New Mexico Legislative Finance Committee
Progress Report

Cost Effectiveness and Operations of the New Mexico Rail Runner Express

October 23, 2024

Legislative Finance Committee

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Summary

The onset of the Covid-19 pandemic created significant challenges for the New Mexico Rail Runner (NMRX)—its operator, Rio Metro Regional Transit District (RMRTD), stopped NMRX service for 51 weeks. NMRX has had a relatively strong post-pandemic ridership recovery, with average monthly ridership in the first half of 2024 at 77 percent of 2019 average monthly ridership levels—the eighth-best among all commuter rail systems and the second-best among peer commuter systems. However, further increases in ridership will be difficult because NMRX operates in one of the most sparsely populated service areas in the country and would have to reverse a long-term ridership decline. Additionally, while improvements could be made to NMRX service to increase ridership, these improvements would be extremely expensive for, in some cases, relatively small increases in ridership. The Legislature will need to decide, if it is interested in providing funding for improved NMRX service, how to direct funding to most efficiently improve ridership.

Despite a 31 percent increase in costs per revenue mile between 2019 and 2022, NMRX operations remain on a strong financial footing compared to other transit systems. While RMRTD used on-hand cash to balance the NMRX FY24 budget, RMRTD predicts that NMRX FY25 operations will end with a $1.6 million cash surplus. RMRTD also predicts NMRX will not experience any budget shortfalls through FY31. RMRTD has undertaken several capital projects designed to improve core NMRX service by increasing train speeds or reducing delays. However, RMRTD is currently prioritizing the completion of a two-phase, $58 million rehabilitation and replacement of its outdated operations and maintenance facility. The cost of this project will significantly reduce RMRTD's ability to fund other service-oriented capital projects. RMRTD should scale down its plans for its maintenance facility to free up agency capacity and funds for capital projects that would improve core NMRX service.

Lastly, while public transit can reduce carbon emissions, current NMRX ridership levels are low enough that, in FY24, train service generated over 2,000 more tons of carbon dioxide (CO_2) than replacement car trips. The Department of Transportation (NMDOT) has calculated NMRX's estimated CO_2 savings, but due to an overoptimistic estimate of NMRX fuel consumption, NMDOT has significantly overestimated NMRX's emission benefit. Increases in average car fuel economy in New Mexico over the next decade will increase NMRX's CO_2 deficit by between 28 and 43 percent absent changes in NMRX fuel economy, ridership, and service levels.

The Evaluation:

The 2019 program evaluation *Cost Effectiveness and Operations of the New Mexico Rail Runner Express* assessed the financial health, ridership levels, and economic development impact of the New Mexico Rail Runner Express after a decade of operations. The evaluation outlined steps that Rio Metro Regional Transit District, the Department of Transportation, and the Legislature could take to improve Rail Runner performance on these topics.

Five of the 2019 evaluation's 10 recommendations (50 percent) that relate to this progress report have been implemented or progressed toward implementation.

Key Recommendations

Rio Metro Regional Transit District should:

- Adopt performance targets for key Rail Runner efficiency and cost-effectiveness metrics including, but not limited to, operating cost per hour and per mile and passenger trips per hour;
- Use performance targets to drive strategies and goals for cost savings and operational efficiency in concert with initiatives to attract ridership;
- Reevaluate the scope of the unfunded portions of the operations and maintenance facility to free up agency and financial capability to fund core service improvements;
- Develop pounds of carbon dioxide emitted per rider as a performance metric; and
- Use pounds of carbon dioxide emitted per rider to guide decision making around long-term strategy and train operations.

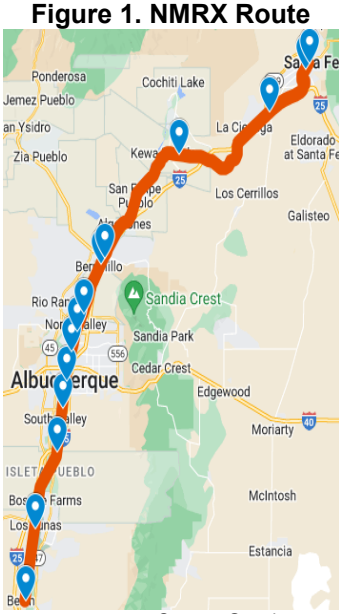
Rio Metro Regional Transit District and the New Mexico Department of Transportation should:

- Develop a plan for prioritizing core infrastructure improvements, taking into account opportunities to maximize added ridership at the lowest cost.

The State's $400 Million Rail Runner Struggles with Long-Term Ridership Declines

The New Mexico Rail Runner Express (NMRX) is a commuter rail line running 97 miles from Belen to Santa Fe. Abridged NMRX service began operation within the Albuquerque metro area in July 2006, with full-service beginning in December 2008. NMRX currently serves 15 stations, the most recent of which, Zia Road station in Santa Fe, was completed in 2017. Since the release of the 2019 program evaluation, no additional stations have been created.

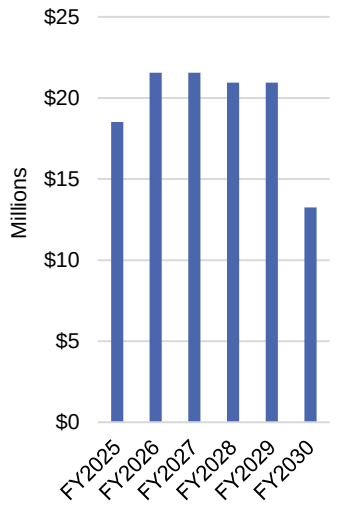
Figure 1. NMRX Route



Source: Google maps

NMRX funding was authorized by Laws 2003 (1st Special Session), Chapter 3, which allowed NMDOT to use bond funds to construct station infrastructure and purchase right of way from BNSF as a part of the $1.6 billion Governor Richardson's Investment Partnership (GRIP). Bond-financed construction costs amounted to approximately $353 million with another $46 million covered by bond premiums. According to NMDOT staff, NMDOT will make $166 million in total payments between FY25 and FY30 on the different rounds of GRIP bonds used to fund NMRX construction. However, according to LFC staff, none of the remaining bonds can be paid off early due to the terms of the bonds. Payment amounts between FY25 and FY30 will average $19.5 million annually.

Chart 1. NMDOT Payments on NMRX-Related Bond Debt

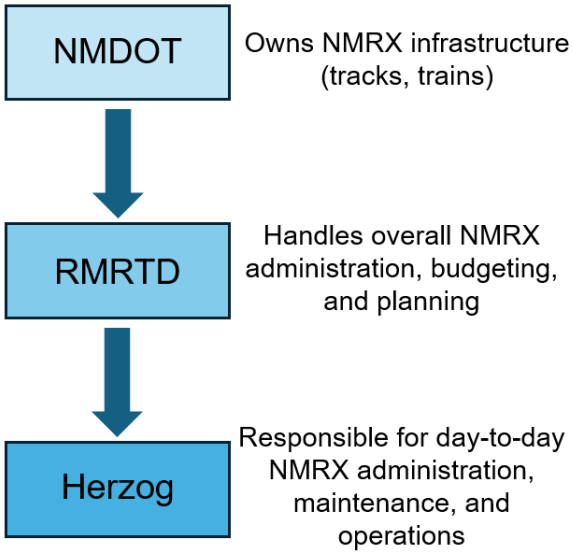


Source: NMDOT

The department owns the Rail Runner's underlying track infrastructure and rolling stock (trains) and contracts with the Rio Metro Regional Transit District (RMRTD) to operate and maintain NMRX. As a part of its responsibilities, RMRTD performs long-term administration, strategic, capital, and financial planning and applies for grants and funding for NMRX projects. The agreement between NMDOT and RMRTD requires RMRTD to subcontract the day-to-day operation and maintenance of NMRX to a private contractor. Herzog Transit Services has functioned as the subcontractor since 2005, with RMRTD signing a new contract with Herzog in 2021 after a competitive award process. That current contract will expire in 2029.

