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Houston METRO Transforms Aging Transit Hub into Flagship Facility

NORTHWEST TRANSIT CENTER
becomes the gold standard for mobility,
accessibility and user experience.

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New Orleans RTA
Brings Operations In-House to Focus on
Service Delivery and Equity

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**Data Informs Effective
Trespass Prevention
Strategies**

PAGE 28

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THE 13TH ANNUAL

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40 UNDER FORTY AWARDS

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OR HER POSITION INNOVATION IN THE FIELD

Featured in the November issue of the magazine,
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Deadline: June 30, 2021



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<https://www.research.net/r/mt40under40>

Nominees must be
39 years old or younger as of
July 1, 2021, to be eligible.



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HOUSTON, TX

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Bridging the Knowledge Gap

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1233 Janesville Ave
Fort Atkinson, WI 53538
920-563-6388 800-547-7377

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Publisher Emily Guill
(847) 454-2730 | Emily.Guill@MassTransitmag.com

Executive Editor Mischa Wanek-Libman
(224) 324-8532 | MWanek@MassTransitmag.com

Assistant Editor Megan Perrero
(224) 252-0226 | MPerrero@MassTransitmag.com

Contributors Ed Dornheim, Jody Summers, Arian Randolph

Multimedia Account Manager Barb Szatko
(800) 547-7377 Ext. 1344 | BSzatko@MassTransitmag.com

Inside Sales Representative Jesse Gonzalez
(224) 303-0611 | jgonzalez@MassTransitmag.com

List Rentals Representatives InfoGroup
Michael Costantino
(402) 836.6266 | Michael.Costantino@infogroup.com
Kevin Collopy
(402) 836.6265 | Kevin.Collopy@infogroup.com

Production Manager LuAnn Hausz

Art Director Erin Brown

Audience Development Manager Debbie Dumke

ENDEAVOR BUSINESS MEDIA, LLC

CEO Chris Ferrell
CRO/CMO June Griffin
CFO William Nurthen
COO Patrick Rains
Chief Administrative and Legal Officer Tracy Kane
EVP Key Accounts Scott Bieda
EVP Healthcare & City Services Amy Mularski
EVP Special Projects Kristine Russell

SUBSCRIPTION CUSTOMER SERVICE

877-382-9187; 847-559-7598
Circ.MassTransit@Omedia.com
PO Box 3257, Northbrook IL 60065-3257

ARTICLE REPRINTS

Brett Pettilo, Wright's Media
877-652-5295, ext. 118 | BPettilo@WrightsMedia.com



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ONLINE EXCLUSIVES

Ultra Light Rail Claims Lower Risk and Lower Cost than Traditional Light Rail

► ULRT uses electric buses on rails, with a few tweaks, that give it the potential to disrupt the way transit is built.

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Why Transit Agencies are Choosing ePaper

► This solar-powered, eco-friendly solution has become an effective way to display passenger information at bus stops, rail platforms and transit facilities.

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Bus Rapid Transit: Early Actions to Position for Implementation

► Developing strategies that eliminate common project hurdles, such as managing unexpected costs at the end of the project and delivering funding to cover the entire project scope, can help successfully implement a BRT system.

➔ MassTransitmag.com/21213089

Unlocking the Micro-Mobility Revolution

► New regulations and automated data collection processes have helped bring order to the industry and will enable municipalities to achieve sustainable transportation goals.

➔ MassTransitmag.com/21214015

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Review of a Year in Crisis

Even within a constant state of flux, the industry remained nimble while working toward a stronger future.

In March 2020, I remember commenting to colleagues on a Monday how concern surrounding the novel coronavirus – we didn’t have the COVID-19 name yet – seemed to be escalating quickly. We discussed reports that our state’s governor would issue a shelter in place order on Wednesday and by Friday, we were making final dashes to the grocery store to stock up on weeks worth of essentials.

We’ve all made it through a year operating in crisis mode. The playing field we thought we were used to was constantly shifting under our feet. This uncertainty delivered more than its fair share of challenges and frustrations.

An environment with so many unknowns also seemed to encouraged innovation. *Mass Transit* covered pilot programs during the past year that extended beyond mobility options to include new cleaning protocols, air sanitization systems, coatings designed to repel and neutralize germs and many others.

We covered the supply side’s pivot to produce additional PPE for transit customers, as well as others in their communities. The new products covered in the past year include stronger HVAC systems, new signage to promote physical distancing and new seats with antimicrobial properties built in.

Services had to be reimagined. Could any of us envision a year ago that transit agencies would be partnering to deliver food to people rather than people to destinations? Or that new and expanded service would include locations where vaccinations would be administered?

Perhaps the most gratifying realization to develop this year is the widespread belief that transit is essential. Many of us read and shared Jarrett Walker’s “In a Pandemic, We’re All ‘Transit Dependent’” in *CityLab* last April with its summation of transit’s value during this health crisis, “The goal of transit, right now, is not competing for riders nor providing a social service. It is helping prevent the collapse of civilization.”

Perhaps the most gratifying realization to develop this year is the widespread belief that transit is essential.



Mischa Wanek-Libman

Mischa Wanek-Libman, Executive Editor

✉ mwanek@masstransitmag.com ☎ 224-324-8532 [in linkedin.com/in/mischawaneklibman](https://www.linkedin.com/in/mischawaneklibman)



A DECAL from the Chicago Transit Authority reminding riders to give each other space.



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Illustration: ASCE

TRANSIT'S SCORE remained unchanged from ASCE's 2017 report card.

ASCE unveils its report card for 2021 on America's infrastructure

The American Society of Civil Engineers (ASCE) revealed its 2021 Report Card for America's Infrastructure on March 3, which evaluated 17 categories across the nation and is released every four years. Transit's score remained unchanged from the last report card released in 2017, coming in at a D minus—the lowest score out of the categories. Rail's score (includes passenger and freight rail) also remained unchanged, coming in at a B. In addition to the scores, the report noted that 45 percent of Americans don't have access to public transit. Simultaneously, many transit systems are aging and lack the funds to keep up to date on the State of Good Repair, which ASCE says is being exasperated by the COVID-19 pandemic. In total, 36 percent of the transit maintenance and storage facilities across the U.S. are in poor condition and over a 10-year period, 19 percent of vehicles and six percent of fixed guideway elements such as tracks and tunnels were rated in poor condition. There is also a \$176-billion State of Good Repair backlog, a deficit that is expected to grow to more than \$270 billion through 2029, the report states.

➔ [MassTransitmag.com/21212862](https://www.masstransitmag.com/21212862)

DART's refinancing of Silver Line RRIF loan estimated to save \$190 million

► Dallas Area Rapid Transit (DART) has refinanced its \$908-million Railroad Rehabilitation and Improvement Financing (RRIF) loan through the U.S. Department of Transportation's (USDOT) Build America Bureau. DART is expected to save an estimated \$190 million on interest costs with the refinance, which comes at a good time as transit systems contend

with pandemic-induced financial stress from lack of revenues. The RRIF loan was originally secured for the 26-mile passenger rail project in December 2018 and the loan proceeds will finance part of the costs of the \$1.2-billion project. The Silver Line is being built from Dallas-Fort Worth (DFW) International Airport eastward to the Plano/Richardson area, covering three counties and seven cities. The project is being constructed primarily within the existing DART-owned railroad right-of-way. Construction on

the project began September 2019 and on Feb. 25, DART started the initial bridge construction of the line's Josey Lane Bridge in Carrollton. The Silver Line is expected to open for revenue service by March 2023.

➔ [MassTransitmag.com/21211965](https://www.masstransitmag.com/21211965)



OTTAWA MAYOR Jim Watson and Canada Minister of Infrastructure and Communities Catherine McKenna.

Canada commits funding to help transit systems transition to electric power

► The government of Canada has committed C\$2.75 billion (US\$2.17 billion) over the next five years toward helping transportation providers transition to electric power. The funding is part of the C\$14.9 billion (US\$11.73 billion) in dedicated transit investment announced in February. The federal funding is in addition to the C\$1.5 billion (US\$1.18 billion) the Canada Infrastructure Bank has committed to zero-emission buses and associated infrastructure as part of its three-year Growth Plan. The newly announced funding will start in 2021 and, according to the Canadian government, "support municipalities, transit authorities and school boards with transition planning, increase ambition on the electrification of transit systems and deliver on the government's commitment to help purchase 5,000 zero-emission buses over the next five years."

➔ [MassTransitmag.com/21213032](https://www.masstransitmag.com/21213032)

FTA will not count federal loans against projects in CIG Program

► The Federal Transit Administration (FTA) published a letter rescinding a June 2018 "Dear Colleague" letter from the previous administration that transportation advocates, such as Transportation for America, said "added strenuous requirements to the Capital Investment Grants Program." The Trump Administration held a view that federal loans would be weighed as part of a CIG Program project's federal share and not the local

share. At the time of the 2018 letter, FTA noted the “process through which a project advances” in the CIG Program “and FTA decides whether to enter into a construction grant agreement, is ultimately a discretionary one.” The Feb. 16, 2021, FTA letter is short and states it is rescinding the June 2018 letter. It states FTA will evaluate projects based on statutory framework, regulation (Major Capital Investment Projects Final Rule at 49 CFR Part 611) and CIG Final Interim

Policy Guidance that was published in June 2016.

