

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
300 Lakeside Drive, P. O. Box 12688, Oakland, CA 94604-2688

NOTICE OF MEETING AND AGENDA
BOND OVERSIGHT COMMITTEE

Friday, March 19, 2021
9:30 a.m. – 12:00 p.m.

COMMITTEE MEMBERS: Marian Breitbart, Leah Edwards, Daren Gee, Michael McGill, Catherine Newman, Sonja Stewart

Please note, pursuant to Governor Newsom’s Executive Order N-29-20 and the California Shelter-in-Place mandate, which prevents all but essential travel, public participation for this meeting will be via teleconference only.

Presentation materials will be available at: www.bart.gov/about/bod/advisory/bond

You may join the Bond Oversight Committee Meeting via Zoom by calling 1 (669) 900-6833 and entering access code **946 8421 7438**.

If you wish to make a public comment:

- 1) Submit written comments via email to mmorale@bart.gov, using “public comment” as the subject line. Your comment will be read into the record and will become a permanent part of the file. Please submit your comments as far in advance as possible. Emailed comments must be received before 9:00 a.m. in order to be included in the record.
- 2) Call 1 (699) 900-6833, enter access code **946 8421 7438**, and dial *9 to raise your hand when you wish to speak.

Public comment is limited to three (3) minutes per person.

AGENDA

1. Call to Order (5 minutes)
 - A. Roll Call
 - B. Introduction of BART Staff
2. Meeting Minutes: December 18, 2020 (For Discussion/Action) (5 minutes)
3. Member Reappointment to Committee 2021-2023 Term (For Discussion/Action) (5 minutes)
4. Update on Filling American Institute of Certified Public Accountants Vacancy (For Discussion/Action) (5 minutes)
5. Annual Report Subcommittee –2021 Annual Report (For Discussion)
 - A. Appointment of Annual Report Subcommittee (two seats) (For Discussion/Action) (5 minutes)
 - B. Review Draft Annual Report (For Discussion) (30 minutes)
6. BART Safety, Reliability and Traffic Relief Program (Measure RR) Presentation (For Discussion)

- A. Office of Civil Rights (5 minutes)
 - 1. Q&A (10 minutes)
- B. Human Resources/Staffing (5 minutes)
 - 1. Q&A (10 minutes)
- C. Station Modernization Project – R-65 (10 minutes)
 - 1. Q&A (10 minutes)
- D. Program Updates (12 minutes)
 - 1. Q&A (10 minutes)
- 7. Requests for Future Agenda Items (For Discussion) (5 minutes)
- 8. Committee Member Announcements (For Discussion) (5 minutes)
- 9. Public Comment (5 minutes)
- 10. Adjournment (5 minutes)

BART provides service/accommodations upon request to persons with disabilities and individuals who are limited English proficient who wish to address Committee matters. A request must be made within one and five days in advance of Board/Committee meetings, depending on the service requested. Please contact the Office of the District Secretary at (510) 464-6083 for information.



San Francisco Bay Area Rapid Transit District

Measure RR Program

*****DRAFT*****

BART Bond Oversight Committee

Friday, December 18, 2020

9:30 AM – 12:00 PM

Via WebEx Conference Call

MEETING NUMBER Term 2, Meeting 5	MEETING DATE Friday, December 18, 2020	MEETING TIME 9:30 am – 12:00 pm
Attendees	Present Members Michael McGill, Chair Catherine Newman, Vice Chair Michael Day Marian Breitbart Daren Gee Leah Edwards Sonja Stewart	Staff Linton Johnson Chris Filippi Sylvia Lamb Veronica Thomas Tracy Johnson Carl Holmes Myat San Michaela Morales Jamal Thompson Rodd Lee Hoa Sin Joseph Towner Audrey Tan Rose Poblete Robert Raburn Vicki Tan

Agenda Item	Meeting Notes
1. Call to Order A. Roll Call B. Welcome Sonja Stewart & Introduction of BART Staff	All committee members in attendance. Members welcome new member Sonja Stewart.
2. Meeting Minutes: September 18, 2020	D. Gee makes the motion. L. Edwards seconds the motion. Unanimous approval.

<p>3. Adoption of Standing Rules</p>	<p>M. Day makes the motion. D. Gee seconds the motion. Unanimous approval.</p>
<p>4. Set Dates for 2021 Bond Oversight Committee Meetings</p>	<p>M. Breitbart moves to keep the current pattern of meetings for 2021, which will be the 3rd Fridays of March, June, September and December of 2021. L. Edwards seconds the motion. Unanimous approval.</p>
<p>5. Annual Report Subcommittee-2021 Annual Report</p> <ul style="list-style-type: none"> A. Review of Draft Outline B. Set Date for Subcommittee Meetings 	<p>L. Edwards likes the outline. She says she wants to make sure that the final report continues to communicate how the committee is making sure that the bond proceeds are on-time and delivered in an effective manner.</p> <p>D. Gee requests that when the report talks about interlockings, the report broadens the terminology to “trackwork” to make it more clear for the public.</p> <p>M. Breitbart requests that the report does a better job at explaining in plain English the legal requirements of purchasing and spending bond funds.</p> <p>M. Day says he likes the outline, and it reflects the improvements from prior reports. He also wants to put a greater emphasis on how the COVID pandemic has helped BART work more expeditiously on moving projects forward.</p> <p>S. Stewart says she would like the report to better explain the concept of “Earned Value” to the public in simple terms.</p> <p>Vice Chair Newman requests that committee consider having an appendix, which will allow the public to get greater detail on specific projects. She also would like to see one or two sentences that show the differences between reports. These sentences should highlight the major projects in the current report.</p> <p>C. Filippi recommends putting these sentences in the Committee Chair’s welcome letter section of the report.</p>
<p>6. BART Safety, Reliability & Traffic Relief Program (Measure RR) Update</p>	<p>Various staff members present the update.</p>

7. Request for Future Agenda Items	None
8. Committee Member Announcements	None
9. Public Comment	<p>There is no public comment. However, Vice Chair Newman requests that the next meetings be on Zoom in hopes to solve the technical difficulties with WebEx.</p> <p>Chair McGill asks to have the conversation about having a subcommittee meeting specifically on the appendix. Staff agrees to set up a separate subcommittee meeting for an appendix discussion.</p>
10. Adjournment	Chair McGill adjourns the meeting.



MEASURE RR BOND
OVERSIGHT COMMITTEE
ANNUAL REPORT

JUNE 2021



DRAFT

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Dear Bay Area residents:

Thank you for taking an interest in the future of BART and learning more about the agency's efforts to rebuild its aging infrastructure through Measure RR, a \$3.5 billion bond measure approved by voters in Alameda, Contra Costa, and San Francisco counties in 2016. This is the fourth annual report on the Measure RR program to be published by the independent Bond Oversight Committee.

The goal of Measure RR is to help bring BART into a state of good repair so it can be a reliable transportation service for the Bay Area. It's the responsibility of the independent Bond Oversight Committee to verify that BART is spending bond revenues as promised. The committee includes members with extensive experience in engineering, finance, and project management.

This past year has posed unique challenges to transit agencies across the world including BART. In addition to our overall review of BART's Measure RR program, the oversight committee has focused on how the COVID-19 pandemic has impacted BART's rebuilding plans. This report addresses multiple areas of interest including how reduced service hours have helped to accelerate the progress of some projects as well as what steps have been taken to ensure the safety of workers during this public health crisis.

An important part of our role as the Bond Oversight Committee is to listen to input from riders and taxpayers. Despite the impacts of the pandemic, our meetings are open to the public via videoconference and are listed on our website at www.bart.gov/about/bod/advisory/bond. We will welcome the public to join us in person for our meetings once that's deemed safe by health officials. We will publish annual reports throughout the lifetime of Measure RR.

As the chair of the committee, I encourage you to read this report as well as to join us at one of our public meetings.

Sincerely,



Michael R. McGill

RR Bond Oversight Committee Chairperson

Professional engineer, Institute of Electrical and Electronic Engineers (IEEE) seat

OTHER COMMITTEE MEMBERS

Full biographies and photographs at www.bart.gov

MARIAN BREITBART, Budgeting & Financial Management Seat

MICHAEL DAY, Accounting Seat

DAREN GEE, Civil Engineering Seat

CATHERINE NEWMAN, League of Women Voters Seat

LEAH E. EDWARDS, League of Women Voters Seat

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EXECUTIVE SUMMARY

This past year presented extraordinary challenges for public transportation agencies across the world. Despite the many difficulties brought on by the COVID-19 pandemic BART has continued to serve as a transportation lifeline for the Bay Area while remaining committed to its Measure RR rebuilding program. To that end, BART has been making the most of reduced service hours to accelerate important infrastructure projects. As BART continues to move forward with its work, the independent Measure RR Bond Oversight Committee also remains committed to its mandate to evaluate the projects funded by Measure RR for cost-effectiveness, meeting quality standards, and being completed in a timely manner.

This fourth Measure RR annual report provides BART riders, BART District residents, and taxpayers a comprehensive overview of the status of Measure RR. It offers a progress report on RR which includes a look at what has been accomplished to date, what comes next, and whether the progress made so far measures up to expectations. This year's report will also look at how BART's rebuilding program has responded to the global pandemic.

Through December 2020, about \$769 million of Measure RR funds have been invested in rebuilding projects. A total of 129 projects across the system are in their planning, design, or construction phases. Another 19 projects have been completed. About 22% of Measure RR work has been completed, which exceeds projections made by BART when Measure RR was put before BART District voters in 2016.

The Measure RR program has achieved several key successes in the last year including:

- Award of the design-build contract for the Train Control Modernization Project.
- Major track replacement projects completed in Orinda, Hayward, and Richmond.
- Substantial Completion reached on the Station Modernization Project at El Cerrito del Norte and the Powell Street Ceiling and Lighting Project.

BART has made steady progress on its major program categories since the inception of the Measure RR program. As of the end of March 2021 BART had replaced or substantially completed:

- 34 miles of worn rail.
- 31 track switches (key track components that help trains switch lines).
- 27 miles of 34.5kV electrical cable to ensure trains have a reliable source of power Platform edges at seven stations have been upgraded to improve safety
- 58 miles of third rail coverboards (the white, curved fiberglass shields that protect the third rail, which powers BART trains) have been enhanced to reduce failures that cause train delays.
- 4 major Station Modernization and Station Access projects

This report examines the progress made on BART's rebuilding efforts in each of the major program categories including Track, Power Infrastructure, Tunnels and Structures, Mechanical, Station Modernization, Station Access, and Relieve Crowding. The Bond Oversight Committee has determined that the rebuilding projects being prioritized by BART have been delivered in accordance with best practices and are already improving the experience of riders by enhancing the reliability of the BART system. The committee also believes BART is meeting the bond mandate and is on track to deliver on its public commitments.

Advancing Sustainability

The oversight committee is also responsible for ensuring Measure RR projects are progressing in accordance with the District's sustainability standards. There are multiple examples of RR projects benefiting the environment including:

- New escalators being installed at downtown San Francisco stations are constructed of sustainable materials and utilize an automatic lubrication system that applies lubrication only when and where it is needed. The new units are energy efficient and feature variable frequency regenerative drives which allow for smooth starts and stops and allows for the escalators to slow down and save electricity when no passengers are using them.
- The El Cerrito del Norte Station Modernization Project incorporates sustainable design concepts. Two new bioswale areas with new plants were installed in the station parking lots to hold stormwater runoff and protect local waterways from stormwater pollutants.
- Power cable replacement work enhances BART's ability to meet its long-term renewable and low/zero carbon resource objectives. BART's Wholesale Electricity Policy Portfolio calls for BART to get 100% of its energy from zero carbon sources by 2035 and 100% from eligible renewable sources by 2045.



BART RESPONDS TO THE CORONAVIRUS

In January 2020 when the news initially broke regarding the coronavirus, BART leadership mobilized immediately. The objective was to ensure BART was prepared for a multitude of scenarios in the event the virus spread within California. A task force was organized which began to pour over the “what ifs” and the data to determine how BART could best position itself to respond to a given situation. Several service scenarios were evaluated, and contingency plans developed. A key component of these plans was the ability to prioritize rebuilding projects which could be accelerated based on a number of factors including available personnel, materials on hand, and potential disruptions to global supply chains.