Two other rail operators, Amtrak and BNSF, operate inter-city passenger rail and freight rail, respectively, on NMDOT-owned track. Amtrak and BNSF both pay fees to NMDOT for the right to operate on NMDOT-owned track—NMDOT remits these fees to RMRTD, which amounted to approximately $2.2 million in FY24. As a part of the operating agreement with Amtrak, NMDOT receives penalties or incentive payments based on the on-time performance of Amtrak Southwest Chief trains. Between FY20 and FY24, RMRTD netted $828 thousand in incentive payments.

Figure 2. NMRX Operating Environment



Source: LFC files

RMRTD is governed by a 20-person board of directors with representatives from local governments within RMRTD's service area. One of the recommendations from the 2019 evaluation was that NMDOT obtain a seat on RMRTD's board. Despite this recommendation, NMDOT still does not have a seat on the board. NMDOT staff have stated they are satisfied with the current NMRX governance structure and that they do not plan on pursuing an RMRTD board seat.

One of the 2019 program evaluation core findings was that NMRX ridership had declined steadily since it began full service, with annual ridership peaking in 2010. Between that peak and the release of the 2019 program evaluation, NMRX annual ridership declined by 38 percent, equivalent to the loss of 476 thousand riders. The 2019 program evaluation included a series of recommendations designed to address and reverse this trend, including prioritizing capital projects that would improve core service and developing strategies to attract new riders and improve NMRX financial efficiency.

NMRX Ridership has Recovered Better than Most Rail Systems, but Further Increases Will Be Difficult

The Covid-19 pandemic and pandemic-related restrictions significantly decreased public transit ridership nationally, with researchers estimating that national transit ridership hit a 100-year low in 2020. Ridership has recovered slowly since then but, in most cases, has not reached pre-pandemic levels. According to data from the national transit database, only four commuter rail systems in the entire U.S. had average monthly ridership levels in the first half of 2024 within 5 percent of their average 2019 monthly ridership. The ridership level at the average commuter rail system in the U.S. in June 2024 was only 65 percent of its average monthly 2019 levels. NMRX has seen a stronger ridership recovery than most commuter rail systems in the country and, as of June 2024, had the eighth-best ratio of average 2024 monthly ridership to average 2019 monthly ridership of all U.S. commuter rail systems. The 2019 program evaluation identified a number of peer commuter rail systems—among these peers, NMRX had the second-best ridership recovery, less than a percentage point behind the Utah Frontrunner.

Table 1. Comparison of Ridership Recovery

Agency	Name	Operating Area	Ratio of 2024 Average Monthly Ridership to 2019 Average Monthly Ridership
Utah Transit Authority	Frontrunner	Salt Lake City, UT	78.1%
Rio Metro Regional Transit District	Rail Runner Express	Albuquerque, NM	77.4%
Central Florida Commuter Rail	Sunrail	Orlando, FL	77.0%
Dallas Area Rapid Transit	Trinity Railway Express	Dallas-Fort Worth-Arlington, TX	62.9%
North County Transit District	Coaster	San Diego, CA	60.1%
Altamont Corridor Express	ACE	Stockton, CA	48.9%
Central Puget Sound Regional Transit Authority	Sounder	Seattle-Tacoma, WA	42.1%
Regional Transportation Authority	WeGo Star	Nashville-Davidson, TN	38.1%
Connecticut Department of Transportation	Shore Line East	Hartford, CT	25.5%
Metro Transit	Northstar	Minneapolis-St. Paul, MN	15.6%

Source: National Transit Database

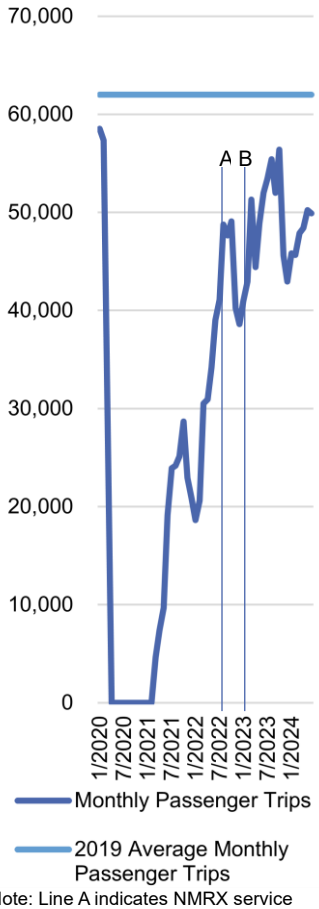
RMRTD has tried to adapt service levels and costs to meet additional commuter flexibility and attract non-commuter ridership.

During winter and spring 2022, RMRTD staff conducted a comprehensive review of NMRX service and fare levels with the goals of understanding pandemic-driven changes in NMRX ridership and outlining a strategy to increase ridership in the aftermath of the pandemic. Consistent with prior customer surveys, both commuting and leisure riders cited inconvenient service times as why they did not ride NMRX more. RMRTD staff also noted that 30 percent of post-pandemic commuting riders were working either hybrid or fully remote work schedules with greater flexibility. In response to these findings, in August 2022 RMRTD launched four new midday trains on weekdays, six new midday trains on weekends, and reduced fares by 75 percent through the end of 2022 (line A on Chart 2). Both policies are supported by academic research, with frequency of service and transit price associated with increases in ridership (research finds 0.48 percent and roughly 0.2 percent increases in ridership for every 1 percent increase in frequency and 1 percent decrease in fare price).

Disentangling the effects of RMRTD's policies is difficult, but evidence suggests they may have helped in recovering ridership. While most ridership recovery occurred prior to the implementation of these policies, as shown by Chart 2 NMRX ridership reached its current ridership level (roughly 78 percent of pre-pandemic ridership levels) for the first time in August 2022, an 18 percent increase in ridership from July 2022. While ridership did see further increases in spring and summer 2023 after the normal winter seasonal dip in ridership, these further increases are also likely attributable to both RMRTD's policy changes and state executive personnel returning to the office in February 2023 (line B on Chart 2). Despite these increases, ridership appears to have plateaued in recent months. This suggests RMRTD may need to further refine and adjust new train schedules to attract additional riders.

NMRX commuting is significantly cheaper for riders than solo car commuting. While RMRTD initially reduced all fares by 75 percent in 2022, RMRTD has permanently reduced monthly pass costs by 50 percent. These reductions increase the considerable financial benefit that commuters gain from riding NMRX rather than driving their own cars. In FY24, an online monthly passholder who rode the train every day to commute to work would save $5,235 in driving costs annually, a 14 percent increase in savings from pre-reduction monthly pass levels.

Chart 2. NMRX Ridership Recovery



Note: Line A indicates NMRX service changes, Line B indicates executive personnel returning to office.
Source: National Transit Database

In a review of post-pandemic ridership, RMRTD staff noted that 30 percent of post-pandemic commuting riders were working either hybrid or fully remote work schedules with greater flexibility.

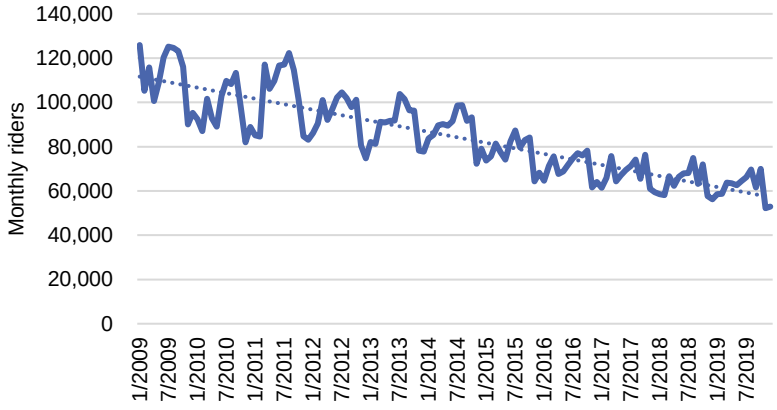
Due to teleworking and service area characteristics, reaching pre-pandemic NMRX ridership and beyond will be difficult.

While current NMRX ridership has reached close to 80 percent of pre-pandemic ridership, further increases are unlikely to occur absent new initiatives from RMRTD. Even pre-pandemic, NMRX ridership had declined year-over-year for every year of full operation with the exception of 2011, meaning increasing ridership will have to work against this long-term trend. Additionally, NMRX operates in a sparsely populated, low-car traffic area, conditions not conducive to transit ridership. Lastly, the rate of telecommuting has significantly increased in both the Santa Fe and Albuquerque areas, reducing the number of workers using NMRX to commute to work. RMRTD will need to develop strategies to address these factors to further increase NMRX ridership.