➔ [MassTransitmag.com/21210574](https://www.masstransitmag.com/21210574)

TransLink's copper pilot project moves to second phase

► TransLink is advancing a pilot project to evaluate the effectiveness of copper coatings on high-touch surfaces following a five-week initial test phase that found select copper products on

transit are durable and kill up to 99.9 percent of all bacteria within one hour of the bacteria's contact with the surface. Teck Resources Limited fully funded the first phase of the pilot and will also support the second phase of the project. The second phase is expected to launch in the coming months and is designed to verify the results of the initial phase. More train cars and buses will be testing the copper products in the pilot's second phase, which will also include testing over a longer amount of time to analyze various conditions, focused tests on products that were most effective in TransLink's transit environment – including copper decals and copper nickel plasma sprays – and public engagement to determine the copper products' impact on customer confidence. The pilot is the result of a partnership between TransLink, Teck, Vancouver Coastal Health (VCH), the University of British Columbia (UBC) and the VGH & UBC Hospital Foundation.

➔ [MassTransitmag.com/21213028](https://www.masstransitmag.com/21213028)



MORE TRAIN cars and buses will be testing the copper products in the pilot's second phase.

WMATA could take control of second phase of Silver Line by Labor Day

► The second phase of the Silver Line Metrorail project could be turned over to the Washington Metropolitan Area Transit Authority (WMATA) by Labor Day weekend, according to the Metropolitan Washington Airports Authority (MWAA). MWAA is managing construction of the 23-mile extension of the Metrorail public transit system between Reston and Ashburn in Loudoun County, Va. MWAA project managers base their expectation for substantial completion of Phase 2 on analysis of the latest data, the pace of testing by contractors and meetings with project partners and WMATA. Substantial completion means the project is ready to be turned over to WMATA for further testing, training and operational demonstrations.

➔ [MassTransitmag.com/21213145](https://www.masstransitmag.com/21213145)

Continued ►

People in the News



Deborah Prato

The Rapid

Deborah Prato has been selected to be The Rapid's new CEO.

Her contract was formalized by the board of directors on Jan. 27. Prato brings more than 30 years of public sector experience to the role, including 10 years of executive team experience in public transportation. Her expertise in local government and public transit in the northeast positions her to hit the ground running at The Rapid as the agency continues its work to support pandemic recovery and growth in the region. She officially began her new role March 8. “Together and alongside all of the dedicated employees at The Rapid, we have the talent to continue to deliver exceptional service to our customers and create extraordinary value by connecting our communities,” said Prato.

➔ [MassTransitmag.com/21209075](https://www.masstransitmag.com/21209075)



Quemuel Arroyo

Metropolitan Transportation Authority (MTA)

The MTA has named Quemuel Arroyo as the authority's first chief accessibility officer,

where he will handle accessibility matters across all MTA departments and systems and will report directly to MTA Chairman and CEO Patrick Foye. Arroyo will serve as a key point of contact for the region's diverse community of disability rights advocates. He previously served in a similar capacity at the New York City Department of Transportation and most recently was interim president and global head of community for GetCharged Inc., overseeing strategic partnerships and government relations. “Part of my job will be reshaping the way in which we conceive of accessibility as a public authority and working closely with the public to broaden our impact across the region,” said Arroyo.

➔ [Masstransitmag.com/21209059](https://www.masstransitmag.com/21209059)



Bob Ruzinsky

Greater Dayton Regional Transit Authority (RTA)

Bob Ruzinsky has been named CEO of the Greater Dayton RTA, effective April 1.

Ruzinsky currently serves as the agency's deputy CEO, a position he assumed in September 2019, where he oversees RTA's day-to-day departmental functions, including all actions for the three primary work groups in the agency: operations, finance and customer and business development. He began his career with RTA in 1987, working his way up in the accounting department before joining the Butler County Regional Transit Authority as CFO in 2002. He returned to RTA in 2009 and was promoted as the first chief capital officer in 2013. “Bob is the right fit at this time to carry on the fine reputation of the RTA in the community,” said RTA Board President Dave Williamson.

➔ [MassTransitmag.com/21208700](https://www.masstransitmag.com/21208700)

PEOPLE & PLACES

RTC Washoe County to launch Virginia Street Rapid extension to University of Nevada, Reno

► The Regional Transportation Commission (RTC) of Washoe County launched the final piece of its Virginia Street Project Bus RAPID Transit Extension Project on March 8 with the extension of the RAPID Virginia Line service to the University of Nevada, Reno. The RAPID Virginia Line is an enhanced transit

service. The route has features that allow buses to travel more quickly on Virginia Street and with fewer stops than on regular bus routes, including transit stops approximately every half mile, raised level-boarding platforms to allow passengers to get on and off quickly, dedicated bus lanes in some locations and technology that allows the bus to communicate with traffic signals to help keep the route on schedule. The electric

coaches are quiet and passengers waiting at RAPID stations will be encouraged to pay extra attention when the bus is arriving. RAPID buses are scheduled to have 10-minute headways along Virginia Street. The RAPID Virginia Line is the highest ridership route in RTC's transit system. Extending the RAPID Virginia Line to the university is anticipated to continue to increase ridership while providing students, faculty and staff with an enhanced travel option through the Virginia Street corridor in Reno.

➔ [MassTransitmag.com/21213051](https://www.masstransitmag.com/21213051)



RTC OF Washoe County has completed the Virginia Street Project Bus RAPID Transit Extension.

Glassboro-Camden Line achieves important milestone

► The Glassboro-Camden Line (GCL) light-rail project has achieved a significant project milestone with the completion of a comprehensive Environmental Impact Study (EIS), keeping the project on track to significantly impact transportation in South Jersey. The EIS was a critical phase that carefully reviewed the project's environmental impacts. Nationally recognized transportation experts conducted the study with feedback from hundreds of members of the community. The GCL is an 18-mile passenger light-rail line that will traverse Gloucester and Camden counties, including the communities of Glassboro, Pitman, Sewell, Mantua Township, Deptford Township, Wenonah, Woodbury Heights, Woodbury, Westville, Brooklawn, Gloucester City and Camden. The GCL restores passenger rail service in a corridor that historically provided this type of service.

➔ [MassTransitmag.com/21211232](https://www.masstransitmag.com/21211232)

First tunneling machine reaches future L.A. Metro Wilshire/La Cienega subway station

► The first tunnel boring machine (TBM), named Elsie, broke through to the Los Angeles County Metropolitan Transportation

People in the News



Mark Petit

Greater Cleveland Regional Transit Authority (RTA)

Mark Petit has been chosen to be the general manager of innovation and technology for the Greater Cleveland RTA. He brings more than 30 years of experience leading technology teams and initiatives as an outsourced chief information officer (CIO) in both the private and public sectors. His first day was Feb. 1. Recently, Petit was the CIO for the city of Akron, Ohio, serving on the mayor's cabinet and leading smart city initiatives. Managing Akron and Summit County's IT operating budget of more than \$9 million, Petit developed multi-year strategies with initiatives that improved staffing, operations, applications, infrastructure, compliance, security and cloud. "I look forward to the opportunity to find innovative ways to improve the RTA and its services for the communities that it serves," said Petit.

➔ [MassTransitmag.com/21208693](https://www.masstransitmag.com/21208693)



Natoya Walker Minor

Greater Cleveland Regional Transit Authority (RTA)

The Greater Cleveland RTA has selected Natoya Walker Minor to be deputy general manager of administration and external affairs. She brings 30 years of experience working in external affairs and public administration positions of increasing responsibility. She has provided strategic leadership, policy and operational direction for multiple departments within the city of Cleveland, Ohio, since 2006, where she first served as special assistant to the mayor for public affairs. Most recently, she served as the chief of public affairs for the city of Cleveland. She began her new role at RTA on March 8. "I look forward to becoming a member of this dynamic team to advocate and advance the necessity of public transit," she said.

➔ [MassTransitmag.com/21211222](https://www.masstransitmag.com/21211222)



Tiffany Casey

Memphis Area Transit Authority (MATA)

MATA has chosen Tiffany Casey to fill the new role of director of performance improvement.

Prior to this role, Casey served in other capacities at MATA as director of transit operations, senior manager of customer experience and as lead technical writer/interim project leader. Prior to joining MATA, she served as senior vice president of Shane Transportation, Inc., a joint-venture with Laidlaw Transit-North America (now First Transit-North America). Casey holds a bachelor's degree in business administration from the University of Memphis and a master of education degree in instructional technology from the University of Maryland. "This role is key to setting goals, developing measures, determining performance targets, allocating resources and evaluating results using business plans as a tool," said MATA COO Ted Harris.

➔ [MassTransitmag.com/21210908](https://www.masstransitmag.com/21210908)



ELSIE THE TBM broke through to the Wilshire/La Cienega station site in late February.

Authority's (L.A. Metro) Wilshire/La Cienega subway station in Beverly Hills. It is the first of two TBMs that will reach this last station on Section 1 of the L.A. Metro D Line (Purple) Extension project. Tunneling for the first four-mile section of the subway project is now two-thirds complete.

More than 90 percent of the tunnels have been mined safely and L.A. Metro anticipates completing tunnel mining this summer. Excavation for all three subway station boxes beneath Wilshire Boulevard has been completed. Elsie, the 1,000-ton, 400-foot long TBM started west at the Wilshire/Fairfax station on May 29, 2020, and broke through to the Wilshire/La Cienega station site about one mile away on Feb. 25. L.A. Metro's first TBM arrived at Wilshire/Fairfax on April 4, 2020. L.A. Metro's TBMs were first lowered into the ground at the Wilshire/La Brea station site in the Miracle Mile area of Wilshire in October 2018. While advancing, the TBM tunneled about 60 feet per day. They worked five days a week, 20 hours a day. When tunneling is finished for this project section, both of L.A. Metro's TBMs will have mined nearly half a million cubic yards of earth — the equivalent of filling 2.3 million bathtubs with dirt. The \$9.3-billion project will extend the Metro Purple Line nine miles from its terminus in Koreatown to Westwood/VA Hospital in West Los Angeles.

