

Edmontonians Anxious for Metro Line LRT Service

We had hoped to be able to report in this issue that Edmonton's long awaited Metro LRT line was up and running, but unfortunately, this is still not the case. Fourteen months have passed since the line was originally slated to go into service, and the \$665 million dollar light rail line has yet to carry a single passenger. The Metro Line is one of the most expensive publicly funded projects in Edmonton and is expected to add around 13,200 new riders to the city's LRT system each weekday.

The 3.3 km line between Churchill Station and NAIT was supposed to open in April 2014, but has faced repeated delays due to problems integrating the signalling software designed by Thales Canada with the existing signalling system.

The City indicated the contractor faces financial penalties for delayed delivery, but the specifics are not being released.

Test trains have been seen on the route, and staff training has been reported to be underway, but the line is still not ready for operation. Some reliability issues have emerged, such as incorrect information on display boards and computer screens that freeze. "We're encountering some minor glitches that are leading to questions about the reliability of service," City Spokesperson Graham McElheran told reporters.

The existing Capital line is on a fixed block track, while the Metro Line uses a moving block system, he explained. In a fixed block system, there is a set block of space between each train, so a train can't enter a space if there is a train ahead occupying that space. With the moving block system, each train has its own buffer space and is not tied to a specific space on the track.

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Edmonton Air Quality Declines since Removal of Electric Trolleys

Downtown Edmonton air contains higher levels of harmful air pollution than found in Toronto, a city with five times the population and more industry, according to one analysis. On some winter days, the level of fine particulate matter — invisible particles that cause serious heart and lung problems — was 25 per cent higher in Edmonton than levels in Toronto on that city's worst air days a few years ago, Dr. Joe Vipond of the Canadian Association of Physicians for the Environment told reporters recently.

The organization used Alberta government figures released in January showing pollution from fine particulate matter exceeded legal limits of 30 micrograms per cubic metre at two city monitoring stations on several winter days in 2010 through 2012.

Edmonton needs to address this major health concern, Vipond said.

The impact of Edmonton's bad air days is felt in city hospitals, said Dr. Brian Rowe, an emergency physician with a Canada research chair at the University of Alberta. "After a couple of days of bad air quality, visits to the emergency rooms go up," Rowe said.

"While we're mostly concerned with respiratory disease, fine particulate matter also gets into the blood stream and causes inflammation, heart problems and can cause heart attacks. There is no safe level of exposure, and we should be trying to reduce this pollutant as much as possible."

Alberta Environment defines fine particulates as tiny particles smaller than 2.5 microns. By comparison, a strand of human hair is about 70 microns in width. Fine particulates in this size range are referred to as PM2.5 and cannot be seen with the human eye.

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Edmonton's Metro Line (continued)

The moving block system “allows the trains to move much more closely together, yet still safely,” McElheran said. “You don't have to have a big amount of space between trains, you can run them closer together safely because they're communicating with each other, with the tracks and with a master control in the LRT control centre.” The software controls train movement, arms and gates, station announcements, and information on electronic boards. The glitches have come when running different styles of trains on the same track.

McElheran claimed that there are 25 different projects around the world that have a similar problem. “There are talented, hardworking people—some working around the clock—to get the LRT line open”, he said. Earlier this year city officials were “cautiously optimistic” the line would be ready to open in May. It's now June, and the City has not committed to an official opening date.

“The contractor has taken responsibility and has sent in a team to get this work done,” said Ward 6 Councillor Scott McKeen. McKeen said he doesn't want to see people lose their jobs, but he does want answers and is tired of waiting. An auditor's report is forthcoming on the NAIT line delays.

Meanwhile, a City spokeswoman confirmed that Charles Stolte, the manager for Edmonton Transit System, was no longer employed by the City of Edmonton. She could not confirm if his departure was related to the Metro Line delays; Stolte was not directly involved in the construction of the line.

Stolte was hired by the City in 2006 during the debates on the future of Edmonton's large electric trolleybus system and took sides on the issue opposing citizens and communities who wanted to see the system retained and new, low floor trolleybuses purchased. At the time, administrators claimed that over \$100 million would be saved by eliminating the trolley system, and that these savings could pay for half of the future Northeast LRT extension to Gorman. The trolley system was shut down in May of 2009 and quickly dismantled. To date, the City has had difficulty accounting for any significant savings, and none of the expenditures for LRT expansion have been identified as coming from this source.