Overall, NMRX ridership decreased by a little more than 500 riders each month between January 2009 and December 2019

Prior to the pandemic, annual NMRX ridership declined by an average of five percent annually, while post-pandemic ridership appears to have plateaued. After beginning full service in January 2009, NMRX ridership decreased every year prior to the Covid-19 pandemic except one. Overall, NMRX ridership decreased by a little more than 500 riders each month between January 2009 and December 2019. Since the pandemic and the restarting of NMRX operations, ridership has increased at a significant rate, and NMRX ridership in June 2024 was 43 percent higher than it would have been if that pre-pandemic trend had continued. This recovery seems to indicate that the long-term trend of declining ridership has reversed. However, monthly ridership has hovered at approximately 80 percent of average 2019 monthly levels since May 2023, only reaching 90 percent in one month. This plateauing suggests that, despite NMRX's relatively strong ridership recovery, absent significant changes in NMRX services, the cost of driving, or other factors, NMRX ridership may continue to stagnate or decline.

Chart 3. Pre-pandemic Change in NMRX Ridership



Source: National Transit Database

Traffic congestion and development patterns in Albuquerque and Santa Fe are not conducive to transit ridership. Prior academic research has suggested that low levels of car traffic may cause individuals to shift from riding transit to taking a private car for a trip. The 2019 LFC evaluation noted the Albuquerque and Santa Fe urbanized areas were among some of the less congested areas among peer rail systems. The most recent available federal highway data from 2022 indicates this pattern has remained almost unchanged, with NMRX now serving the second lowest trafficked urbanized area instead of the lowest (see Table 2). Additionally, academic research has consistently identified a strong positive correlation between transit ridership and the population density of a given area. However, NMRX's service area is the least densely populated among its peer commuter rail systems and the fifth-least dense of any commuter rail system in the U.S. (see Table 3).

Table 2. Comparison of Traffic Levels Between NMRX and Peer Commuter Rail Systems

Commuter Rail System	Average Daily Traffic Per Freeway Lane in 2022
Coaster	18,437
Altamont Corridor Express	18,217
Trinity Railway Express	17,836
Frontrunner	16,460
Sounder	16,386
Sunrail	16,020
Northstar	15,121
WeGo Star	14,630
NMRX	13,508
Shore Line East	13,220

Source: FWHA

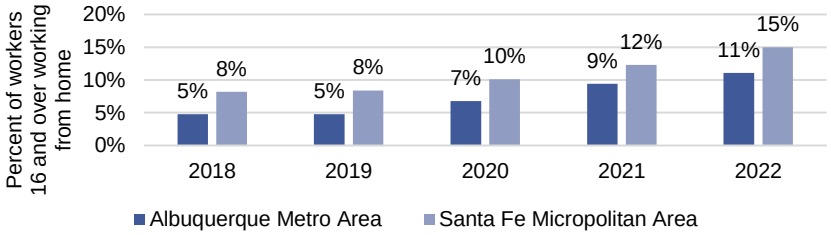
The rate of telecommuting has more than doubled in the Santa Fe and Albuquerque areas. RMRTD analysis and the 2019 LFC program evaluation have firmly established that the core of NMRX ridership is work commuters. According to American Community Survey data, in 2018 only 4.8 percent of workers in Albuquerque telecommuted most workdays. By 2022 (the latest year that data is available), that number had more than doubled to 11.1 percent—Santa Fe has seen a similar increase, with the rate of telecommuting increasing from 8.2 to 15 percent over the same period. These numbers likely underestimate the extent to which workers are telecommuting because only those who "usually" telework are counted in the ACS survey. Many additional workers likely still telework for a minority of their workdays and are, therefore, not included in these percentages. Research conducted internationally during and after the pandemic suggests workers who have longer commutes are more likely to telecommute. While these studies were conducted outside of the U.S., these affects likely hold true in New Mexico as well. Given that many NMRX commuters are commuting more than 100 miles a day, these workers are likely to telework if they can. NMRX staff have noted in their reviews of NMRX ridership that telework remains an obstacle to increasing ridership.

Table 3. Comparison of Population Density Between NMRX and Peer Commuter Rail Systems

Commuter Rail System	Service Area Population per Square Mile
Altamont Corridor Express	156,928
Frontrunner	4,183
Trinity Railway Express	3,626
Northstar	3,520
Coaster	3,070
Sounder	3,037
Sunrail	2,874
Shore Line East	2,623
WeGo Star	2,111
NMRX	992

Source: National Transit Database

Chart 4. Percentage of Workers Who Telecommute Most Days in Santa Fe and Albuquerque Areas



Source: American Community Survey

Increasing train speeds and frequency would be expensive but could marginally improve ridership.

Reviews of transit ridership have underscored that, in addition to factors like population density that are outside train operator's control, decreasing travel times can increase ridership. The 2019 LFC program evaluation had multiple recommendations and analyses related to decreasing NMRX travel times, either through increasing train speeds or reducing passing delays from other trains. However, decreasing train travel time, either by increasing train speeds or reducing train delays, is very costly and results in only small increases in ridership. If the Legislature wishes to provide state funding for core infrastructure improvements, legislators and RMRTD should carefully consider the relative impacts and prices of different strategies and projects.

The 2019 LFC evaluation estimated that increasing speeds for one NMRX train would cost $22 million and increase total ridership by 1.2 percent. Federal statute sets maximum allowable train speeds for tracks based on the quality of the train infrastructure. Currently, NMRX track is set at class four, meaning NMRX trains can reach a maximum of 79 miles per hour. The 2019 program evaluation analyzed the impact of increasing allowable track speeds to 89 miles per hour (class five), suggesting that decreasing travel times by 1 percent would lead to a roughly 1 percent increase in ridership. This analysis suggested that decreasing travel times on the #102 Express by 8 percent (around five minutes) would increase annual ridership on that line by 9,000 riders.

Table 4. 2019 Program Evaluation Analysis of Estimated Travel Time and Ridership Impacts of Track Upgrades
(Train #102 Express from Los Ranchos/Journal Center to South Capitol)

	Class 4 (Current)	Class 5 (90 mph), 2 Locomotives	Class 5 (90 mph), Higher-Speed Locomotive
Commute Time	1:06	1:03	1:01
Time Reduction	N/A	-5%	-8%
Estimated Change in Annual Ridership (Train #102 Express)	N/A	+5,000	+9,000
Projected Cost	$0	$22 million	$22 million+

Note: Assumes travel time elasticity = 1; these are general estimates only, not including components such as speed limits on La Bajada and in villages, increased deceleration time, and reduced travel time from the benefit of increased accelerations before reaching maximum speeds.

Source: LFC analysis

However, increasing NMRX track classification and train speeds to minimize travel time would undoubtedly be expensive for only a marginal gain in ridership. Reaching 89 mph on a sufficient length of track would require either two locomotives per trip or the use of more powerful locomotives. According to RMRTD documentation, on a given service day, only a single locomotive is not in service or undergoing maintenance and that spare locomotive is typically used as a back-up in case of failure. This means that to reach higher speeds on the #102 Express, RMRTD would have to acquire at least one new locomotive. RMRTD has priced the purchase of new, more powerful locomotives at $7 million each. Additionally, RMRTD would have to undertake significant infrastructure improvements to meet the requirements for class five track. The 2014 state rail plan suggests a total cost of $15 million, but NMDOT staff have stated that this cost estimate is out of date and no current cost estimate exists. If the $15 million cost has remained constant, increasing allowable and actual train speeds for the #102 Express would cost at least $22 million. Lastly, a 9,000 rider increase on the #102 Express in 2018 (the year of data used to perform these calculations) would increase total annual NMRX ridership by only 1.2 percent. Larger increases in ridership would be dependent on boosting speeds on multiple routes, which would vastly increase costs.

Increasing NMRX speeds for the #102 Express would cost at least $22 million and would boost total annual ridership by only 1.2 percent.