One of the most dramatic impacts of the pandemic on BART happened in March 2020 when the agency reduced its service hours amid a deep reduction in ridership. BART moved the end of its service day from midnight to 9 pm. Much of the rebuilding and track maintenance happens at BART during a time referred to as “the blanket” when trains are not operating. Before the pandemic the blanket for most of the system lasted roughly from 1:00 am - 4:30 am. With the revised service hours, the length of the blanket has nearly doubled which has offered a tremendous opportunity to advance infrastructure projects. As a result of the early planning the District was able to accelerate rebuilding efforts across four of the eight major program categories and reduce the length of time riders are, and will be, impacted by work on those projects. Here are some of the RR projects that have been accelerated during the pandemic.

- Downtown San Francisco 34.5KV electrical cable replacement project
- Oakland Wye/West Oakland 34.5KV electrical cable replacement project
- Rail Profiling for New Wheel Profile – multiple lines
- Third Rail Replacement Program
- Coverboard Enhancement
- Install Safety Barriers
- Running Rail Replacement – Systemwide
- Rail Direct Fixation Pad Replacement – Systemwide
- Earthquake Safety Program – Transbay Tube Retrofit
- Union City Station Modernization
- El Cerrito del Norte Station Modernization

Making the most of resources

Capital projects are funded separately, and specifically, for capital projects, meaning BART’s substantial reduction in ridership and related revenue loss has not impacted this work. Additionally, to further reduce operating costs, BART has moved approximately 200 employees from operating funded work to rebuilding capital projects. This process is often referred to as load shedding and is allowing BART to make the most of its existing workforce by maximizing the number of people available to assist on projects during the system’s extended blanket, when operating hours are reduced.

Prioritizing worker safety

BART’s efforts to accelerate capital projects during this pandemic would not be possible without the implementation of new anti-virus safety policies and protocols. BART is committed to following all CDC and county guidelines. Wearing masks is required at all BART properties, job briefings which used to take place in a huddle are now happening in a way which allows workers to practice appropriate social distancing. Additional vehicles are being used to transport workers to job sites. 55-gallon drums of

clean water and soap are deployed at work sites and workers have been instructed to wash their hands more often. Social distancing is enforced during breaks and mealtimes.

BART also requires all contractors who perform rebuilding work to follow CDC and county guidelines such as developing social distancing policies, and requiring masks, for all their employees. In instances where the task makes it challenging to achieve social distancing, BART workers are required to wear KN95 masks.

The committee will continue to monitor how the coronavirus pandemic could impact the timing of the delivery of RR projects.



ABOUT THE BOND OVERSIGHT COMMITTEE



Marian Breitbart
Association of Budgeting & Financial Management Seat



Michael Day
American Institute of Certified Public Accountants Seat



Leah Edwards
League of Women Voters of the Bay Area Seat



Daren Gee
Civil Engineering Management and Oversight Seat



Michael R. McGill
Chairperson of the Committee
American Institute of Electrical Engineers Seat



Sonja Stewart
Project Management
Institute seat



Catherine Newman
Vice Chairperson of the Committee
League of Women Voters of the Bay Area Seat

Measure RR required BART to establish a Bond Oversight Committee (BOC) to verify that bond revenues are being spent as promised. The independent committee is comprised of seven members who represent a diversity of expertise, geography, and demographic characteristics. Members serve two-year terms and are eligible to serve up to six years total. They are appointed by the BART Board of Directors. Members of the committee represent different areas of expertise.

- 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 construction project management.
- The League of Women Voters, Bay Area, or its successor organization or chapter is represented by two members.

The Bond Oversight Committee is responsible for providing diligent, independent, and public oversight of the expenditure of funds from bond sales. The BOC assesses how bond proceeds are spent to ensure all spending is authorized by the ballot measure. The committee assesses whether projects funded by 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 also publishes this annual report.

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/about/bod/advisory/bond.

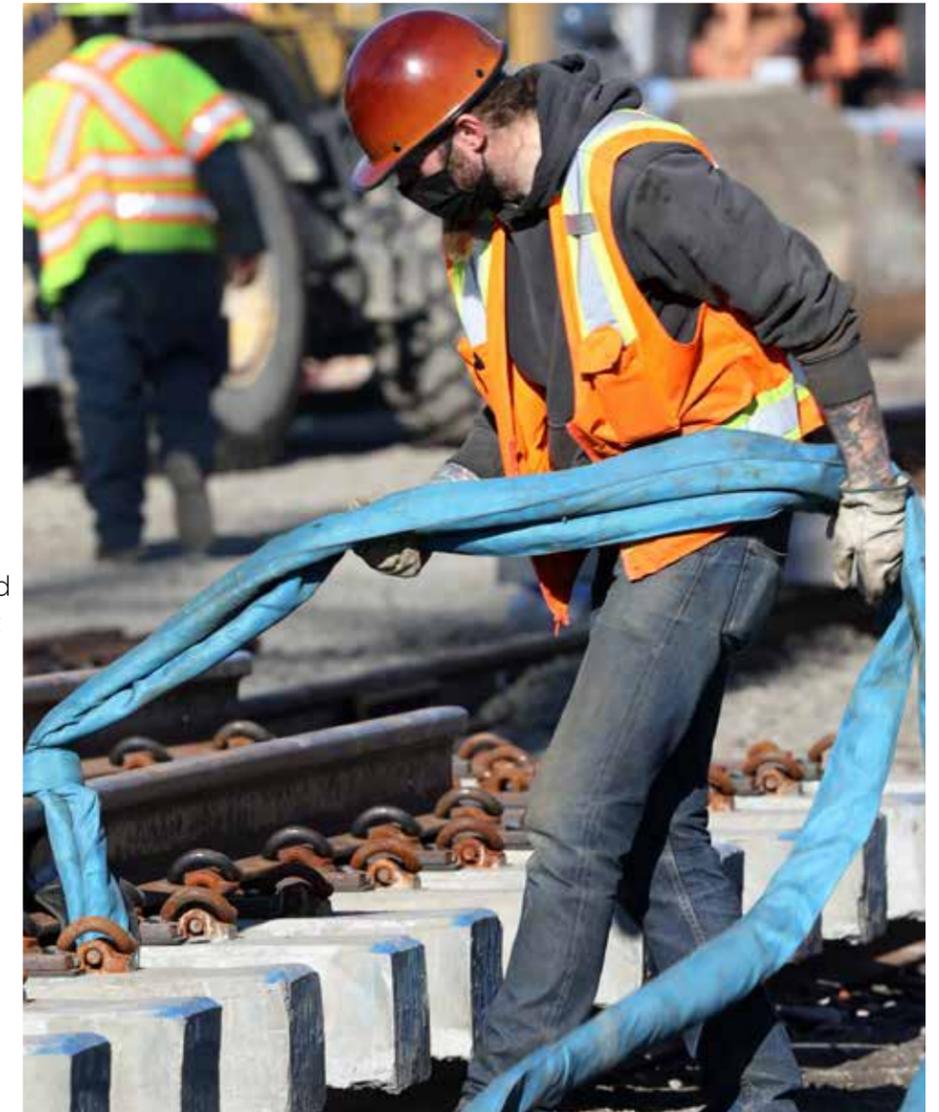
THE STORY OF MEASURE RR

Bay Area voters in November of 2016 turned the proposed Measure RR into a reality when they overwhelmingly approved the request to raise \$3.5 billion in general obligation bond money to rebuild the backbone of BART. More than 70% of voters in the BART District (Alameda, Contra Costa, and San Francisco counties) cast ballots in favor of Measure RR in that election. The bond measure easily exceeded the two-thirds support requirement to become law.

Measure RR traces its origins to the dire situation BART faced in 2016 with its aging infrastructure. The transit agency had a growing backlog of rebuilding needs that had to be addressed quickly. If action wasn't taken the risk of a major system failure would have continued to grow. The challenge was compounded by the fact BART didn't have enough funding to do the needed rebuilding work. BART estimated that if nothing was done, in just 10 years nearly half of the system's assets including long stretches of track and power cables would be at the end of their design lives.

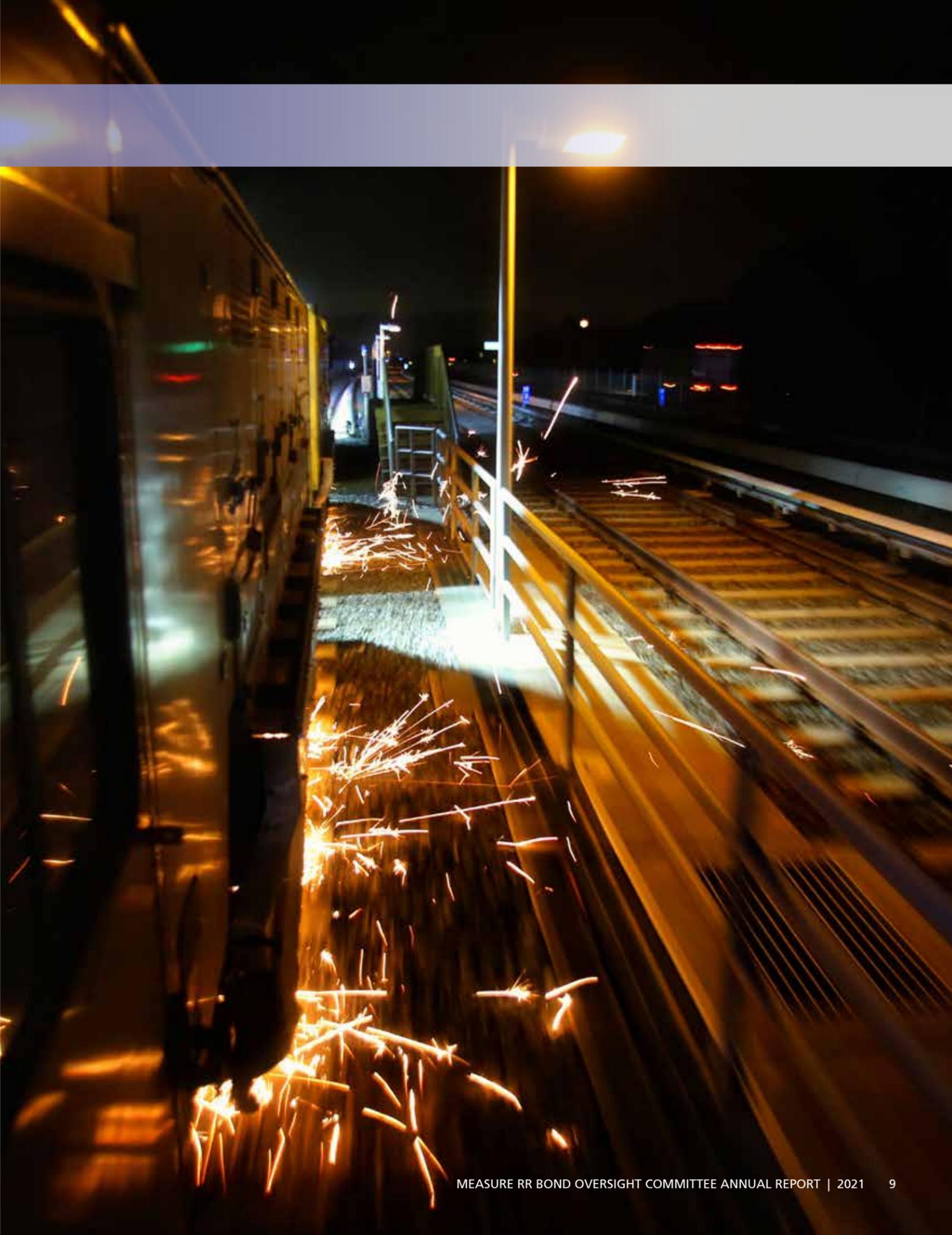
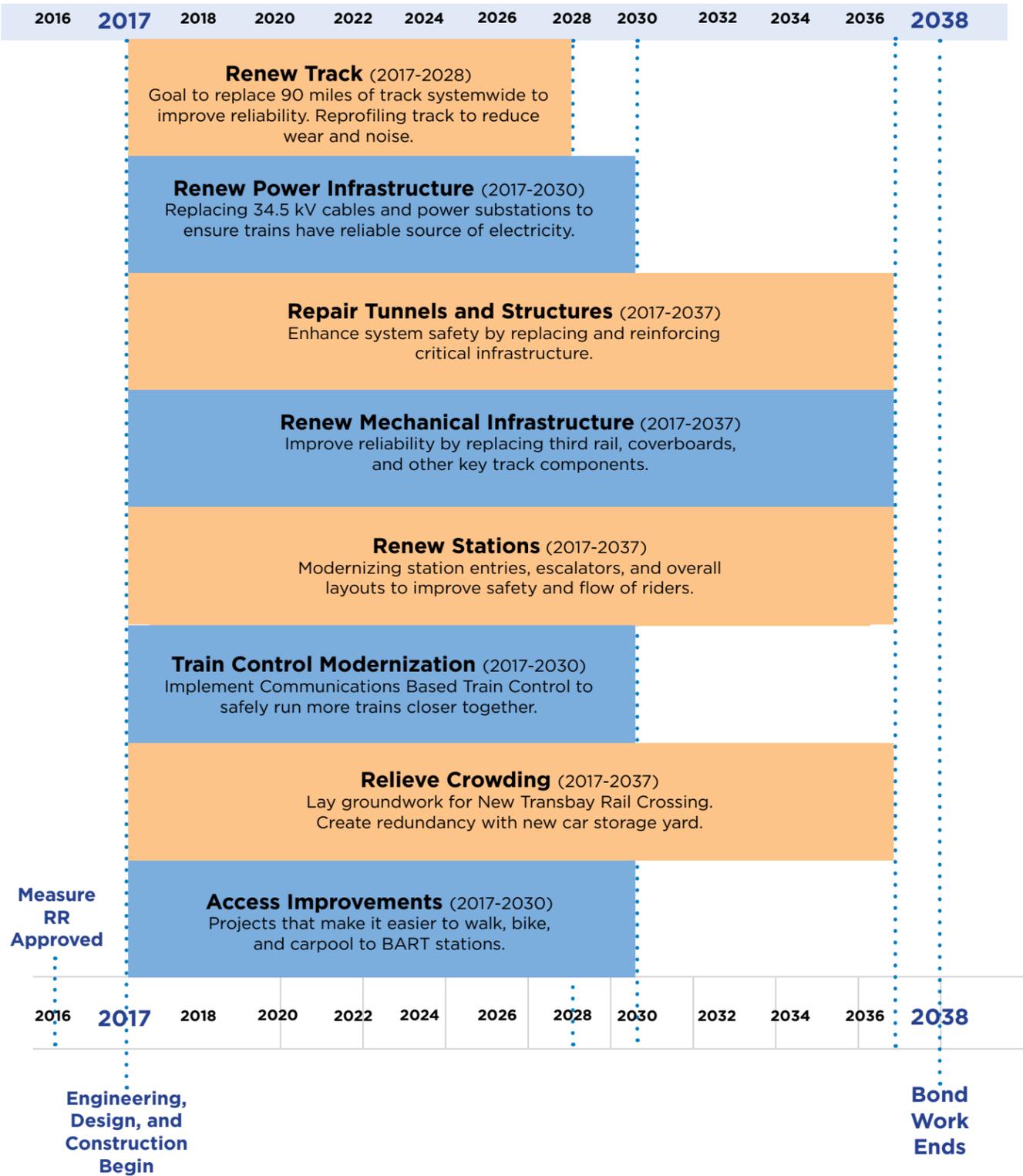
There was a need to educate the public about BART's predicament. BART held more than 300 community meetings to explain the system's needs as well as to hear from riders and taxpayers. After gathering that public input, the BART Board of Directors voted unanimously to put a \$3.5 billion general obligation bond before the voters.