➔ [MassTransitmag.com/21212376](https://www.masstransitmag.com/21212376)

MORE NEWS AT A GLANCE

▶ BAE Systems will outfit 15 public transit buses in Vancouver, B.C., Canada, with the company's next-generation Series-EV propulsion system.

➔ [MassTransitmag.com/21212608](https://www.masstransitmag.com/21212608)

▶ Capital Area Transit System in Baton Rouge, La., has signed an agreement with Hitachi America, Ltd., to help the agency increase ridership through the improvement of passenger engagement, journey visibility and asset utilization.

➔ [MassTransitmag.com/21211987](https://www.masstransitmag.com/21211987)

▶ Corvallis, Ore., intends to award a contract to the Center for Transportation and the Environment to serve as project manager on its first battery-electric bus deployment project.

➔ [MassTransitmag.com/21212127](https://www.masstransitmag.com/21212127)

▶ Lohr Group, Transdev Autonomous Transport System (ATS) and Mobileye have announced a strategic collaboration to develop and deploy autonomous shuttles.

➔ [MassTransitmag.com/21212168](https://www.masstransitmag.com/21212168)

Got great Light Rail Vehicle tech? We want to talk to you!

JOIN US FOR A VIRTUAL NEW VEHICLE DAY!

April 8

Capital Metro is assessing light rail vehicles (LRV) for the Orange and Blue Line fleets. Contact us to discuss your technology's performance capabilities and to schedule a one-on-one virtual meeting.

How does your LRV technology benefit the Project Connect System Plan?

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- Maximum operating speeds (55 mph goal)
- State-of-the-art technologies



Austin, Texas | Project Connect is a bold transit plan that includes a new rail system, a downtown transit tunnel, an expanded bus system and a transition to an all-electric fleet.

Project Connect's new Orange and Blue routes will utilize light rail on about 19 miles of light rail track with 26 new light rail stations, including a new bridge & tunnel in the City's downtown - connecting key destinations throughout the City.

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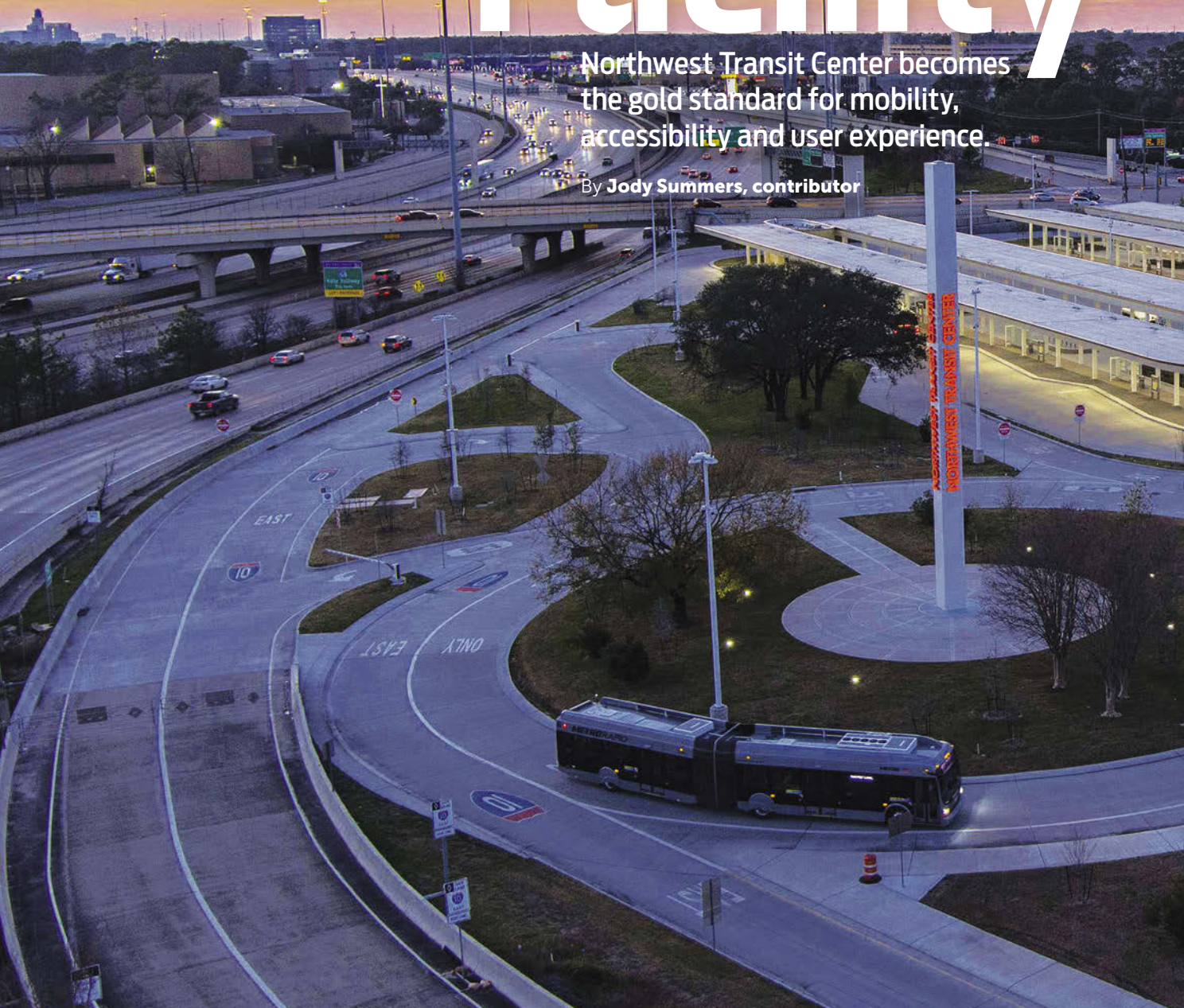
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Houston METRO Transforms
Aging Transit Hub into

Flagship Facility

Northwest Transit Center becomes
the gold standard for mobility,
accessibility and user experience.

By Jody Summers, contributor



HOUSTON'S NORTHWEST TRANSIT CENTER IS PROOF THAT A MAJOR TRANSIT HUB can maintain operations while undergoing a complete renovation and become a modern model of mobility, accessibility and user experience.

"The new Northwest Transit Center provides the best patron experience possible," said Bruce Krantz, vice president of construction for the Metropolitan Transit Authority of Harris County (Houston METRO). "This is our new gold standard for facilities."

The 30-year-old transit hub serves as a key connection point for park-and-ride and local bus transfers from two of the region's largest corridors: Interstate 10 and U.S. 290. As ridership grew, Houston METRO saw a greater need to address parking and congestion issues to improve bus and car traffic flow patterns. The renovations addressed the bus queuing burdens at the 10 existing bus bays and increased patron parking space availability.

The now-completed updates have added more bus bays and clearly delineated vehicle and bus traffic while adding improved connectivity, access, safety and security.

Houston METRO Evaluates 10 Concepts

In 2016, Houston METRO partnered with HNTB Corp. to provide planning, final design services and construction phase support for the \$35-million expansion and improvement of the Northwest Transit Center. The federally-funded design-bid-build project included a National Environmental Policy Act phase, after which HNTB began design in spring 2017 and completed the center in summer 2018.

AN AERIAL view of Houston METRO's Northwest Transit Center.

Trey Cambern,
courtesy of HNTB



“METRO required three design concepts,” said Vince Obregon, HNTB project manager, “but we had so many ideas and variations that we actually presented 10 concepts. The client selected three to develop further. From there, we arrived at the recommended alternative.”

“The recommended alternative included everything we wanted,” said Bridgette Towns, Houston METRO vice president of project management and engineering. “We liked its versatility, its welcoming atmosphere, the user-friendliness and it incorporated all eight of our Universal Accessibility principles.”

Design Incorporates Accessibility Goals

Improving patron access to all services had been a Houston METRO priority for years. To advance that goal, the authority developed and adopted eight principles of Universal Accessibility that exceed the Americans with Disabilities Act requirements.

- **Equitability:** Everyone, regardless of ability, should be able to use the same environment.
- **Flexibility:** Services or facilities should accommodate a wide range of uses.
- **Simplicity:** Unnecessary complexity should be eliminated; the facility should be easy to use and understand.
- **Perceptibility:** The design should effectively communicate information regardless of the user’s sensory abilities.
- **Mobility:** Appropriate sizing and spacing should maximize mobility.
- **Safety:** Elements should be arranged to minimize hazards and provide warnings.
- **Suitability:** Everyone should be able to use the facility efficiently and comfortably.
- **Usability:** The environment, accessed by disabled or non-disabled patrons, should offer the same experience in effectiveness, efficiency and satisfaction.

“Universal Accessibility not only includes those who are disabled but those patrons who ride their bicycles or walk to the transit center,” Towns said.

The new Northwest Transit Center would be the first of the agency’s facilities to incorporate all eight principles. A virtual reality model of the facility’s design helped Houston METRO visualize how patrons would interact with the new facility.

“The virtual tour simulated the transit center access from a walking perspective and from a wheelchair, giving all patrons the experience regardless of their abilities” Obregon said.

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“We were very pleased with the final design,” Towns said. “It is well-thought-out and addressed all our needs.”

In addition, Houston METRO collaborated with multiple departments and agencies to improve pedestrian and vehicular circulation throughout the transit center, park-and-ride lot and access and egress roadways.