Additional sidings and other projects to mitigate low-speed areas and reduce delays could reduce travel times but would still be expensive. NMRX travel times could also be reduced by increasing speeds in low-speed areas and increasing opportunities for NMRX, BNSF, and Amtrak trains to pass one another by constructing additional sidings. RMRTD has constructed two additional sidings since 2019. However, these projects still cost millions of dollars. RMRTD's recent Alameda project, which added 1,500 feet of siding, cost a little more than $7 million. Further, since sidings do not necessarily increase speed but reduce travel times by reducing delays, it is difficult to estimate by how many minutes a given siding will reduce the average NMRX trip time. RMRTD has also upgraded infrastructure to increase train speeds in low-speed areas. The Centralized Traffic Control (CTC) project, completed in FY24, improved signals along a 4.7-mile stretch of downtown Albuquerque. These improvements increased allowable train speeds from 20 mph to 60 mph. RMRTD staff believe that this will reduce NMRX travel times by five to 10 minutes—however, completing this project will cost RMRTD approximately $12 million. Additionally, according to RMRTD staff the CTC project has a uniquely outsized impact on travel time compared to other potential low-speed mitigation projects.

Table 5. Cost and Impact of NMRX Service Improvements

Project	Cost (millions)	Service Improvement	Ridership Impact
All double-track study projects	$96+	30% more trains	17%
Sidings and low-speed mitigation	$7-$9 per siding	travel time reductions	1% per 1% reduction in travel time
Increasing maximum speeds for all routes	$85	5-10 min reduction in travel time	8%

Note: Double track study does not include the cost of purchasing additional locomotives ($7 million each), cabs ($4.5 million each), and coaches ($4 million each). The number of each needed to support more frequent service would depend on train configuration.

Source: LFC analysis of RMRTD data

More frequent service could also improve ridership but would require new locomotives and expensive infrastructure improvements. In 2022, RMRTD completed a double-track study, which identified sidings, double-track segments, and further infrastructure improvements that, if completed, would reduce train delays and allow RMRTD to operate 35 percent more weekday trains. While RMRTD currently has no plans to undertake all double-track improvements, prior research has established that a 1 percent increase in service frequency is associated with a 0.48 percent increase in transit ridership—this means if RMRTD were to increase NMRX service frequency to hourly (increasing the number of trains by 35 percent), ridership could be expected to increase by approximately 17 percent. However, the infrastructure needed to support more frequent service at this level would cost $96 million, not including the need to purchase additional locomotives ($7 million per unit) and cab and coach cars ($4.5-$4 million per unit) to support the number of new trains needed for service. RMRTD staff report that they could increase NMRX service frequency at a lower level than 35 percent without purchasing additional locomotives or building all double-track projects, but that costs would vary depending on the level of service frequency.

Increasing NMRX train frequency by 35 percent would cost more than $96 million but could increase ridership by roughly 17 percent.

RMRTD staff report significant performance data to their governing board but still have not set specific performance metrics and targets on the efficiency of trip level ridership. A key recommendation from the 2019 program evaluation was that RMRTD adopt performance metrics for NMRX operations to increase efficiency and guide longer-term strategy. RMRTD has not yet developed new metrics, despite staff stating they were open to adopting performance metrics, Performance metrics can provide valuable insight into the efficiency and effectiveness of current operations and suggest areas of improvement or change. For example, if RMRTD were to adopt a performance metric for trip-level ridership, that metric could be used to adjust schedules and change low ridership routes.

If RMRTD were to adopt a performance metric for trip level ridership, that metric could be used to adjust schedules and change low ridership routes.

Recommendations

Rio Metro Regional Transit District should:

- Adopt performance targets for key Rail Runner efficiency and cost-effectiveness metrics including, but not limited to, operating cost per hour and per mile and passenger trips per hour; and
- Use performance targets to drive strategies and goals for cost savings and operational efficiency in concert with initiatives to attract ridership.

Rio Metro Regional Transit District and the New Mexico Department of Transportation should:

- Develop a plan for prioritizing core infrastructure improvements, taking into account opportunities to maximize added ridership at the lowest cost.

NMRX is in a Strong Financial Position, but Capital Spending Could be Prioritized to Improve Core Service

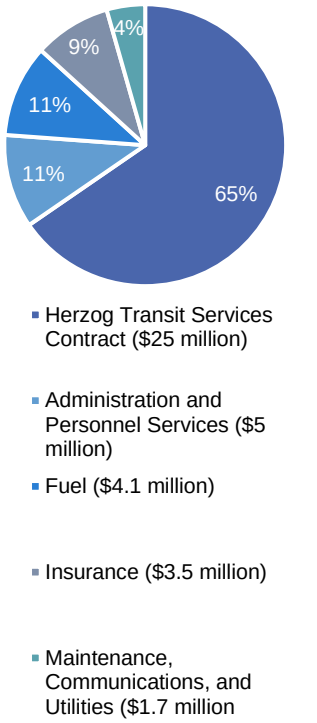
Like many transit agencies, RMRTD has seen significant cost increases since the release of the 2019 program evaluation. Most of RMRTD's cost increases appear to be driven by taking over the maintenance of a new federally required rail signal system, and RMRTD's maintenance costs for this system are relatively high compared to other transit agencies. Despite these increased costs, unlike many other transit agencies RMRTD predicts no budget shortfalls from FY25 through FY31 and plans to end FY25 with a $1.6 million cash surplus. While the costs of implementing positive train control (PTC) limited RMRTD's ability to improve core NMRX service, RMRTD has managed to complete some service-oriented capital projects. At the same time, RMRTD's plans for a new $58 million maintenance facility have restricted its ability to fund other core-service capital projects in the future. While RMRTD's current operations and maintenance facility should be replaced, RMRTD should consider reducing the scope of the project to free up agency and financial capacity for projects designed to improve core NMRX services.

Despite cost increases, NMRX's long-term financial outlook is positive.

In FY24, RMRTD reported approximately $81 million (not including $20 million of cash balance) in available revenues, $34 million in operational costs, and $48 million in capital and capital maintenance costs for NMRX. Like nearly all commuter rail systems in the United States, NMRX operational costs increased significantly during the pandemic. Most of these cost increases are due to its operating contractor, Herzog Transit Systems, taking over PTC maintenance. While RMRTD's costs have increased, they are only slightly higher than most of its peer agencies and RMRTD predicts no budget shortfalls between FY25 and FY31. RMRTD has sufficient financial resources to maintain current NMRX service levels and undertake new capital projects.

NMRX operational costs increased by 31 percent in the aftermath of the pandemic. Operational cost per vehicle revenue mile is a commonly used metric in transit operations to assess the relative financial efficiency of transit operations, with a revenue mile referring to one mile of train movement while in service. In 2022, the most recent year of expenditure data in the national transit database, NMRX operations cost $28.2 per revenue mile—a nearly 31 percent increase from RMRTD's cost per

Chart 5. Sources of NMRX FY24 $39.5 Million in Operational Costs



Note: Excludes costs from pass-through projects

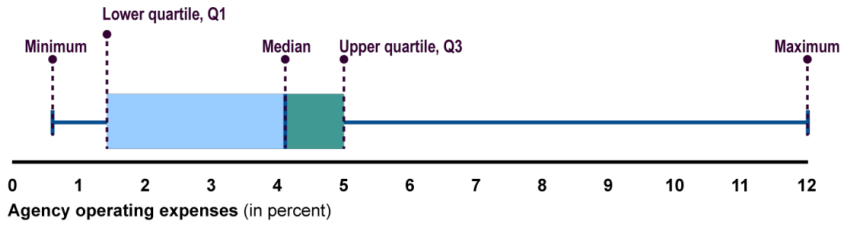
Source: RMRTD

revenue mile of $21.5 in 2019. While RMRTD did have the third-lowest percentage increase in costs among its peer agencies, the relative size of the increase still means that, in 2022, RMRTD had slightly higher costs per revenue mile than its median peer agency.