Measure RR funding has been devoted to the system's most critical rebuilding needs first. That includes replacing track and traction power components that in many cases predate the start of BART service in 1972.



THE LIFE SPAN OF MEASURE RR

Measure RR work is organized in to these eight major project areas.



MEASURE RR SPENDING BREAKDOWN

RR – ONLY PART OF THE SOLUTION

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	\$570	16%	✓	✓	
Renew Mechanical Infrastructure	\$135	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	\$200	6%		✓	✓
Access Improvements	\$135	4%	✓	✓	✓
TOTAL	\$3,500	100%			

BART is currently collecting and analyzing data to produce a FY22 Capital Improvement Program (CIP), which is scheduled to be published late summer/fall 2021. BART had been scheduled to update its CIP in FY21 but deferred it one year at the request of the Metropolitan Transportation Commission due to the pandemic.

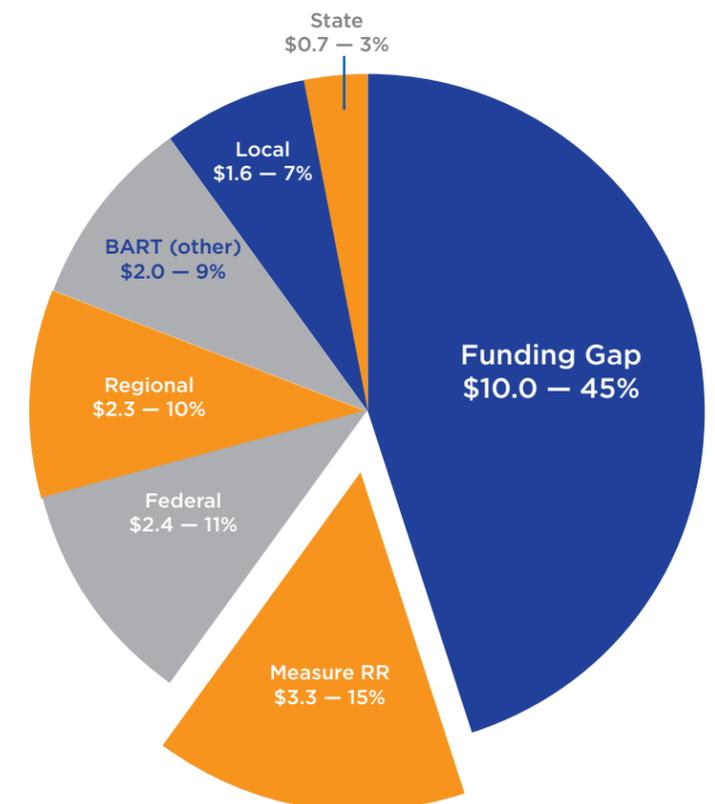
Measure RR will raise \$3.5 billion to help rebuild BART’s aging system (\$3.3 billion of that is expected to be spent through fiscal year 2033 while the remaining \$200 million will be spent after). The measure is an important part of BART’s overall plan to replace its decades-old infrastructure but it’s only part of the solution. BART’s current CIP shows the District’s total capital need through Fiscal Year 2033 is \$22.4 billion. As shown in the chart below, funding sources identified to rebuild and enhance the system include Measure RR and other BART funding as well as federal, state, regional, and local sources. These combined sources total \$12.4 billion, which is \$10 billion short of the District’s total 15-year need of \$22.4 billion.

BART faces long-term capital funding challenges and continues to pursue additional grants. BART’s grants efforts paid off in September 2020 when the Federal Transit Administration issued a nearly \$1.2 billion Capital Investment Grant Full Funding Grant Agreement for BART’s Transbay Corridor Core Capacity Program. The grant is the largest BART has ever received in its history. In 2020, BART also secured a \$60M State Solutions for Congested Corridors Program grant for the TCCCP. The federal and state grants will bolster Measure RR funds supporting the installation of a new Communications-Based Train Control System, a new railcar storage yard at the Hayward Maintenance Complex, and installation of new traction power substations.

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

NOTE: All numbers are noted in billions.



FUNDING RR WITH GREEN BONDS

BART has now offered three tranches of climate-certified green bonds totaling more than \$1.3 billion to support the Measure RR rebuilding program since work started in 2017. The third and latest tranche of Measure RR bonds was offered to the public in August of 2020. The third tranche offering was for \$700 million and is the largest of the three offerings. The second tranche offering in August 2019 was \$360 million and the initial offering in 2017 was \$300 million.

At the time the third tranche was offered Moody's Investor Service gave BART's General Obligation (GO) Bond Program a credit rating of Aaa, stable and cited BART's exceptionally large and diverse tax base that encompasses a major component of the Bay Area economy and favorable wealth profile of service area residents support its strong credit profile. S&P Global Ratings assigned a AAA long-term credit rating to BART's GO Bonds as well.

The initial plan when the Measure RR program started was to offer bonds in equal installments every two years for 18 years as funds were needed to rebuild the system. If BART stayed on this original schedule, then the third tranche would not have been offered until 2021 and the total amount of bonds issued through the first three tranches would only be about \$900-950 million. The fact BART is offering more bonds sooner than originally anticipated is another indication that the RR rebuilding program is ahead of schedule. Projects are accelerating thanks to expanded work windows and load shedding, which is allowing more BART personnel to work on capital programs. This advancement requires more resources earlier than originally anticipated.

All the bonds issued to support Measure RR are labeled as climate certified. BART is the first transit agency on the West Coast to earn such a distinction. In June 2017, BART sought and received certification through the Climate Bonds Initiative's Low Carbon Transport Standard. 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 these green bonds grows costs for climate-friendly projects everywhere may decrease.

The starting threshold for investing in Measure RR bonds is \$5,000. During all three bond sales, BART offered certain maturities with a preference for retail investors who live in the three counties that comprise the BART District (Alameda, Contra Costa, and San Francisco).

The Series 2020 Green Bonds received 83 retail orders, totaling \$199.905 million. In aggregate since 2017, Measure RR bonds received \$658 million in orders, indicating that retail orders made up 15.6% of all orders placed for Measure RR.

Offering green bonds is consistent with BART's long-term commitment to sustainability. BART has set a goal that 100% of its energy will be generated from zero-carbon sources by 2035. All conventional BART trains are 100% electric. While a typical car gets 21 miles per gallon of gas a BART rider gets the equivalent of 224 miles per gallon.

Measuring up to Bond Requirements

BART's bond spending follows IRS rules. Those rules say that at the time of issuance the BART District needs to have a reasonable expectation that 85% of the bond proceeds, including interest earnings on the proceeds, will be spent within three years. BART has progressed on Measure RR projects at a pace that exceeds this requirement. This reflects the District's success in delivering Measure RR-funded work in a timely manner.

Measure RR gives BART the authority to offer up to \$3.5 billion in general obligation bonds to pay for rebuilding projects. The funds to pay back the bonds are raised through property taxes assessed in Alameda, Contra Costa, and San Francisco counties. When the program started 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 that the yearly tax rate would range from \$0.80 to \$17.49 per \$100,000 of assessed value. In the latest assessment for Fiscal Year 2020-21 the tax amount was \$6.80. This tax rate will fluctuate from year to year and is likely to increase deeper into the life of the bond measure as additional bonds are issued.

BART anticipates that each bond tranche will be paid off within 30 years of being issued. BART has worked with its financial advisor to develop a financing plan to ensure funds are available as needed for projects while taking into consideration the rate paid by taxpayers. From start to finish, BART estimates property owners could pay off the bonds associated with Measure RR in 48 years.

RR PROGRAM EXPENDITURES OVERVIEW

Program	Expended Through December 2020	% Expended Out of Total Bond Investment	Forecast Expenditures		
			SHORT-TERM (Through September 2023)	MID-TERM (Through 2025)	LONG-TERM (Through End of Bond)
Renew Track	\$237.4	38%	\$382	\$400	\$625
Renew Power Infrastructure	\$290.0	24%	\$573	\$608	\$1,225
Repair Tunnels and Structures	\$77.8	14%	\$136	\$268	\$570
Renew Mechanical Infrastructure	\$44.9	33%	\$77	\$65	\$135
Renew Stations	\$29.6	14%	\$125	\$148	\$210
Train Control Modernization	\$29.5	7%	\$89	\$286	\$400
Relieve Crowding	\$38.9	19%	\$76	\$69	\$200
Access Improvements	\$21.3	16%	\$37	\$86	\$135
TOTAL In (\$ Millions)	\$769.4	22%	\$1,495	\$1,930	\$3,500

INNOVATIONS IN INFRASTRUCTURE

Many of the systems and equipment that keep BART moving are decades old but despite that they produce significant amounts of useable data. This information is important in assessing how BART is doing in several areas including on-time performance and overall reliability. Now BART is focused on ideas that can make use of the numbers from a forward-thinking perspective. This information can be a powerful tool that BART can use to take predictive actions and avoid future service impacts. These innovations in infrastructure are already saving time for riders and dollars for taxpayers.

Send in the drones

BART has a dozen radio towers strategically placed across the system that are invaluable for communication and monitoring local conditions. In the past these towers would be inspected by professional riggers who would need to physically climb the towers and whose work could be limited by conditions. But now for the first time BART is using drones to safely inspect the towers. The drones provide both video and still images of the towers in real time and can offer a more thorough look if necessary. An inspection process that used to take three weeks can now be accomplished in two days at a cost savings of 45% or \$3,000 per tower site for BART.