“We typically don't discuss the reason behind changes in personnel,” said Transportation General Manager Dorian Wandzura, “but what I can tell you is that ETS and Transportation has got 3,000 people that are all focused on meeting council's vision and that's really what we're focused on.”

A June 3rd report in the *Edmonton Journal* suggested that Stolte's vision for public transit in the city was not in line with that of Council. It claimed that Stolte had defended the existing system of meandering, low volume suburban transit routes, while some members of Council are pushing for a more cost-effective system focussing on frequent, high volume routes.

Edmonton's longstanding Capital LRT Line runs from Century Park to Clareview and will continue to do so once the Metro Line opens. Once it opens, the new Metro Line will run between Century Park and NAIT in peak hours and between Health Sciences/Jubilee Station and NAIT the rest of the time.

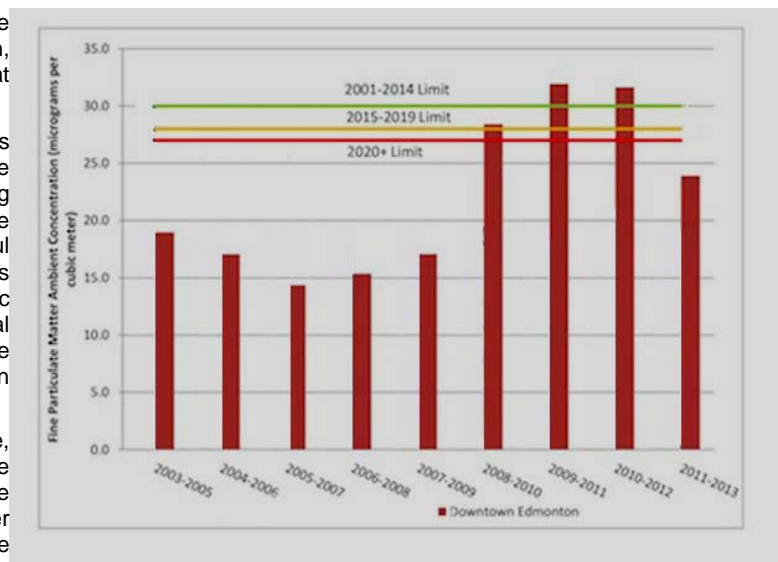
[Sources: Global News, June 2, 2015; Edmonton Sun June 1, 2015; Edmonton Journal, June 3, 2015; City Council Meeting records and correspondence, 2008-2011]

Edmonton's Air Quality (continued)

Vipond said there are many sources contributing to the high levels of fine particulate matter in Edmonton, including a growing number of vehicles on the road that pump the pollutant directly into the air.

While Vipond did not specifically mention diesel buses and trucks, these vehicles have been found to contribute significantly to health problems of people living along busy transportation corridors in other major cities of the world. “It is very striking that the rise in levels of harmful particulate matter in downtown Edmonton coincides almost exactly with the elimination of Edmonton's electric trolleybus system, which served the city's central communities,” commented Brian Tucker, Chair of the Edmonton Trolley Coalition. The system was shut down in May of 2009.

Air quality expert Andrew Read of the Pembina Institute, an environmental think-tank, said that there is some urgency to reduce levels of particulate matter because the Federal government will be bringing in tighter standards. Next year the allowable limit for particulate matter will be reduced to 28 micrograms per cubic metre from 30 parts and reduced to 27 parts the following year.



(Chart adapted from *National Post*, Apr. 14)

“Expanding LRT is one positive measure,” said Tucker, “but perhaps we need to be looking at how we are powering the buses in our city. Removing Edmonton's large trolleybus network was clearly a step backwards; maybe it's time we looked at putting it back and drawing our power from clean sources such as the wind, which seems to blow constantly lately.”

[Sources: National Post, April 14, 2015; Huffington Post, June 10, 2015; Edmonton Trolley Coalition]

Seattle's New First Hill Streetcar Line now in Testing Phase

A sky-blue test streetcar travels from its maintenance base alongside Seattle's Chinatown International District at low speed, to the corner of Broadway and Denny Way. As it travels back, it goes off-wire during the descent back to Chinatown ID. You see, the corridor is uniquely engineered for trains to retract their power poles and travel downhill on stored battery power, so as to reduce overhead wiring requirements where South Jackson Street meets 12th and Rainier Avenues.