Most of the increases in NMRX costs are due to PTC maintenance. In 2008, the Federal Railroad Administration required all commuter rail systems operating at or above a certain frequency to implement PTC by December 31, 2020. RMRTD successfully implemented PTC on this deadline at a total cost of approximately $65 million. Before the completion of the project, RMRTD staff predicted PTC maintenance costs would be approximately $3 million annually. Beginning in FY23, Herzog took over PTC maintenance. Payments and projected payments made to Herzog for PTC maintenance for FY23, FY24, and FY25 totaled $13 million, an average annual payment of $4.3 million. In FY24, PTC maintenance payments comprised 11 percent of RMRTD's operating costs, and RMRTD expects these costs to increase by approximately 3 percent annually due to inflation. PTC maintenance payments will undoubtedly restrict RMRTD's ability to use federal and local funds for future capital projects.

RMRTD's PTC maintenance costs are significantly higher than other commuter rail systems. In 2024, the Government Accountability Office (GAO) surveyed commuter rail systems regarding their FY22 PTC maintenance costs. Based on responses, GAO calculated the median annual PTC maintenance cost to be $2.4 million, or 4 percent of operating costs, significantly less than RMRTD's total PTC maintenance costs. While RMRTD did not report PTC maintenance costs separately in 2022, the FY24 figure of 11 percent of total operating costs would put RMRTD's PTC maintenance costs on the very high end of commuter rail systems. While RMRTD was unsure of exactly why its PTC costs were higher, the GAO report suggests that longer track length is associated with relatively higher PTC maintenance costs—RMRTD's relatively small size for its length of track may explain these higher costs.

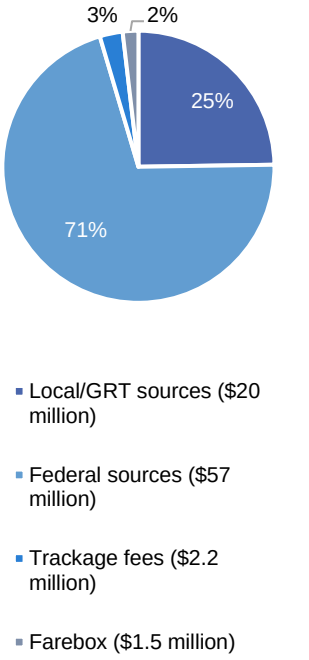
Figure 3. GAO Plot of Commuter Rail PTC Maintenance Costs



Source: GAO

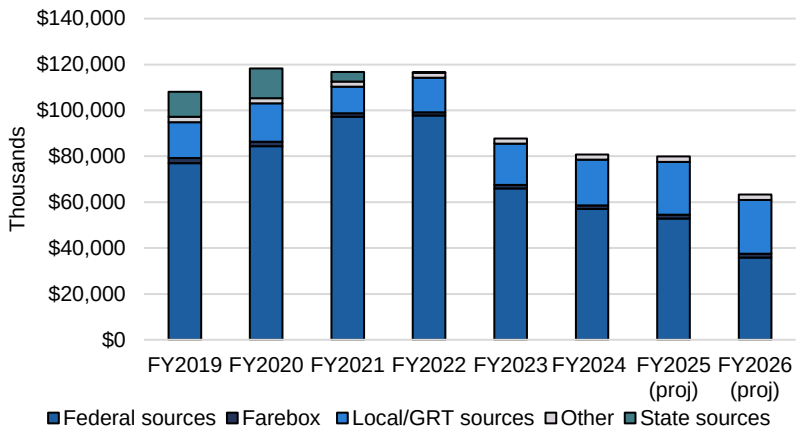
Federal and local gross receipts tax (GRT) revenues still make up the largest portion of NMRX revenues and are expected to remain relatively unchanged. In line with the findings of the 2019 LFC evaluation, NMRX's largest source of revenue has historically been federal transit formula and federal discretionary grant funds. In addition, RMRTD also received one-time pandemic-related federal funding from the Coronavirus Aid, Relief, and Economic Security (CARES) Act and American Rescue Plan Act (ARPA) for NMRX in FY21, FY22, and FY23. Between FY19 and FY24, federal funding comprised an average of 77 percent of NMRX's total revenue. However, federal funding began to decline in FY23 due to the exhaustion of the one-time funding sources (CARES and ARPA), as well as reductions in funding from two federal transit funding formulas, 5307 Urbanized Area and 5337 State of Good Repair. This decline means for FY24, federal transit funding comprised 71 percent of total revenue. NMRX's second largest source of revenue is local GRT, which increased from 14 percent of FY19 revenues to 25 percent of FY24 revenues. Overall declining revenues and RMRTD's projection of increased GRT revenues means GRT will increase to 37 percent of revenues by FY26.

Chart 6. Sources of NMRX FY24 $81 Million Revenue



Note: Excludes revenues from pass-through project and fund balance
Source: RMRTD

Chart 7. Change in Composition of Total NMRX Revenues

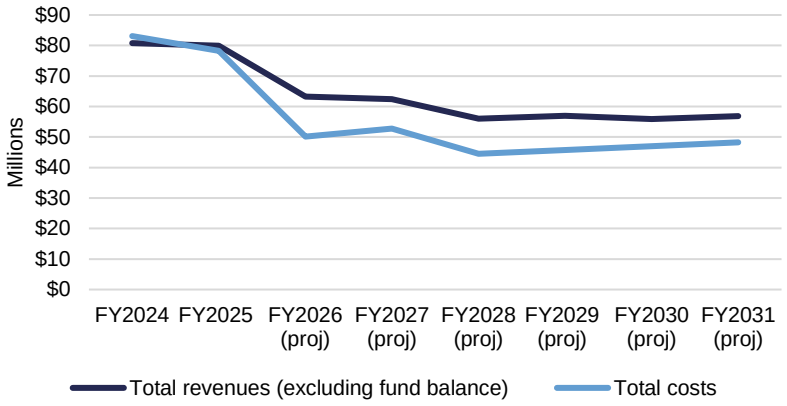


Note: Excludes cash balances. Revenues in legend are sorted bottom to top in bars.
Source: RMRTD budget documents

Despite increased costs, RMRTD predicts no NMRX budget shortfalls through 2031. Due to pandemic-related ridership drops and the end of federal transit aid, many transit agencies are facing significant budgetary shortfalls. While RMRTD relied on withdrawals from NMRX's fund balance to complete capital projects in FY24, the agency is not expecting a comparable budgetary cliff. RMRTD plans to end FY25 with a $1.6 million cash surplus and a $16.7 million total cash balance. After FY25, RMRTD predicts NMRX will continue to run a budget surplus without drawing from reserves through FY31. The size of the surpluses in future years is due to RMRTD not including new capital projects in its financial plan after FY27, which RMRTD staff state is due to many projects still being in the planning phase. RMRTD's cash balance and the agency's strong history of obtaining

federal grants means the agency has and will have sufficient resources to support future capital spending.

Chart 8. NMRX Revenues and Costs Through FY31



Note: RMRTD used cash reserves to cover FY24 deficit.

Source: RMRTD budget documents

RMRTD is prioritizing the construction of a new operations and maintenance facility, limiting its ability to fund core infrastructure improvements.

The 2019 program evaluation recommended RMRTD and NMDOT develop and present a capital plan to the Legislature outlining projects that would improve core NMRX service. In line with this recommendation, RMRTD has finished or is in the process of finalizing three capital projects designed to either reduce train delays or improve train speeds. However, RMRTD is restricting its ability to fund future core service improvements by focusing fundraising and capital spending on completing a two-phase, $58 million rehabilitation and replacement of its operations and maintenance facility.

In line with 2019 program evaluation recommendations, recently completed large capital projects, including implementing centralized train control (CTC) and the Broadway and Alameda sidings, have focused on core service improvement. Between FY19 and FY24, RMRTD programmed $224 million toward capital projects. Aside from PTC, three of the largest projects, the construction of the Alameda and Broadway sidings and the implementation of centralized traffic control (CTC), were intended to improve service along NMRX's route. For example, RMRTD' s $7 million siding project along Alameda, completed in May 2024, will allow NMRX, BNSF freight, and Amtrak passenger trains to pass each other between the Griegos road crossing and the town of Bernalillo. RMRTD also implemented CTC, an improved signaling system, on a portion of track running through Albuquerque—RMRTD estimates this will reduce travel times by five to 10 minutes.

