

MEASURE RR BOND
OVERSIGHT COMMITTEE
ANNUAL REPORT

JUNE 2024



Dear Bay Area residents:

Welcome to the Bond Oversight Committee's (BOC) seventh annual report on the Measure RR rebuilding program.

My fellow committee members and I appreciate your interest in BART's ongoing efforts to improve the rider experience by rebuilding the system's core infrastructure. BART's campaign to regain riders is directly tied to the ways rebuilding work improves safety and reliability. It's the job of the BOC to ensure that work is being done in a cost-effective manner consistent with what was promised to voters.

This report puts the interests of riders first by highlighting RR's impact on the reliability of BART service and safety. This year's report examines how track replacement work funded by RR may have mitigated the damage and injuries caused by a derailment; how BART is incorporating fire protection engineering in construction projects; and provides updates on how equipment-related delays have been reduced by replacing decades-old track components.

Measure RR was approved in November 2016 by more than two-thirds of voters in the three Bay Area counties that comprise the BART District (Alameda, Contra Costa, and San Francisco). Measure RR raises \$3.5 billion to replace essential trackway components that in some cases are more than 50 years old. The BOC receives regular updates from staff on the progress of RR-funded projects and can request additional documents or information on an ad hoc basis. We appreciate the efforts of BART staff to be responsive to committee requests for additional details about rebuilding projects and their diligent work to address committee questions.

We hope you'll find this report useful and informative. We want to hear from you and welcome you to share your thoughts and opinions. The BOC holds quarterly public meetings. You can participate in person or via videoconference. Learn more about upcoming meetings at the BOC's website: www.bart.gov/bondoversight.

Sincerely,

Michael R. McGill
 RR Bond Oversight Committee Chairperson
 Professional Engineer, Institute of Electrical and Electronic Engineers (IEEE)

OTHER COMMITTEE MEMBERS

Full biographies and photographs at www.bart.gov/bondoversight

- CINDY ROSENTHAL**, Committee Vice Chairperson, League of Women Voters of the Bay Area
- JANEY WANG**, Association of Budgeting and Financial Management
- VINIT SHRAWAGI**, American Institute of Certified Public Accountants
- SUZANNE LOOSEN**, League of Women Voters of the Bay Area
- SONJA STEWART**, Project Management Institute

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The BART system includes 50 stations and 131 route miles of track. This current system map identifies all service lines and can provide greater context for understanding the location of Measure RR rebuilding projects and how they affect the larger system.



EXECUTIVE SUMMARY

The Measure RR rebuilding program has reached a significant milestone now that more than half of the planned work has been completed. The program, which is expected to have a 20-year life span, is now entering its eighth year and already 58% of all anticipated work is complete. That work is significantly improving the rider experience on BART.

As Measure RR work has moved forward, the Bond Oversight Committee (BOC) has fulfilled its responsibility to independently evaluate the program. The committee's oversight places an emphasis on the cost effectiveness, quality, and timeliness of work completion.

Through March 2024, \$1.81 billion of Measure RR funds have been invested in rebuilding projects. There are now 157 projects in planning, design, or construction, or have been completed. A total of 61 projects are complete, including 13 projects that have been completed since the BOC issued its last annual report in 2023. Measure RR money spent, and work completed to this point, have exceeded initial expectations. See page 27 for a yearly breakdown of program expenditures.

The BOC reviews projects and data presented by BART staff in quarterly briefings. The BOC can request additional documents, information, and presentations on an ad hoc basis. Based on its review, the BOC believes BART is delivering projects in a timely manner and that the work is improving the reliability and safety of the system. This is consistent with the promises BART made to the public in 2016 when District voters approved Measure RR. The BOC also believes BART is following industry best practices as it pursues this rebuilding work.

Significant accomplishments in the last year include:

- 400 fewer trains delayed as a result of rail replacement work.
- Replacement of a key portion of trackway between Rockridge and Orinda stations.
- Completion of construction for Oakland Yard tracks.
- Installation of Civic Center Station scissor stairs.

The BOC is continuing to monitor several challenges to the Measure RR program, including macroeconomic forces that are beyond the control of BART. Concerns about the stability of global supply chains remain. This has already resulted in delaying the arrival of needed materials. Inflation has driven up construction costs. Market conditions have also resulted in a limited pool of bidders for some projects. BART staff is addressing these concerns and continues to update the BOC on the actions BART is taking and how those actions are affecting Measure RR-funded work.

As Measure RR work has advanced, BART ridership has lingered well below pre-pandemic levels and remains closely tied to the Bay Area's work-from-home rates, which remain among the highest in the country. BART's typical weekday ridership has been about 45% of pre-pandemic levels, while weekend ridership has reached approximately 70% of what it was in 2019.

The BOC will continue to review the progress of Measure RR and will issue annual reports throughout the duration of the program.



ABOUT THE BOND OVERSIGHT COMMITTEE

The Bond Oversight Committee is comprised of seven members (one of the positions is vacant as of the writing of this report) who represent a diversity of expertise, geography, and demographic characteristics. All members of the BOC are unpaid volunteers.

The BOC is responsible for providing diligent and public oversight of the expenditure of funds from bond sales associated with Measure RR. The BOC assesses whether projects funded by the Measure RR bond proceeds are completed in a timely, cost-effective, and high-quality manner consistent with the best interests of BART riders and District residents. The BOC publishes its findings in its annual report. This document is the seventh annual report from the BOC.

Organizations represented on the BOC include:

- The American Society of Civil Engineers, or its successor organization, is represented by one member who has expertise in civil engineering management and oversight.
- The Institute of Electrical and Electronic Engineers, or its successor organization, is represented by one member who has expertise in electrical engineering management and oversight.
- The American Institute of Certified Public Accountants, or its successor organization, is represented by one member who has expertise in audit or financial oversight.
- The Association for Budgeting & Financial Management section of the American Society for Public Administration, or its successor organization, is represented by one member who has expertise in municipal finance.
- The Project Management Institute, or its successor organization, is represented by one member who has expertise in project management.
- The League of Women Voters, Bay Area, or its successor organization or chapter, is represented by two members who bring expertise in government accountability and transparency.

Members serve two-year terms and are eligible to serve up to a total of six years. Members of the BOC are appointed by the BART Board of Directors. You can find the full text of the duties and responsibilities of the BOC in Section 11 of the resolution that established the committee. It's available at www.bart.gov/bondoversight.



Michael R. McGill
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THE STORY OF MEASURE RR

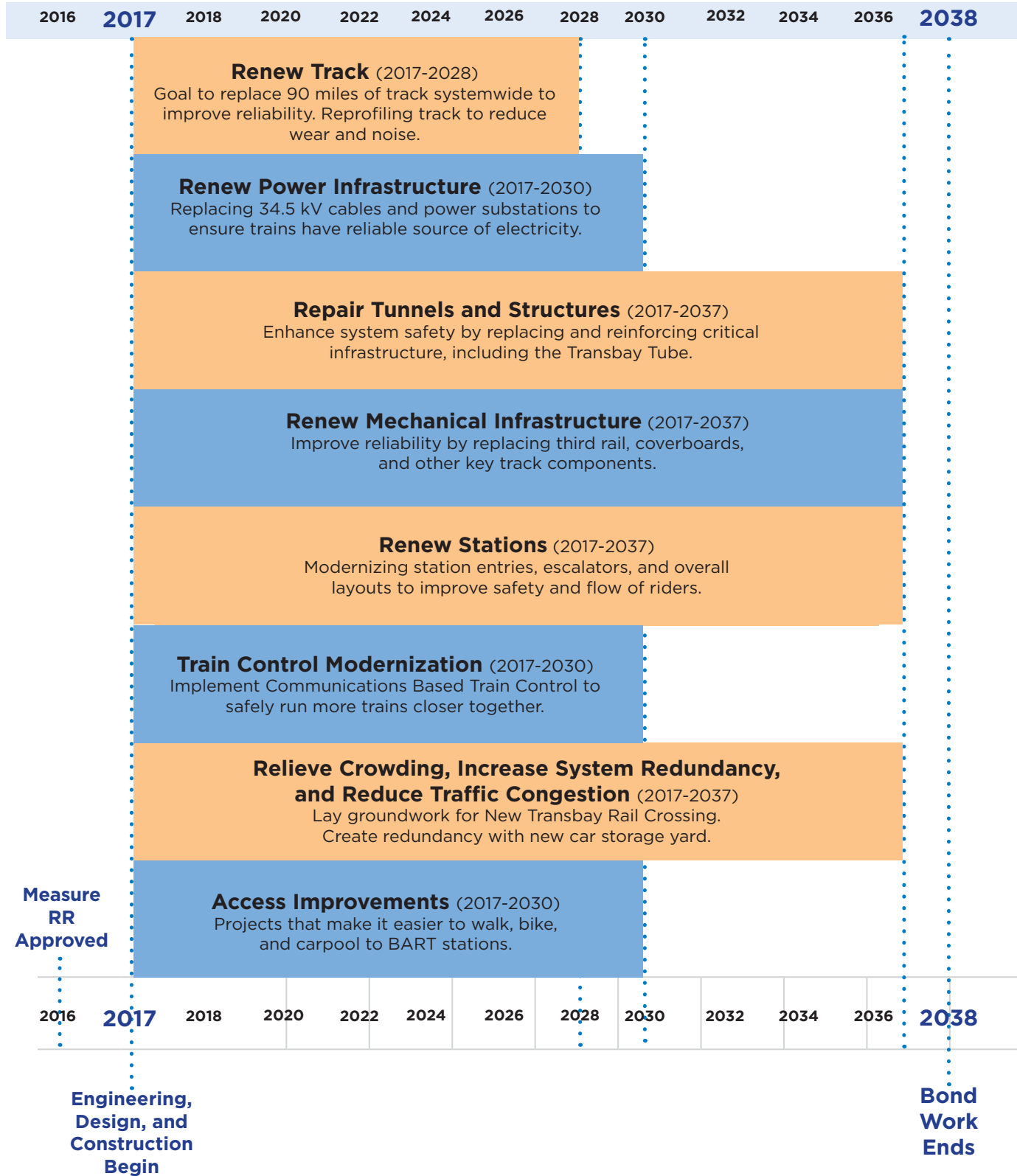
The final resolution that went before voters in November 2016 to authorize Measure RR was the product of extensive public outreach to various stakeholders across the BART District. BART staff began engaging with the public two years before Measure RR appeared on the ballot. BART's Office of External Affairs organized more than 200 meetings with community groups, business organizations, transit advocates, and elected officials in the lead up to the vote. BART has continued to engage with these stakeholders as well as others throughout the implementation of the Measure RR program.

The stakeholder organizations below had a leading role in helping BART put together Measure RR.

Organization	Stakeholder Demographics
Self Help for the Elderly	Serves more than 40,000 older adults annually. More than 90% of clients low income and from minority communities.
Bike East Bay	Works to ensure transportation planning is done in a way to redress the effects of systemic and institutional racism.
East Bay Leadership Council	Committed to preserving natural space and investing in transit that cuts commute times and greenhouse gas emissions.
Genesis	Membership includes 16 institutions representing the spectrum of geography, race, economic class, and abilities.
United Seniors of Oakland and Alameda County	Grassroots organization dedicated to mobilizing and enabling seniors to address quality of life issues.
Metropolitan Transportation Commission	MTC provides planning, funding, and coordination to cities, transit, and other partners.
SF Bicycle Coalition	Promoting the bicycle for everyday transportation in San Francisco for more than 50 years.
TransForm	Promotes walkable communities with excellent transportation choices to connect people of all incomes with opportunities.
Sierra Club	Coordinates with partner organizations and non-profits to advocate for environmental and social justice issues.
League of Women Voters of the Bay Area	A nonpartisan, grassroots organization promoting civic engagement, government accountability and transparency, and working to protect and expand voting rights.
Bay Area Council	Members include more than 330 of the region's largest employers. Committed to keeping the Bay Area inclusive, economically competitive, and sustainable.

