



FY22

Zero Emissions Fleet Transition Plan

NEW ORLEANS REGIONAL TRANSIT AUTHORITY

MAY 31, 2022



Background

The New Orleans Regional Transit Authority (RTA) is committed to transition to a low and zero emissions fleet, in accordance with the agency's Strategic Mobility Plan (SMP) and in alignment with the City of New Orleans' and Louisiana's respective Climate Action Plans. The path which the RTA is able to achieve this transition is constrained by unique challenges within the operating environment and history in New Orleans metropolitan area. These challenges include a fleet with a significant portion of vehicles nearing retirement and a utility provider that, for the foreseeable future, does not have the reliability and resilience to meet the RTA's needs. The RTA's Zero Emissions Transition Plan takes these challenges in account and will serve as living document as the agency works towards setting a transition strategy that best accommodates them.

Recovering from 2005 Bus Fleet Loss

The RTA's fleet is a crucial point in time requiring a carefully planned replacement schedule. In 2005, the levee failure following Hurricane Katrina wiped out the entirety of the RTA's fleet of 372 busses. The agency had to rapidly purchase vehicles to restart service for a recovering population, resulting in 78% of the bus fleet being purchased in a 3-year period from 2008 to 2010. The RTA now operates with a bus fleet of 134 busses, and the service run by the agency is pared back from pre-2005 levels.

Today, the RTA operates with 43% of the busses purchased in 2008 and 2010 following Hurricane Katrina. By the end of 2021, 53% or 71 of the 134 buses in the fleet that were purchased in with FEMA funds 2008 and 2010 have surpassed their useful life in years or miles. An additional 40 busses will need to be retired by 2024. The FY22 Bus and Bus Facilities funding request will enable the RTA to retire these post-Katrina busses that will meet their useful life in 2024, allowing the agency to meet its goal of 10% of fleet past useful life and to deliver high-quality service to its residents while it forms a long-term and comprehensive transition strategy for its fleet.

In addition, RTA is working to smooth out the fleet replacement schedule to return to evened out annual purchases. RTA is working to complete the purchase of 10-12 smaller fixed-route busses, 23' low-floor Frontrunners, using unspent recovery funds managed by the State of Louisiana. These vehicles will serve a need for both smaller vehicles on lower ridership coverage routes and on routes that service historic neighborhoods with narrower streets. These vehicles also have a much shorter useful life benchmark (5-7 years) that will require replacement in 2028-2029. All these combined actions are all part of RTA's work to smooth out its future fleet replacement schedule to return to more even annual levels.

Planning for the Future

The RTA is seeking to retain a dependable fleet without compromising any level of service delivery to riders today and while the agency takes action to improve service in the region. As the population continues to grow post-Katrina, the RTA has been faced with an increased demand for service. Service needs have also changed as many transit-dependent communities have shifted to neighborhoods outside of the city's core like East New Orleans and the West Bank. The region has new residents who are eager to utilize public transit and reduce their dependence on automobiles. State and local Climate

Action Plans call for increased use of public transit and shifts in land use to better support access through transit. In 2022, the RTA will roll out New Links, the network route redesign that promises to deliver improved service to riders and target populations within the region to help meet the needs of the population and support these climate action goals. As the system redesign is implemented, delivery of service using reliable vehicles will be a crucial piece of following through on the promised improvements.

In 2021, the New Orleans Regional Transit Authority (RTA) received federal funding to procure three (3) electric vehicles to expand the fleet of low or zero emission vehicles for the fixed route fleet from 15 to 18 vehicles. The request included funds to install the infrastructure to charge the batteries, train the staff and procure the diagnostic and maintenance tools required. This funding request represents the first step for the agency to pilot the use of zero emissions vehicles within the network and develop the infrastructure needed to support this vehicle type.

Reliability and Resilient Fuel Technology

In the summer of 2021, a new challenge became clear in the aftermath of Hurricane Ida, which wiped out the power utility in the region - in most places for up to three weeks. The RTA has always played a crucial role in natural disaster response, as the RTA is responsible for evacuating the 40,000 self-identified people who will require evacuation assistance during catastrophic weather events. In the weeks after Hurricane Ida, the RTA deployed busses to serve as cooling centers to support residents who remained in the city without power. Within 5 days of the hurricane making landfall, the RTA was able to run service on major corridors, allowing residents to access services and resources available for recovery.