The final design included two platforms with a total of 20 bays for local commuter buses and a third platform dedicated to Houston METRO’s new Uptown Bus Rapid Transit Silver Line. There is also ample parking, with a new lot designed to hold 195 vehicles, as well as an existing additional parking lot with 256 spaces adjacent to the facility, which the authority currently leases from the Texas Department of Transportation.



Trey Cambern, courtesy of HNTB

Phasing Maintains Operations

Perhaps the most challenging part of the project was determining how to maintain bus service while the existing facility was leveled to virgin soil and rebuilt.

“We did not want to temporarily relocate the facility,” Krantz said.

“It would have created too much confusion and pushback from patrons. So, the task was to find a way to keep operations on-site.”

Collaborating with Houston METRO, the HNTB team created a phased interim operations plan that would maintain operations while giving the contractor full

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access to the project site. Under phase 1, the authority would move all bus services to five bus stops along Old Katy Road, as well as to the existing temporary parking lot. The “temporary transit center” would include a 10-bay bus platform. Under phase 2, with the temporary configuration complete and operating, the contractor could demolish the vacated facility, construct two bus platforms and add new access roadway inclusive of a roundabout. In phase 3, Houston METRO would transfer bus operations from the temporary site to the new facility, freeing up the temporary site destined to become a new, permanent parking lot.

On paper, it worked. But would it be successful in the real world? To test the plan, Houston METRO and HNTB held multiple meetings to confirm the plan’s operational feasibility. They developed geometric configurations and ultimately created a live testbed of the proposed plan to observe actual bus movements at Houston METRO’s Bus Service Center parking lot.

“The interim operation plan was safety-driven and maintained nearly seamless connectivity,” Krantz said.

According to Al Ramirez, superintendent for the contractor, SpawGlass, the phasing facilitated construction.

“The benefit was being able to construct a temporary bus platform, which gave us the opportunity to start on phase 2, the most complicated portion of the project, before phase 1 was completed,” Ramirez said.

Facility is Designed to Expand

Construction started in June 2019, and in December 2020, Houston METRO unveiled a modern, new facility, double the size of the previous center.

Hailed as a first-of-its-kind multimodal center, the new Northwest Transit Center features Uni-



Trey Cambern, courtesy of HNTB

versal Accessibility, a full-service Houston METRO RideStore, extensive Intelligent Transportation Communications connectivity to shared-use bike paths, LED lighting and surveillance systems to enhance safety and security.

“Bus traffic and vehicular traffic [updates] for local, park-and-ride and HOV lane access have greatly improved,” Krantz said.

Further, the facility is designed to accommodate Houston METRO’s long-term service goals.

“With METRONext, METRO plans to add 75 miles of BRT lanes to our system, which correlates to many additional BRT buses,” Krantz said.

The multimodal transit center also could become a BRT connection point from a proposed terminus for a high-speed rail line station between Houston and Dallas.

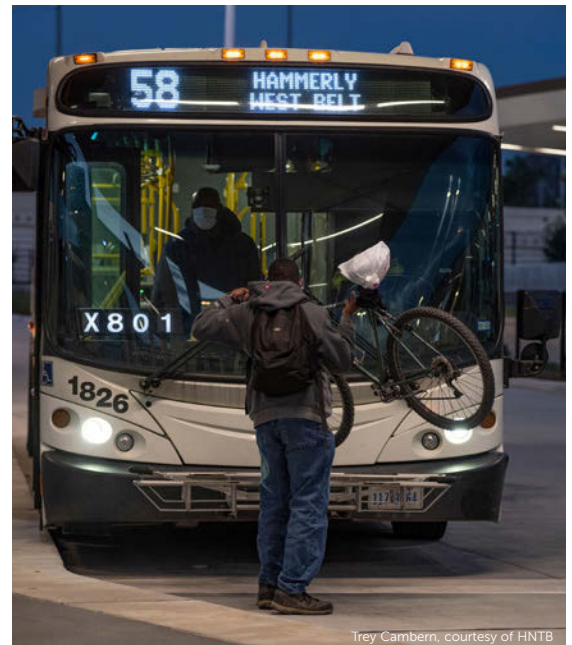
“The center is designed to handle both current ridership and future capacity,” Towns said.

Center is Accessible to All

Incorporating Houston METRO’s Universal Accessibility principles into the facility’s design resulted in raised walkways across bus travel lanes to increase pedestrian visibility. There are docking stations for recharging wheelchair batteries, handrails, expanded handicap parking and braille signage.

The facility is equipped to accommodate strollers and service animals. There are fully accessible public restrooms, bike storage facilities and a bike repair station. BRT bus platforms offer level ac-

HOUSTON METRO requested three design concepts for the transit center but was presented with 10.




Trey Cambern, courtesy of HNTB

THE FACILITY is being hailed as a first-of-its-kind multimodal center.

cess for safer loading and unloading. In the near future, Bluetooth bus bay beacons, accessible on a smartphone app, will help guide patrons to the right bus bay.

According to Towns, the authority’s insistence on the Northwest Transit Center incorporating its Universal Accessibility principles will pay off for years to come.

“The facility works for everyone, regardless of age, mobility, visual, auditory and mental ability,” Towns said. “When a design addresses the needs of every stage of human life, it gives a facility a longer useful life and reduces the need to retrofit later.” 

Jody Summers is a freelance writer who has been serving the transit industry for 15 years. She lives in North Kansas City, Mo.

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Planning for Recovery

The transit industry has been operating in crisis mode for a full year and is arming itself with strengthened resolve, detailed plans and strategic investments to forge a clearer path toward recovery.

By **Mischa Wanek-Libman**, executive editor

IT HAS BEEN ONE YEAR since State of Emergency orders began rolling out across North America concerning the COVID-19 pandemic. Stay-at-home directives that were originally scheduled to last weeks dragged into months as the global health crisis intensified.

For the transit industry, the losses of the past year can be measured in several ways: Colleagues lost to the pandemic, significant drops in ridership and the near catastrophic reduction in revenues. While harder to measure, the blow to customer confidence, as well as the constant uncertainty, are ongoing challenges that could put recovery plans at risk.

However, the industry is also presented with the opportunity to rethink what mobility can be through better integration of services, data that leads to a deeper understanding of how communities use networks, as well as systems that improve safety.

Strategic Investments

In Turlock, Calif., where Turlock Transit is one of three providers within Stanislaus County, Transit Manager Wayne York's challenge in dealing with the health crisis

during the past year has been compounded by a variety of factors.

"Our biggest challenge has been trying to make strategic investments in technology or equipment to keep staff and passengers safe, while in an environment where (1) regulations and guidance are constantly changing, (2) many emerging technology products are unproven or (3) product availability is limited," explained York.

The Turlock Transit team met the challenge by turning to extensive research, reviewing products in industry trade publications and networking with peers to identify what worked.

The transit system implemented a range of measures to deliver added safety for its staff and passengers including increased cleaning protocols, limiting the number of passengers on board vehicles to support physical distancing and making personal protective items, such as hand sanitizer and face masks, available if needed.

"As the pandemic progressed and more information was learned about the SARS-CoV-2 virus, we learned that airborne transmission was in fact a significant transmission method, so we began actively seeking an air treatment technol-



"Many of our passengers are socioeconomically disadvantaged and transit-dependent, so it is important we make using transit as simple and easy as possible."

-TRANSIT MANAGER Wayne York, Turlock Transit



alvarez | 1221628776 | Getty Images

ogy to address that threat,” said York. “It was a priority for us to mitigate or eliminate such threats for the safety of passengers and staff, particularly at focal points like the front of the bus where there can be more person-to-person interactions.”

In February, Turlock Transit became the first transit system in California and the second in the U.S. to install an air filtration device within the driver compartment. The device, called the Air-Bubbl®, was installed on Turlock Transit’s eight heavy-duty, 35-foot

ONE CONSTANT throughout the pandemic has been transit providers’ focus on the safety of riders and staff.

buses and 11 midsize buses. Each device can generate approximately 1,060-cubic feet of clean air each hour, remove more than 95 percent of airborne viruses, bacteria and other particulate matter and gas pollutants including nitrogen dioxide and ozone from the air and

can operate for 1,000 hours before filters require replacement by fleet maintenance personnel.

"We sought a product that met three primary goals: (1) proven effective against SARS-CoV-2, and (2) safe for use around drivers and passengers and (3) actively filtered or treated the air (versus passive devices). Most of the products on the market didn't meet that criteria, so when we learned about how Plymouth Metrolink was using AirBubbl, we recognized that we found a solution that met all of our needs. In addition, it came in an elegant form factor, was relatively inexpensive and made very little noise. Since it has been deployed, it's been received positively by drivers," said York.

He explains investing in improved air quality will have positive impacts beyond the current health crisis.

"As a city within the San Joaquin Valley Air Basin, which is a non-attainment area in terms of air quality, we recognized these devices as good long-term investments to remove harmful particulate matter from the air, even after the pandemic has ended," York said.

Turlock Transit plans for additional technology investments, including whole-bus Active Air Purifications Systems from United Safety and Survivability Corporation. York notes these investments are among ways the transit system can reassure passengers of the steps being taken to keep them safe.

"In the long term, following gradual ridership return and ample opportunities for community-wide vaccinations, I see three key opportunities. The first is to leverage technology to further re-



AN AIRBUBBL device is seen behind the bus operators seat.

duce barriers to access whether in the pre-trip planning phase, on-board the bus or transferring between modes," said York. "Many of our passengers are socioeconomically disadvantaged and transit-dependent, so it is important we make using transit as simple and easy as possible. Second, I see an opportunity to modify our services to meet the needs of passengers under the

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‘new normal,’ which hasn’t yet been fully defined. Third, I see opportunities to coordinate with regional agencies to make intra-regional travel more effective, improving mobility for all.”