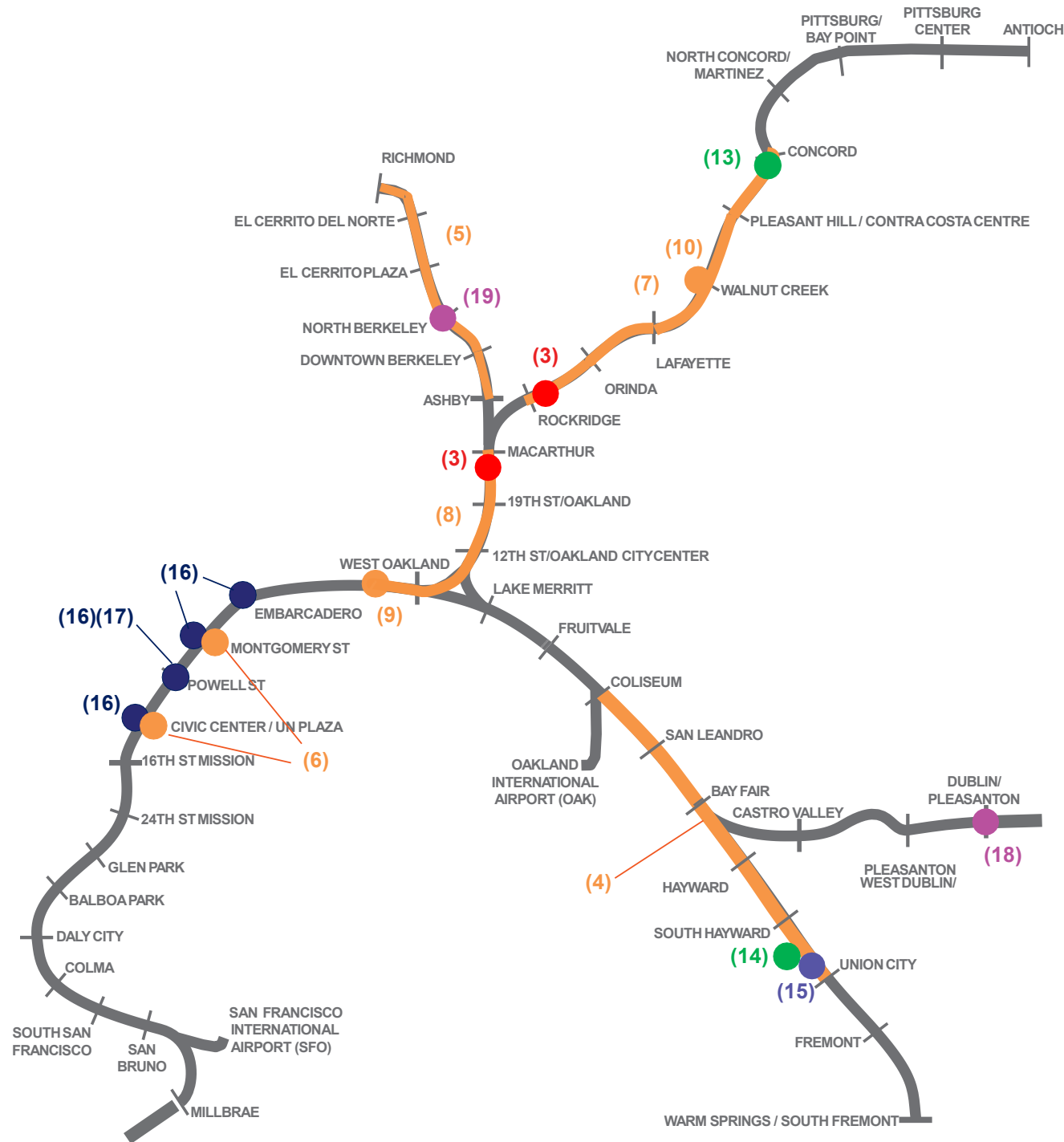
THE LIFE SPAN OF MEASURE RR

Measure RR work is organized into these eight major project areas.



MAJOR PROJECTS – PROJECT PROGRESS

Ongoing Construction



Renew Track

- 1 Frog Capital Maintenance (Systemwide Not Mapped) - Ongoing Construction
- 2 Rail Relay (Systemwide Not Mapped) - Ongoing Construction
- 3 K-Line Interlocking Replacement - Ongoing Construction

Renew Power Infrastructure

- 4 A-Line 34.5kV Cable Replacement - Ongoing Construction
- 5 R-Line 34.5kV Cable Replacement - Ongoing Construction
- 6 Substation for Core Capacity - Ongoing Construction
- 7 C-Line 34.5kV Cable Replacement - Ongoing Construction
- 8 K-Line 34.5kV Cable Replacement (MacArthur to Transbay Tube East) - Ongoing Construction
- 9 Substation at Transbay Tube East - Ongoing Construction
- 10 Substation at Walnut Creek - Ongoing Construction

Renew Tunnel & Structures

- 11 Water Intrusion at Train Control Rooms (Systemwide Not Mapped) - Ongoing Construction
- 12 Seal and Secure Substation Roofs (Systemwide Not Mapped) - Ongoing Construction

Renew Mechanical

- 13 Turntable Replacement Concord Yard (OCY) - Ongoing Construction
- 14 Fire Services Yards - Hayward Yard (OHY) - Ongoing Construction

Design and Engineer Future Projects to Relieve Crowding, Increase System Redundancy, and Reduce Traffic Congestion

- 15 Hayward Maintenance Complex (HMC) Phase 2: Civil & Grading - Ongoing Construction

Renew Stations

- 16 Market Street Canopies and Escalator (M16, M20, M30, M40) - Ongoing Construction
- 17 Powell Street Station Modernization - Ongoing Construction

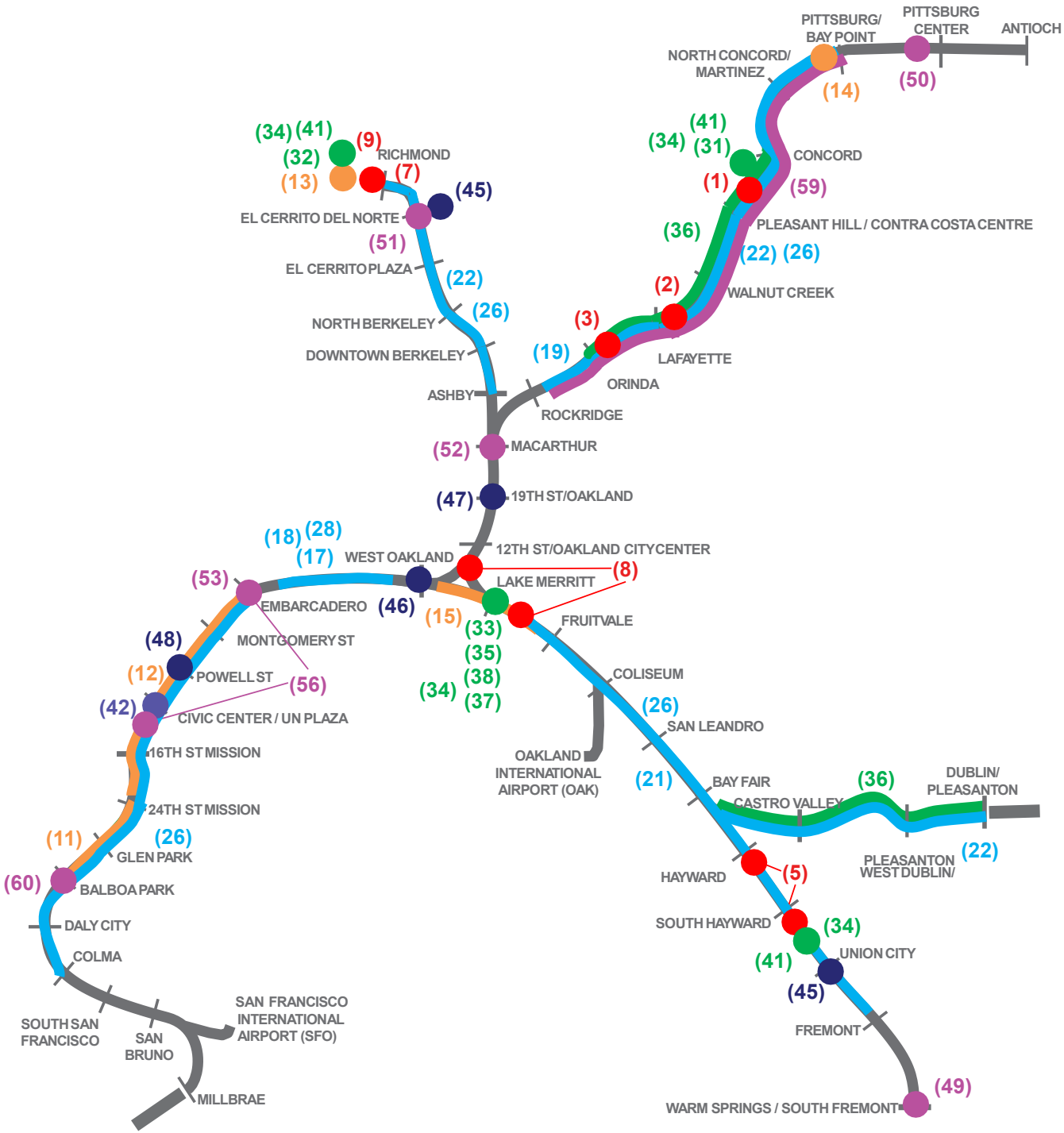
Expand Safe Access

- 18 Dublin Iron Horse Trail Bridge (SR2B) - Ongoing Construction
- 19 North Berkeley Access Improvements - Ongoing Construction

Replace Train Control/Increase Capacity

- 20 Enabling Works (Systemwide Not Mapped) - Ongoing Construction

MAJOR PROJECTS – PROJECT PROGRESS



Completed Construction

Renew Track

- 1 C55 Interlocking Replacement near Concord Station
- 2 C35 Interlocking Replacement near Lafayette Station
- 3 C25 Interlocking Replacement near Orinda Station
- 4 Restraining Rail (Systemwide Not Mapped)
- 5 A65/A75 Interlocking Replacement near Hayward and South Hayward Stations
- 6 Friction Modification Study (Systemwide Not Mapped)
- 7 R65 Interlocking Replacement near Richmond Station
- 8 A15 Interlocking Replacement near 12th Street Station / M03 Interlocking Replacement near Lake Merritt Station
- 9 System Joint Elimination Richmond Yard
- 10 Rail Re-Profiling Services (Systemwide Not Mapped)

Renew Power Infrastructure

- 11 Traction Power Cable Replacement: M-Line Balboa Park Substation (MBP) to 24th St. Substation (MTF)
- 12 Traction Power Cable Replacement: M-Line Bay-tube West Substation (MTW) to Balboa Park Substation (MBP)
- 13 Substation Replacement: Richmond Yard (ORY)
- 14 Concord Willow Pass (CWS) High Voltage Transformer Replacement near Pittsburg/ Bay Point Station
- 15 K-Line Cable Replacement Washington St. Substation (KWS) to Nineteenth Ave. Substation (ANA)
- 16 Third Rail Replacement Phase 3 (Systemwide Not Mapped)

Renew Tunnel & Structures

- 17 Replacement of Transbay Tube Emergency Doors Phase 1
- 18 Replacement of Transbay Tube Emergency Doors Phase 2
- 19 Berkeley Hills Tunnel Creep
- 20 Safety Barriers Phase 3 (Systemwide Not Mapped)
- 21 A-Line Operability Feasibility Study
- 22 Renew Sound Walls of Guideways (C-Line, R-Line, L-Line)
- 23 Platform Edge Structural Rehabilitation (Systemwide Not Mapped)
- 24 Substation Walls (Painting & Repair) (Systemwide Not Mapped)
- 25 Water Intrusion in Escalator and Elevator Machine Rooms (Systemwide Not Mapped)
- 26 Aerial Fall Protection (A-Line, C-Line, M-Line, R-Line)
- 27 Rehabilitation of Expansion Joints (Systemwide Not Mapped)
- 28 Transbay Tube Retrofit #1 (Underwater)