This response emphasized the crucial role that the RTA plays in disaster response in the city and revealed that a reliance on the electric utility present in New Orleans would present a weakness in the resiliency of the RTA's fleet and ability to serve residents in the aftermath of natural disasters. Based on this experience, the RTA is reconsidering its approach to using electric vehicles in its fleet and is evaluating other low and zero emissions technologies that may better suited. This evaluation is just getting underway starting with research and leverage the current Lo No Grant to the extent possible for the pilot stage.

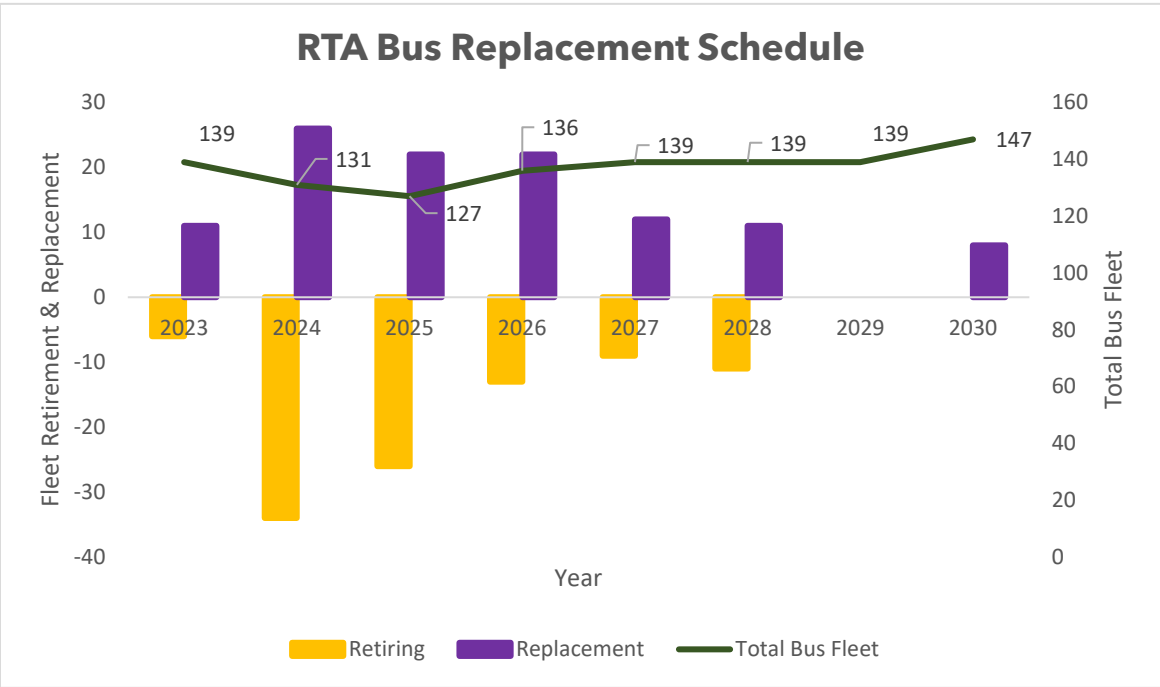
The RTA's Strategic Mobility Plan (SMP) sets a goal to have 75% of the fleet be low or zero emissions by 2030. As the RTA continues to develop and refine its Zero Emissions Transition Plan to meet this goal, the agency will seek to identify solutions that optimize for resiliency and reliability and that will succeed in face of the operating challenges in the city.

Fleet Management Plan and Strategy

Currently, the RTA manages a fleet of 154 vehicles, many of which are nearing or past the useful life of 12 years, which is the useful life cited by the bus manufacturer.

2022 Current Bus Fleet			
Type	No. Buses	Age	Total Years
2004 MCI	4	18	72
2008 Orion	3	14	42
2010 Orion	58	8	464
2012 Orion	8	10	80
2010 Artic New Flyer	5	12	60
2012 Artic New Flyer	10	10	100
2019 New Flyer	8	10	80
2020 New Flyer	15	2	30
2021 New Flyer	22	1	22
2022 New Flyer	21	0	0
Total Fleet	154		950
			6.2

RTA maintains a useful life benchmark (ULB) of 12 years for buses. 40 busses are planned to be retired between 2023 and 2024. The fleet breakdown can be seen in the table above and is maintained according to industry standards for service delivery through preventative maintenance and rehabilitation programs. Today, the RTA’s fleet includes 15 hybrid articulated busses. The RTA fleet transition program includes working towards a transition goal of 75% low or no-emissions vehicles by 2030, however, we continue to evaluate this number due to the dynamic challenges posed by the gulf region as experienced by Hurricane Katrina and Ida.