Safety Drives Decisions

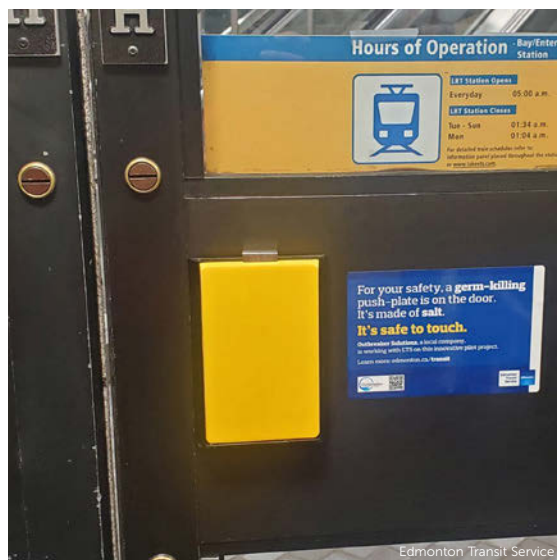
Edmonton Transit Service (ETS) Branch Manager Carrie Hotton-MacDonald says the predominant challenge ETS faced during the past year was making “definitive decisions in an environment that was constantly changing and often ambiguous.” The primary focus, even with so much uncertainty, was the safety of passengers and staff.

ETS, like its peer agencies throughout North America, took on the monumental task of delivering safe and essential service during an unprecedented time. ETS implemented more than

30 different safety measures, including a mask/face covering policy, intensified disinfecting measures of transit vehicles and facilities, armed staff with personal protective equipment, only deployed buses with operator safety shields and developed more contactless sales channels to safely sell transit passes.

“Just about everything has changed in transit,” said Hotton-MacDonald. “Our staff has done an incredible job handling constant changes, new procedures and high levels of stress to keep public transit running in Edmonton. It has been a huge undertaking over the past year and I’m very proud of everyone.”

The constant change also created an environment conducive to innovation and ETS was able to tap some of Edmonton’s home-grown ideas. Hotton-MacDonald



points to ETS’ germ-killing push plate pilot at transit centers as one example of this in action.

In early 2021, ETS collaborated with an Edmonton-based biotech company, Outbreaker Solutions,

ETS IS piloting push plates made of compressed salt that feel like ceramic tile.

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to install push-plates on manual swing doors at some transit centers. The push-plates are made of highly compressed salt. They feel just like a ceramic tile and are safe to touch, as long as you're not a germ, virus, bacteria or fungi, in which case the salt crystals pierce the cell membrane and neutralize the microbes.

"We've had a good relationship with this innovative company for a number of years and when COVID hit, it spurred more detailed conversations about safety products they were working on. They were looking for public spaces to trial their product, and it ended up being a great fit, with great timing," explained Hotton-MacDonald.

ETS has also begun the installation of new antimicrobial seats on its newer model of trains. The new seats contain an additive that kills germs.

"Safety is at the forefront of just about every decision we're making right now," said Hotton-MacDonald. "On that note, we're also excited about the community collaboration we'll be doing over the coming months, to gather feedback from diverse groups about how we can further enhance transit safety, especially for women and girls. We firmly believe that a transit system that is safe for women and girls is safe for everyone. We're actually one of the few transit agencies in North America to put a gender-based analysis lens (GBA+) on the work we do."

While the pandemic brought its fair share of challenges, ETS is forging ahead with several modernization projects in 2021, including the launch of a new bus network and On Demand Transit pilot on April 25.

"We're very excited about the new bus network, as it will provide Edmontonians with faster, more direct and better-connected transit service. The new bus network is based on feedback we've heard from tens of thousands of



Edmontonians. It will be their network, and it will help recover ridership in time, as vaccine rollout progresses of course," said Hotton-MacDonald.

She continued, "Like many transit agencies, ETS ridership levels have decreased during COVID-19. Our levels have stabilized around 40 percent of pre-COVID levels. It was initially anticipated that the new bus network and On Demand Transit would increase ridership levels, as has been the case in several other cities that made similar

L.A. METRO identified bike share options as one way to enhance equity while encouraging transit use.

TURLOCK TRANSIT implemented a range of measures to deliver added safety for its staff and passengers.



"Safety is at the forefront of just about every decision we're making right now."

-CARRIE HOTTON-MACDONALD, Branch Manager, Edmonton Transit Service

changes. However, these projects are now part of the ridership recovery plan for ETS. We're confident that ridership will recover over time, as vaccines progress, and more employees and students gradually start returning to the office and campus."

Developing a Plan

Recovery within the transit industry may arrive through non-traditional routes, take several years to fully be realized and will require partnerships and collaboration throughout the industry as it moves toward a strategic recovery.



Los Angeles County Metropolitan Transportation Authority

Recovery – whatever it may look like – will require a plan. One example of this in action is from the Los Angeles County Metropolitan Transportation Authority (L.A. Metro), which released its “A Path Forward” report developed over the past year by the authority’s Recovery Task Force.

The plan contains 20 early action recommendations and 17 final recommendations that will serve as “a partial roadmap for building” a system that is “more effective, equitable and sustainable.” The task force notes in the report that the recommendations reflect a “mix of pragmatism and optimism.”

“Now more than ever we believe in the promise of a more equitable L.A. that doesn’t require every adult to own a car, where all people have a multitude of mobility

options that are convenient and accessible, and where it is safe and healthy to live your life in public spaces no matter your race or economic status. The recommendations in this report from the Recovery Task Force offer such a promise,” wrote L.A. Metro CEO Phil Washington in the report’s opening letter.

The 17 final recommendations within the recovery plan include new and improved services such as express buses, accelerating complete streets, improving station amenities, offering incentives to choose transit and working to integrate transit in the Los Angeles region.

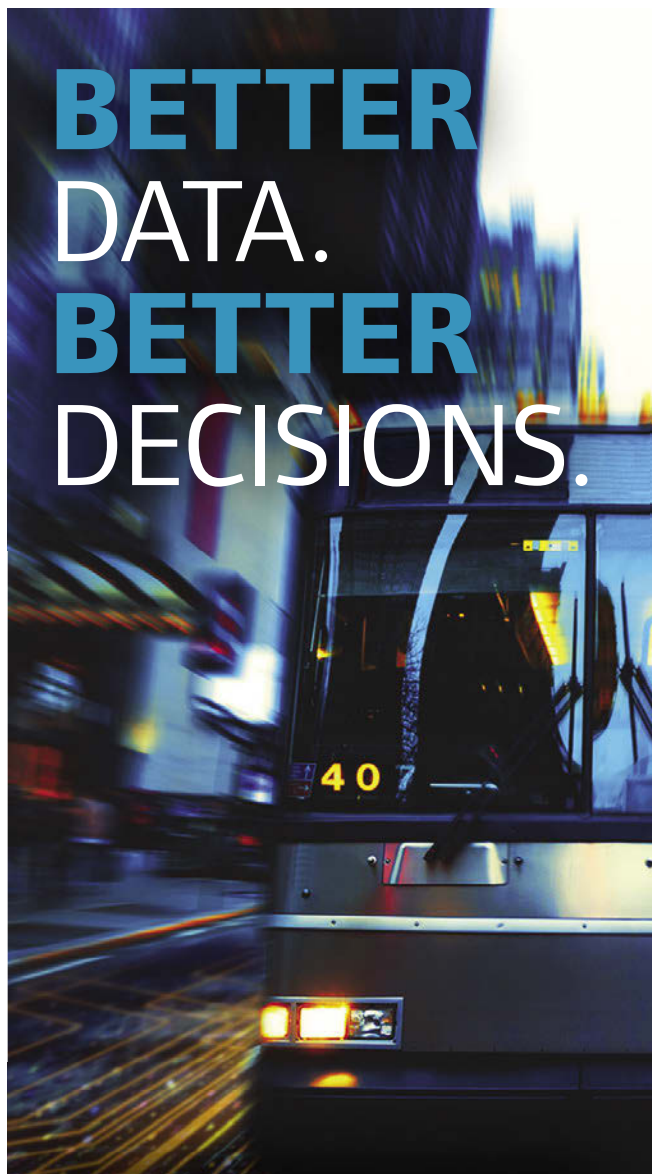
L.A. Metro also aims to become a more responsive agency by gathering and sharing more data, as well as improving public engagement.

The authority wants to plan for what it labels a “vibrant future” through transit-oriented communities, expanded broadband infrastructure in the region, the creation of green jobs and green infrastructure and reimagining destination discounts, which aim to support local small business by promoting the use of transit to access these destinations.

Last, L.A. Metro recognizes it will need to develop a plan for how to pay for the recommendations through controlling construction costs and expanding revenue opportunities.

The report lays out implementation steps for each recommendation and L.A. Metro explained staff will aim to develop, track and share metrics as the authority moves forward with the recovery plan. The full report can be accessed at metro.net/recovery. **MT**

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New Orleans RTA Brings Operations In-House to Focus on Service Delivery and Equity

With an entirely new leadership team on board, New Orleans RTA took the reins of the agency in December 2020 and is focused on providing world-class service for all New Orleans riders.