Renew Mechanical

- 29 Corrosion Assessment of Metallic Gas Lines (Concord Yard (OCY), Hayward Yard (OHY), Oakland Shop (OKS), Richmond Yard (ORY))
- 30 Fire Hoses and Piping (Systemwide Not Mapped)
- 31 Fire Services Yards – Concord Yard
- 32 Fire Services Yards – Richmond Yard
- 33 Fire Services Yards – Oakland Shops
- 34 Access Ladders (OCY, OHY, ORY, OKS)
- 35 Vacuum System (Non-Revenue Vehicle Shop, OKS)
- 36 Coverboard Enhancement – Phase 4 (C-Line and L-Line)
- 37 Computer Room Fire Protection Initial Planning (LMA)
- 38 Replace Fire Suppression System at Lake Merritt Administrative Building (LMA)
- 39 Facilities HVAC Equipment Replacement - Phase 1 and 2 (Systemwide Not Mapped)
- 40 Replace Antiquated Backflow Preventers (Systemwide Not Mapped)
- 41 Rotoclones (Wet Dust Collectors) Replacement at Shops (OHY, OCY, ORY)

Design and Engineer Future Projects to Relieve Crowding, Increase System Redundancy, and Reduce Traffic Congestion

- 42 Civic Center Scissor Stairs
- 43 Platform Doors Feasibility Study (Systemwide Not Mapped)

Renew Stations

- 44 Union City Intermodal Station Phase 2A
- 45 El Cerrito Del Norte Station Modernization
- 46 West Oakland Station Modernization Plan
- 47 19th St Station Modernization Construction
- 48 Powell Street - Gateway Station

Expand Safe Access

- 49 Warm Spring Pedestrian Bridge West
- 50 eBART Additional Parking Lot
- 51 El Cerrito Del Norte Gateway
- 52 MacArthur Transit Improvements
- 53 Embarcadero Station Entrance Gates
- 54 ADA Lighting Improvements (Systemwide Not Mapped)
- 55 Fare Evasion Barriers and Control (Systemwide Not Mapped)
- 56 Embarcadero Civic Center Bike Modernization
- 57 Wayfinding Improvements Phase 2 (Systemwide Not Mapped)
- 58 Last Mile Investments (Systemwide Not Mapped)
- 59 Outer C-Line Access Study
- 60 Balboa Park Station East Side Improvement and Plaza

REDUCING SERVICE DELAYS

Several recently completed projects have improved the rider experience on BART by reducing service delays. Improving the reliability of BART is one of the most important benefits of the Measure RR rebuilding program. When BART District voters approved Measure RR in 2016, they sent a clear message that they expected BART's performance to improve as the agency replaced its aging infrastructure.

The most dramatic reduction in delays came when BART crews completed a key portion of the rail relay project, which is the replacement of aging rail that has in many cases outlived its design life. The number of trains delayed due to old rail fell by more than 400 instances compared with before the work was complete.

Here are additional examples of how rebuilding work has resulted in fewer delays for riders:

- Replacing coverboards on the Blue and Yellow lines reduced coverboard-related delays by 48 from 2022 to 2023.
- Replacing an important section of trackway between Orinda and Lafayette stations resulted in 18 fewer service delays.
- Work in the Renew Mechanical project category reduced the number of train delays attributed to mechanical issues by 45 trains from 2022 to 2023.

You can read more about all eight of Measure RR's project categories in the Major Project Categories section of this report starting on page 17.

PREVENTING A DERAILMENT FROM BECOMING A DISASTER

On the morning of January 1, 2024 an eight-car Antioch-bound BART train partially derailed on the Yellow Line in Contra Costa County between Orinda and Lafayette stations. Two cars derailed. Though there were no major injuries, nine people were taken to area hospitals for evaluation. There was also significant damage to the trackway. Despite what happened, the incident could have been far worse if not for rebuilding work supported by Measure RR.

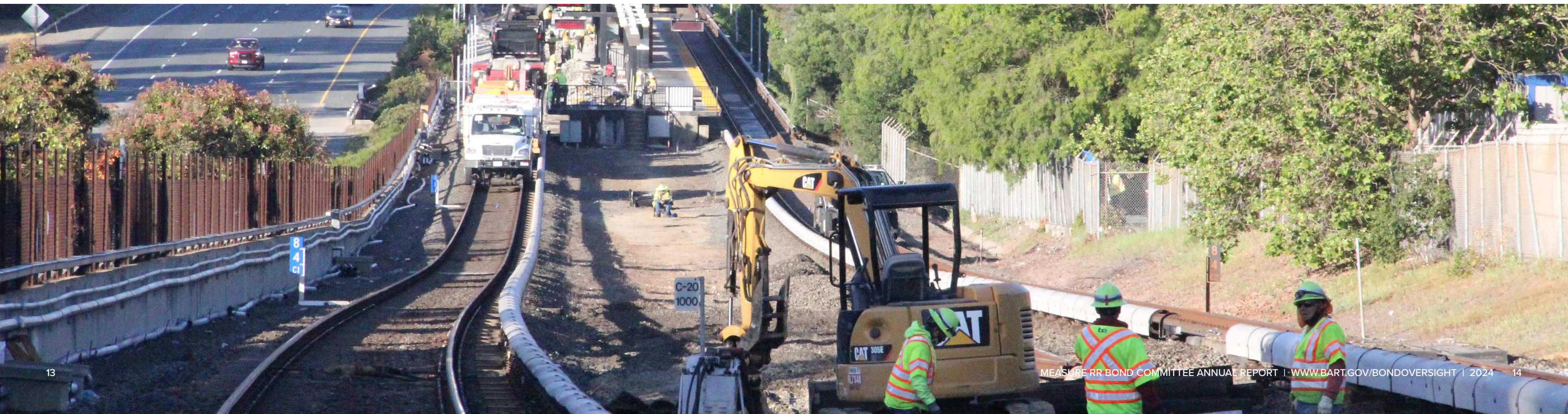
The stretch of track where the partial derailment occurred had been replaced only three years ago by work funded by RR. The new trackway components were far more resilient against an incident such as this compared with the decades-old equipment that was replaced. BART officials say it's likely the trackway would've been destroyed if the old infrastructure had still been in place. That would have also raised the possibility of more serious injuries for riders aboard the incident train.

The new trackway equipment not only potentially saved lives, but it also helped BART to avoid lingering and massive delays to service on the busiest line in the system. BART crews worked around the clock after the incident to make repairs. Because of their efforts, service on the Yellow Line was restored in time for the morning commute the next day.

When voters approved Measure RR in 2016, they were told that rebuilding the backbone of BART would lead to a more reliable system that would better serve the needs of the Bay Area. But in addition to that, RR investments are already making a difference when it comes to rider safety.

BART has been working with the California Public Utilities Commission on the investigation into the partial derailment. The case is still under investigation.

Previous work on the Yellow Line funded by Measure RR helped limit the damage from the January 2024 derailment between Orinda and Lafayette stations.



FIRE SAFETY GETS A BOOST

The safety improvements being realized through the Measure RR rebuilding program extend to making the system more resilient against fire. BART's Fire Life Safety (FLS) Program has established itself as a leader in public transit. In 2023 the program was awarded the highest honor for rail safety, the 2023 American Public Transportation Association (APTA) Rail Safety Gold Award. The award recognizes transportation providers for "their innovative and proactive safety and security programs" that "help to build the industry by benchmarking successful initiatives so other systems can implement and fine tune their programs."

Measure RR dollars are helping to mitigate potential fire hazards. Replacing 34.5 kV (kilovolt) cabling as well as aging substations offers a huge relief in terms of fire concerns since electricity is a major consideration in fire management. Funding has also been used to replace fire services infrastructure in BART's various operations yards. Construction of upgraded fire services at the Hayward Yard is set to be completed in 2024.

But BART's commitment to fire safety goes beyond the infrastructure. The Fire Life Safety Program reviews construction projects both small and large from beginning to end with fire protection engineering being a focus. The program participates in safety certification for larger projects under oversight from the California Public Utilities Commission. For smaller projects, the FLS program partners with BART's System Safety Department and the Office of Infrastructure Delivery to track those projects in regularly held workshops. Materials to be used are reviewed by local fire agencies. All of this helps to reduce costs and delays to projects as potential issues are resolved early in the design process.



Regular fire drills in the system and on trains are an essential part of BART's Fire Safety Program.

RENEW TRACK

Projects in this category focus on the backbone of BART service, specifically the 131 miles of rail that extend across the system. Work in this category includes replacing aging rail that has outlived its design life as well as rail grinding to reduce the noise level of the BART screech.

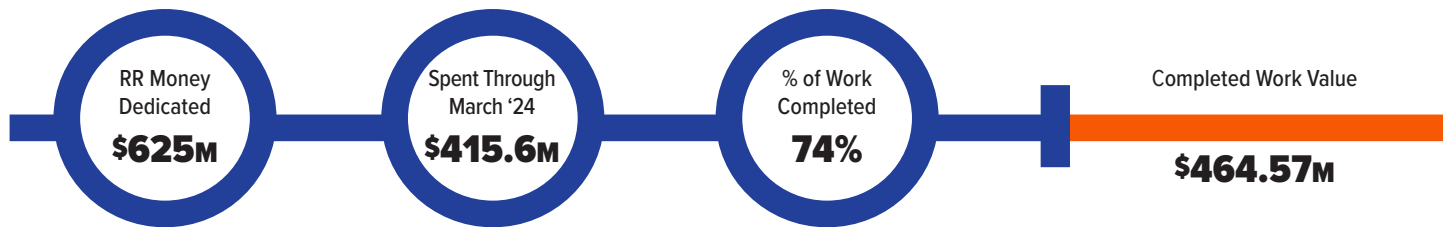
BART's efforts in the Renew Track category are improving the rider experience by enhancing the system's reliability. The number of trains delayed by worn-out rails has dropped by 400 thanks to this work.

To date, 20 projects have been launched in the Renew Track category. Eleven projects have been completed. Recent accomplishments include:

- 5.59 miles of linear rail replaced in 2023. 53 miles replaced to date by Measure RR.
- Completion of Oakland Yard tracks.
- Replacement of an interlocking near South Hayward Station (interlockings help trains transition safely from line to line).

BART has also replaced 56 track switches. Track switches are the main components of interlockings.

The graphic below shows the amount of Measure RR money dedicated to this project category, the amount of that money that has been spent through March 2024, the percentage of planned work that's been completed through March 2024, and the value of the work completed so far. The value of work completed is the dollar value associated with the original estimate of labor and materials needed to complete the work. To learn more about how BART measures this value please go to Measuring Cost Effectiveness on page 28.



RENEW POWER INFRASTRUCTURE

The Renew Power Infrastructure category focuses on replacing traction power cables and the installation of new electric substations. New 34.5 kV (kilovolt) traction power cables help to ensure BART trains have a reliable source of electricity. Much of the cable being replaced is decades old and has outlived its design life. Replacing old substations and adding new ones will eventually help BART run more trains.

To date, 34 projects have been launched in the Renew Power Infrastructure category. Six of those projects have been completed.

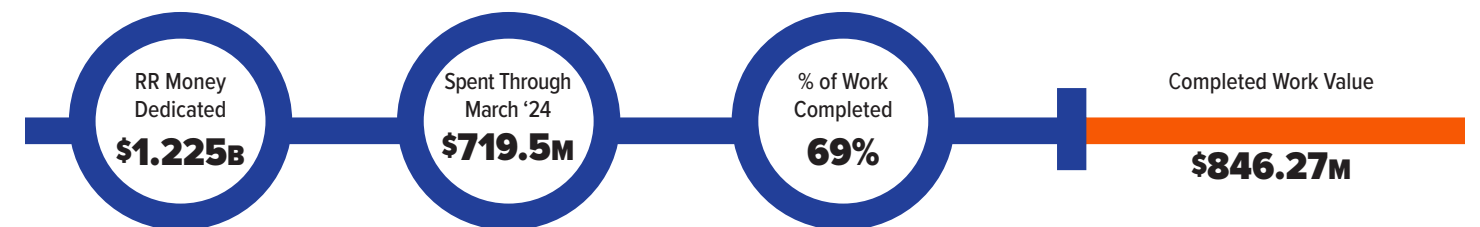
Recent accomplishments include:

- Replacement of 10.2 miles of traction power cables in 2023. 61 miles of cable installed since the start of Measure RR.
- Completion of the Willow Pass Road High-Voltage Transformer Replacement Project near Pittsburg/Bay Point Station.