BART is now outfitting its radio towers with professional grade weather stations capable of providing real-time localized data that can be used to inform operational decisions. In the future it can provide the Communications-Based Train Control System with data to adjust train performance levels for weather concerns such as high-temperature conditions. A high heat indication can also be generated for track crews to be dispatched to an area to look for signs of distress in the rail.

Microenvironment monitoring

Heat issues generally contribute to major delays associated with train control as equipment fails during spikes in temperature. Using previous years' data, sensors were installed starting in August 2020 in 15 of the historically worst impacted train control rooms. This new gear allows maintenance teams to address the problem before it impacts service. Before the upgrade, train control rooms were inspected manually. In June these manual inspections couldn't prevent multiple heat-related issues, which resulted in 297 train delays systemwide. But in September after the new devices were installed multiple heat-related alerts were sent and the number of train delays dropped to only seven.

Wind: the nemesis of coverboards

Wind has never been a friend to coverboards, the long arc-shaped pieces of white fiberglass that protect the third rail that provides power for BART trains. Strong winds can blow aging coverboards into the trackway and delay service. BART is now partnering with the UC Berkeley Division of Computing, Data Science, and Society to take on this decades old challenge. Students are taking data from a variety of sources including data logs from the Operations Control Center, weather stations, and more to create algorithms to help determine when and where BART should dispatch maintenance crews to inspect coverboards. The goal is to use a data-driven approach to reposition maintenance staff to high wind locations and reduce recovery times.

Rewriting the book of how things are done

Rebuilding projects at BART are performed by the book, or in this case several books. BART staff did a top to bottom review of key policy manuals and updated these important texts to provide improved guidance for projects and ensure the latest industry-best practices are being implemented.

The updated Resident Engineer Manual now includes 40 examples of how to administer both construction and procurement contracts. The rewrite of this manual also added a chapter to provide construction guidance while executing design-build contracts, which is a first for BART. The Construction Management Quality Assurance Audit Checklist has been revised to provide a comprehensive step-by-step list of every requirement on BART commercial construction contracts. This includes 500 checks that must be followed. The revised document is allowing BART management to more effectively assess a project's on-going progress and identify potential problem areas sooner.

The District is also shifting to unit-price contracts and the move is already yielding results. Unit-price contracts only pay contractors for actual quantities performed, supplied, or constructed on a given project. These contracts establish pre-approved work rates, which lower the risk for contractors and encourage more competitive bids.

PUTTING PEOPLE TO WORK



Rebuilding projects supported by Measure RR are critical to revitalizing BART and have a secondary benefit of supporting high-quality jobs that strengthen the Bay Area's economy. These jobs are especially important now with the economic challenges brought on by the COVID-19 pandemic. In 2020 Measure RR supported 848 Full Time Equivalent (FTE) jobs, 358 FTE consultant positions and 270 FTE contractor jobs. These employees and contractors are working across the BART District.

Due to the pandemic BART has used load shedding to shift employees from their normal operational duties to supporting capital projects. The practice of load shedding allows BART to avoid layoffs and make the most of currently available resources to accelerate rebuilding work. In the last year BART has shifted approximately 200 positions to

capital projects and anticipates continuing this practice while service hours are reduced due to the pandemic.

BART's workforce reflects the rich diversity of the Bay Area it serves. The agency is striving to build upon that diversity, especially in areas that have historically been male-dominated professions. A small but growing number of women are entering the ranks of track and structure workers at BART, where they do the same strenuous physical labor as their male counterparts: swinging sledgehammers, welding rail, and driving heavy equipment.



Shelley Culloty became the first female member of the track department when she was hired by BART in March 2009. "I love my job," said Culloty. "I came from Union Pacific, I had worked there for about 11-and-a-half years, and I had not worked with any other females there, either, so coming to BART was kind of natural for me. Working around all men, you have to have some thick skin. But if you work hard ... you can come in and make a good life. I know it's provided me a home and everything I could ever want for my children and my family."

The work was physically demanding but it got easier as it went along, she said. "I started digging ties, around 20-some ties a day, and worked up to 60-some ties a day. I was at the age of 49 when I started here, starting all over again, and I thought, 'Oh my God, can

my body handle this?' And it did. I would go home and be worn out, but then I would come back again the next day to do it again. I've always been determined."

Thu Nguyen trained at the Cypress Mandela Training Center near Fruitvale BART Station in Oakland and was hired by BART in February 2020. "I'm so happy, because I know I can do the job. I feel like whatever the men can do, I can." Nguyen takes great pride in her work. "We've been putting pads down for track, changing out pads, checking the track, taking all the old material out," said Nguyen. "Whatever the next step is, I work hard to be prepared. I'm very happy to be working here at BART."

SMALL BUSINESS OUTREACH

BART's Office of Civil Rights takes the lead on efforts to encourage small businesses to bid on projects funded by Measure RR. This work has been complicated by the global pandemic. Before the arrival of COVID-19, BART held large networking gatherings where prime contractors would discuss work they had available and interview small business subcontractors to look for a good fit. But those type of events are no longer appropriate in a world where social distancing is a priority.

BART has transitioned its outreach to virtual events with an emphasis on providing small businesses with information that is relevant to the current economic situation. There has been strong turnout for these virtual events as more than 600 participants were reached through these outreach efforts in 2020. Now prime contractors are setting aside as much as a full day to hold virtual "speed-dating" sessions that allow them to interact with dozens of potential subcontractors. The meetings can be as short as five minutes long with a five-minute buffer in between. Prime contractors must provide BART with their schedules to show whom they interviewed. Attendees have enjoyed the flexibility of being able to participate in outreach events from anywhere and as a result, BART expects that it will continue to leverage virtual events post-pandemic.

This outreach is especially important as small businesses play a vital role in rebuilding BART. Private contractors are providing valuable expertise for numerous projects including major track rebuilds, replacing power infrastructure, repairing tunnels, and renovating stations. Small businesses have been awarded 31% of all Measure RR-supported contracts.

BART's Office of Civil Rights administers a Non-Discrimination Program for Subcontracting on Non-Federally Funded Contracts to ensure prime contractors don't discriminate when subcontracting out work. Additionally, BART has a Small Business Program for non-federally funded contracts that provides bid preferences for qualified small businesses. The Small Business Program also includes small businesses that are Local Small Businesses, Disabled Veteran Business Enterprises, and Lesbian, Gay, Bisexual, and Transgender Business Enterprises.

The District's Small Business Supportive Services and outreach have been the critical reason why 681 RR contracts have been awarded to small businesses through the end of 2020. Those contracts have a value of \$197 million.



MONITORING PUBLIC IMPACTS OF LARGE PROJECTS

One of the responsibilities of the independent Bond Oversight Committee is to monitor the service and neighborhood impacts of rebuilding projects and what efforts were made to inform the public of the work. Service impacts are often unavoidable for major projects, but substantial public outreach is essential to ensure transparency and maintain public trust in the RR rebuilding program.

The year since the publication of this committee's last oversight report has been an especially busy period for major track rebuilding projects across the BART system. In that time BART and its contractors have successfully completed track rebuilding projects in Orinda, Hayward, and Richmond.

From May through June 2020 BART scheduled five weekend shutdowns between the Rockridge and Lafayette stations to complete the replacement of an interlocking near the Orinda Station. Interlockings are a railway's answer to intersections in that they make it easier for a train to safely move from one line to another. On shutdown weekends there is no train service between the impacted stations and riders are given the option to take a free bus to continue their trips. During this project, free bus rides were provided by AC Transit and County Connection. Riders typically had to add 20-25 minutes to their trips.

One of the weekends when a shutdown was scheduled was the Memorial Day holiday. BART often schedules track shutdowns on holiday weekends because while a typical two-day shutdown offers 36 hours for productive construction time a three-day shutdown can provide around 60 hours of wrenchtime. That represents a nearly 67% increase in time for productive construction. That extra productivity paid off for riders as BART and its contractors were able to reach their construction goals ahead of schedule and cancelled the final scheduled shutdown weekend for the project. In addition to replacing the interlocking workers also installed 3,000 feet of new rail, replaced 1,200 tons of rock ballast to stabilize the track, and replaced the platform edge tiles at Orinda Station.

A similar track rebuild happened in August and September of 2020 near the Hayward Station and required four weekend shutdowns of train service between the Bay Fair and South Hayward stations. Riders who used the free buses provided by AC Transit typically had to add 20-40 minutes to their trips. Five weekend shutdowns were originally scheduled for this project, but the construction team made so much progress in the first four weekends that the last planned closure was cancelled. In addition to installing a new interlocking work crews replaced some 300 badly worn wooden ties with longer-lasting concrete ones.

The latest major track replacement work happened near the Richmond Station in early 2021. This work required five weekends in January through March when train service was not offered between the Richmond and El Cerrito del Norte stations. BART riders were able to take free buses provided by AC Transit between the two stations and the typical added travel time was 15 to 20 minutes.

BART engaged in extensive outreach to alert the public about the work and service impacts for each of the major track projects. News articles were posted on the Planned Service Advisory page of BART.gov approximately two months before each of the first shutdown weekends. For each project a news release was crafted and shared with a distribution list of more than 300 local news agencies and reporters. The BART Communications Department conducted multiple interviews with the media.

Posters with closure dates and service maps were installed in impacted stations. Messages about the work and its impacts were posted on Twitter and Facebook throughout construction and special service advisories were issued on construction days. BART purchased online and radio advertising to promote the work and impacts. BART's Government and Community Relations Department developed neighborhood notices that were mailed to residences and businesses within a half mile of each construction site. BART staff also provided project briefings for elected officials in all impacted communities.

The oversight committee will continue to meet its mandate by closely monitoring the public impacts of rebuilding projects. Among the work the committee will be following is a series of projects scheduled to happen between the Hayward and Union City stations. The work includes a major track rebuild as well as the construction of a storage facility at Hayward Maintenance Complex for additional Fleet of the Future cars. The work is expected to require the replacement of train service with free buses between South Hayward and Union City on 14 weekends in 2021 and an undetermined number of weekends in 2022. Members of the public can get the latest details on service impacts resulting from rebuilding projects by going to <https://www.bart.gov/schedules/advisories>.



MAJOR PROJECTS: RENEW POWER INFRASTRUCTURE

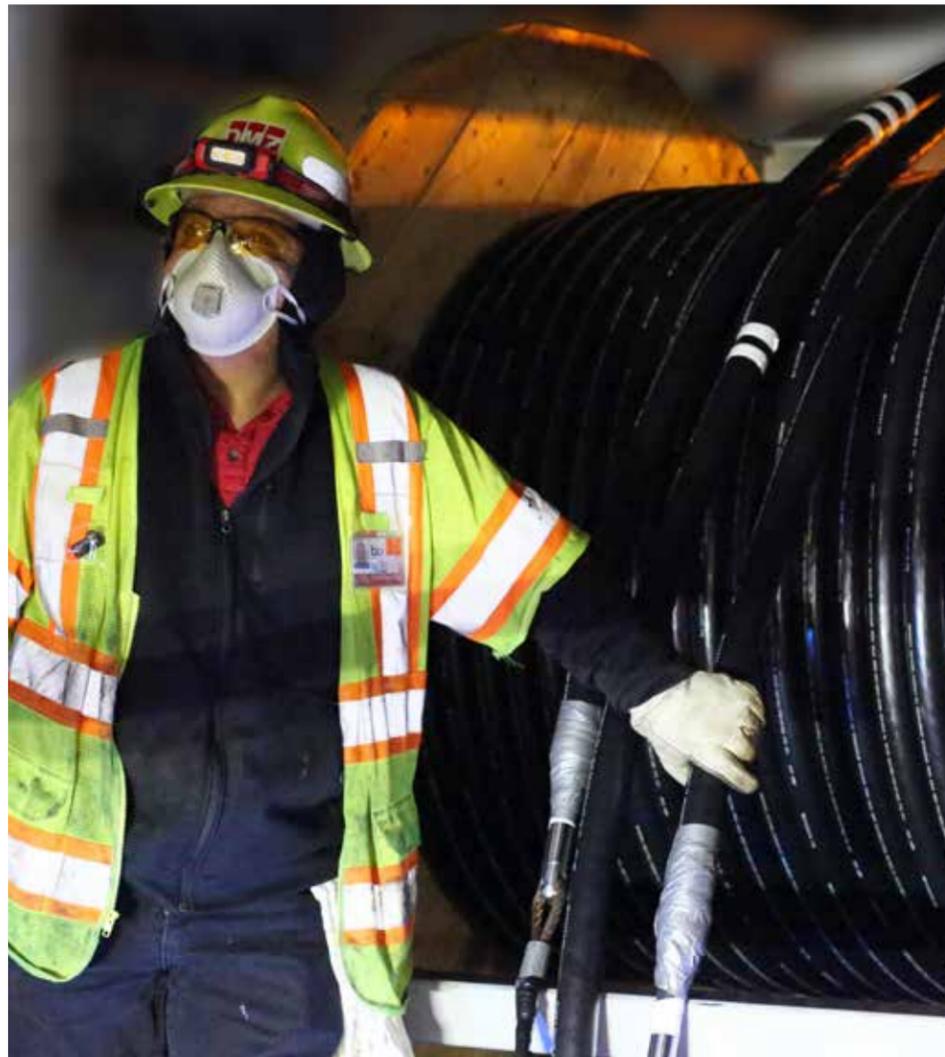
BART has been making the most of extended work hours resulting from service reductions stemming from the pandemic to accelerate its work in replacing key pieces of infrastructure that ensure trains have a reliable source of traction power and that stations can keep their lights on and keep their fare gates and ticket vending machines in operation.