By **Arian Randolph**, contributor

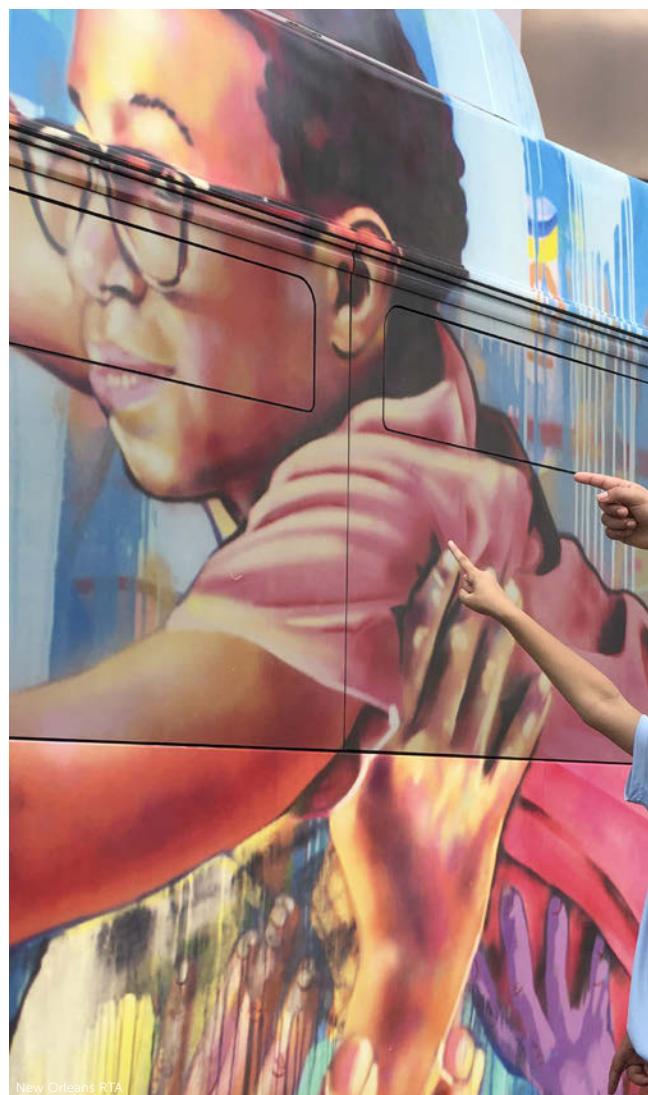
MARCH 2021 MARKS the end of the first quarter of the New Orleans Regional Transit Authority (RTA) fully managing its administration and operations of the agency. For the

first time in the agency's history, all rail and bus operations are managed directly by the RTA, increasing its direct employees from 70 administrative staff to more than 800 employees in various maintenance, operations and administrative roles. With this historic change, the RTA is poised to make good on its commitment to create a world class transit system that is both equitable and reliable.

In December 2020, the RTA completed the final steps to bring all operations and maintenance staff in house. This accomplishment comes

18 months after the Board of Commissioners hired Alex Z. Wiggins as the agency's first publicly appointed CEO since 2009. The board felt strongly that, moving away from the delegated management model, it could empower local leadership to make operational changes to improve the transit experience for New Orleans riders.

"Transit equity is the driving force behind the decision to bring RTA operations in house," said Flozell Daniels, Jr., RTA Board chair. "We understand the importance of transit and the role it plays in the viability of families. We are excited about the intentional culturally appropriate community engagement conducted by the RTA to understand and meet our ridership needs. The RTA Board will always prioritize our riders first as we develop policies, imple-



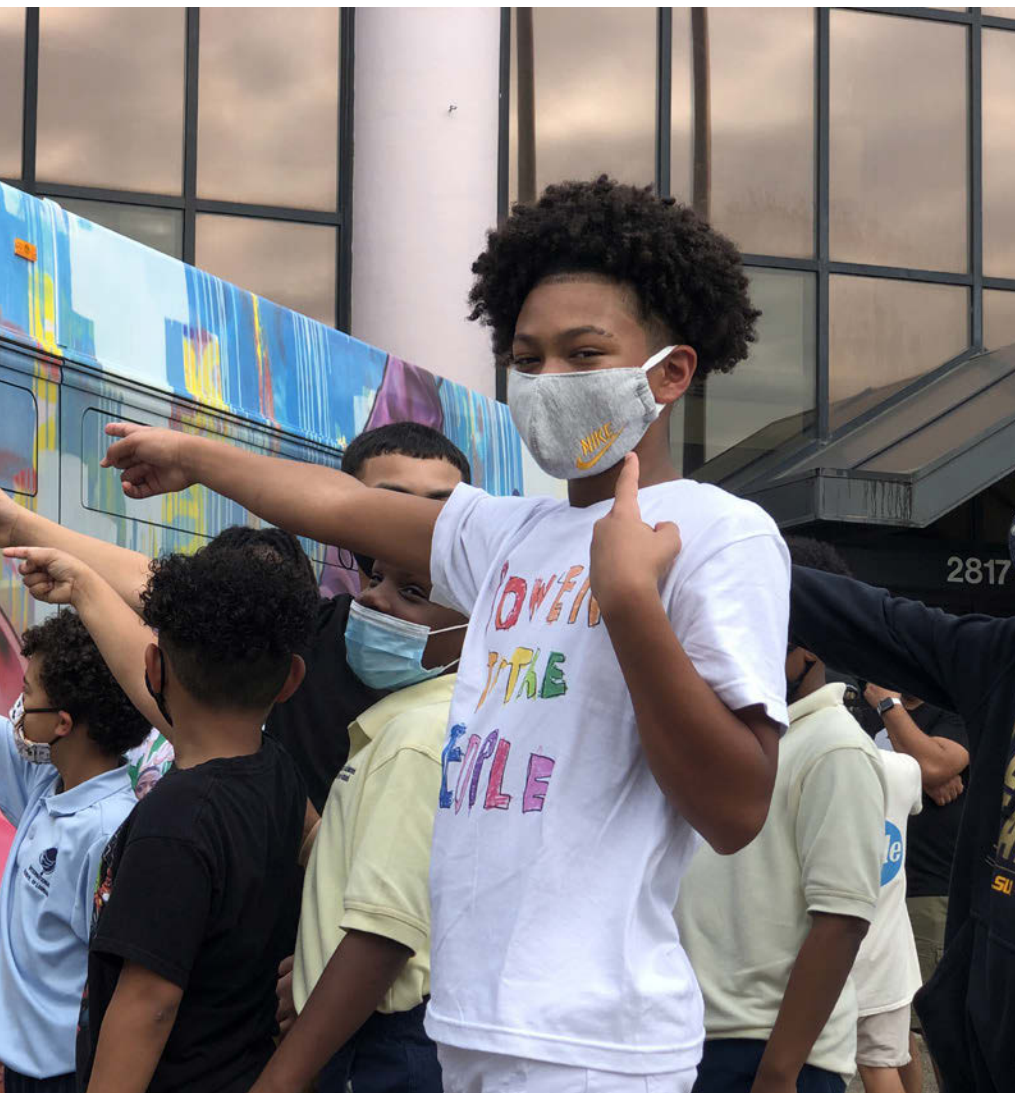
NEW ORLEANS 7th grader Dontay Allen at the unveiling of the public arts bus where he is featured.

"Transit equity is the driving force behind the decision to bring RTA operations in house."

FLOZELL DANIELS, Jr., RTA Board chair

ment service and innovate to meet the needs of our community."

An entirely new leadership team was brought on board in 2020 and was poised to successfully take the reins of the agency and intensively focus on safety, customer service, on-time performance and equity.



Rebuilding Trust

This past year, the nation experienced a collective reckoning with the lingering impacts of institutional racism and its impacts on communities of color. More than ever, words like equity, inclusion, diversity and privilege were tossed around in every industry in the country, including transit. The RTA is no exception.

The new leadership team realized that it had to rebuild credibility and trust within the community, and quickly. Talking about equity and diversity would not be enough. New Orleans residents demanded action, transparency and results.

“While the new RTA is committed to building an equitable public transit system, we know that to be successful, we must acknowledge the injustices within public transit’s history in this country and here in New Orleans,” said Wiggins. “Streetcar segregation, facilitated by ‘black star’ streetcars which were reserved for ‘colored’ passengers and the later use of screens to separate passengers, are part of that history. By understanding and acknowledging this past, we are better positioned to do the work to undo any lingering institutional damage to the people and the communities we serve - and most importantly, to make sure this dark history never repeats itself.”

In the more recent past, the prevailing sentiment of local New Orleanians is that the RTA prioritized visitors and tourists over its workforce and transit reliant families who endure long commute times from New Orleans East and the West Bank, often without the benefits of adequate shelter and comfort facilities. Sizable investments were made in streetcar expansions, which primarily serves tourists, while the RTA continued to operate skeleton bus service with only 38 percent of the pre-Hurricane Katrina bus fleet.

The trust between riders and RTA was dismal. Not dismayed,

ALEX WIGGINS.
RTA CEO, New Orleans native and saxophone musician, poses with his saxophone on the Historic St. Charles Streetcar alignment.



Zack Smith Photography

NEW ORLEANS
RTA staff surveys
riders for the
New Links
system redesign
project.



Zack Smith Photography

STAFF REVIEW
Race and Social
Justice Toolkit
data.



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By the Numbers

800

direct
employees;
up from 70
employees
previously

**15
minutes**

Goal time of
headways on
critical routes;
down from
60 minutes

the new agency leadership understood the importance of rebuilding confidence with riders as it headed into a new era.

