (and from

the back yet). Fifteen of the Škoda-built three-section 100 percent low-floor articulated 15T cars are on the roster, supplemented by six four-section 15T1s. Officially listed in Škoda's catalog under the ForCity Alfa brand, these cars are also very popular in Prague, which has 250 such standard-gauge units. Riga has since ordered 20 more, fifteen three-section (103 feet long) and five four-section

(135 feet) units. Sadly, I did not photograph any of the longer four-section units, nor any without advertising wraps (although I did see one, but only one). (Those who have read my series of trip reports, which included a visit to Bratislava, may recall that there are 30 similar Škoda ForCity meter-gauge T29/T30 cars operating in that city.)