A primary focus of this work has been on replacing aging 34.5 kV (kilovolt) electrical cable that is used to help deliver power to trains. As of the end of 2020 BART has replaced 27 miles of 34.5 kV cable across the system. Many of the cables being removed had not been replaced since BART first opened for service.

Much of the cable replacement work has been happening in BART's tunnels in downtown San Francisco on nights and weekends. On weekdays, BART begins the preparatory work of bringing in staff and materials around 9 pm which means BART reduces service in the work area to only a single track which has caused some delays of up to 10 minutes to the last few trains of the evening. This earlier start time is necessary for BART to be ready to use the full window of time when the system is closed.

The extra time means, potentially, BART can "pull" four reels of cable instead of one per shift. That equals up to 9,200 linear feet of cable that can be installed each night. This could shave off up to a year of work affecting riders from the six-year-long project.

Measure RR dedicates a total of \$1.225 billion toward the renewal of BART's power infrastructure. Through December 2020 \$290 million in RR funding has been invested in power infrastructure projects.



Active Projects Completed or Under Construction

Status as of 12/31/2020



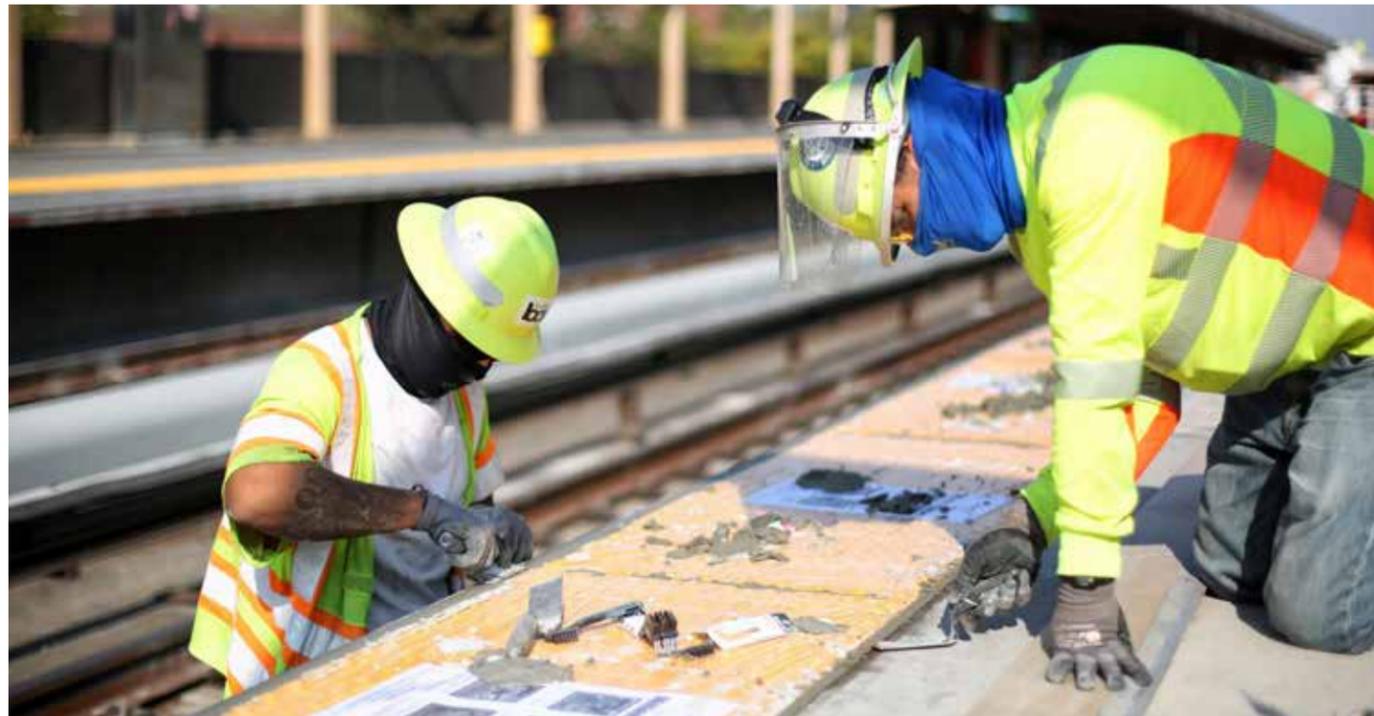
MAJOR PROJECTS: REPAIR TUNNELS AND STRUCTURES

BART is progressing on a multi-year project to retrofit the Transbay Tube. The Tube is structurally sound but now BART is taking steps to protect the structure against what experts describe as a rare 1,000-year earthquake. BART worked with earthquake retrofit specialists using a combination of geotechnical and structural site investigations, computer simulations, and testing of materials and models to develop the strengthening game plan.

The installation of the inner liner inside of the tube's gallery started in 2017. The next phase began in early 2019. That's when BART shifted from a 4 am to 5 am opening for service and began single tracking through the tube after 9 pm on weekdays to allow more time for the seismic retrofit project. These schedule shifts boost the available productive construction time for the project by 20%. The retrofit will install a curved inner steel lining to key sections of the 3.6-mile-long tube. It will also install an upgraded pumping system to allow larger quantities of water to be removed quickly from the Tube.

Improvements to the Transbay Tube can't be seen by riders but other structural projects are highly visible. At the end of 2020 crews finished replacing the yellow platform edge tiles at Hayward Station. BART has completed similar platform edge replacement projects elsewhere in the system including at the Lafayette and Orinda stations. This work often coincides with major track rebuilding efforts that require impacted stations to be closed on weekends to provide a safe workspace for crews. This is an example of BART maximizing construction time to complete multiple projects at once to reduce public impacts.

Measure RR dedicates a total of \$570 million toward the repair of tunnels and structures. Through December 2020 \$77.8 million in RR funding has been invested in tunnels and structures projects.



Active Projects Completed or Under Construction

Status as of 12/31/2020



MAJOR PROJECTS: RENEW MECHANICAL INFRASTRUCTURE

Replacing mechanical support units that are vital to the BART system not only improves reliability but also enhances safety for riders and employees. A prime example of this work is the Coverboard Enhancement Project. The goal of this project is to replace the miles and miles of curved fiberglass boards that protect the electrified third rail, which powers BART trains. When a coverboard is damaged or falls out of place it can interrupt that reliable source of power for trains, which leads to significant service impacts. Coverboard failures are being reduced through the installation of additional supports and the replacement of aging and damaged boards. So far 58 miles of third rail coverboard have been improved through the enhancement project.

Another area of focus has been to increase fire safety at BART's operations yards where railcars are stored and repaired. Construction has been completed on Concord Yard fire services while work is now underway on safety enhancements at BART's Oakland Yard. Additionally, design work has been completed on fire safety upgrades at the Hayward Yard.

Measure RR dedicates a total of \$135 million toward renewing mechanical support structures. Through December 2020 \$44.9 million in RR funding has been invested in renewing BART's mechanical infrastructure.



Active Projects Completed or Under Construction

Status as of 12/31/2020



MAJOR PROJECTS: RENEW STATIONS

Some of the most visible improvements to result from the Measure RR rebuilding program are now taking shape as the result of station renewal projects. In downtown San Francisco the first three new escalators that are part of a massive overhaul are currently being installed at the Powell Street and Civic Center stations. The \$96.5 million Market Street Escalator Project is funded by Measure RR and will bring 41 new escalators to BART's four downtown San Francisco stations. Many of the escalators being replaced are among the oldest and most heavily used in the BART system.

The new escalators incorporate the latest technology with multiple improvements:

- Safety enhancements that comply with the latest code requirements.
- New lighting systems include programmable LED skirt lighting.
- Materials used in fabrication are lighter in weight yet equally or more robust than heritage escalators.
- Improved reliability and shorter down-time - advanced controller equipment and real-time remote monitoring of escalators allows for BART to know the moment an escalator is not available for public use as well as the cause of the shutdown.

The escalator replacement work is happening in conjunction with the Market Street Canopy Project to ensure the escalators are well protected and riders are provided with revitalized entrances to BART's busiest stations. The canopy project is bringing as many as 22 new entrances to downtown San Francisco stations that include new entrance gates, screens with real-time transit information, and multiple security cameras.

Downtown San Francisco stations are not the only ones being upgraded. In early 2021 a major phase of the El Cerrito del Norte Station Modernization Project was completed. The upgrades and improvements include a fully modernized south entrance, two new elevators, two new staircases, an additional fare gate array, and a dramatic floor to ceiling exterior window wall to brighten the station. Crews will next focus the final Phase 2 of the El Cerrito del Norte Modernization Project, which includes the construction of two new public restrooms and two art walls.

Station modernization projects are also advancing at Union City and 19th Street in downtown Oakland. The 19th Street Modernization Project will bring a series of upgrades to the station including the renovation and reopening of public restrooms, the replacement of existing light fixtures with energy-efficient LED lighting, the installation of new glass railing and fare barriers, and a new elevator at the north end to improve vertical circulation from the concourse level to the platform levels.

Measure RR dedicates a total of \$210 million toward renewing stations. Through December 2020 \$29.6 million in RR funding has been invested in station renewal.



Active Projects Completed or Under Construction

Status as of 12/31/2020



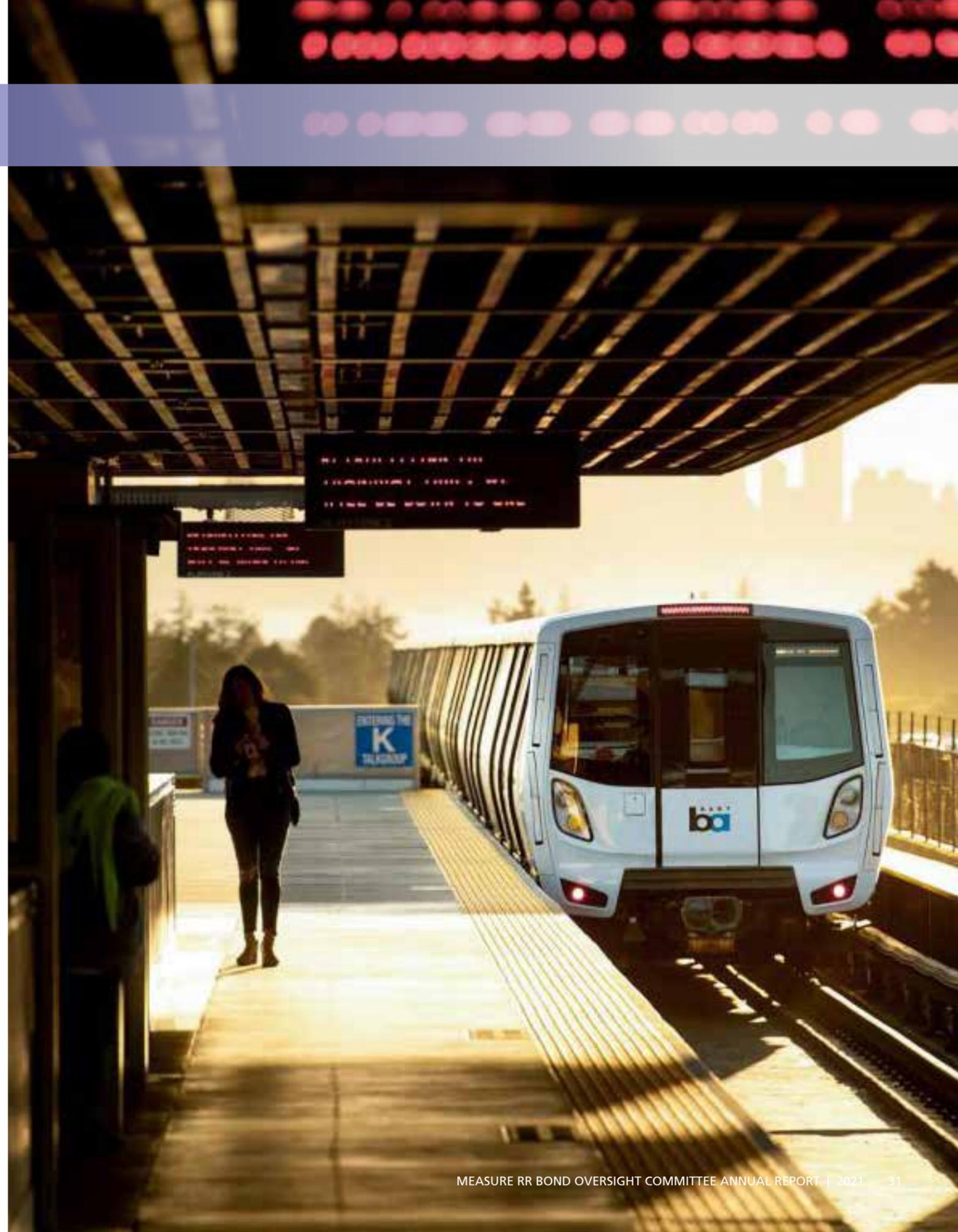
MAJOR PROJECTS: TRAIN CONTROL MODERNIZATION