Workers this year are on track to complete cable replacement on the Red Line in Contra Costa County ahead of schedule. This has been a priority project since aging cables on the Red Line failed in 2022. That cable failure led to major service delays. Initially, it was expected the Red Line work could take up to three years to complete.

The graphic below shows the amount of Measure RR money dedicated to this project category, the amount of that money that has been spent through March 2024, the percentage of planned work that's been completed through March 2024, and the value of the work completed so far. The value of work completed is the dollar value associated with the original estimate of labor and materials needed to complete the work. To learn more about how BART measures this value please go to Measuring Cost Effectiveness on page 28.



REPAIR TUNNELS AND STRUCTURES

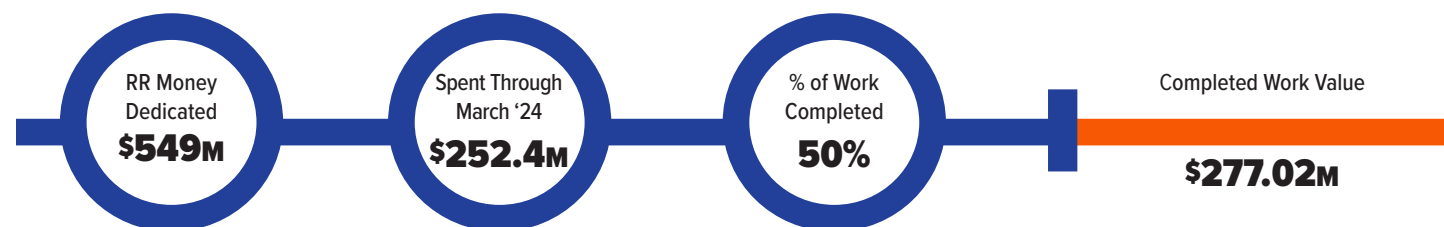
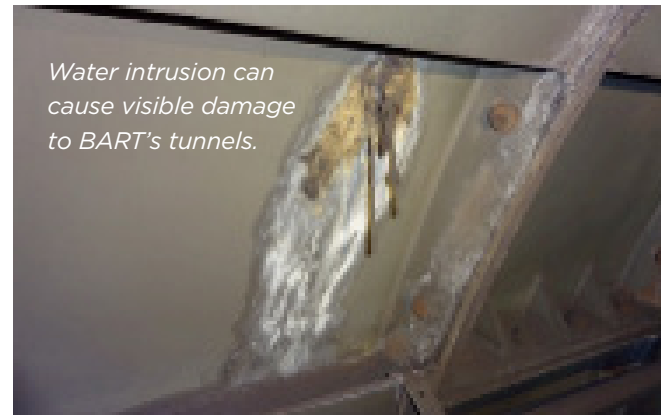
The Repair Tunnels and Structures category includes work to ensure BART tunnels can safely withstand a large seismic event. A landmark project already completed in this category was the retrofit of the Transbay Tube. Work in this category also improves critical safety structures such as aerial walkways and slopes that help stabilize the track.

To date, 26 projects in this category have been launched. Twelve of those projects are now complete. Recent accomplishments include:

- Construction started to renew catwalks along aerial trackways.
- Work underway on slope stabilization along portions of the Blue Line in Alameda County.

Slope stabilization work helps ensure BART tracks are not vulnerable to mudslides. The work focuses on repairing eroding slopes and damaged abutment joints below bridges.

The graphic below shows the amount of Measure RR money dedicated to this project category, the amount of that money that has been spent through March 2024, the percentage of planned work that's been completed through March 2024, and the value of the work completed so far. The value of work completed is the dollar value associated with the original estimate of labor and materials needed to complete the work. To learn more about how BART measures this value please go to Measuring Cost Effectiveness on page 28.



RENEW MECHANICAL INFRASTRUCTURE

Work in the Renew Mechanical Infrastructure category focuses on components of the BART system that go beyond the basics of rail and power cables. An example of completed work in this category is the Coverboard Enhancement Project, which replaced the curved boards that are placed over the electrified third rail for safety and to protect train cars from damage.

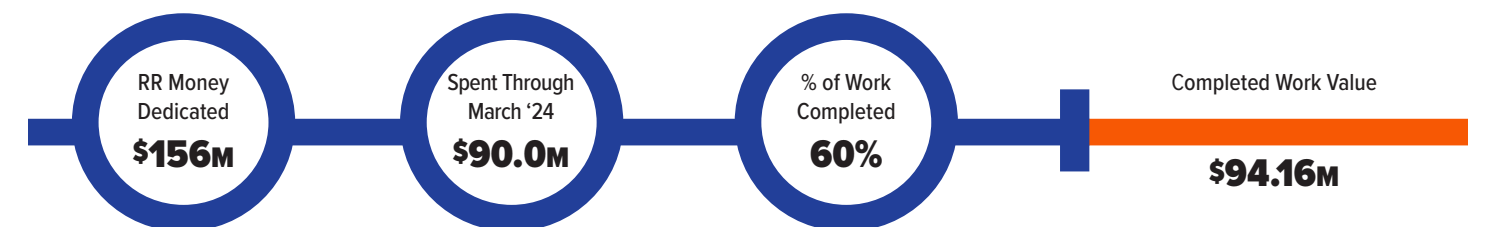
Ongoing work in this category is making BART more fire safe. This includes installing new fire hoses and piping at BART train yards. Additional projects in this category focus on core needs such as replacing heating, ventilation, and air conditioning (HVAC) units.

To date, 26 projects in this category have been launched. Thirteen of those projects are now complete. Recent accomplishments include:

- Work completed on backflow preventers (these devices ensure water can flow in only one direction).
- Design work finished for sewage pumps replacement.

Work is advancing on installing wheel-truing facilities. Truing machines allow BART to better address train car wheel flats. Metal wheels can develop flats when they skid on the rail. This is another example of how Measure RR work benefits riders by reducing the time it takes to get train cars with damaged wheels back into service.

The graphic below shows the amount of Measure RR money dedicated to this project category, the amount of that money that has been spent through March 2024, the percentage of planned work that's been completed through March 2024, and the value of the work completed so far. The value of work completed is the dollar value associated with the original estimate of labor and materials needed to complete the work. To learn more about how BART measures this value please go to Measuring Cost Effectiveness on page 28.



RENEW STATIONS

Many of the most visible changes to BART resulting from Measure RR are happening in the Renew Stations category. This category includes work that improves the functionality, safety, and appearance of stations. Much of the recent work in this category has been focused on stations in downtown San Francisco, which are the busiest in the entire system. Installing new, more reliable escalators accompanied by canopies to protect them from the elements is among the projects underway that are improving the rider experience.

To date, eight projects have been launched in this category. Five of those have reached completion. Recent accomplishments include:

- Entrance canopies completed at seven entrances to downtown San Francisco stations.
- Construction completed on platform lighting at Powell Street Station.
- Installation of four new escalators in downtown San Francisco stations.

More escalators and canopies are on the way. The Market Street Escalators Renovation Project is installing or replacing 41 escalators at Embarcadero, Montgomery, Powell, and Civic Center stations.

The new escalators are expected to be significantly more durable than the old units that are being replaced. They feature real-time monitoring, which will allow BART staff to know the moment an escalator goes out of service. Staff will also be notified right away what was the cause of the shutdown. The new escalators have brighter LED lighting systems to make them more welcoming to riders. They're constructed with sustainable materials and utilize an automatic lubrication system that applies lubrication only when and where it's needed. Another environmentally friendly enhancement is the new escalators have a sleep mode that makes them more energy efficient. They also feature variable frequency regenerative drives that allow them to slow down and save electricity when there are no passengers.

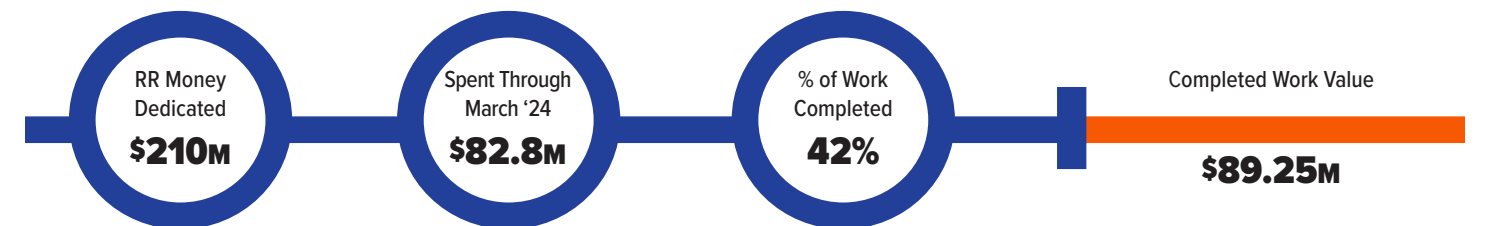
Plans also call for the construction of 19 new canopies at downtown San Francisco stations. The canopies not only protect new escalators, but they provide an added layer of station security and cleanliness. Motorized gates allow the entrances to be locked at street level when stations are closed. Each canopy includes a real-time digital display that shows train arrival times, a retractable gate, LED lighting, security cameras, art elements, and potentially a living roof at select locations.

The graphic on the next page shows the amount of Measure RR money dedicated to this project category, the amount of that money that has been spent through March 2024, the percentage of planned work that's been completed through March 2024, and the value of the work completed so far.



A new canopy has transformed this entrance to Embarcadero Station.

The value of work completed is the dollar value associated with the original estimate of labor and materials needed to complete the work. To learn more about how BART measures this value please go to Measuring Cost Effectiveness on page 28.



TRAIN CONTROL MODERNIZATION

The Train Control Modernization category includes work to replace BART’s more than 50-year-old train control system. BART now uses a fixed block system to control its trains. This system requires trains to be separated by a set distance and limits how many trains BART can operate at one time.

Work is now underway to replace the outdated fixed block system with Communications Based Train Control (CBTC). CBTC is a system that relies on telecommunications between trains and trackside equipment for traffic management. This new technology will allow BART to know a more exact location of its trains than with the traditional fixed block system. CBTC allows for real-time adjustments of speed and braking to enable safe separation with a shorter distance between trains. This equates to increased capacity and reduced wait times between trains. The implementation of CBTC will eventually allow BART to run as many as 30 trains per hour per direction through the Transbay Tube. The current limit is 24 trains per hour per direction.

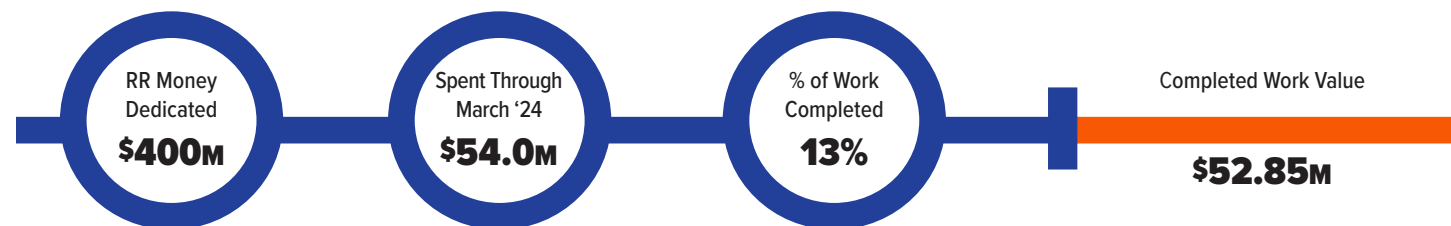


BART often utilizes cranes and forklifts to move oversized track components during weekend shutdowns.