The New RTA

Today, the RTA has placed an intense focus on putting New Orleans residents first and is quickly making good on the promises to build a world class transit system that meets the needs of all riders. To build trust and credibility with its riders and community, the RTA went to work to reduce headways from 60 minutes to 15 minutes on critical routes serving transit dependent communities, entering the agency's two new passenger ferries into revenue service, scheduling CEO listening sessions in communities throughout the city and beginning to in-

stall bus shelters to protect riders from the weather.

Led by Wiggins, the team at the RTA knew that systemic changes were also needed to dismantle the historic bias within the system. A team of staff volunteers developed the agency's Race and Social Justice Toolkit, modeled after what was used by the city of Seattle where Wiggins spent the early part of his transit career. The toolkit features a series of questions that encourages decision makers to consider critical demographic data on race, income, access to vehicles and other pertinent indicators that could influence transit outcomes. This toolkit is now used whenever the agency considers operational or policy changes that could negatively impact communities of

color—nearly 70 percent of the New Orleans population.

The RTA is also focusing on being a better community partner and joined forces with New Orleans-based artist Brandan “BMike” Odums and Ashe Cultural Arts Center to create a public art bus. BMike is nationally celebrated for his poetic and passionate pieces surrounding political activism depicting brightly colored political figures, contemporary creatives and everyday people. He agreed to allow the RTA to use his art in a traveling art exhibit that brings uplifting messages that celebrate African American youth to the community.

Transit System Redesign

The RTA is re-envisioning transit service as the lead partner in the network redesign which aims to increase transit connectivity and equity. The New Links project, which began in 2019, is led by the New Orleans Regional Planning Commission (RPC) as a planning effort for a redesign of the greater New Orleans transit system which includes New Orleans, Jefferson and St. Bernard Parishes.

The planning team, comprised of RTA and RPC planners, placed an intentional focus on compiling rider and stakeholder feedback about the system, pain points and suggestions for improvement from a series of surveys and public forums. Surveys were conducted on board vehicles to ensure the agency received feedback from a diverse cross section of rider demographics and travel patterns.

In addition to data gleaned from rider surveys and forums, the planning team gathered ridership and operational data, including a detailed study called a Comprehensive Operations Analysis (COA) of existing transit services. This includes detailed data on ridership, on-time performance and how the RTA and



NORTA'S EXECUTIVE leadership team, left to right: Mike Smith, Gizelle Banks, Jose Ruiz, Mark Major, Katherine Bush Felton, Alex Wiggins, Thomas Stringer, Lona Hankins, Darwyn Anderson and Robert Hickman.

Jefferson Transit (JeT) use their existing bus and streetcar fleets.

The team also developed a transit propensity index to understand where people are living, working and going to school, as well as data on where and when people are traveling. Some of this information comes from an origin-destination survey of RTA and JeT riders in 2019, which gave the planning team information on who is using the transit system, and where, when and why people are traveling.

"The work of the New Links project planning team to seamlessly connect RTA's modes and transit systems across the region is imperative as we strive to meet the most basic transit needs of our riders," said Wiggins.

From this data, the team compiled three transit re-design concepts which were presented to the community for feedback. The final network plan was presented to the RTA Board of Directors in February. This new network plan would increase the number of people living within a half mile of buses with 15- or 20-minute head-

The work of the New Links project planning team to seamlessly connect RTA's modes and transit systems across the region is imperative as we strive to meet the most basic transit needs of our riders."

ALEX WIGGINS, CEO


ways. It would improve service for residents who live in poverty and for households without cars. The system would also be better coordinated across parish lines to reduce redundancy and make transfers between systems easier.

The new plan would establish transfer hubs in the West Bank, East New Orleans, St. Bernard and Jefferson Parishes, which will allow more frequent service by shortening run times on major routes to the downtown corridors. Combined, these changes will result in a measurable improvement in transit equity, reliability and overall rider experience.

With bringing transit operations and management in-house, building an experienced leader-

ship team, focusing on the transit needs of its riders and re-designing the transit system, the New Orleans RTA is poised to lead the nation in equitable, rider-focused transit. This work is not new; it builds on the legacy of New Orleans' early transit integration following the 1867 riots to integrate the streetcar, as well as the city's 12-year resistance to the adoption of the Louisiana's Separate Car Act of 1890.

New Orleans is a city built on diversity, resulting in a rich and unique culture. The RTA is proud to be a part of this community and is honored to do its part to ensure that New Orleans culture endures and prosperity is shared by all. **MT**

The background of the entire page is a dark, atmospheric photograph of a person walking away from the viewer on a railroad track. The tracks are covered in a layer of snow, and the surrounding area is dark and misty. Overlaid on this image is a grid of blue binary code (0s and 1s) that covers the entire page. The title 'Data Informs Effective Trespass Prevention Strategies' is written in a large, bold, white sans-serif font, with 'Data Informs Effective' in a smaller size above 'Trespass Prevention Strategies'.

Data Informs Effective Trespass Prevention Strategies

Understanding rail trespassing behavior can help advise agencies of hotspots that may benefit from physical barriers and better focus public outreach and targeted education efforts.

By **Megan Perrero**, assistant editor

RECENTLY, THE FEDERAL RAILROAD ADMINISTRATION (FRA) has put an emphasis on locating hot spots for trespassing, as well as identifying trends in the number of suicide incidents and fatalities and injuries. Such efforts include launching FRA's Trespass and Suicide Dashboard and researching mitigation efforts by teaming up with law enforcement and utilizing unmanned aerial vehicles to monitor target areas. While these efforts have spurred success, more than 2,000 injuries or fatalities were reported across the United States in railroad rights-of-way from 2019-2020, according to FRA's Trespass and Suicide Dashboard.

"Despite improvements to rail safety, every three hours in the U.S., a person or vehicle is hit by a train," said Jennifer DeAngelis, director of communications and marketing, Operation Lifesaver, Inc (OLI).

So, what can agencies do? Understanding trespassing behavior can help inform agencies of hotspots that may benefit from physical barriers and better focus public outreach and education efforts.

Data Helps Identify Effective Mitigation Efforts

The more information available surrounding the factors for trespassing, the better agencies and the rail industry can prevent such occurrences. That's because this data can then inform predictive modeling, giving agencies and rail service providers a better understanding of trespassing behavior and how to prevent it.

The Institute for Transportation Research and Education (ITRE) at North Carolina State University, in collaboration with the North Carolina Department of Transportation (NCDOT), researched this exact practice in the "Rail Network Trespass Statewide Severity Assessment and Predictive Modeling" study.

The research group used motion-activated thermal video camera systems to capture and analyze trespassing incidents. Sarah Searcy, bicycle and pedestrian program manager, ITRE, and principal investigator, explains the research group strategically mounted the camera systems beyond the railroad right-of-way to record 24/7 for at least one week during each season of the year at 11 different locations across the state of North Carolina. Locations were selected based on several factors, including FRA's past five years of incident data. Roger Smock, NCDOT Rail Division and project committee chairman, adds that gathering data on pedestrian trespassers was critical in understanding the true count of trespassers that do not involve injury or death, which are already included in FRA's incident reports.

"In addition, this research studied the behaviors of trespassers. Identifying these behaviors is very

important when applying effective treatment and mitigation efforts," Smock said. "Measuring the scale of trespassing and understanding the behaviors of trespassers are paramount to informing and educating community stakeholders, policy makers and enforcement and safety officials."

The cameras captured individuals, pairs, groups, various ages and even people walking dogs and pushing strollers, but one behavior stood out—95 percent of trespassing events involved crossing the tracks, says Searcy, noting most events happened in the daytime with the majority of people walking along or through the right-of-way.

"Several factors were identified as associated with higher frequencies of daily trespassing events, including greater densities of pedestrian attractors such as schools, universities and colleges, social services and restaurants and other eating places in proximity to the railroad right-of-way, and in combination with less access to vehicles as means of transportation to work, greater density of racial minorities and greater density of low-income housing," said Searcy.

Models for estimating and predicting trespassing were created using the data collected from the research. Profiles of trespassing activity by season, month, week day and hour of each day were also created for each study location "that can inform local-level intervention strategies," Searcy added.

"The potential reduction in loss of life and its associated costs are compelling justification for investing in the data collection needed to inform strategies for mitigating pedestrian trespassing," Smock concluded.

Physical and Visual Barriers Serve as Efficient Deterrent

Considering ITRE's research findings, which saw most trespassing incidents from the study in North Carolina involve crossing the



THE ATPs attach to adjacent panels with a fixing that passes under the rail, creating a single matrix across the track to ensure panels do not become dislodged.



NINETY-FIVE PERCENT of trespassing events involved crossing the tracks during the day and most people walked along or through the right-of-way.

tracks as opposed to moving along the right-of-way, agencies may consider implementing anti-trespass panels (ATPs), such as ones available from L.B. Foster, which can be customized for specific locations.

"[ATPs have] been proven to reduce incidents by up to 80 percent," said Sarah McBrayer, general manager, transit products, L.B. Foster. "The ATP is a sustainable, environmentally friendly product manufactured from recycled rubber bonded with a proprietary polyurethane system for added strength."

L.B. Foster's panels are assembled on-site using a kit included with the panels. The ATP attaches to adjacent panels with a fixing that passes under the rail, creating a single matrix across the track. This ensures panels do not become dislodged, when installed properly. After the ATPs have been connected, the panels are then cut to fit the specific location's requirements. Agencies can install these panels next to highway-rail grade crossings, terminal platforms and rail yard entrances.