In order to deliver expected service to its riders, the RTA must be able to replace the vehicles that were procured when the following Hurricane Katrina. In 2024, 40 vehicles will have met or exceeded their useful life and will need to be retired. It is critical that RTA be able to replace these busses to be able to retain their service standards for riders, but the RTA is not yet in a position to invest in low and zero emissions vehicles for these replacements.

Financial Resource Availability

In 2021, the RTA received \$5.9 million in federal funding to expand the fleet of low or no emission vehicles for fixed route the fixed route fleet. The RTA originally proposed to procure five (5) no emission vehicles, install the infrastructure to charge the batteries, train the staff and procure the diagnostic and maintenance tools required. The five vehicles were planned to replace five of RTA's oldest vehicles, while expanding the low-no Emissions Fleet from 15 to 18, by introducing these all-electric vehicles. The RTA was awarded funding sufficient to purchase three (3) electric vehicles and the corresponding infrastructure.

Following Hurricane Ida, which knocked out the power utility in New Orleans, the RTA is re-evaluating the use of electric vehicles in its fleet. The RTA is in the process of completing this evaluation and is working with FTA to potentially revise the proposed use of funds, if necessary. The funding received through this grant remains the main financial resource on hand to begin the transition towards low and zero emissions vehicles. The RTA is separately submitting a request for \$11.4 million in federal funds to acquire 23 diesel busses, which will enable the RTA to continue to serve its riders while determining the best low and zero emissions solutions for its riders and operational context and updates its transition plan.

Policy and Legislative Impact

The transition towards a zero emissions fleet is directly in alignment with the 2022 Climate Action Plan for Louisiana, the 2017 New Orleans Climate Action Plan and the RTA's own Strategic Mobility Plan. Both the State of Louisiana and City of New Orleans are working towards establishing the infrastructure to support a transition to zero emissions technologies. In addition to policies that support the use of electric vehicles, the state is also supportive of exploring hydrogen as an alternative fuel. The RTA's commitment to reduce emissions through alternative technologies is supported by the policy and legislative context.

In 2020, the Louisiana's governor signed an executive order establishing the Climate Initiatives Task Force, which set the goal for the state to be "net zero" by 2050. The Climate Initiatives Task Force developed a Climate Action Plan to reach this goal, which was adopted in 2022. The 2022 Climate Action Plan for Louisiana includes four strategies that directly address transit operations. Within the Transportation priority area, the Louisiana Climate Action Plan has the following strategies:

- STRATEGY 9: Accelerate adoption and accessibility of low- and zero-emission vehicles and fuels
- STRATEGY 10: Reduce vehicle miles traveled and increase transportation efficiencies
- STRATEGY 11: Increase urban, rural, and regional public transit service
- STRATEGY 12: Coordinate land use planning to reduce sprawl and support healthy and resilient communities

Accomplishing these strategies requires effective transit service that has low and zero emission vehicles and infrastructure to support it. The plan suggests that passenger, light-duty vehicles should be first to move to zero-emission, electric vehicles, while heavy-duty trucks and vehicles may initially transition to low-carbon alternative fuels, such as renewable diesel, which can be used in existing vehicles.

The governor is open to exploring hydrogen to meet emissions goals, as indicated through the state's application to the Department of Energy to be selected as a hydrogen hub in coordination with Oklahoma and Arkansas. This would in addition to the hydrogen plant that is planned to be built in Ascension Parish. The state has also requested permission for carbon capture and sequestration projects in the state from the EPA. The RTA will remain up to date with the state's policies and the different technology opportunities for transforming its fleet in alignment with those opportunities.

The 2017 New Orleans Climate Action Plan also has transportation sector strategies, including:

- Transform infrastructure to reduce car reliance
- Increase fuel efficiency, clean fuel use and shared-use mobility services

These strategies include actions that focus on improved access via transit and maximizing the fuel efficiency of public transit fleet. Actions that the RTA takes to support the transition to a low and zero emissions fleet will also directly align with these strategies and actions.