RMRTD is currently prioritizing the construction of a new operations and maintenance facility over other projects that could enhance service. After FY25, RMRTD's only planned capital project is the completion of phases one and two of a new operations and maintenance facility. RMRTD has already secured $23.9 million in federal funding for phase one, which has an estimated total cost of $42.5 million. RMRTD staff predict phase two of the facility will cost an additional $15 million. RMRTD staff have reported they are currently saving their $16.7 million in cash balance as a local match for federal grants or as a funding source for the remaining operation and maintenance facility. RMRTD staff have also reported the current maintenance facility is inadequate, forcing staff to conduct maintenance outside without adequate and secure storage for fuel, coolant, electrical wire, and other maintenance materials.

Figure 4. Examples of NMRX Outdoor Maintenance and Hazardous Fluid Storage

Source: RMRTD documents, LFC site visits

RMRTD's focus on the operation and maintenance facility restricts the agency's ability to fund other potential projects that would improve NMRX service. RMRTD is not fundraising or planning to dedicate cash balance funds toward new projects to improve core NMRX service, such as additional sidings, double track sections, or allowable speed improvements. For example, RMRTD currently has plans to refurbish 4,000 feet of siding in Los Lunas that would reduce delays caused by passing BNSF freight trains—the 2019 program evaluation specifically recommend that RMRTD prioritize completion of projects like the Los Lunas siding to improve NMRX service. However, due to the focus on fundraising for the operations and maintenance facility, RMRTD has not finalized plans and does not have grant funding secured for this project.

Recommendations

Rio Metro Regional Transit District should:

- Reevaluate the scope of the unfunded portions of the operations and maintenance facility to free up agency and financial capability to fund core service improvements.

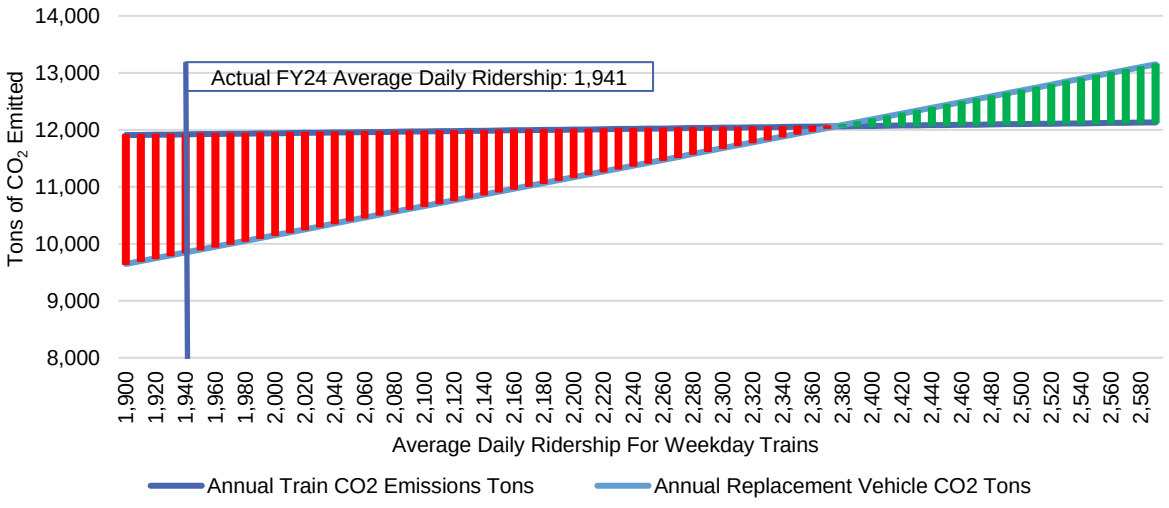
Low Ridership Reduces Potential NMRX Climate Benefits

Transportation activities are responsible for the largest portion of greenhouse gas emissions in the United States, comprising 28 percent of total 2022 emissions (the most recent available data). While gas- and diesel-powered public transportation still produce greenhouse gases like carbon dioxide (CO_2), in theory, public transportation can vastly reduce transportation emissions by eliminating single-passenger car trips. However, the current level of NMRX ridership means that NMRX operations generate more CO_2 than they save. Weekday ridership would need to be 23 percent higher for NMRX operations to reduce emissions to a level equivalent to individual car trips, and that gap will only grow due to increases in vehicle fuel efficiency in New Mexico.

NMRX average daily weekday ridership would have needed to be 23 percent higher in FY24 for NMRX to offset more CO_2 than it generated at current service levels.

On average, in FY24, weekday NMRX trains carried 1,941 passengers across 36 individual train trips. LFC staff estimate that, based on current NMDOT methodology, those trips generated a little over 12,000 tons of CO_2 (both from train trips and from passengers driving to train stations). Had those train trips been replaced by car trips at a rate of 1.2 passengers

Chart 9. Comparison of Tons of CO_2 Emitted by Weekday NMRX Riders and Replacement Car Trips in FY24



Note: Red bars indicate where NMRX generates more tons of CO_2 than replacement vehicle trips, green bars indicate replacement vehicle trips generate more CO_2 than NMRX trips

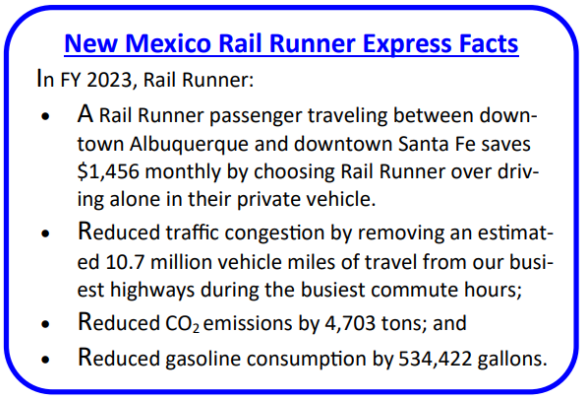
Source: LFC analysis of NMDOT methodology and NMDOT, RMRTD, and NTD data

per car, those trips would have generated 9,900 tons of CO_2. Based on current service levels, average weekday ridership would need to be 23 percent higher, equal to 2,380 passengers, for NMRX to offset any CO_2 emissions. NMRX weekday average ridership has been below this point since FY19. Weekend trips would need to see even larger increases—Saturday ridership would need to be 26 percent higher and Sunday ridership more than a third higher. This CO_2 deficit is a function of both lower ridership and increased service—according to NMDOT stats, RMRTD's expansion of NMRX service in 2022 increased the number of daily NMRX revenue miles by 22 percent.

NMDOT staff have significantly overestimated CO_2 emissions reduced by the Rail Runner. The NMDOT Rail and Transit Bureau publishes an annual legislative factsheet that includes statistics on reductions in emissions, vehicle miles, and gallons of gasoline saved by individuals taking NMRX. As shown by Figure 5, in preparation for the 2024 legislative session NMDOT reported NMRX had reduced CO_2 emissions by a total of 4,703 tons in FY23. However, NMDOT's own calculation sheet reports that in FY23 NMRX CO_2 reductions only amounted to 743 tons. NMDOT staff stated that this misreporting was due to an internal communication error and that they have published an updated fact sheet.

An assumption embedded in NMDOT's calculation method further overinflates NMRX emissions reductions. NMDOT staff assume a fuel economy of 0.67 miles per gallon of diesel fuel for NMRX locomotives when calculating CO_2 emissions reduced by NMRX. NMDOT staff have stated this calculation was based on actual NMRX fuel consumption and estimates of miles traveled, but as of 2024 that calculation was 13-14 years old. LFC staff used more recent actual fuel and mileage data (from 2019-2022) reported by RMRTD to the national transit database to calculate a fuel economy of 0.43 miles per gallon of diesel fuel, a percent reduction from the NMDOT rate. RMRTD staff confirmed that NMRX operations generally consumed between 0.4 and 0.45 gallons of diesel fuel per train mile. Using this assumption of fuel economy, in FY23 NMRX operations

Figure 5. NMDOT 2024 NMRX Legislative Fact Sheet

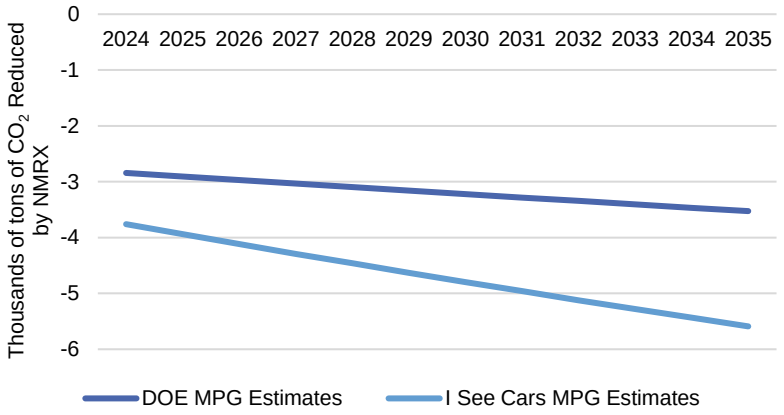


Source: NMDOT

generated 2,700 more tons of CO_2 than would have been generated by replacement vehicle trips.