Testing for Seattle's new First Hill streetcar line began in late May on Broadway, with the goal of launching full passenger service this summer. There is no specific schedule for the next round of tests, according to city and maintenance staff. City Transportation Director Scott Kubly said in March that passenger service would start this summer, sometime after June. New streetcar operators have already been in training on the South Lake Union streetcar line—Seattle's first new streetcar line in that city's planned system.



Sky Blue First Hill car on test [Capitol Hill Seattle Blog]

It's been almost seven years since voters approved the \$134 million First Hill Streetcar project, funded almost entirely by the regional Sound Transit 2nd ballot measure. The grand opening is nearly 1 1/2 years behind schedule, after delays in procuring streetcars from a Czech supplier. Final assembly and wiring on four of the seven streetcars (one of which was purchased for the SLU line) is being done by the Seattle-based company Pacifica Marine in the maintenance base.

Sound Transit initially conceived the streetcar as a feeder service to the International District/Chinatown and the future Capitol Hill light-rail stations, after elected officials in 2005 cancelled an underground First Hill subway station because of high cost and tricky construction.

Some of the streetcars on the First Hill line will be colored baby blue to represent babies born at First Hill hospitals. Other colors that will be used are pink for Capitol Hill, gold and silver to represent Pioneer Square's Klondike gold rush days, vermilion and yellow for traditional Chinese colors and Amazon's burnt orange. [Source: Seattle Times, May 21, 2015]

Second Bus Tunnel for Seattle?

A grass-roots group in Seattle is pushing to build a second downtown transit tunnel to speed up bus routes. The group Seattle Subway, an organization dedicated to promoting high quality transit, says the second bus tunnel would cost more than 1 billion dollars.

Jonathan Hopkins of Seattle Subway explained that the current bus tunnel will kick out buses in 2019 or 2020 because the tunnel will be filled with new light rail lines from Bellevue. He said those buses, as well as buses currently running on 3rd Avenue, could use the new tunnel and cut travel times by 7-12 minutes through downtown. The second tunnel would also house light rail in future. "It sets up for future rail expansion to Ballard and sets you up for future rail expansion to West Seattle," added Hopkins. He said the tunnel would also be a huge help with the viaduct shutdowns forcing 30,000 to 70,000 more cars onto downtown streets each day.

Transit riders appeared open to the idea. "It would be beneficial for people driving cars and people taking the bus. Buses are going to go faster, and there will be less traffic for car commuters, too. It seems like a 'win-win' in that situation," said Melanie Voytovich after she got off a bus at 3rd and Pine.

Sound Transit wasn't ready to comment on the plan. It will consider the proposal along with others as it studies what to include on a ballot measure in 2016. [Source: kirotv.com, Feb. 17, 2015]

Houston marks opening of two new Light Rail Lines with *Rail Fest*

The long wait is over for expanded rail service in the Houston. Beginning May 23, two new light-rail lines began operation: The Green Line (East End Line) travels along Harrisburg through the historic East End, and the Purple Line (Southeast Line) travels through one of Houston's oldest African-American neighborhoods.

To mark the opening that day, Houston Metro provided free light rail rides all day as well as a free concert sponsored by Houston Rapid Transit (HRT). The event was dubbed "RailFest 2015" and took place in partnership with the mayor's office of Special Events, BBVA Compass Stadium and CBS Radio. RailFest celebrated Metro's Connecting Communities initiative with a showcase of the city's finest attributes including inaugural rides on the new rail lines, live music, family fun activities and a spectacular fireworks show.

"This is a huge step forward for our region. These two new lines will provide more transit options and help spark development in the communities they serve," said Houston Metro Chairman Gilbert Garcia. "This has been a long time coming; people have been working on this for 20 years. We opened the North Line extension of the Red Line in December 2013. There has been a great deal of success with that line and we expect to do very well with these two new ones." (continued on Page 4)

Houston RailFest (con't)

The lines provide customers with convenient travel to the downtown theater district, nightlife and entertainment centers, as well as connecting downtown with the University of Houston Central Campus, Texas Southern University and Palm Center. Both new routes will cross the existing Main Street Red Line.