To date, six train control projects have been launched in this category. None of those projects have been completed. Recent accomplishments include:

- Installation of 320 feet of duct bank at the Hayward Test Track.
- Asbestos assessments performed in 27 train control rooms.
- Asbestos mitigation at eight train control rooms in San Francisco.

The graphic below shows the amount of Measure RR money dedicated to this project category, the amount of that money that has been spent through March 2024, the percentage of planned work that’s been completed through March 2024, and the value of the work completed so far. The value of work completed is the dollar value associated with the original estimate of labor and materials needed to complete the work. To learn more about how BART measures this value please go to Measuring Cost Effectiveness on page 28.



RELIEVE CROWDING, INCREASE SYSTEM REDUNDANCY, AND REDUCE TRAFFIC CONGESTION

Work in the Relieve Crowding, Increase System Redundancy, and Reduce Traffic Congestion category is focused on preparing for the next generation of regional transportation needs, including designing and engineering, and environmental studies for infrastructure projects. Despite the uncertainty of growth projections and transportation needs, long-term planning is a vital enterprise.

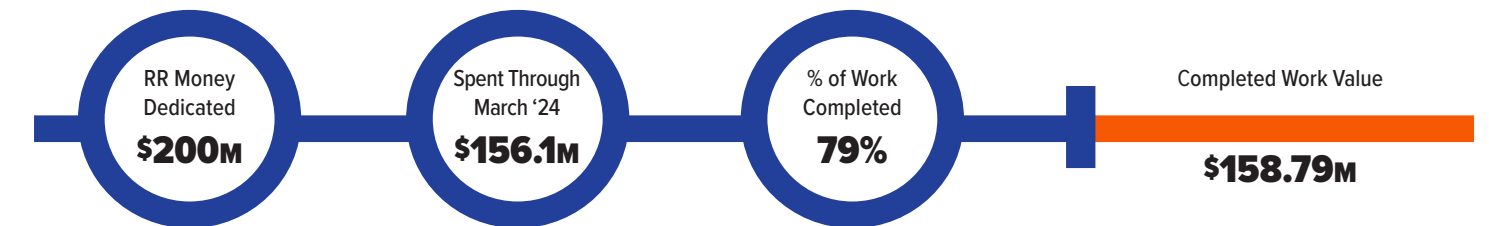
A key project in this category is Link21 (also known as second transbay rail crossing). The Link21 Program and its partners will transform the BART and regional rail (including commuter, intercity, and high-speed rail) network in the Northern California Megaregion into a faster, more integrated system that provides a safe, efficient, equitable, and affordable means of travel for all types of trips. This program, including a new train crossing between Oakland and San Francisco, will enhance livability, community stability, economic opportunity, and environmental quality in the Megaregion while improving the passenger experience. With key investments that leverage the existing network and increase capacity and system reliability, train service will better meet the travel needs of residents throughout the Megaregion. You can learn more about the Link21 program at www.link21program.org.

Work in this category includes improvements to the Hayward Maintenance Complex (HMC). HMC upgrades will include an expanded repair facility, a component repair shop, a vehicle overhaul station, and a new central parts warehouse. The expansion of HMC will allow the facility to house as many as 250 Fleet of the Future train cars.

To date, seven projects have been launched in this category. Two projects have been completed. Recent accomplishments include:

- The Transit and Intercity Rail Capital Program (TIRCP) awarded Link21 \$11.3M.
- The Link21 Program initiated the Equity Advisory Council, which will provide a forum for meaningful community collaboration to advance equity throughout the development and implementation of the Link21 Program. You can learn more about the Council at www.link21program.org/en/program/equity/equity-advisory-council.
- Link21 will be hosting a series of public outreach events in 2024 to communicate preliminary findings.
- Construction was completed on the access road and retaining wall for HMC.

The graphic below shows the amount of Measure RR money dedicated to this project category, the amount of that money that has been spent through March 2024, the percentage of planned work that’s been completed through March 2024, and the value of the work completed so far. The value of work completed is the dollar value associated with the original estimate of labor and materials needed to complete the work. To learn more about how BART measures this value please go to Measuring Cost Effectiveness on page 28.



ACCESS IMPROVEMENTS

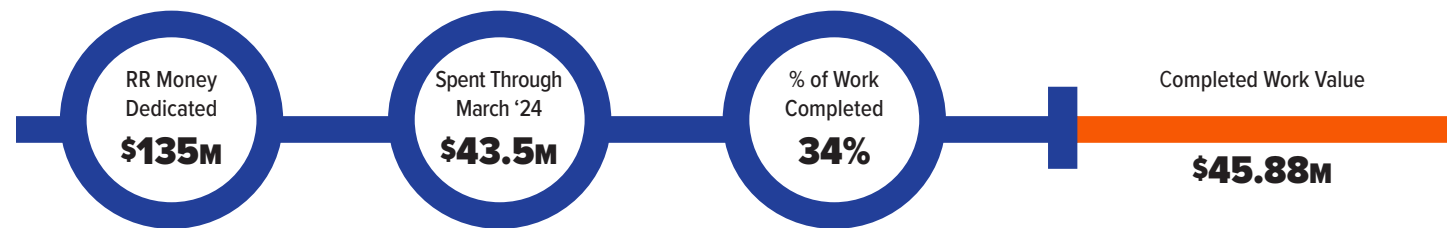
Projects in the Access Improvements category make it easier for riders to easily get to and use the BART system. Work in this category is part of BART’s focus on equity as these projects often involve helping people with varying needs and life circumstances use the system.

To date, 30 projects have been launched in this category. Thirteen projects have been completed. Recent accomplishments include:

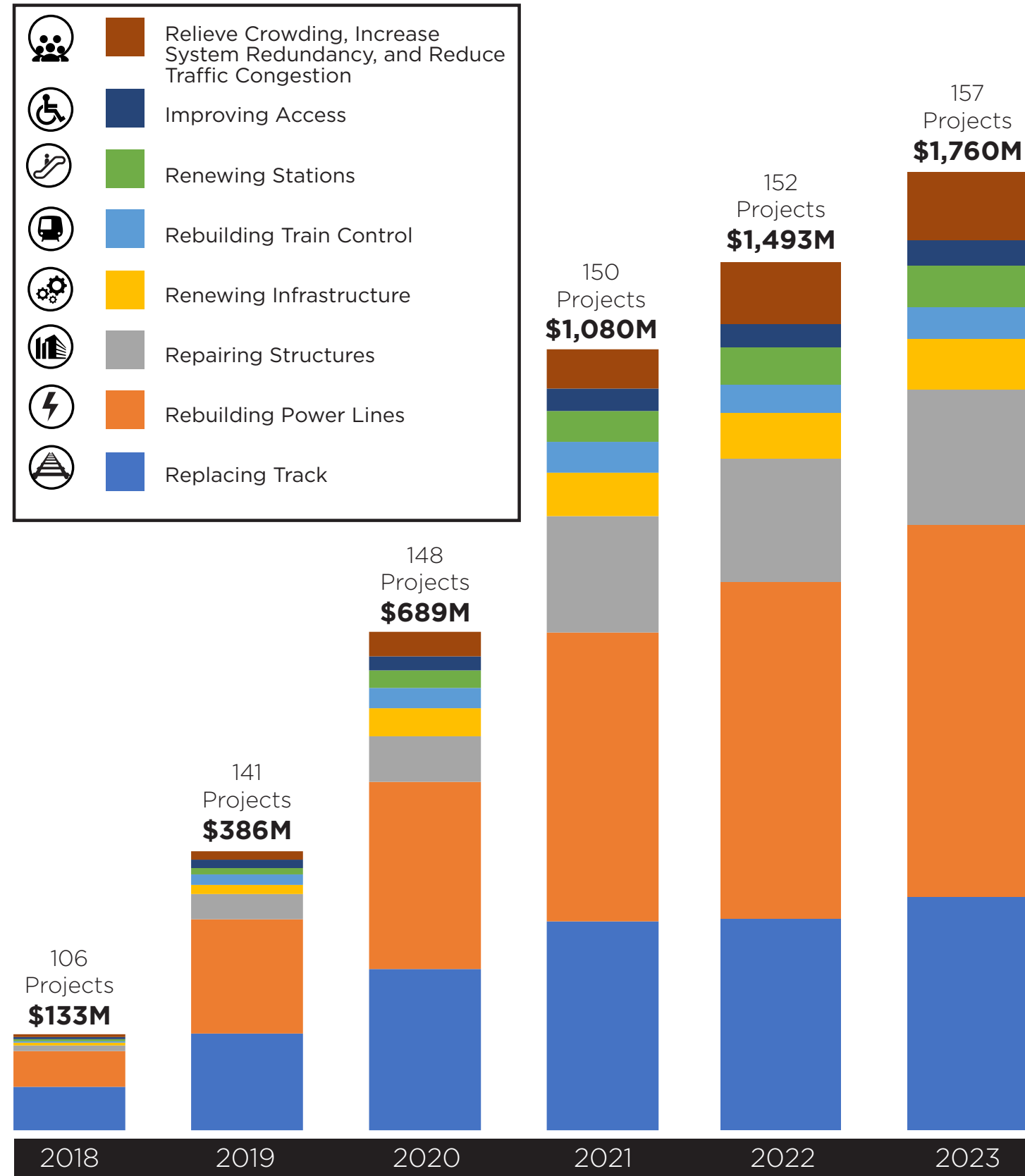
- Completion of construction of 12th Street/Oakland City Center and MacArthur stations bike racks.
- Demolition started to improve Americans with Disabilities Act (ADA) access at Fremont, Bay Fair, and Hayward stations.

Measure RR money is also supporting a community partnerships initiative that makes it easier to walk or bike to BART. The Safe Routes to BART program leverages RR dollars to support projects started by other local agencies that can offer a minimum funding match of 30%, provide evidence of governing body support, a full funding plan, and a minimum of 35% design completion. Projects recently selected to receive Measure RR support through this program include the Ohlone Greenway Modernization and Safety Project, Fremont Boulevard, Elevated Bikeway, and the North Bailey Road Active Transportation Corridor Project.

The graphic below shows the amount of Measure RR money dedicated to this project category, the amount of that money that has been spent through March 2024, the percentage of planned work that’s been completed through March 2024, and the value of the work completed so far. The value of work completed is the dollar value associated with the original estimate of labor and materials needed to complete the work. To learn more about how BART measures this value please go to Measuring Cost Effectiveness on page 28.



YEARLY PROGRAM EXPENDITURES



MEASURING COST EFFECTIVENESS

BART and the Bond Oversight Committee (BOC) utilize an integrated method known as Earned Value Management (EVM) as a tool to measure the cost effectiveness of the Measure RR rebuilding program. Ensuring that RR work is proceeding in a cost-effective manner is one of the mandates of the BOC. EVM is used to evaluate the progress of individual projects as well as larger program categories. It is a popular, well-established, and widely recognized objective measurement of government contracting and project management.

BART staff present to the BOC what work will be done, when it is expected to happen, and how much money and time it will take to reach completion. EVM allows someone to assess whether the value of work completed at a given point is worth the money spent at that point in time.

Providing both a Cost Performance Index (CPI) as well as a Schedule Performance Index (SPI) EVM is useful in project forecasting. When BART staff analyze EVM results they are looking for trends that emerge over multiple quarters. Projects are considered on track when both the CPI and SPI consistently hover around 1.0. When a CPI or SPI rises above 1.2 or below 0.80 in a reporting period, the program is given additional scrutiny to determine if there are any risks or issues. If risks exist, staff develop a mitigation plan to either correct or hinder the risks from growing larger. It's normal for some projects to perform better than others at different times, which makes looking at the overall programs so important for the long term.

The BOC receives regular EVM updates from BART staff and is advised if any issues are identified that require mitigation. The public may view a project's CPI or SPI status by visiting www.bart.gov/bondoversight and looking at the "Earned Value" section of the Appendix of staff presentations.



FUNDING MEASURE RR WITH GREEN BONDS

Green Bonds are at the center of BART’s plan to finance Measure RR construction work since the beginning of the program. BART’s Green Bonds were initially certified through the Climate Bonds Initiative’s Low Carbon Transport Standard in 2017. BART is among the first transit agencies in the country to earn a green climate bond certification.