Increases in passenger vehicle fleet efficiency will further reduce NMRX emissions benefits. Current NMDOT methodology assumes the typical car in New Mexico has a fuel economy of 20 miles per gallon. The most recently available data on fuel economy in New Mexico estimates the average car fuel economy in the state was 19.4 miles per gallon in 2018. More recent national data suggests the average fuel economy has increased by an average of half a percent annually, placing New Mexico's average fuel economy in 2024 at 20.1 miles per gallon. However, a private used car sales portal conducted its own analysis of electric vehicle adoption and fuel economy over the same period and determined that, nationally, fuel economy increased by 7.9 percent, or 1.58 percent annually, between 2018 and 2023. Based on this growth rate, New Mexico's average fuel economy in 2024 could be as high as 21.3 miles per gallon. Based on these two estimates, while NMRX activity already generates several thousand more tons of CO_2 than it reduces, increases in fuel economy for the typical New Mexico vehicle will increase NMRX excess emissions by between 23 and 48 percent absent changes in ridership or the purchase of more efficient locomotives.

Chart 10. Change in NMRX Emissions Due to Changes in Average Fuel Economy in New Mexico



Source: LFC analysis of NMDOT methodology and NMDOT, Department of Energy, and ISeeCars.com data

Infrastructure changes to reduce NMRX emissions are either prohibitively expensive, have significant drawbacks, or both. In addition to improving ridership, RMRTD could reduce NMRX emissions through significant, capital-intensive changes, the largest of which would be system electrification. Electrifying NMRX would eliminate all train-derived CO_2 emissions, with the only CO_2 emissions coming from the power source used to generate electricity for the train. However, electrifying the NMRX system would be extremely expensive. A 2021 analysis of the cost of electrifying the Massachusetts Bay Transit

Authority's (MBTA) commuter rail system suggested an electrification cost per mile of $3.5 million ($3.7 million in 2024 dollars). Using this estimate, electrifying NMRX's 97-mile route would cost at least $360 million.

While alternative fuel- or battery-powered locomotives exist and would reduce train-derived CO2 from NMRX operations, these new locomotives are still in the testing phase and are poorly suited to NMRX's operating environment. Hydrogen-powered commuter rail trains are costly—Caltrans acquired the first round of four hydrogen fuel cell trainsets at a cost of $20 million per trainset—and would require RMRTD to replace entire NMRX trains, rather than swapping locomotives, and install hydrogen infrastructure. At least two commuter rail systems in the U.S. have adopted battery-electric locomotives: the Chicago Transit Authority's Metra and MBTA. However, Metra expects its trains to have a maximum range of 65 miles, less than two-thirds of NMRX's full-service length. Both agency's trains are hybrid battery-electric, meaning they are dependent on partial electrification to supplement and charge battery power—using battery hybrid locomotives would require RMRTD to install at least some charging infrastructure in addition to purchasing an entirely new train fleet. Additionally, both battery- and hydrogen fuel cell-powered locomotives may have insufficient power outputs to climb La Bajada.

Table 6. Comparison of Zero Direct Emission Train Systems

	Full Electrification	Battery-Electric Powered Trains & Partial Electrification	Hydrogen Fuel Cell Trains
Best estimate of train replacement and infrastructure cost	$360 million	$590 million	$580 million++
Additional considerations	Would still generate CO2 from utility power (56.6 percent of NM utility power generation is non-renewable).	Would still generate CO2 from utility power generation; may lack power to climb La Bajada; range limitations would require mid-route charging; currently deployed battery-electric trains have smaller capacity than NMRX trains.	CO2 impacts depend on the source of hydrogen; would require installation of new maintenance and support equipment for hydrogen fuel cell technology; may lack power to climb La Bajada; currently deployed hydrogen fuel cell trains have smaller passenger capacity than NMRX trains.

Note: Support and maintenance cost of hydrogen fuel cell train unknown
Source: LFC analysis of Stadler Rail AG, Governing, Metra, MBTA, and Transit Matters data

Coach buses would significantly reduce emissions, but shifting from train to bus would have significant drawbacks. NMDOT currently operates New Mexico's Park and Ride commuter bus system across the state, with the Purple Line running along NMRX tracks between

Albuquerque and Santa Fe. At current ridership and service levels, coach buses similar to those used by Park and Ride are more CO_2 efficient than NMRX locomotives, as shown by Table 7. However, replacing NMRX service would require the purchase, operations, and support of a significant number of buses—to replicate the current total seating capacity of NMRX rolling stock, plus a reasonable ratio of spare buses, RMRTD would need to acquire 61 coach buses, hire bus operators and mechanics, and build or lease a maintenance and bus storage facility. Assuming a cost of $750 thousand per bus, just purchasing a bus fleet would cost approximately $46 million, with additional capital and annual operating and maintenance expenses adding tens of millions in costs. In 2015, NMDOT estimated that annual operations for a replacement bus service would be close to $15 million, or a little over $20 million in 2024 dollars. NMDOT also noted that replicating NMRX service at all stops would add significant time to bus trips, reducing attractiveness compared to private vehicle trips.

Table 7. Daily CO2 Emissions from in FY24 from NMRX 102x Route and Bus Replacement

	NMRX	Bus
Average FY24 passengers	256.1	256.1
Trains/buses needed	1	5
Total tons of CO2 (bus low mpg estimate)	2.53	1.60
Total tons of CO2 (bus high mpg estimate)	2.53	0.73

Note: Low and high MPG estimates for buses are 3.4 and 7.5 mpg respectively
Source: LFC analysis of NMDOT, MCI, and DOE data

Recommendations

Rio Metro Regional Transit District should:

- Develop pounds of carbon dioxide emitted per rider as a performance metric; and
- Use pounds of carbon dioxide emitted per rider to guide decision making around long-term strategy and train operations.

Appendix A. Progress on Past Recommendations

Finding

Declining Ridership Poses Risks for the Rail Runner's Performance

Recommendation	Status	Comments
As the owner of the Rail Runner, NMDOT should seek approval from the Governor to exercise its current statutory authority under the Regional Transit District Act to enter into a contract with RMRTD to hold a seat on its board of directors.	No Action	NMDOT has stated that it believes the rights, responsibilities, authorities, and roles of each party in the management of NMDOT's railroad assets as described in the Memorandum of Agreement (MOA) are appropriate for managing the relationship of the two entities with respect to NMDOT's railroad assets and that it does not plan on pursuing a seat on the RMRTD board of directors
As part of its short-range plan, RMRTD should adopt performance targets for key Rail Runner efficiency and cost-effectiveness metrics including, but not limited to, farebox recovery ratio, operating cost per hour and per mile, and passenger trips per hour.	No Action	RMRTD has not adopted any performance metrics in any of its short-range plans adopted since the publishing of the 2019 evaluation, although RMRTD have expressed openness toward adopting them.
RMRTD should use performance targets to drive strategies and goals for cost savings and operational efficiency in concert with initiatives to attract ridership.	No Action	RMRTD staff have not adopted any new formal performance metrics for their internal strategic planning or for reporting to their board or the State Transportation Commission.
RMRTD should incorporate transparency and efficiency requirements into its next RFP and contract for a train operator, including the ability to separately track charges not directly related to revenue train operations.	No Action	RMRTD staff have stated that they believe they have negotiated a favorable contract with Herzog Transit Services. The new 2021 contract contains no new provisions related to transparency or efficiency measures.
RMRTD should pursue other mechanisms to lower operating costs in the medium to long term, including the use of ticket vending machines in lieu of onboard sales.	Progressing	RMRTD staff reviewed the cost of ticketed vending machines and report that, given RMRTD's low level of fares, they do not justify themselves on a cost basis.
RMRTD should develop a long-term strategy to increase ridership, with a focus on actions to attract or reattract core commuters.	Complete	In spring 2022 RMRTD staff developed a plan to attract and retain commuting and non-commuting ridership in the aftermath of the pandemic. RMRTD staff implemented this plan in August 2022.