Each rail station platform will showcase Metro's "Arts in Transit" program, featuring the work of 22 artists who illustrate the cultural and artistic diversity of the communities they serve. Stations on the Southeast Line highlight African-American heritage and those on the East End line focus on Mexican-American culture.

[Source: Metropolitan Transit Authority of Harris County, May 12, 2015]

Battery-Electric Bus News

Battery Electric Buses hit streets in LA

The Los Angeles Metropolitan Transportation Authority (Metro) has embarked on a greener path by taking delivery of their first 5 battery electric transit buses from Chinese-based manufacturer BYD.

Metro--which had proposed a trolleybus network in the early 1990s that was never built, and subsequently introduced a large CNG fleet--is now finally turning to electric powered buses. These 40-foot vehicles were built by the local Southern California Electric Vehicle plant of BYD Motors, and will be directly integrated into their daily operations.

"We know from widely available data that buses and taxis emit nearly 30 percent of the world's harmful emissions, yet only account for 1.7 percent of total vehicle ownership," said BYD's Founder and Chairman Chuanfu Wang. "The fastest way to create change, and help as many people as possible, is to replace our fossil fuel burning transit buses".

"We are finding a solution to pollution in our city," said Supervisor Michael D. Antonovich, a Metro board member. "When you're behind one of these buses, you won't get asphyxiated like behind those diesel belchers."

Los Angeles Metro will test the first 5 electric buses on various routes around the city to evaluate their optimal route profiles. The \$20.7-million contract calls for 25 buses in total.

The 40-foot buses will be tested during a full shift, with the air conditioning running. The electric motors will operate quietly and require less maintenance because they have fewer parts than conventional buses, BYD officials say. When new, the battery can run for 155 miles on one charge. The company says it can be recharged more than 160 times.

The battery is also partially recharged through the brake system as the vehicle operates, said Macy Neshati, a BYD vice president. When drivers slow the bus, the brake system stores some energy to keep the vehicle running.

[Sources: LA Times, May 1, 2015; BYD Motors news release, May 1, 2015]

Abracadabra: IndyGo turns Diesels into Electrics

Complete Coach Works has begun the delivery of 21 battery-electric buses to Indianapolis Public Transportation Corp. (IndyGo). But they are not the typical battery buses that we see being tried by other transit properties lately. Rather, they are remanufactured buses—former diesel buses rebuilt with lightweight flooring, lightweight seats, low resistance tires, energy-efficient heating and cooling and an entirely different propulsion system.

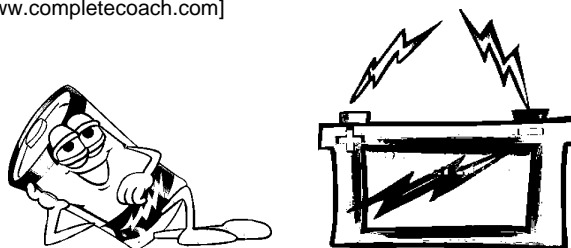
The battery-electric ZEPS buses have a range of 130 miles on a single battery charge. Each 40 foot electric bus can carry 36 seated passengers plus standees and is equipped with air operated doors, brakes, suspension, hydraulic power-steering, stainless steel bike racks and LED lighting.

"With the industry's current drive towards developing green technology, it is exciting to be able to provide transportation agencies a way to double their fleets or reduce their purchasing cost to half, both within the same budget," CCW Vice President Richard Sullivan told reporters.

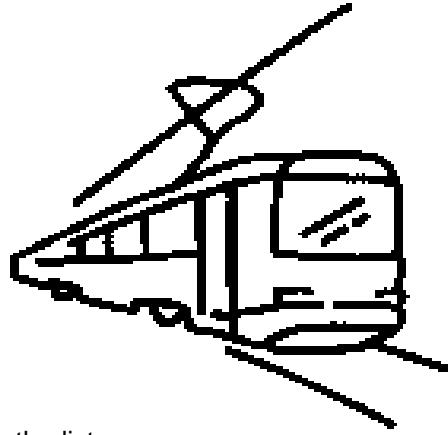
Like electric trolleybuses, the ZEPS battery-electrics reduce reliance on foreign oil, use electricity from the grid which is a renewable energy source, and reduce air pollution.

"This project is coming at a time when our ridership is at a record high, with over 10 million trips in 2014. The project is another opportunity . . . to foster interest in public transit," said Mike Birch, chief operating officer at IndyGo.