"[ATPs] discourage trespassing because they are visually and physically difficult to walk on. They are also used in more remote or rural locations to prevent livestock or other animals from accessing the track," McBrayer explained. "Panels are available in three styles to fit any application – single flanged to fit each side of the track, double flanged designed to fit within the track gauge and flange-less for all other applications."

McBrayer adds the ATPs can be installed in a multitude of envi-

ronments and weather conditions and work best around fixed structures like fencing, walls, ends of platforms or dense vegetation. Little maintenance is required and the panel has a conical profile design to allow dirt and debris to be easily cleared. McBrayer notes ATPs can last for more than 25 years when installed correctly.

Educating and Informing Stakeholders Remains Critical

Continued targeted education and public outreach are additional trespass mitigation strategies that are equally as important. By identifying specific communities or behaviors that lead to unsafe decisions made around rail infrastructure, outreach can be crafted to address these particular issues.

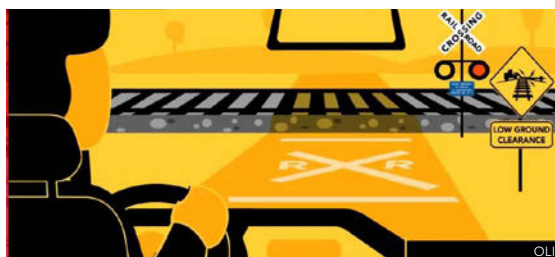
For instance, OLI recently developed and released several au-

“The potential reduction in loss of life and its associated costs are compelling justification for investing in the data collection needed to inform strategies for mitigating pedestrian trespassing.”

-ROGER SMOCK, project committee chairman, NCDOT Rail Division

dience-specific safety campaigns, such as materials for people experiencing homelessness, as well as the professionals and volunteers who work with them.

“Our goal is to educate and empower individuals experiencing homelessness to make safe choices for themselves around tracks and trains,” said OLI Executive



OLI LAUNCHED a Low Clearance PSA featuring audio and visual clips that highlight safety tips for railroad crossings.

Director Rachel Maleh. “Our Respect the Rails: Choose Safety materials educate professionals and volunteers who work with people experiencing homelessness about the dangers individuals may face near trains and tracks.”

Other new campaigns include the Low Clearance PSA, which brings attention to the possibility of low-clearance vehicles like buses getting stuck on a railroad crossing and what action to take should this happen via audio and visual clips; and the Train Safety Savvy game, an interactive online game for kids ages seven to 10 that tells kids how to make safe choices around railroad tracks and trains. **MT**

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Sunrise offers a standard series of single- and double-line signs designed within ADA (Americans with Disabilities) guidelines. NXTPS signs are most often used inside transit vehicles as part of an intelligent transportation system to alert passengers to upcoming stops and are available in 16- and 20-character length. These passenger information displays show messages that can be displayed statically or as a continuous stream. The signs are available in monochrome or full color and can communicate via J1708, J1708 with J1587, RS-232 or Ethernet.

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Bridging the Knowledge Gap

Software provides a useful tool, but foundational knowledge is still required to develop schedules that balance efficiency and service.



Ed Dornheim
Transit Schedule Maker/
Consultant

Computer scheduling is a fantastic advancement, but it will require experienced schedulers to utilize the software as the supplemental tool it was intended to be.

AS MASS TRANSIT MANAGEMENT LOOKS to future industry innovations in technology, there is a cautionary narrative associated with the scheduling knowledge base. The decades of innovation and progress made in computerized scheduling, automated runcutting and rostering has created a growing loss of the in-depth knowledge and understanding of these processes by the schedulers. There is a growing knowledge gap as it relates to the importance of scheduling and runcutting to the financial, operational and labor relations health of public transportation. This gap will continue to grow if the industry's focus remains on believing that scheduling software packages are the knowledge base and not the tool they were intended to be. The software is designed to augment, not replace, the required understanding and knowledge of the scheduler.

In all agencies, and particularly smaller systems, there should be the ability for ongoing mentoring. Even a veteran scheduler working in the field might benefit from a suggestion such as adding parameters to better define a.m., mid-day and p.m. runs for making a better schedule. Understanding certain mathematical equations that were never handed down can open other opportunities. It might be hard to imagine, but there are veteran schedulers who are extremely competent and, many times, self-taught, who might never have been shown key parts of the job. As adults, this gets embarrassing and, many times, rather than admit there is a problem, they struggle, hide and fake their level of understanding through no fault of their own.

With this idea in mind, there should be a succession plan that includes education and training for someone who can step in whenever needed. Agencies should ensure that the knowledge base does not rest with one person. Nothing can be more harmful to an agency as a whole than to start from scratch by losing invaluable industry knowledge that this inimitable position requires when someone leaves.

Another issue to consider is whether a schedule is made for efficiency, the customer or both. There are times when optimization of schedules creates solutions that are not feasible. The



scheduler must balance all the components of the process to provide the best outcomes. Quite often, management has a poor understanding of this and gives direction that is counterproductive to providing good service. A scheduler without the proper knowledge may think that making efficient schedules is the only solution. An artful scheduler will be able to balance these factors to achieve success. Poor scheduling can be detrimental to the agency and operation as drivers and customers will be dissatisfied with the service provided.

The advent of computers has made the overall scheduling processes more effective and inadvertently removed the most critical piece of the operation, which is learning and understanding each step and how they interact with each other. For a successful outcome in the specific environment of a unique operating agency, a scheduler must learn how to schedule first and foremost with emphasis on learning how to manipulate the software to achieve that goal. Computer scheduling is a fantastic advancement, but it will require experienced schedulers to utilize the software as the supplemental tool it was intended to be. Anyone interested in enhancing their knowledge of the scheduler position will find TCRP 135 a useful reference manual. **MT**



Mike Townes, a retired transit professional with agency and private sector experience, as well as past leadership positions in several transit and transportation associations, contributed to this article.

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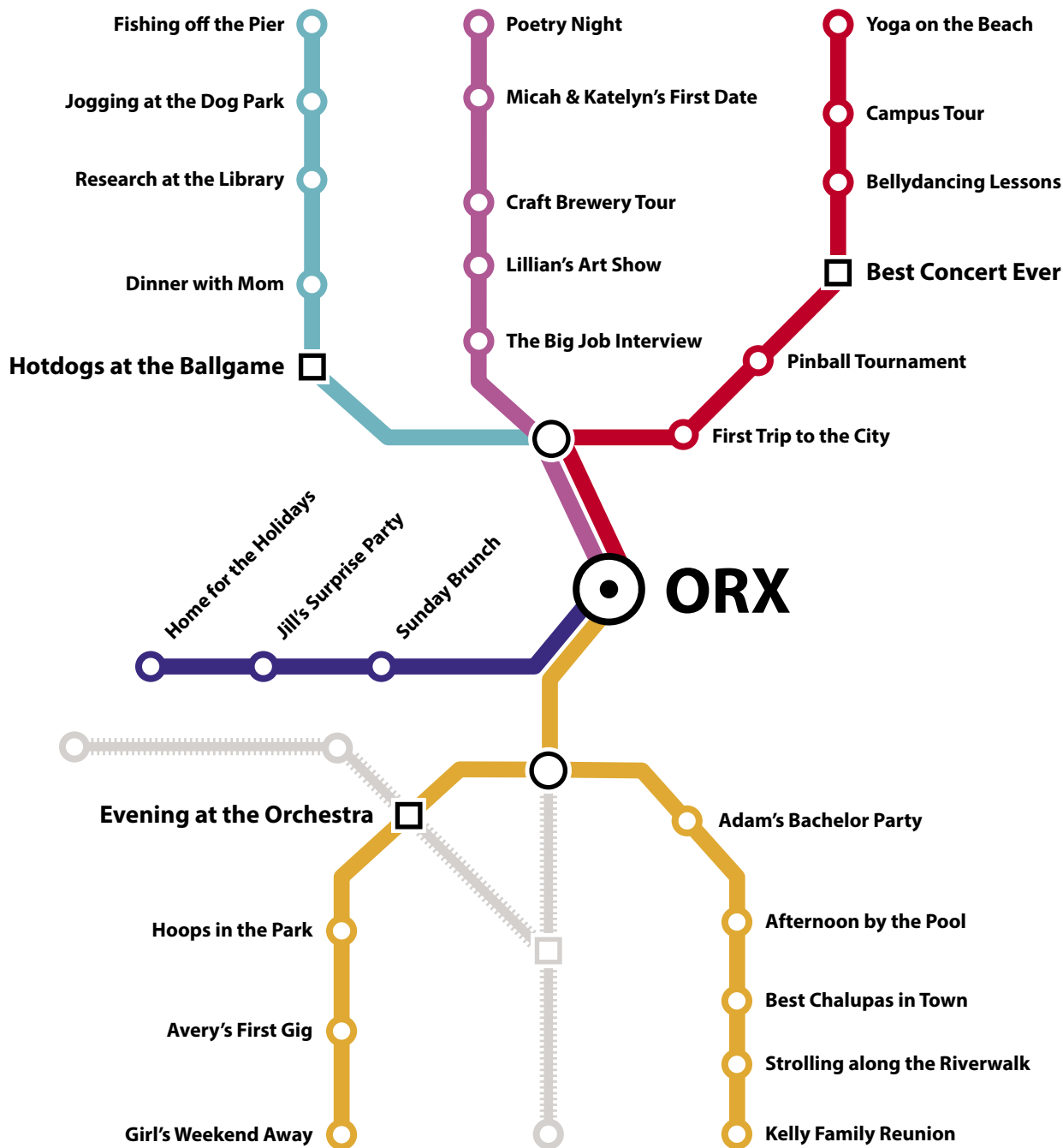
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