One of the goals of the agency's Strategic Mobility Plan (SMP) is to Support a Sustainable, Healthy Region, by having 75% of the fleet powered by low or no-emission vehicles by 2030. This goal is the direct result of more than 1,000 interactions with community members and are consistent with other regional plans. This is in line with federal, state, and local initiatives to protect the environment and public health. While the agency is in the still in the planning stages of service routes to utilize these no-emission vehicles, it intends to have a matrix to include factors grounded in equity. The EPA Environmental Justice Map and the CDC Asthma Map are two additional sources of data that will be used to inform the decision in addition to tradition factors like capital cost to install the infrastructure, operations, and maintenance cost.

Facility Evaluations

The RTA's facilities include the electricity infrastructure to run the five (5) streetcar routes included in the RTA network. The streetcar service requires the local utility to deliver power to the RTA's vehicle yard and along the streetcar routes. These facilities would have to be enhanced and expanded to support the electrification of bus routes, if that is the technology adopted during the emissions transition.

The RTA's 2021 application for federal funding for electric busses included a budget of \$2.4 million for infrastructure development to support electric vehicles. This included the design and installation of a main charging station, field charging stations and physical modification to the garage or along the route. The RTA is still in the process of evaluating its facility needs and how to utilize these funds for facility modifications based on the technology adopted for the low and zero emissions fleet.

Utility and Fuel Partnerships

In 2021, the RTA applied for federal funding to procure five electric buses and construct the infrastructure to support charging these vehicles. As a part of that application, the RTA secured support from Entergy, the power utility in the region. In its letter of support, Entergy describes its interest in working together with the RTA to evaluate and implement the infrastructure necessary to operate safe and reliable bus service and to minimize electric bill impacts. The RTA already works closely with Entergy to supply power for the streetcar lines within the RTA's network. This partnership will be further developed in the exploration of zero emissions technologies for transit. The RTA is currently in a diesel fuel contract with Mansfield Fuel.

Workforce Impacts

Technology is constantly advancing and that is no exception when it comes to new bus technology. As the Agency continues to grow and advance its fleet, the technical and maintenance teams as well as the operators will be supported to adapt through a series of trainings. The agency is in the process of hiring a director of fleet advancement, who will comprehensively manage the planning for and integration of new fleet technology into the RTA's fleet. This position will include oversight of all training needs for RTA staff.

As the agency adapts to new low and zero emissions vehicles, technicians will need to learn the new technology. Training needs may include but are not limited to basic electrical theory and application, multiplexing systems, high voltage systems, and Electric Vehicle (EV)-drive systems, high voltage safety. If the agency determines that a different type of low or zero emissions vehicles will be procured, the trainings will be adapted to meet the needs of those vehicles.

Transitioning to electric drive vehicles will require training for all bus technicians. The agency has several technicians who are familiar with the high voltage hybrid buses that are already within the fleet. Any new electric drive or other zero emissions solutions will still require trainings for the entirety of the workforce. For electric vehicles, the greatest anticipated skills gap in the workforce will be with high voltage electrical systems and electric drives. Multiplexing systems will continue to be an area with training needs. Operations Engineering and Maintenance (OEM) training will be required on these systems.

The new director of fleet advancement will be responsible for coordinating and identifying all new training and skills needs. Training partners will include the OEM as well as component manufacturers, from there the agency will use "train the trainer" to teach additional staff. Training will play a critical role in mitigating any potential workforce displacement resulting from the introduction of new technology. Many technicians and operators have the necessary foundations to be able to adapt and learn new technological aspects associated with new fleets. Working with equipment manufacturers to provide key training to trainers and technicians, and then trickling down into "train the trainer" sessions will help ensure the success of the agency workforce transition. Training will be paid for by a combination of grant funds when allowed as well as local funds.

Updating the Zero Emissions Transition Plan

The RTA will continue to update this Zero Emissions Transition Plan as the agency gains information on the available technology and the most appropriate solutions for the environment in New Orleans. The emissions plan will also be updated to include a comprehensive look at RTA's fleet, inclusive of paratransit vehicles, support vehicles and streetcars.