[Source: Complete Coach Works news release, Feb. 6, 2015 www.completecoach.com]



Electric Streetcar News



Streetcar Service Returns to Dallas!

Electric streetcar service between Oak Cliff and Downtown Dallas is back after a 50 year absence, connecting a historic community via a state-of-the-art electric vehicle and a free ride. The modern era of Dallas streetcar service began April 13 with a 1.6 mile route from downtown's Union Station to Oak Cliff's Methodist Dallas Medical Center. This marks the first phase of Dallas' modern streetcar system.

The starter line traverses the Trinity River corridor, which separates southern Dallas from the city's largest employment centers. The project targets commuters in mixed-use districts adjacent to downtown and helps connect them to transportation choices available in the city center.

The second phase will extend the route to the shopping and dining of Oak Cliff's Bishop Arts District and is expected to open in early 2016. The third segment, currently in planning, will expand the streetcar line to the Kay Bailey Hutchison Convention Center and the Omni Dallas Hotel.

[Source: Dallas Area Rapid Transit, April 15, 2015]

Tucson Streetcar a Huge Success!

After seven months in operation, Tucson's Sun Link streetcar has exceeded ridership estimates. Streetcar ridership has been averaging more than 4,000 people each weekday, whereas the Tucson Department of Transportation only had estimated 3,600 weekday riders. On weekends with large downtown events, the streetcar averages 8,000 daily riders.

Cost recovery is about on target, too, says spokesperson Jenny Papuga. A new mobile ticketing app is also in the works, she said.

Tucson had experienced delays in actually getting the cars on the tracks due to problems with streetcar manufacturer Oregon Iron Works. The company still owes the city damages for not meeting the construction deadlines.

Much of the ridership has been driven by the novelty of having an electric train gliding through downtown- and university-area streets—the so-called "sparks effect".

[Source: Arizona Daily Star, March 16, 2015]

New Streetcars Continue to Enter Service in Toronto

The Toronto Transit Commission's fourth new streetcar, car number 4405, entered regular service March 1, on the 510 Spadina route, with more new cars following. The 510 Spadina line is an all-door boarding, proof-of-payment route equipped with Presto readers and fare vending machines.

The state-of-the-art Bombardier streetcars are accessible, air conditioned and offer greater capacity and reliability to keep Toronto moving. All 204 new streetcars are expected to be in service by 2019.

[Source: TTC, March 2, 2015 and subsequent new items]



TTC 4400, a Bombardier Flexity streetcar, in operation on Rte. 510 Spadina (Photo courtesy of Douglas J. Cowan)

Providence, Rhode Island to finance construction of Electric Streetcar Line with Tax District

The City Council's Finance Committee in Providence, Rhode Island has put forward a plan to finance a 1.6 mile streetcar line, which it plans to build to run from the train station near Kennedy Plaza to the Rhode Island Hospital via Washington Street.

To come up with its share of the costs totaling some \$57 million, the Finance Committee plans to create a special tax district along the route. No doubt the streetcar will provide transportation benefits to area residents and businesses. But moreover, electric rail projects are known to positively influence property values, as properties located close to a line are considered "location efficient". Increases in property values attributable to the streetcar would result in higher taxes which would in turn be used to fund the construction of the line.

The idea is that property values in the district would be assessed before the streetcar goes in, and the city would continue to collect that tax revenue generated from that value. But the tax revenue generated by any increase over that base level would be diverted to pay for streetcar bonds.

Current estimates are that building the 1.6-mile line and buying four cars would cost about \$100 million of which the city is expected to provide \$57 million. The state would chip in \$29.5 million. The promised share from the federal government is currently \$13 million, although that could rise.

The streetcar line would have 11 stops and cost about \$3.2 million a year to operate, according to a consultant's analysis.

[Source: The Providence Journal, May 14, 2015]

Charlotte, North Carolina Streetcar Enters Testing Phase

The first phase of Charlotte's streetcar is closer to reality: On-street testing started in early April. The streetcar is scheduled to open before the end of June.

The first phase runs 1.5 miles from the Charlotte Transportation Center to Novant Health Presbyterian Medical Center. It has six stops and will use modern electric trolley vehicles that have a vintage look. Rides will be free of charge.

Two extensions are in the planning: one to Johnson C. Smith University to the west, and one to the Elizabeth neighborhood to the east.