Finding

Core Infrastructure Improvements Can Help the Rail Runner Add Value to the Transportation System

Recommendation	Status	Comments
The Legislature should consider prioritizing the use of state infrastructure and capital outlay funding for the Rail Runner toward costs associated with core infrastructure needs and necessary safety or capacity improvements, rather than development of new stations.	Progressing	The Legislature has appropriated minimal funding for NMRX since 2019. State funding aligned with this recommendation includes $100 thousand for Wi-Fi implementation and $300 thousand for a study on an extension of the Main 2 line. However, the 2020 General Appropriations Act includes $2 million in general support for NMRX with no guidance or restrictions.
RMRTD and NMDOT should place an immediate moratorium on development of any new stations.	Progressing	RMRTD and NMDOT have not placed an official moratorium on the development of new stations, but staff from both agencies have stated that there are no plans to develop new stations.
RMRTD and NMDOT should close or limit service to the Downtown Bernalillo station, consolidating its service at the Sandoval County/US 550 station.	No Action	Service levels at the Downtown Bernalillo station have not changed since 2019.
RMRTD and NMDOT present to the 2019 Legislature a temporary plan for prioritizing core infrastructure improvements, taking into account opportunities to reduce travel times and improve scheduling flexibility, including plans to upgrade to Class 5 track with a maximum speed of 90 miles per hour, improve the Los Lunas and Belen (Chloe) sidings, and identify opportunities for additional sidings or double-tracked segments; and develop and present a thorough plan for the above by October 2019.	Progressing	In 2022 RMRTD developed a double-track study that identified several projects which would reduce delays and allow more frequent NMRX service. In addition, RMRTD has completed several core infrastructure projects, such as CTC implementation and the Alameda siding, since the release of the 2019 program evaluation. However, RMRTD is currently prioritizing the completion of new operations and maintenance facility, limiting their ability to complete new core infrastructure projects. No updated plan exists for improving NMRX track classification.

Finding

The Rail Runner Can Play a Larger Role in Catalyzing Economic Development

Recommendation	Status	Comments
The Legislature should consider amending the Regional Transit District Act to permit RMRTD to participate in transit-oriented development, with appropriate safeguards to mitigate risk to public funds and ensure return on investment.	No Action	The Legislature has not amended the Regional Transit District Act.
RMRTD should as part of its next long-term strategic visioning plan, collaborate with local planning and development agencies within the RMRTD service area to develop and adopt shared guidelines for transit-oriented development that enable the maintenance of local character; and	Progressing	RMRTD has not developed a new long-term strategic visioning plan since the release of the 2019 program evaluation. However, RMRTD staff report that they collaborate with local development agencies and local planning offices on an ad-hoc basis—this support includes actions like letters of support for redevelopment proposals.
RMRTD should partner with the Economic Development Department, local planning and development agencies, and landowners to identify opportunities for employers to locate near Rail Runner stations.	Progressing	RMRTD has not developed a new long-term strategic visioning plan since the release of the 2019 program evaluation. However, RMRTD staff report that they collaborate with local development agencies and local planning offices on an ad-hoc basis—this support includes actions like letters of support for redevelopment proposals.

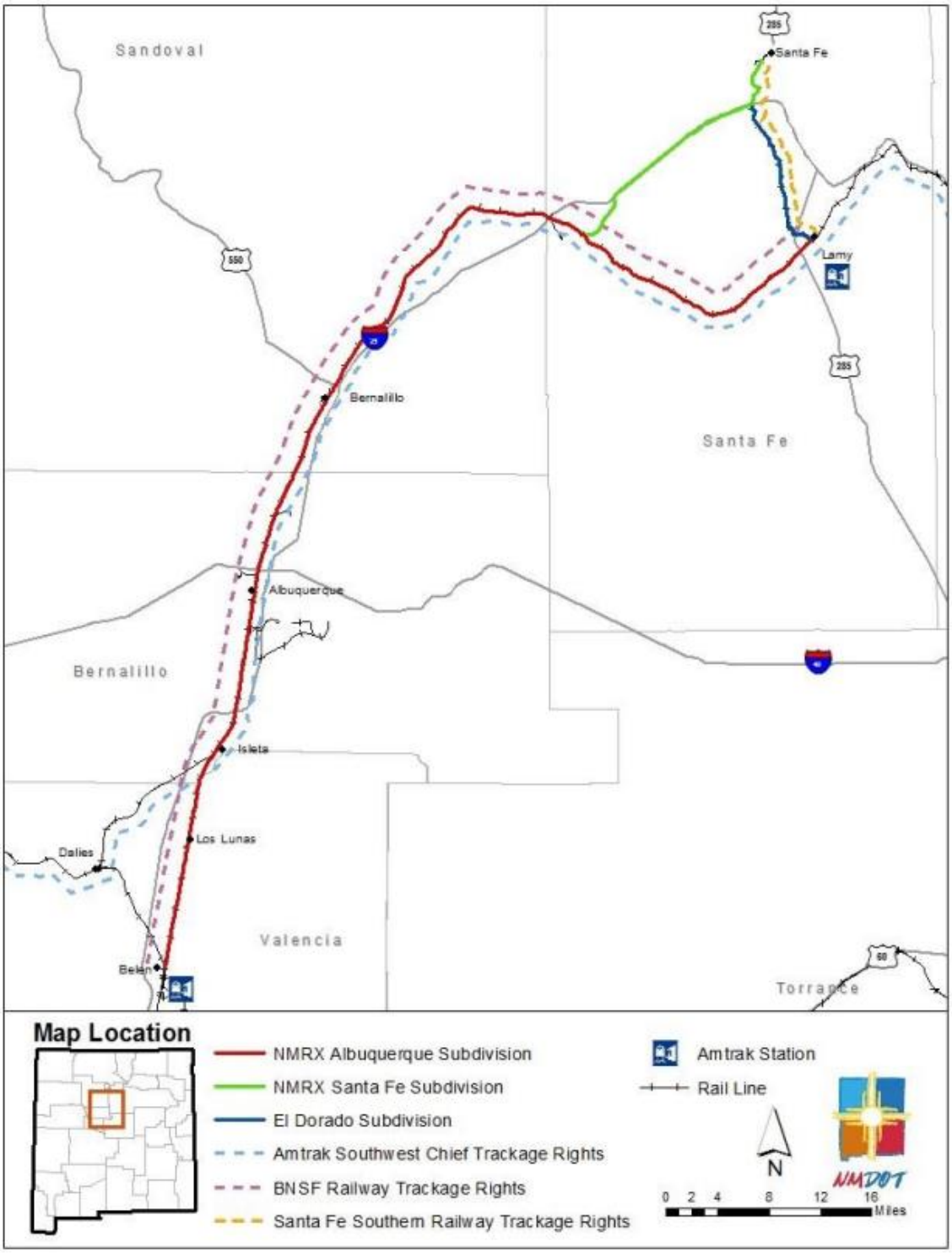
Appendix B: Total NMRX Station Activity by Station in 2023

Station	Total Station Activity
Santa Fe Depot	247,506
South Capitol	121,358
Zia	54,268
SF County/NM 599	51,768
Kewa	31,404
Sandoval/US 550	119,906
Dtwn. Bernalillo	11,383
Sandia Pueblo	20,501
Los Ranchos	119,304
Montano	80,157
Downtown ABQ	197,439
Bern. County	13,020
Isleta Pueblo	15,127
Los Lunas	43,079
Belen	46,398

Note: Total station activity refers to train boardings and train exits at a particular station.

Source: RMRTD data

Appendix C. NMDOT Track Map



Note: Santa Fe Southern Railway operates the Sky Train

Source: NMDOT 2014 State Rail Plan