The Climate Bonds Initiative promotes investments in projects that bring the world closer to a low-carbon and climate-resilient economy consistent with the 2015 Paris Agreement. As the market for Green Bonds expands, costs for climate-friendly projects everywhere are expected to decrease. Green Bonds are not more expensive than traditional general obligation bonds and they allow BART or the District to further demonstrate its commitment to the environment.

BART has offered four tranches of Green Bonds totaling more than \$2.06 billion to support the Measure RR rebuilding program since work started in 2017:

- \$300M in May 2017
- \$360M in August 2019
- \$700M in August 2020
- \$700M in May 2022

For each issuance, BART has worked closely with its financial advisors to develop a financing plan that ensures funds are available as needed for projects while taking into consideration the interest rate paid by taxpayers.

When the fourth tranche (2022 series D) was offered in May 2022, Moody’s Investors Service (Moody’s) assigned BART’s General Obligation Bond Program a credit rating of Aaa Stable. Fitch Ratings has assigned its highest AAA rating with a stable outlook. These ratings reflect the rating agency’s perspective on the relative creditworthiness of the District’s general obligation bonds compared to other similar credits.

On July 24, 2023, Moody’s affirmed the Aaa ratings on the District’s outstanding general obligation bonds but revised the outlook from stable to negative, reflecting national concerns about the health of transit systems. Moody’s wrote:

“The rating reflects the District’s exceptionally large and diverse tax base that encompasses a major component of the Bay Area economy. The District’s current healthy financial metrics, strong liquidity, conservative management, and ample federal aid position the District well to manage suppressed ridership due to the coronavirus pandemic and the longer-term shift to remote work in the near term, however projected outyear deficits represent a significant risk.”

On April 14, 2023, Fitch affirmed the District’s Issuer Default Rating at AA with a negative outlook. Fitch also affirmed its credit rating on the remaining outstanding 2022D series GO bonds at AAA with a stable outlook.

BART originally expected to offer bonds in equal installments every two years for 18 years, however Measure RR-funded rebuilding work has progressed faster than initial projections. As a result, more funds have been needed sooner to ensure work continues. If BART stayed with its original financing plan only about \$1.2 billion in Green Bonds would have been issued up to this point.

You can go to Appendix Item 5 on page 43 for more on BART’s latest Annual Comprehensive Financial Report

Covering the costs of Green Bonds

The District incurs administrative costs associated with the issuance of its Measure RR general obligation bonds. Bond issuance costs typically include fees paid to underwriters, legal counsel, municipal advisor, rating agencies, and other vendors. When Measure RR general obligation bonds are issued, the District generally structures the pricing of the bonds to generate a premium to cover administrative costs. This is consistent with the municipal bond market’s preference for premium bonds.

The Measure RR bonds issued so far have generated \$172.3 million of premium. The District used these proceeds, together with \$7.7 million of Measure RR debt service account funds, to pay \$163.5 million of short-dated taxable bonds and accrued interest and net administrative costs of \$6.6 million. Another \$9.9 million of surplus premium went into debt service accounts to pay bond interest and reduce the tax rate for the District’s taxpayers. The original issue premium generated by the District has covered all the net administrative costs, including \$25,570 for Green Bond certification by the Climate Bonds Initiative and third-party verification.

Measuring up to Bond Requirements

IRS rules require that BART reasonably expects to spend 85% of bond proceeds, including interest earnings on the proceeds, within three years of the issuance of the bond. BART has progressed on Measure RR work at a pace that exceeds this requirement. As of March 31, 2024, BART had spent \$1.81 billion on Measure RR projects. It is projected that the latest tranche will be spent by early 2025. This pace of spending demonstrates that Measure RR-funded work is being delivered in a timely manner.

Measure RR bonds are supported and secured solely by an unlimited ad valorem tax upon all property subject to taxation in Alameda, Contra Costa, and San Francisco counties. At the start of the program BART estimated the average yearly tax rate over the life of the bond program would be \$8.98 per \$100,000 of assessed property value. BART further projected the yearly tax rate would range from \$0.80 to \$17.49 per \$100,000 of assessed value. BART’s latest property tax assessment for Measure RR to cover debt service in FY 2023-2024 is \$8.60 per \$100,000 of assessed valuation, lower than the projected average.

RR PROGRAM EXPENDITURES OVERVIEW

Program	Expended Through March 2024	% Expended Out of Total Bond Investment	MID-TERM	LONG-TERM
			(Through 2025)	(Through End of Bond)
Renew Track	\$415.6	66%	\$433.5	\$625
Renew Power Infrastructure	\$719.5	59%	\$868.0	\$1,225
Repair Tunnels and Structures	\$252.4	46%	\$318.3	\$549
Renew Mechanical Infrastructure	\$90.0	58%	\$133.0	\$156
Renew Stations	\$82.8	39%	\$107.1	\$210
Train Control Modernization	\$54.0	14%	\$113.1	\$400
Relieve Crowding, Increase System Redundancy, and Reduce Traffic Congestion	\$156.1	78%	\$127.8	\$200
Access Improvements	\$43.5	32%	\$69.2	\$135
TOTAL In (\$ Millions)	\$1,813.9	52%	\$2,170.0	\$3,500

The Bond Oversight Committee receives quarterly expenditure updates from BART staff on the Measure RR infrastructure rebuilding program. The latest information is also available to the public in the agenda packets for each Bond Oversight Committee meeting, which can be found at www.bart.gov/bondoversight.

MEASURE RR SPENDING BREAKDOWN

Total Measure Investment	\$ Millions	% of Total Bond	Benefits		
			 Safety	 Reliability	 Crowding +Traffic Relief
REPAIR AND REPLACE CRITICAL SAFETY INFRASTRUCTURE	\$3,165	90%	✓	✓	✓
Renew Track	\$625	18%	✓	✓	
Renew Power Infrastructure	\$1,225	35%	✓	✓	
Repair Tunnels and Structures	\$549	16%	✓	✓	
Renew Mechanical Infrastructure	\$156	4%	✓	✓	
Renew Stations	\$210	6%	✓	✓	✓
Train Control Modernization	\$400	12%	✓	✓	✓
RELIEVE CROWDING, REDUCE TRAFFIC CONGESTION, AND EXPAND OPPORTUNITIES TO SAFELY ACCESS STATIONS	\$335	10%	✓	✓	✓
Relieve Crowding, increase System Redundancy, and Reduce Traffic Congestion	\$200	6%		✓	✓
Access Improvements	\$135	4%	✓	✓	✓
TOTAL	\$3,500	100%			

ONLY PART OF THE SOLUTION

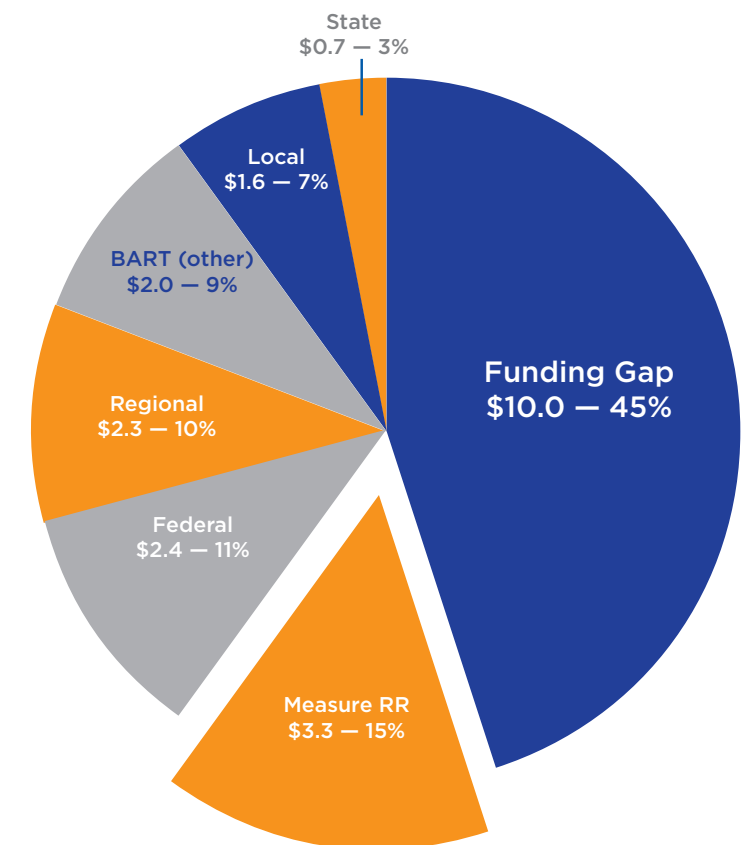
Measure RR goes a long way in addressing BART’s need to rebuild its critical infrastructure. But the \$3.5 billion that will be raised over the lifetime of RR does not go far enough to fulfill all of BART’s capital needs. BART estimates its total capital need through Fiscal Year 2033 is \$22.4 billion. The agency has so far identified \$12.4 billion in funding, which leaves a gap of \$10 billion. The pie chart on this page shows the various funding sources to fund BART’s capital program as well as the funding gap.

BART faces long-term capital funding challenges and continues to pursue additional grants by leveraging RR dollars. Through March 2024, \$1.81 billion of Measure RR has been expended which has leveraged more than \$3.5 billion of external grant funding and other BART funding to support the RR program. The external grant funding represents funding from the Federal Transit Administration to county transportation agencies. These grants funded a diversity of projects from core repair and basic maintenance investments to station modernization projects.

BART is in the process of developing an updated Capital Improvement Program, which will forecast the BART Capital Program and funding landscape over the next 15 years. That document is expected to be published later in 2024.

BART FY19-33 Capital Investment Needs and Funding Sources (Billions)

Total capital need: \$22.4
 Total funding identified: \$12.4
 15-year capital funding gap: \$10



INFORMING THE PUBLIC ABOUT LARGE PROJECTS

The Bond Oversight Committee's responsibilities include observing BART's efforts to inform the public about its rebuilding work. Effective public outreach is essential to ensure riders and residents who live near rebuilding projects are aware of the potential impacts including rider delays, changes to station access, and construction noise and lighting.

Public outreach is especially important when BART temporarily closes a portion of the trackway. Track shutdowns allow BART to do major track work in a short amount of time. Multiple activities can happen simultaneously when there are no active trains in a portion of the system, creating a safe work environment, allowing employees to work in a larger area, and maximizing worker efficiency since they can work uninterrupted in the trackway. Shutdowns are one of the reasons BART has been able to complete Measure RR projects in a timely manner.

Since 2019, BART has successfully completed 50 track shutdowns. Over the next three years, 35 shutdowns are scheduled, including 15 in 2024. To learn more about upcoming shutdowns go to www.bart.gov/advisories.

A recent example of BART's public outreach was for a track shutdown on Presidents' Day Weekend (February 17-19, 2024) near the Richmond Station. BART crews replaced an interlocking, which is a critical track component that allows trains to safely move from one line to another. Instead of regular train service, BART passengers rode free buses between Richmond and El Cerrito del Norte stations.

BART's Office of External Affairs takes the lead on public outreach for major track projects with a three-pronged approach that involves staff from the Government and Community Relations (GCR), Marketing, and Communications departments. Outreach for the Richmond project started more than a month before the first shutdown weekend. The outreach was designed to reach different audiences in multiple languages. Key information shared with the public included the track shutdown schedule, bus bridge details, anticipated delay lengths, benefits of the work, and neighborhood impacts.

Examples of the outreach include:

- GCR updated the Richmond city officials and developed two mailers that were sent to nearly 1,900 businesses and households within a quarter mile of the project work site. The mailers offered information in English, Spanish, and Chinese.
- The Communications Department drafted a passenger bulletin that was posted at BART.gov on the homepage and the Alerts and Advisories section. A news release was sent to more than 300 reporters and news outlets. Social media posts, emails, and text alerts were sent to BART news subscribers, community groups, and riders.
- The Marketing Department produced digital and print ads for multiple platforms describing the work and its disruptions in Spanish, Vietnamese, Korean, and Chinese. Digital ads on multiple social media platforms were delivered to anyone who used those media platforms near the work area.
- There were also outreach activities within the BART system itself. Public address announcements were made in English, Spanish, and Chinese. Systemwide messages were displayed on digital platform signs. Posters with project information and the bus bridge map were placed in stations.