[Source: The Charlotte Observer, April 7, 2015]

Orange Country Streetcar Plans on Track in Santa Ana, Calif.

Transportation, city and community leaders gathered at the Santa Ana Regional Transportation Center on May 11 to mark a number milestones toward the construction of Orange County's first modern streetcar line.

The OC Streetcar project, planned to travel through the cities of Santa Ana and Garden Grove, has advanced significantly in recent weeks. Plans for the streetcar project have been approved by city councils in both cities and received environmental clearances from the Federal Transit Administration. The project is to be funded by Measure M – a half-cent sales tax for transportation improvements – and it was recently accepted into the project development phase of the New Starts federal grant program, making it a candidate for future funding.

The Orange County Transportation Authority (OCTA) has taken over as the lead agency to design, build and operate the OC Streetcar.

"For years, we've been talking about the concept of a streetcar in Orange County, and now we want people to know that the future of the OC Streetcar is on track," said OCTA Chairman Jeff Lalloway. "We're excited as we look to fulfill another promise made to voters who approved Measure M by providing better connections between transit centers and the places where people live, work and shop."

The streetcar is intended to provide easy connections for people traveling from trains and buses to employment, retail and recreational areas in the heart of Orange County. It is expected to serve as an economic boost to the neighborhoods along the route.

The OC Streetcar will operate along a route of just over 4 miles, stretching from the Santa Ana train station, through Downtown Santa Ana and the Civic Center. It would run along 4th Street and Santa Ana Boulevard, then continue along the former Pacific Electric right-of-way and connect into a new multimodal transit hub at Harbor Boulevard and Westminster Avenue in Garden Grove. Up to seven streetcars are planned to serve the route, stopping at 12 stations. It is expected to begin operation in 2019 and eventually carry more than 6,000 riders a day.

[Source: Orange Country Transportation Authority, May 12, 2015]

Milwaukee Streetcar Moving Forward

The development of a Milwaukee Streetcar is moving forward following city approval and additional funding for the Final Design phase in February. The Request for Proposals (RFP) for streetcar vehicles has been issued and selection of a vehicle vendor is expected by this fall. Also this fall, public utility relocations will begin, and RFPs will go out for building the system's main line, operations and maintenance facility. Main line construction is expected to start in spring 2016. The streetcar is slated to begin service in 2018.

The Council debate on whether to build the streetcar line had gone on for 24 years. After the final approval was announced, Common Council President Michael Murphy told reporters: "We believe the streetcar not only complements a larger transit network, but also serves as a city-building tool within a broader development plan — a plan that improves mass transit while attracting commercial and residential development in the heart of the city's tax base." Proponents have said the streetcar will help attract young, upwardly mobile professionals to Milwaukee.

[Source: Milwaukee Journal Sentinel, Feb. 10, 2015]

Rock Hill South Carolina Proposes Streetcar Route

A South Carolina developer is proposing a streetcar line to connect Winthrop University and downtown Rock Hill with the community of Knowledge Park, citing the positive impact it will have on development.

Without a linkage between the university and downtown, Knowledge Park will be another industrial park with possibly some apartments, not the 1.3 million square feet of retail, restaurant, office and residential space that developer Sora-Phelps unveiled about two years ago.

Stephen Turner, Director of Economic Development for Rock Hill, said that the purpose of the line is to spur development of the Rock Hill Printing & Finishing Co. site, also known as the Bleachery. "This is not meant to meet transit needs; it's not about moving people," Turner said.

Initial construction funds would be generated, in part, from tax incremental financing, or TIF, dollars. The Knowledge Park Leadership Group, a group of local business leaders, is advocating for the project. In addition to the streetcar, which appears to be their primary focus, the group also agreed to look at other alternatives, including electric buses and a "people mover". But preference is for a streetcar.

[Source: The Herald, April 16, 2015]

Memphis to Buy new Streetcar Fleet

Following electrical fires that destroyed two of Memphis' historic Ex-Melbourne streetcars and sidelined the streetcar fleet, the Memphis Area Transit Authority has proposed to replace its historic fleet with a new one. The system's trolley service -- along Main, the Riverside Loop, and the Madison Line -- has been shut down for 10 months. Earlier this month, MATA started operating hybrid buses along the trolley lines.