BART plans to implement a new state-of-the-art Communications Based Train Control (CBTC) system in the next 11 years. The Train Control Modernization Project is part of the broader Transbay Corridor Core Capacity Program, which also includes 252 additional new railcars, a new railcar storage facility, and five new traction power substations. In September 2020 the Federal Transit Administration issued a nearly \$1.2 billion Capital Investment Grant Full Funding Grant Agreement for the Core Capacity Program, a milestone achievement that will help BART to implement a new train control system that will improve reliability and increase capacity.

BART's current fixed-block train control system is very safe but limits the frequency and number of trains BART can run. The current system relies on widely spaced signal blocks to denote train occupancy on the track. This contributes to longer distances between trains and increased travel times. A new CBTC system will detect a train's location using "moving" block technology that allows for more efficient train movement. This translates to a shorter distance between trains (while maintaining safe breaking/stop distances) and means BART can safely operate more trains, improve reliability in service, and decrease travel times. CBTC could boost BART's Transbay capacity by as much as 35%.

BART's plan is to test the new CBTC technology on a test track. Once successfully tested, the new train control system will then be deployed in eight geographical phases, with the ability to run 28 trains per hour in each direction through the Trans Bay Tube in 2030 and up to 30 trains in 2032. Hitachi Rail STS USA, Inc. holds the design-build contract for the CBTC system.

Measure RR dedicates a total of \$400 million toward the implementation of a new train control system. Through December 2020 \$29.5 million in RR funding has been invested in train control modernization.



MAJOR PROJECTS: RELIEVE CROWDING

In January 2021 BART partnered with the Capitol Corridor Joint Powers Authority to launch Link 21, a transformational rail improvement program. The goal of the new program is to link BART with regional rail (including intercity, commuter, and high-speed passenger rail) while also connecting people sustainably to employment opportunities and affordable housing throughout the 21-county Northern California megaregion.

Link 21 is comprised of various projects including a new transbay rail crossing between Oakland and San Francisco. The new crossing will increase capacity for the overcrowded corridor and will bring new passenger rail connections and services to the Megaregion, including potential for a direct, one-seat ride between Sacramento and San Francisco. It is included in the regional Plan Bay Area 2050 Final Blueprint as a key strategy for building a next-generation transit system.

Link21 is backed by voters who approved Measure RR as well as the Metropolitan Transportation Commission's Regional Measure 3. These funds and others will help support the development of the new transbay crossing. A target date for the start of construction has not yet been selected. Link 21 will host a series of public meetings in 2021 to gather feedback on possible program alternatives.

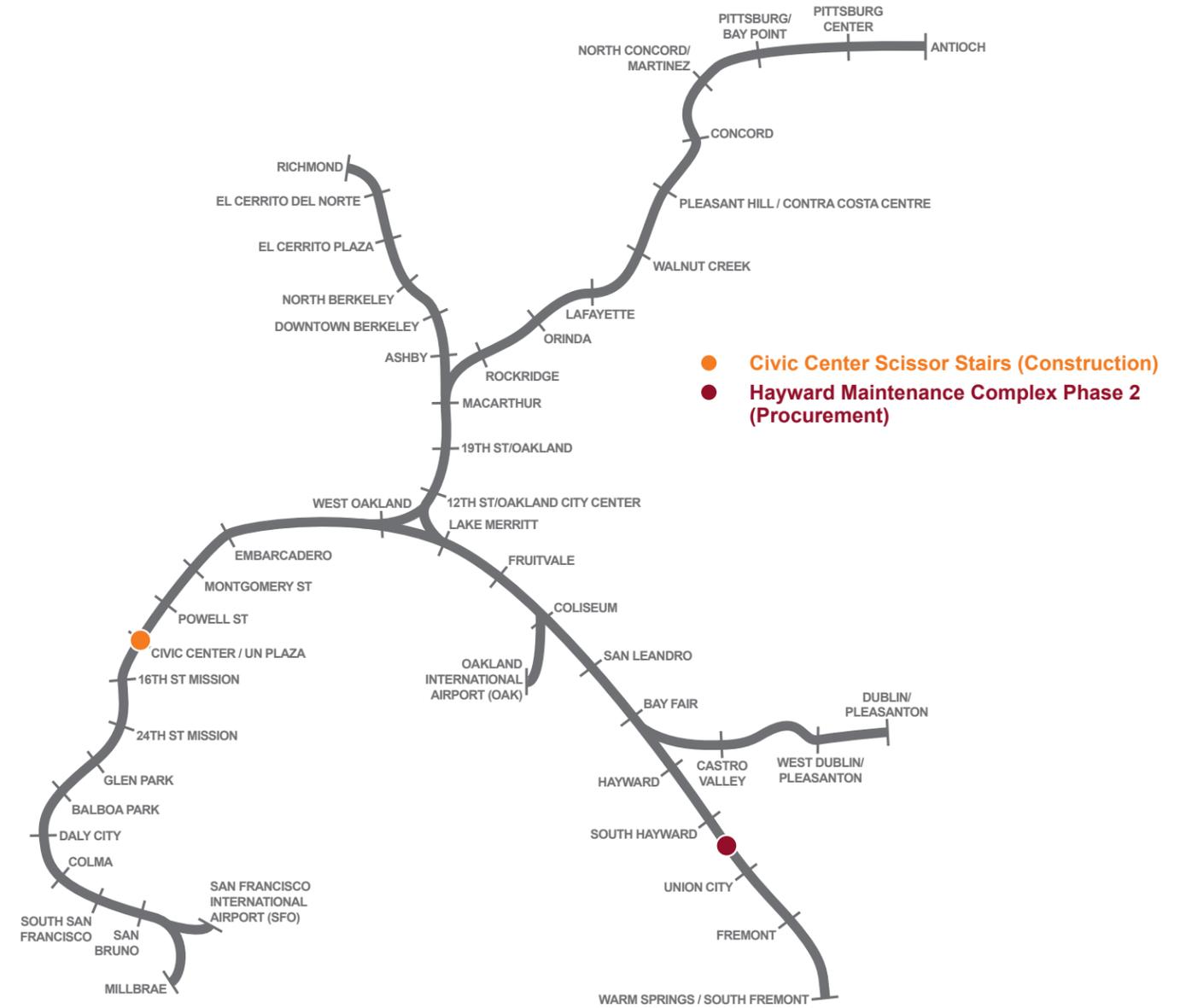
Another project meant to address the region's long-term capacity needs and to ease crowding on BART is the construction of a new railcar storage facility at the Hayward Maintenance Complex. The project calls for acquiring and improving four properties on the west side of the existing Hayward Yard for a larger primary repair shop and a new storage yard for 250 train cars to support the Fleet of the Future. Initial work on improving the trackway leading to the complex is set to begin later in 2021 between the South Hayward and Union City stations. The project is jointly supported by BART and the Santa Clara Valley Transportation Authority, since many of the cars serviced there will operate on the new extension of BART service to San Jose.

Measure RR dedicates a total of \$200 million toward efforts to relieve crowding. Through December 2020 \$38.9 million in RR funding has been invested in crowding-related projects.



Active Projects Under Construction, Design or Planning

Status as of 12/31/2020



MAJOR PROJECTS: ACCESS IMPROVEMENTS

BART is leveraging funding from Measure RR to build new partnerships with the communities it serves to making it easier for riders to get to BART stations. In 2020 BART successfully launched the Safe Routes to BART Program, which uses RR money to support local projects that enhance bicycle and pedestrian connections to stations. The goal is to identify projects that can offer a minimum funding match of 30%, have evidence of governing body support, and have a minimum of 35% design completion.

The Safe Routes to BART Program identified four projects that will receive a combined total of \$3.5 million in RR funding:

Powell Street Station – San Francisco: Fifth Street Improvement Project. This project is located on the city’s high-injury network and its improvements support San Francisco’s Vision Zero goal of eliminating all traffic deaths by 2024 by improving safety along the 5th Street corridor. Safe Routes to BART will provide \$420,000 to support the vehicle-lane reductions, striping, signal timing changes, and a parking protected bikeway already underway with curb ramps, raised crosswalks, transit boarding islands and additional restriping and signage. The project has a total estimated cost of \$1.88 million.

Fremont Station – Walnut Ave./Liberty St. Protected Intersection. This project is located within a quarter mile of three facilities that assist disadvantaged individuals and families. Safe Routes to BART will provide \$920,000 to support shortening crossing distances, removing right turn slip lanes, promote safer vehicle turning speeds, and upgrade lighting and bicycle detection. The project has a total estimated cost of \$1.83 million.

Pittsburg Center – BART Pedestrian/Bike Connectivity Project. This project will fully separate pedestrians and cyclists from vehicle traffic. Safe Routes to BART will provide \$700,000 to help implement four new bike facilities as well as to enhance lighting and provide high visibility crosswalks. The project has a total estimated cost of \$5.5 million.

Dublin/Pleasanton – Iron Horse Trail Bridge. The trail directly connects to the Dublin/Pleasanton and Pleasant Hill BART stations. Safe Routes to BART will provide \$1.5 million to support a grade-separated crossing, which will promote safer and quicker access to the Dublin/Pleasanton station. It will also improve a major gap in the 30-mile multiuse trail. The project has a total estimated cost of \$11.11 million.

This is the first time BART has used a grant program to support access improvement partnerships with local governments.

BART has also recently completed and is moving forward with a number of bike access improvements including the modernization of the Embarcadero and Civic Center Bike Stations; the installation of 92 additional BikeLink locker spaces at West Oakland, San Leandro, El Cerrito Plaza and Hayward stations; and the installation of 30 Bikekeep high security racks at 16th and 24th Street Mission stations. Projects moving forward include:

- Bicycle stair channels at seven station (allowing passengers with bikes to roll, rather than carry, their bikes up and down stairs)
- Design of an expanded Bike Station for the 19th Street Oakland
- Construction of a self-park Bike Station at Lafayette (in conjunction with improved pedestrian access to downtown)

- Improved connections to the Ohlone Greenway and close to 100 additional BikeLink lockers at North Berkeley BART
- Improved connections to the Iron Horse Trail and expanded secure bike parking facilities at Dublin/Pleasanton Station

Measure RR dedicates a total of \$135 million toward access improvements. Through December 2020 \$21.3 million in RR funding has been invested in access improvements.

Active Projects Completed or Under Construction

Status as of 12/31/2020



Committee Activities and Expenditures

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

• May 29, 2020 – Regular Meeting

Oversight Committee holds its first meeting via WebEx conference call under state rules for public meetings implemented in response to the pandemic. Committee elects Catherine Newman to be vice chair with no objections. Committee unanimously appoints vice chair Newman, committee member Michael Day, and committee member Marian Breitbart to serve on the 2021 RR Annual Report subcommittee. Full committee unanimously approves 2020 RR Annual Report. BART staff provides program update with details on how the reduction in service hours is allowing workers more time to advance multiple projects. Committee Chair Michael McGill asks staff to schedule longer meetings so there's more time to ask questions. Staff adds an hour to schedule for next meeting. Several committee members say they'd like more details about watch list items. Staff agrees to provide follow up information at future meetings. Vice Chair Newman asks staff to make sure the WebEx access code for future meetings is correct. Staff will confirm access details to be included on future agendas.