SMALL BUSINESS OUTREACH

The Bay Area's small businesses are a vital part of the Measure RR rebuilding program. To ensure as many locally owned contractors can participate in this important work BART's Office of Civil Rights (OCR) leads an extensive contractor outreach campaign. In 2023 OCR organized 41 outreach events, drawing an average of 27 participants at each event. This includes 18 training and outreach events hosted by the District's Small Business Support Services (SBSS) program.

SBSS is administered by the Office of Civil Rights. SBSS was established as a free resource with the goal of providing pre-award and post-award supportive services to increase the number of qualified small, local, minority, women, disabled veteran, and LGBTQ+ businesses that can participate in BART contracting opportunities. The program also provides them with customized technical assistance that would make them more competitive in the bidding process. SBSS guides their efforts to successfully bid on projects. Once a contract is awarded, the program provides support services to ensure the successful delivery of the project from start to finish.

Laner Electric Supply Company is one of 670 small businesses supported by SBSS. Sandra Escalante owns Laner Electric and has often been called a "unicorn." "I'm a woman, a minority, a member of the LGBT community," she said recently. "It's very difficult just to be an employee in the construction world. A business owner? Ha."

Each criterion for participation in SBSS applies to Escalante, who's been working with the program since its inception in 2018. "Programs like SBSS are the beginning of changing mindsets," she said. "If you don't change the mindset, nothing will change materially."

Escalante has served on multiple advisory councils in recent years, including BART's Small Business Advisory Council. It's a lot of time and effort, but she believes sharing her knowledge and experience is important. Owning a small business "is not easy," she said, and more so if you're a minority or member of the LGBT community.

Escalante knows the difficulties of owning and operating a business, but she's never given up, even after experiencing a debilitating stroke and heart attack in 2006, which forced her to sell her business at the time. At Laner Electric, her responsibility to her employees keeps her going through it all, she said.

"You have to treat your employees how you want to be treated," she said, acknowledging that "being an entrepreneur requires tenacity, strength, and the guts to take risks."

That's why she's grateful for programs like SBSS that are "actually making a difference." "I hope BART continues to expand the program and keeps taking chances on small businesses," she said.

OCR also administers the District's Non-Discrimination Program for Subcontracting on non-federally funded contracts, which ensures that prime contractors do not discriminate or give preference in the award of subcontracts on the basis of race, national origin, color, ethnicity, or gender.

Small businesses have been awarded 26% of all Measure RR contract dollars. Small businesses have been awarded 1,513 Measure RR contracts through the end of 2023. These contracts are valued at \$298.1 million.



EQUITY AND MEASURE RR

BART is working to incorporate equity into all aspects of its operations, including infrastructure decision-making. It's essential for BART to do everything it can to ensure all community members and stakeholders have equal access to the system. Communities thrive when everyone has access to robust public transportation.

The Accessibility Improvement Program is actively identifying and implementing improvements needed systemwide to meet ADA regulations. Based on an initial assessment in 2011, BART conducted an evaluation of stations systemwide and identified improvements and upgrades required to meet federal ADA regulations and the California Building Code. There are currently 11 stations in the construction phase with Fremont and Bay Fair stations actively under construction.



Making improvements to signage at MacArthur Station in Oakland.

The Public Address System Improvement Project scope includes installation of a new PA system, including electrical, communications, equipment installation, testing, and commissioning at Lafayette and Powell stations.

BART wayfinding improvements at 14 stations located in Alameda, San Francisco, and San Mateo counties. Work includes fabrication and installation of illuminated wayfinding signs, custom design cases, station ID pylons, kiosks, and real-time displays. Existing wayfinding directional and transit information signage and displays will be replaced to improve and enhance the transit wayfinding experience of transit users. The new signs and information displays will provide consistent and understandable information with the use of fewer written messages and more pictograms, graphic symbols, and operator logos. At least 35% of design has been completed at each of the 14 stations. Design and construction will soon be complete at MacArthur and Ashby stations.

ADVANCING SUSTAINABILITY

Measure RR is helping BART to meet its sustainability goals. BART's commitment to sustainability is advanced by providing safe, affordable, equitable, and environmentally friendly transit to move people to jobs, recreation, and services. This involves projects that make BART easier to use for more people and help the Bay Area be less dependent on cars. BART riders get the equivalent of 73.3 miles per gallon as the system is three times as efficient compared with a typical car driven alone. BART is also working towards getting 100% of its power from zero-carbon sources by 2035.

The Bond Oversight Committee has a mandate to ensure Measure RR work measures up to BART's sustainability standards. Recent examples of RR-funded projects benefiting the local environment include:

- The Balboa Park Transit-Oriented Development project includes a new plaza and passenger loading zone. The new plaza increases access to transit, fosters community, and enhances quality of life. The plaza provides better access to transit, with stairs directly into the BART station, a new Bay Wheels bike share station, and an updated passenger loading area including a paratransit stop. There is access to both a Muni bus stop and multiple Muni rail lines adjacent to the development. The plaza has seating areas for transit customers, tenants, and the public, with the possibility of outdoor space being used by ground-floor retail or for community events. New trees were added throughout the plaza, along with ADA accessible paths, lighting, and security cameras.
- BART is advancing implementation of Measure RR-funded pedestrian and bike improvements at North Berkeley including widening of the Ohlone Greenway on BART's property. Other North Berkeley access improvements include a raised crosswalk at the station entrance, improved bike access from Acton Street to the station entrance and widened pedestrian connections between Sacramento Street and the station.
- As part of the Warm Springs Extension (WSX) into Fremont, BART has restored 11 acres of aquatic habitat near Fremont Central Park. The site now supports a variety of riparian, wetland, and wildlife species and helps manage stormwater runoff from the watershed of nearby areas. The District also committed to seven years of monitoring to ensure the site was meeting the success criteria identified in the mitigation plan. More than 10.5 acres of wetland and riparian habitat have been restored at the site, which now supports native plant species including tall flat sedge, slender hair grass, narrow-leaved cattail, and arroyo willow trees. The habitat is home to mule deer, racoons, mallards, and herons. Maintenance activities have prevented invasive species from encroaching on the parcel. During storm events, the site helps store stormwater runoff from the watershed of the nearby areas. BART collaborated on this mitigation project with a team of ecologists, hydrologists, and landscapers led by H. T. Harvey & Associates. The John Muir Land Trust will be responsible for long-term management of the parcel going forward.



Walkers and bicyclists enjoy the Ohlone Greenway.

Committee Activities, Suggestions & Expenditures

As part of this report, the Bond Oversight Committee also presents a summary of its activities and expenditures.

April 21, 2023

Staff presents first draft of RR Annual Report. Committee Member Vinit Shrawagi asks whether printed copies will be made available to public and staff says they will. Staff presents overview of RR program. Committee Member Sonja Stewart requests list of watchlist items including a status update of what's been done.

June 16, 2023

Measure RR Annual Report draft is presented to full committee. Members of Annual Report subcommittee say they're pleased with the draft and how staff have responded to their requests. Report is approved unanimously, and Chair Michael McGill is appointed to present it to BART Board. Staff provides update on status of overall RR program. Committee Member Daren Gee proposes the creation of a new subcommittee to do deep dives on projects.

September 15, 2023

BOC approves meeting schedule for 2024 and 2025. Committee Member McGill unanimously approved for new term as chair. Committee Member Cindy Rosenthal unanimously approved as Vice Chair. Committee Member Gee unanimously approved as chair of Deep Dive subcommittee. Stewart requests future updates on time, date, and location of future BART Board meetings where RR Report is discussed. Staff reviews public rollout of Annual Report. Staff provide update on RR program. Committee Member Janey Wang asks for actual versus historical comparisons for budget forecasts.

January 19, 2024

Chair McGill announces Committee Member Gee has resigned from BOC because he took a job with a contractor who does business with BART. Committee unanimously votes for Stewart to succeed Gee as chair of Deep Dive subcommittee. Staff presents outline for 2024 Annual Report. Stewart says it would help for BART to show the outreach to stakeholders done prior to putting RR before voters. Staff presents overview of RR program progress. Rosenthal asks for discussion on how to make it easier to find RR content on www.bart.gov.

Committee Expenditures: As of this report, the committee has spent \$6,800 in Fiscal Year 2024 on the design and production of the RR Annual Report.

The public is invited to attend Measure RR Bond Oversight Committee meetings in person or online. Meetings are held from 9:30-12:30 on the third Fridays of January, April, June, and September. The meetings are listed on the BART website at <https://bart.legistar.com/Calendar.aspx>

The public can view meeting minutes at www.bart.gov/bondoversight

This committee will continue to publish annual reports throughout the life of the Measure RR Rebuilding Program.

Helpful Links

Additional information about the Measure RR Rebuilding Program can be found on bart.gov. Here is a list of helpful links if you'd like to learn more about the details of Measure RR.

Previous Measure RR Annual Reports published by the Bond Oversight Committee	The Bond Oversight Committee has published an annual report for each year of the Measure RR rebuilding program. All these past reports are available at www.bart.gov/bondoversight .
Measure RR Standing Rules and Original Documents	
Bond Oversight Committee Standing Rules	This document outlines the basics of how the Measure RR Bond Oversight Committee operates. www.bit.ly/466cSLh
Original Measure RR Bond Resolution	This is the document approved unanimously by the BART Board of Directors on June 9, 2016, that led to Measure RR being placed on the November 2016 ballot in the BART District. www.bit.ly/3p9olne
2016 Treasurer's Tax Rate Statement	The statement from BART's Treasurer was issued in compliance with the state election code ahead of the November 2016 vote and offers best estimates of the highest tax rate that would be required to be levied to fund the bond issue, the total debt service, and more. www.bit.ly/3qSfTyt
2016 Measure RR Fact Sheet	Includes details put before District voters in advance of the 2016 election. www.bit.ly/3Xeuf8s
Major Audits	
There were no major audits of the RR program during the period of this Annual Report. Starting in 2022, staff began giving regular audit presentations in the second meeting of the calendar year. The public can view these presentations at www.bart.gov/bondoversight .	
Additional Background	
Green Bonds	BART provides updated information on its climate-certified Green Bonds, including preliminary offering statements and credit reports at www.bart.gov/greenbonds .
Procurement	Updated info on upcoming procurement opportunities and contracts out for bid at BART. www.bart.gov/about/business/procurement

PAST ACCOMPLISHMENTS 2016-2023

2016

- Voters passed Measure RR

2017

- Established a Bond Oversight Committee
- Underwriting pool request for proposals
- Board approved underwriting pool
- Presentation to rating agencies
- Bond pricing
- Planning Track Program
- A15 track interlock replaced in Oakland

2018

- M03 track interlock replaced in Oakland
- Issued \$300 million in green bonds that qualify for climate friendly projects
- Conducted extensive outreach with small businesses

2019

- \$96.5 million contract awarded to replace more than 40 aging escalators in SF
- Completed platform edge rehabilitation at MacArthur and Rockridge stations
- Construction underway on El Cerrito del Norte-Ohlone Greenway
- Construction underway on West Side Pedestrian Bridge at Warm Springs Station
- Awarded 8 General Engineering Service contracts totaling \$320 million

2020

- Reprofiled 149 miles of track
- 23 track switches replaced at junctures in the system
- Replaced 6 miles of 34.5kV cable in Oakland and San Francisco
- Replaced 118 cross passage doors and 2 lower gallery doors in the Transbay Tube

2021

- 34 miles of worn rail replaced
- Replaced 27 miles of 34.5kV electrical cable
- Upgraded platform edges at 7 stations
- Replaced 58 miles of third rail coverboards
- Completed 4 major Station Modernization and Station Access projects

2022

- Substantial completion of 34.5kV cable replacement in downtown San Francisco
- Completed trackway demolition and restoration for Transbay Tube retrofit
- Completed station modernization projects at Powell Street and 19th Street
- Opened Warm Springs Pedestrian Bridge
- Issued \$700 million in climate-friendly green bonds.