Pursuing repairs to the old trolleys would take too long and be too expensive to meet safety requirements, said Ron Garrison, MATA President. MATA staff wants to purchase 17 to 19 new trolleys made to look like vintage vehicles. "The new vintage replicas, he said, would "have all the newer equipment on them, and they would be easier to maintain, much more reliable, much safer and more cost effective for running the service."

Mayor A C Wharton included \$32.2 million for the new trolleys in his proposed five-year capital improvement budget.

Despite now wanting to buy new trolleys, MATA staff is still recommending that the board approve the repair of four old trolley trucks. The four trolley trucks would be used with two of the existing trolleys.

[Source: The (Memphis) Commercial Appeal, April 28, 2015]

International Electric Trolleybus News

San Francisco shows off New Trolleybus on Earth Day

On Earth Day in April--a day for all things environmental--San Francisco's MUNI took the opportunity to showcase its latest in environmentally friendly public transportation—a new 60 foot articulated low floor trolleybus prototype that arrived in March. The stylish Xcelsior trolleybus is one of 60 ordered by MUNI at a cost of \$68 million to replace some of its older fleet. The new trolleys will first see service on the 14 Mission. [SF Bay News, April 22, 2015]

Salzburg and Eberswalde Celebrate 75 Years of Electric Trolleybuses

Salzburg, Austria will celebrate 75 years of trolleybus operation this year. A special circulator service will operate on selected dates from April to August to mark the occasion. The circulator service will be numbered "Route 75" and will use one of Salzburg's historic trolleybuses—for the most part coach 123, a 1957 Henschel trolleybus that formerly operated in Solingen, Germany.

The trolleybus system in Eberswalde, Germany, also celebrates 75 years of clean, quiet public service this year. A two-day celebration will be held to mark the event on the weekend of September 12th and 13th. Trolleybus tours and an open house at the local trolleybus garage are some of the events that will be offered to the public during the two days.

[Source: International Trolleybus News, R.C. DeArmond, April, May 2015]

New Trolleybus System to open in Verona, Italy in 2018

Construction on Verona's trolleybus system finally began with the planting of traction pole bases in February, after being in planning since 2008. The system will feature two main routes traversing the city and a total of 23 km of overhead wire. Additional branches in the suburbs may be added later.

Like Rome and some Chinese cities such as Beijing, Verona's city centre will feature a section with no overhead wire which the trolleybuses must traverse on auxiliary propulsion with poles down.

37 trolleybuses will be used on the system, with propulsion equipment to be built by Vossloh-Kiepe. The cost of the system will total some 164 Million Euros and will be covered by the City as well as the Italian federal government.

[Source: Trolleyemotion, various dates]

Guided Trolleybus System Expansion a Huge Success in Castellon, Spain

Patronage on Castellon's automatically steered, "optically guided" trolleybus line T1 has been tremendous since its expansion in December of 2014. It is now expected that the line will carry around 2.5 million passengers in 2015. Schedules have had to be adapted to accommodate the loads, such that 15 minute service now extends until 10 pm, with additional service till 1 am on Friday and Saturday nights. Portions of the line offer frequencies of 8 minutes during peak hours.

Plans for the construction of a second guided line to Villareal-Burriana, as well as plans for the extension of Castellon's tram line No. 1 were talked about during the regional elections at the end of May, but there are yet no finances in place for their construction.

[Source: Trolleyemotion, June 1, 2015]

Swedish Trolleybuses subject of Energy Research

One of the three trolleybuses on the system in Landskrona, Sweden, has been set up to collect data for energy research purposes. "Elvis", as that particular vehicle has been named, will provide information to a research team at the local university.

20 years ago, typical trolleybus power consumption was around 3 kWh/km. Vancouver's newer trolley fleet recorded a typical consumption of about 2.1 kWh/km in tests around 2005. These figures represent all of the power used in propelling and operating the vehicle, including that consumed by compressors, fans, lighting, etc. Little is known about the consumption of individual components in the system, however.

In the tests on Elvis, the consumption of each component is being measured. By comparison with previously known data, Elvis exhibits remarkably low energy consumption. Over a 10-day period, Elvis' propulsion system consumed on average 0.6 kWh/km. Energy needed to supply the 24 Volt system, compressors and lighting averaged about 0.32 – 0.34 kWh/km.

All of the results of the research will be released sometime in August.

[Source: Trolleyemotion, May 18, 2015]