• September 18, 2020 – Regular Meeting

BART staff provides update on search to fill vacant Project Management Institute committee seat. Chairman McGill briefs committee on presentation of RR Annual Report to the BART Board of Directors. McGill says presentation was well received and he supported the approach of having staff deliver a full RR update to the Board before the presentation of the annual report. BART staff says draft outline for the 2021 annual report will be presented at December meeting. Committee member Leah Edwards asks the committee to consider a request from the public who asked that the next report speak to how BART is managing costs compared with other agencies. Staff researching if comparative info is available for the 2021 report. Staff presents updated overview of RR program and suggests committee hear a report on station modernization at a future meeting. Committee agrees.

• December 18, 2020 – Regular Meeting

Meeting notes pending.

• March 19, 2021 – Regular Meeting

Meeting notes pending.

Committee Expenditures: As of this report, the committee has spent \$xxx in Fiscal Year 2021.

You are invited to participate in future Measure RR Bond Oversight Committee meetings. Those meetings are scheduled to happen on the third Fridays of March, June, September, and December. The meetings are open to the public via videoconference during the pandemic and will be listed on the BART website at www.bart.gov/about/bod/meetings/2019. Members of the public will be welcome to attend committee meetings in person once it's deemed safe to do so by health officials. The committee will also be publishing an annual report each year to inform the public of BART's progress and activities.

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



Resources to Learn More

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.

<p>Previous Measure RR Annual Reports published by the Bond Oversight Committee</p>	<p>2020 Annual Report https://www.bart.gov/sites/default/files/docs/Measure%20RR%20Report%202020%20June%20Final.pdf</p> <p>2019 Annual Report https://www.bart.gov/sites/default/files/docs/RR%20Report%20July%202019.pdf</p> <p>2018 Annual Report https://www.bart.gov/sites/default/files/docs/BART_Measure_RR_AReport_6_27_18_WEB.pdf</p>
<p>Measure RR Standing Rules and Original Documents</p>	
<p>Bond Oversight Committee Standing Rules</p>	<p>This document outlines the basics of how the Measure RR Bond Oversight Committee operates including length of committee member terms, how many meetings must occur each year, and rules to safeguard against conflicts of interest. https://www.bart.gov/sites/default/files/docs/Bond%20Oversight%20Committee%20Standing%20Rules_Adopted%2012-18-2020%20.pdf</p>
<p>Original Measure RR Bond Resolution</p>	<p>This is the document approved unanimously by the BART Board of Directors on June 9, 2016 that lead to Measure RR being placed on the November 2016 ballot in the BART District. https://www.bart.gov/sites/default/files/docs/Bond%20resolution.pdf</p>
<p>2016 Treasurer's Tax Rate Statement</p>	<p>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 which would be required to be levied to fund the bond issue, the total debt service and more. https://www.bart.gov/sites/default/files/docs/2016%20Tax%20Rate%20Statement%20SIGNED.pdf</p>
<p>2016 Measure RR Fact Sheet</p>	<p>Includes details put before District voters in advance of the 2016 election including how the bond would work, how much property owners could expect to pay, and a financing schedule for Measure RR. https://www.bart.gov/sites/default/files/docs/2016%20Tax%20Rate%20Statement%20SIGNED.pdf</p>
<p>Green Bond Background</p>	
<p>Green Bonds</p>	<p>BART provides updated information on its climate-certified green bonds including preliminary offering statements and credit reports at www.bart.gov/greenbonds.</p>

Appendix

Appendix 1: Pages from Fiscal Year 2020 Financial Statement Audit that pertain to long term debt and Measure RR. The first page describes the bonds issued to finance Measure RR projects; the second page is a summary of proceeds, uses, and balances; and the final page shows expenditures by project.

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

Notes to Financial Statements (Continued)

June 30, 2020 and 2019

Long-Term Debt (Continued)

2017 Measure RR General Obligation Bonds (the 2017A Measure RR GO Bonds)

In June 2017, the District issued the 2017 Series A Measure RR General Obligation Bonds with an aggregate principal amount of \$300,000,000 and a premium of \$35,641,000. The 2017A Measure RR GO Bonds were issued in 2 series, 2017A-1 Measure RR Bonds in the amount of \$271,600,000 and 2017A-2 Measure RR Bonds (Federally Taxable) in the amount of \$28,400,000. The 2017A Measure RR GO Bonds are part of a \$3,500,000,000 authorization approved at an election held on November 8, 2016 (Election of 2016), by over two-thirds of the qualified voters of the District voting on a ballot measure (“Measure RR”) titled “BART Safety, Reliability and Traffic Relief” to keep BART safe; prevent accidents/breakdowns/delays; relieve overcrowding; reduce traffic congestion/pollution; and improve earthquake safety and access for seniors/disabled by replacing and upgrading 90 miles of severely worn tracks, tunnels damaged by water intrusion; 44-year old train control systems; and other acquisition or improvement of real property. The 2017A Measure RR GO Bonds constitute the first issue of general obligation bonds being issued pursuant to the Measure RR authorization. Proceeds from the 2017A Measure RR Bonds will be applied to (1) finance the projects described in Measure RR, and (2) pay a portion of the debt service on the 2017A Measure RR Bonds through February 1, 2018, including the debt service in full of the 2017A-2 Bonds.

The 2017A Measure RR GO Bonds are general obligations of the District, payable from and secured solely by ad valorem taxes upon all property subject to taxation by the District, without limitation as to rate or amount (except for certain personal property which is taxable at limited rates) levied in Alameda and Contra Costa Counties and the City and County of San Francisco. No other revenues of the District are pledged to the payment of the 2017A Measure RR GO Bonds.

At June 30, 2020, the remaining outstanding principal balance of \$262,280,000 related to the 2017A-1 Measure RR GO Bonds consist of \$131,160,000 in serial bonds due from August 1, 2020 to August 1, 2037 with interest ranging from 2% to 5%, a \$58,500,000 term bond with interest of 4% maturing in August 1, 2042, and a \$72,620,000 term bond with interest of 5% maturing in August 1, 2047. The 2017A-1 serial bonds maturing on or after August 1, 2028 are subject to redemption prior to their respective stated maturities, at the option of the District, from any source of available funds, as a whole or in part, on any date on or after August 1, 2027, at the principal amount of such 2017A-1 Measure RR GO Bonds called for redemption, together with interest accrued thereon to the date fixed for redemption, without premium. If less than all of the 2017A-1 Measure RR GO Bonds are called for redemption, the 2017A-1 Measure RR GO Bonds shall be redeemed in inverse order of maturities (or as otherwise directed by the District), and if less than all of the 2017A-1 Measure RR GO Bonds of any given maturity are called for redemption, the portions of 2017A-1 Measure RR GO Bonds of a given maturity shall be determined by lot. The 2017A-1 Term Bonds maturing on August 1, 2042 and August 1, 2047 are subject to mandatory sinking fund redemption beginning August 1, 2038, at a redemption price equal to the principal amount to be redeemed (without premium), together with interest accrued thereon to the date fixed for redemption.

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

Notes to Financial Statements (Continued)

June 30, 2020 and 2019

Long-Term Debt (Continued)

2019 Measure RR General Obligation Bonds (Green Bonds) Series B-1 and B-2 (the 2019B-1 Measure RR GO Bonds and 2019B-2 Measure RR GO Bonds)

In August 2019, the District issued the 2019 Measure RR General Obligation Bonds Series B-1 with an aggregate principal amount of \$313,205,000 and 2019 Measure RR General Obligation Bonds Series B-2 with an aggregate principal amount of \$46,795,000. The 2019B-1 Measure RR GO Bonds and 2019B-2 Measure RR GO Bonds constitute the second issuance under authorization approved at an election held on November 8, 2016 (Election of 2016), by over two-thirds of the qualified voters of the District voting on a ballot measure ("Measure RR") titled "BART Safety, Reliability and Traffic Relief".

The 2019 Measure RR GO Bonds Series B1 and Series B-2 are general obligations of the District, payable from and secured solely by ad valorem taxes upon all property subject to taxation by the District, without limitation as to rate or amount (except for certain personal property which is taxable at limited rates) levied in Alameda and Contra Costa Counties and the City and County of San Francisco. No other revenues of the District are pledged for debt service of these bonds. At June 30, 2020, the full principal balance of \$46,795,000 pertaining to the 2019B-2 Measure RR GO Bonds were fully paid. The outstanding principal balance of \$313,205,000 related to the 2019B-1 Measure RR GO Bonds consist of \$165,375,000 in serial bonds due from August 1, 2020 to August 1, 2039 with interest ranging from 3% to 5%, a term bond with principal balance of \$ 37,750,000 due on August 1, 2044 with 4% interest, and a term bond with principal balance of \$110,080,000 due on August 1, 2049, with 3% interest.

After the issuance of the 2019 Measure RR GO Bonds, Series B-1 and Series B-2, the remaining Measure RR General Obligation Bonds that can be issued by the District as authorized under Measure RR is \$2,840,000,000.

Measure RR proceeds, uses and balances are listed below (dollar amounts in thousands):

2017 RR GO Bond Series A-1 and A-2 proceeds	\$ 300,000
2019 RR GO Bond Series B-1 and B-2 proceeds	360,000
Total bonds proceeds as of June 30, 2020	<u>660,000</u>
Project fund expenditures:	
Fiscal year 2017	\$ 17,892
Fiscal year 2018	87,435
Fiscal year 2019	229,155
Fiscal year 2020	<u>309,031</u>
	<u>643,513</u> *
Remaining to be applied to subsequent bond issue - June 30, 2020	<u>\$ 16,487</u> **

* Includes accrual of \$42,188,000.

** The second tranche of Measure RR GO Bonds amounting to \$360,000,000 was issued in August 2019 (2019 Series B).

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

Notes to Financial Statements (Continued)

June 30, 2020 and 2019

6. Long-Term Debt (Continued)

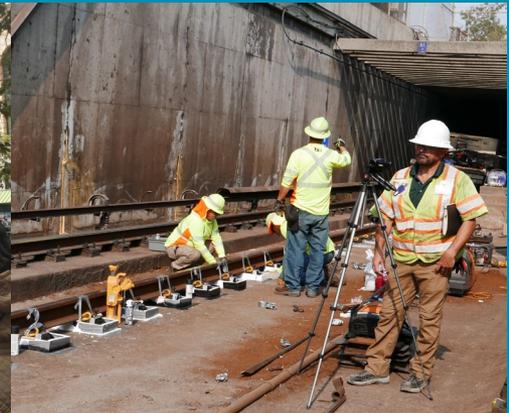
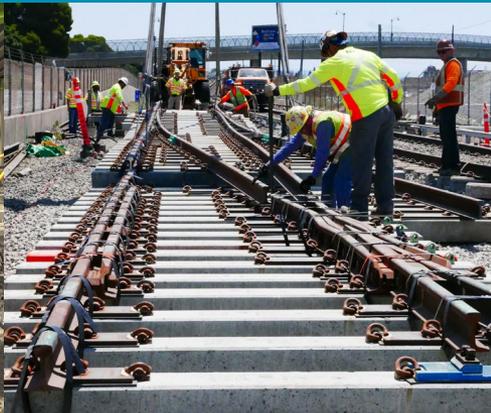
The following are the major projects and related expenditures funded by proceeds from Measure RR GO Bonds issued through June 30, 2020 (dollar amounts in thousands):