2023

- Substantial completion of rail reprofiling (systemwide)
- Completion of 19th Street/Oakland City Center Station Modernization Project
- Construction of Civic Center Station scissor stairs
- Completion of Concord Willow Pass Road (CWS) high voltage transformer replacement
- Completion of construction of Oakland Yard tracks and platform lighting for Powell Street Station Modernization

Appendix

Appendix 1: List of capital grants awarded to BART through 2023 through the use of Measure RR matching funds.

Fund Source	Awarded Through CY2023(\$M)*	Notes
FTA Capital Investment Grant	\$1,295.9	CIG, ARP CIG and supplemental CIG Award from FY23 Appropriations
State Funds	\$910.0	SB1 grants (TIRCP, LPP, SCCP), AHCS, and other state grants
City/County Funds	\$514.6	
BART Sales Tax Bonds	\$410.5	Measure AA and bond proceed interest
Capital Allocations	\$176.6	
Federal Formula/Other Federal Funds	\$160.5	
MTC/Regional Funds	\$62.9	RM1, RM2, RM3, and other bridge toll proceeds
Other	\$3.0	
Total	\$3,534.0	

*Reflects grant awards (allocated and not yet allocated) through CY2023

Appendix 2: Active Measure RR Projects

Project Name	RR Funds Invested	Project Name	RR Funds Invested
Oakland Yard Tracks Project	\$14,941,480	Fire Alarm Replacement Phase 3	\$4,118,369
K-Line Interlockings	\$25,381,080	Met-G Generator Replacement	\$2,870,831
A77 Interlocking Replacement	\$32,031,054	Train Control Room UPS System	\$8,205,700
A85 Interlocking Replacement	\$3,044,841	Walnut Creek Traction Power Substation	\$478,310
Direct Fixation Pads	\$11,593,737	DC Switchgear	\$107,075
Rail Relay	\$58,599,194	Water Intrusion Train Control	\$3,959,921
Frog Capital Maintenance	\$3,633,389	Rehab Grates and Vent Shafts	\$905,468
Richmond Yard Track Rehab	\$5,616,004	Wayside Regulatory Signage	\$1,127,667
Switch Replacement	\$3,911,361	Tunnel Waterproof M-Line	\$2,404,592
Emergency Generator for Transbay Tube	\$51,068,559	Slope Stabilization Maintenance Way 12	\$1,453,428
SFTS Transformer/Bus Upgrade	\$713,308	Slope Stabilization Systemwide	\$2,139,854
Tunnel LED Lighting Upgrade	\$6,345,390	Cross Passage Doors and Hardware	\$1,899,394
Tunnel LED Lighting Phase 2	\$1,047,125	Tunnel Waterproofing at R-Line and Oakland Wye	\$1,799,263
Tunnel LED Lighting Phase 3	\$796,629	Substation Roofs	\$1,579,076
Tunnel LED Lighting Phase 5	\$1,432,633	Renew Catwalks	\$2,741,851
Cast Coil Transformer Replacement	\$1,757,918	Aerial Structure Bear Pad Study	\$1,042,374
A-Line 34.5kV AC Cable Replacement	\$133,168,304	Water Intrusion at C-Line and R-Line	\$1,081,307
C-Line 34.5kV AC Cable Replacement	\$24,211,789	Water Intrusion at A-Line	\$893,883
K-Line 34.5kV AC Cable Replacement	\$13,325,806	Fences Systemwide	\$9,902,087
R-Line 34.5kV AC Cable Replacement	\$78,531,857	Concord Truing Facility	\$8,539
Traction Power Substation Procurement	\$4,872,777	Car Lifts, Richmond	\$731,041
Substation Replacement/Install Group II	\$30,457,217	Replace Sewage Pumps	\$1,400,040
Substation for Core Capacity	\$14,956,282	Stormwater Treatment Systemwide	\$63,393
Traction Power Core Capacity East Bay		Install Wet Standpipe L-Line	\$71,083
Substation Procurement and Installation	\$4,429,377	Upgrade Fire Suppression System	\$636,555
PG&E Power Feed MXP Gap Break	\$192,556	Fire Services Hayward Yard	\$9,040,174
TP-Switch Stations and Gap Break	\$63,694,084	Replace Hydraulic Lift	\$218,758
MPR Install and Rectifier Rehab	\$21,424,885	Turntable Replacement at Concord Yard	\$6,916,956
34.5kV Blocking Scheme Systemwide	\$5,088,194	Transbay Tube Dampers Overhaul	\$791,488
Stations, Emergency Lighting	\$28,421,084	Operations Control Center HVAC Renovation	\$2,648,008
Station Fire Alarm Replacement Phase 4	\$1,804,438	Control Tower HVAC - Concord and Richmond	\$529,380

Appendix 2: Active Measure RR Projects (Continued)

Project Name	RR Funds Invested	Project Name	RR Funds Invested
Walnut Creek TOD Access	\$1,069,445	19th Street Station Active Access	\$1,829,889
Canopy/Escalators Replacement	\$8,290,459	Bicycle Stair Channels Phase 1	\$243,011
San Francisco Escalator Replacement	\$39,239,781	Coliseum Station Access	\$47,822
CBTC Project Development	\$20,140,281	MacArthur Station Access	\$808,549
CBTC M&E RR Interlocks	\$18,914,459	Civic Center Station Access	\$291,861
CBTC Hitachi D-B	\$6,175,938	Ashby Bicycle Access	\$35,146
CBTC Enabling Works	\$7,122,789	Pittsburg/Bay Point Mobility Improvements	\$465,249
Battery Replacement for TC Rooms Part 2	\$1,667,185	Bike Program Capital	\$275,516
PA System Improvements	\$308,785	Wayfinding Improvements Phase IV	\$246,392
Accessibility Improvement Program	\$3,872,913	HMC Phase 2 Preliminary Engineering	\$7,937,961
MacArthur Plaza Renovation	\$363,509	HMC East Storage Yard	\$3,100,696
Lake Merritt Plaza Design	\$2,391,777	Link21	\$125,622,418
Safe Routes to BART Grant Program	\$2,493,512	Embarcadero Platform Elevator	\$815,882
Fremont Station Access Improvements	\$451,586	Program Management - Core Capacity	\$5,374,688
Dublin/Pleasanton Station Access	\$1,562,634		
North Berkeley Station Access	\$4,819,716		

Appendix 3: RR Projects Completed from Inception through 3/31/24

Project Name	RR Funds Invested	Project Name	RR Funds Invested
Fire Hoses and Piping	\$485,999	System Joint Elimination Richmond Yard	\$1,955,476
Fire Services Yards - Concord Yard	\$7,462,119	Rail Reprofitting Services	\$18,321,311
Fire Services Yards - Richmond Yard	\$9,964,867	Warm Springs Pedestrian Bridge West	\$1,510,000
Fire Services Oakland Shops	\$259,182	eBART Additional Parking Lot	\$4,373,899
Access Ladders	\$646,236	EI Cerrito del Norte Gateway	\$8,608,879
Vacuum Systems (non-revenue vehicle shops)	\$1,546,957	MacArthur Transit Improvements	\$4,208,167
Coverboard Enhancement	\$4,065,616	Embarcadero Station Entrance Gates	\$110,435
Computer Room Fire Protection Initial Planning	\$9,742	ADA Lighting Improvements	\$281,200
Replace Fire Suppression at Lake Merritt Admin	\$1,251,907	Fare Evasion Barriers and Controls	\$189,565
HVAC Equipment Replacement	\$9,258,018	Embarcadero Civic Center Bike Modernization	\$541,241
Replace Antiquated Backflow Preventers	\$947,087	Wayfinding Improvements Phase 2	\$78,729
Rotoclones Replacement at Shops	\$4,335,234	Last Mile Investments	\$796,596
Cable Replacement M-Line Balboa Park-24th St.	\$4,323,220	Outer C-Line Access Study	\$22,793
Cable Replace M-Line Bay Tube West-Balboa Park	\$103,376,490	Balboa Park East Side Improvements and Plaza	\$627,275
Substation Replacement Richmond Yard	\$1,392,350	Replacement of Transbay Tube Doors Phase 1	\$105,184
High Voltage Transformer Replacement near Pittsburg	\$11,909,480	Replacement of Transbay Tube Doors Phase 2	\$12,011,147
K-Line Cable Replacement	\$83,419,394	Berkeley Hills Tunnel Creep	\$1,765,100
Third Rail Replacement Phase 3	\$6,418,760	Safety Barriers Phase 3	\$2,977,063
Union City Intermodal Station Phase 2A	\$8,020,938	A-Line Operability Feasibility Study	\$3,810,453
EI Cerrito Del Norte Station Modernization	\$9,766,553	Renew Sound Walls of Guideways	\$1,434,577
West Oakland Station Modernization Plan	\$298,333	Platform Edge Structural Rehab	\$5,093,758
19th St Station Modernization Construction	\$9,617,000	Substation Walls	\$515,737
Powell Street - Gateway Station	\$5,579,804	Water Intrusion in Escalator and Elevator Rooms	\$1,088,536
C55 Interlocking Replacement near Concord	\$9,030,974	Aerial Fall Protection	\$27,465,687
C35 Interlocking Replacement near Lafayette	\$19,406,194	Rehab of Expansion Joints	\$828,111
C25 Interlocking Replacement near Orinda	\$13,199,523	Transbay Tube Retrofit	\$106,700,369
Restraining Rail	\$409,613	Platform Doors Feasibility Study	\$2,172,740
A65/A75 Interlocking Replacement near Hayward	\$23,933,245	Civic Center Scissor Stairs	\$10,930,023
Friction Modification Study	\$1,427,981	Corrosion Assessment of Metallic Gas Lines at Multiple Yards	\$1,339,766
R65 Interlocking Replacement near Richmond	\$8,543,617		
Interlocking Replacements near 12th & Lake Merritt	\$149,017,215		

Appendix 4: Office of Inspector General final reports related to Measure RR

BART's Office of the Inspector General (OIG) was authorized by Bay Area Regional Measure 3 (RM 3), which Bay Area voters approved on June 5, 2018. The independent OIG was established for the purpose of identifying opportunities to improve efficiency and effectiveness of BART operations and delivery of capital projects and to ensure compliance with applicable federal and state laws. Below are brief summaries with links to finalized OIG reports that pertain to the use of Measure RR funds. You can see all OIG reports at www.bartoig.org/

March 26, 2024: BART Improperly Embedded a Best-Value Procurement into a Fixed-Price Construction Contract

BART incorporated a best-value procurement process into its fixed-price, sealed-bid procurement for the M-Line Tunnel lighting construction project for a light fixture that was not available in the open market. The contract specifications included numerous requirements, including performance and safety requirements, that the light fixture was expected to meet. BART staff evaluated and approved a fixture that did not meet all the performance requirements and had not undergone the required testing for safety certification. Evaluation and approval of such products are incompatible with a sealed bid procurement and should be done through a separate procurement process.

You can read the full report here: www.bit.ly/4aSiJEZ

Appendix 5: Financial Audit

An examination of BART's financial statements is detailed in Audited Financial Reports that are prepared by an independent organization in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. The latest Annual Comprehensive Financial Report includes but is not solely focused on the Measure RR Rebuilding Program.

You can read the full Fiscal Year '23 Audited Financial Report here: www.bit.ly/3V6XQ3f

Keep up with Measure RR

The independent Bond Oversight Committee encourages you to stay updated on Measure RR and share comments or questions about BART's rebuilding efforts. Community engagement and feedback from stakeholders is essential to the success of the Measure RR program.

Follow and comment via social media:



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Email BART directly:
MeasureRRCommittee@bart.gov



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Attend a public meeting and email comments to the oversight committee:

Details on upcoming Bond Oversight Committee meetings can be found at www.bart.gov/bondoversight. Meetings are open to the public to attend in person or watch and participate via videoconference. You may also email public comments that will be entered into the public record. List "public comment" as the subject line and email MeasureRRCommittee@bart.gov.