Project	Description	Cumulative Expenditures through June 30, 2020	
15CQ002	Rails, Ties, Fasteners Phase 3	\$	106,730
15EKRR1	TP-Switch Stations & Gap Break		53,331
15EJRR1	34.5 KV AC Cable Replacement		49,544
15EJ450	M-Line 34.5 KV Replace Ph.II		46,092
09EK300	Emergency Generator for TBT		27,298
15CQ018	Rail Relay		25,281
15TC002	Renewal of Tunnels & Structures		22,027
49GH000	Train Control Modernization - CENGR		19,602
15CQ005	C35 Interlocking		18,031
15LK002	San Francisco Escalator Replacement		13,512
09AF002	Replace Cross Pass Doors TBT Control		11,491
15CQ006	C25 Interlocking		10,176
15EK350	Substation Replace/Install Grp II		9,115
54RR004	M&E Line Rail Equipment		8,866
15CQ004	Track C55 Interlocking		8,843
49GH002	TCMP- Enabling Work		8,774
01RQ100	HMC Phase 2 Preliminary Engineering		8,577
15ELRR1	MPR Install & Rectifier Rehabilitation		8,516
09JA000	2nd Trans Bay Tube Study		8,186
15CQ001	Rails, Ties, Fasteners 2		7,734
15ELRR3	Third Rail Replacement Phase 3		6,140
15CQ016	Direct Fixation Pads		6,030
15EK600	Substation for Core Capacity		5,644
15CQ008	K-Line Interlocks K23, K25, K33C15		5,554
96DARR1	FTA Core Capacity (Measure RR)		5,436
15EJRRK	K-Line 34.5kV AC Cable Replacement		5,315
05HA002	El Cerrito del Norte Station Modernization		5,297
15CQ017	Rail Re-profiling		4,552
15EJ400	Traction Power Cables- M Line		4,323
15TC011	Platform Edge Structure Rehabilitation		4,114
15IIRR1	Stations, Emergency Lighting		4,043
54RR250	Fire Services Yards- OCY		3,893
15AARR1	Tunnel LED Lighting Upgrade		3,888
07GJ000	MacArthur Transit Improvements		3,845
15ST002	A Line Operability Feasibility Study		3,810
79NKRR1	Train Control Room UPS System		3,804
11IA002	Civic Center Platform Stairs		3,756
15CQ011	A65/A75 Interlocking - Replacement		3,721
15EJRRC	C-Line 34.5kV AC Cable Replacement		3,625
15NU002	Accessibility Improvement Program		3,402
54RR410	Coverboard Enhancement C and L Lines		2,866
15ELRR2	34.5kV Blocking Scheme Systemwide		2,557
15EIRR1	CWS Bulk Supply Transformer		2,109
04SF190	eBART Additional Parking Lot		2,077
	Others		71,986
	Total	\$	<u>643,513</u>

Total Measure RR project costs reimbursed from bond proceeds since inception through June 30, 2020 amounted to \$557,038,000.



BART Safety, Reliability, and Traffic Relief Program (Measure RR) Update



Bond Oversight Committee
March 19, 2021



Bond Oversight Committee Duties & Responsibilities

- Provide diligent, independent and public oversight over the expenditure of funds from the sale of District general obligation bonds
- Assess how bond proceeds are invested to ensure that all spending is authorized by the ballot measure
- Assess whether projects funded by bond proceeds are completed in a timely, cost-effective and quality manner consistent with the best interest of BART riders and District residents
- Publish an annual report that includes a detailed account of the Committee's activities including its expenditures



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• RR Program Hiring	8
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• Individual Program Milestones	17
• Budget and Schedule Status	26
• Next Steps	34



Executive Summary

- Through January 2021, \$802.2M of the Measure RR funds have been invested to complete 25% of the work.
- Successes
 - Interlocking projects meeting performance metrics
 - A65 is complete
 - R65 in progress
 - Core Capacity West Bay Substations construction in progress
 - Market Street Escalator – First 3 escalators installed
 - El Cerrito Del Norte – Phase 1 Construction Completed
 - New Transbay Rail Crossing Link21 – Evaluating proposals
- Challenges
 - COVID-19
 - Early retirement incentive

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
6	44(-1)	17(-4)	60(+3)	20(+1)	147*

+ (Projects added in the phase)

- (Projects no longer in the phase)



RR Program Small Business & Outreach



RR Program Update – Small Business

Program	Total RR Commitment	Total RR SB Commitment	SB Commitment %	# of SB Contracts	Total RR Payments on RR Contracts	RR Payments to SBs	SB Payment %
Renew Track	\$105,408,244	\$31,927,676	30%	114	\$70,048,277	\$14,125,295	20%
Renew Power	\$167,333,843	\$82,140,285	49%	166	\$116,121,335	\$73,488,532	63%
Repair Tunnels & Structures	\$111,321,795	\$27,786,857	25%	120	\$67,975,279	\$10,856,041	16%
Renew Mechanical	\$31,271,563	\$10,830,252	35%	59	\$17,755,726	\$6,761,919	38%
Replace Train Control/Increase Capacity	\$15,032,534	\$2,555,378	17%	59	\$8,887,262	\$1,409,327	16%
Renew Stations	\$145,100,083	\$27,260,058	19%	87	\$23,995,707	\$6,489,866	27%
Expand Safe Access to Stations	\$15,702,940	\$4,341,623	28%	92	\$9,265,666	\$3,333,150	36%
Design/Engineer to Relieve Crowding	\$68,034,554	\$16,667,148	24%	64	\$27,010,079	\$6,759,783	25%
Total	\$ 659,205,557	\$203,509,278	31%	760	\$341,059,331	\$123,223,912	36%

Notes: All amounts are based on RR fund percent only. Amounts are updated to March 3, 2021. Includes formal contracts only; does not include informal purchases or work performed by BART's own forces. SB totals include DBEs, MSBEs, SBs, and LSBs. Sources: RR commitments are based on RR Requisitions report, Procurement Sealed Bids Report and PeopleSoft Work Plans application. RR% for each project is based on Financial Analysts' report, RR Funds / Total Project Budget. Payments based on PeopleSoft and B2GNow.



RR Program Update – Outreach



• Recently Completed Events

- BART SBSS – Post Award Services Introduction
- BART SB Outreach - Meet Project Staff and Learn About Upcoming RR Opportunities
- BART SBSS – BART B2Gnow (Vendor Payment Tracking System) Training
- BART SB Outreach - How to do Business with BART
- BART SBSS – Elations Workshop



• Upcoming Events

- BART SB Outreach – Learn About Upcoming Stations Opportunities
- BART SB Outreach – Learn About BART’s Procurement Process



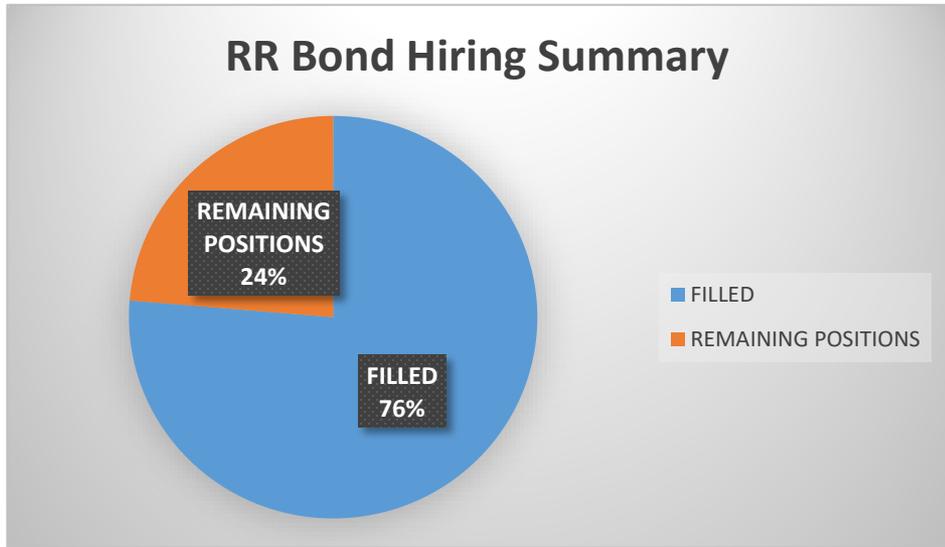
RR Program Hiring



Recruitment

Bond Hiring Summary- To Date	# of Positions
FILLED	332
REMAINING POSITIONS	103
	435

- 332 positions filled to date
- 76% of hiring goal fulfilled to date
- Load Shedding
- 20 positions – pending recruitments



Load Shedding Operating to Capital due to Service Reduction

Next Quarter staffing load shedding estimated 110 for temporary reallocation to take advantage of increased blanket time

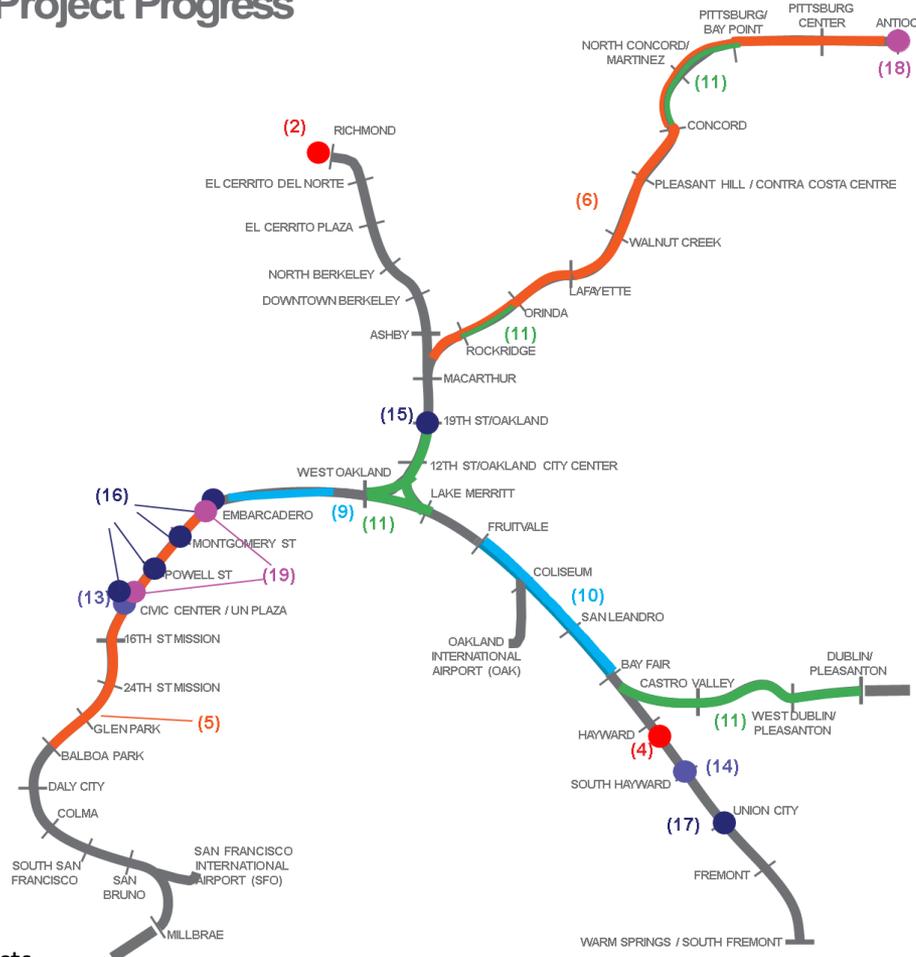


Work Progress Since Last Meeting



Examples of Active RR Projects in November 2020 – January 2021

Measure RR - Project Progress



Renew Track

- 1 Replace Direct Fixation Pads (Systemwide Not Mapped) – Ongoing Construction
- 2 R65 Track Interlocking Replacement – Ongoing Construction*
- 3 Rail Relay – Ongoing Construction - (Systemwide Not Mapped)
- 4 A65/A75 Track Interlocking Replacement – Ongoing Construction

Renew Power Infrastructure

- 5 M-Line 34.5kV Cable Replacement - Ongoing Construction
- 6 C-Line 34.5kV Cable Replacement – Ongoing Construction*
- 7 Third Rail Replacement (Systemwide Not Mapped) – Ongoing Construction

Renew Tunnel & Structures

- 8 Substation Walls – Ongoing Construction (Systemwide Not Mapped)
- 9 Earthquake Safety Program – Transbay Tube Retrofit – Ongoing Construction
- 10 Aerial Fall Protection A line North – Ongoing Construction*

Renew Mechanical

- 11 Coverboard Enhancement – Ongoing Construction
- 12 Facilities HVAC Equipment Replacement System Wide Phase 1 - Ongoing Construction (Not Mapped)

Design/Engineer to Relieve Crowding

- 13 Civic Center Scissor Stairs – Ongoing Construction
- 14 Hayward Maintenance Complex Phase 2 - Civil/Grading – Received Bids*

Renew Stations

- 15 19th Street Station Modernization – Ongoing Construction
- 16 Market Street Canopies and Escalator – Ongoing Construction
- 17 Union City Station Modernization - Ongoing Construction

Expand Safe Access

- 18 eBART Antioch Parking Lot Contract – Ongoing Construction
- 19 Bicycle Stair Channels – Ongoing Construction*
- 20 Safe Route to BART Grant Program – Awarded (Not Mapped)

Replace Train Control/Increase Capacity

- 21 CBTC Design Build Contract – NTP (Systemwide Not Mapped)

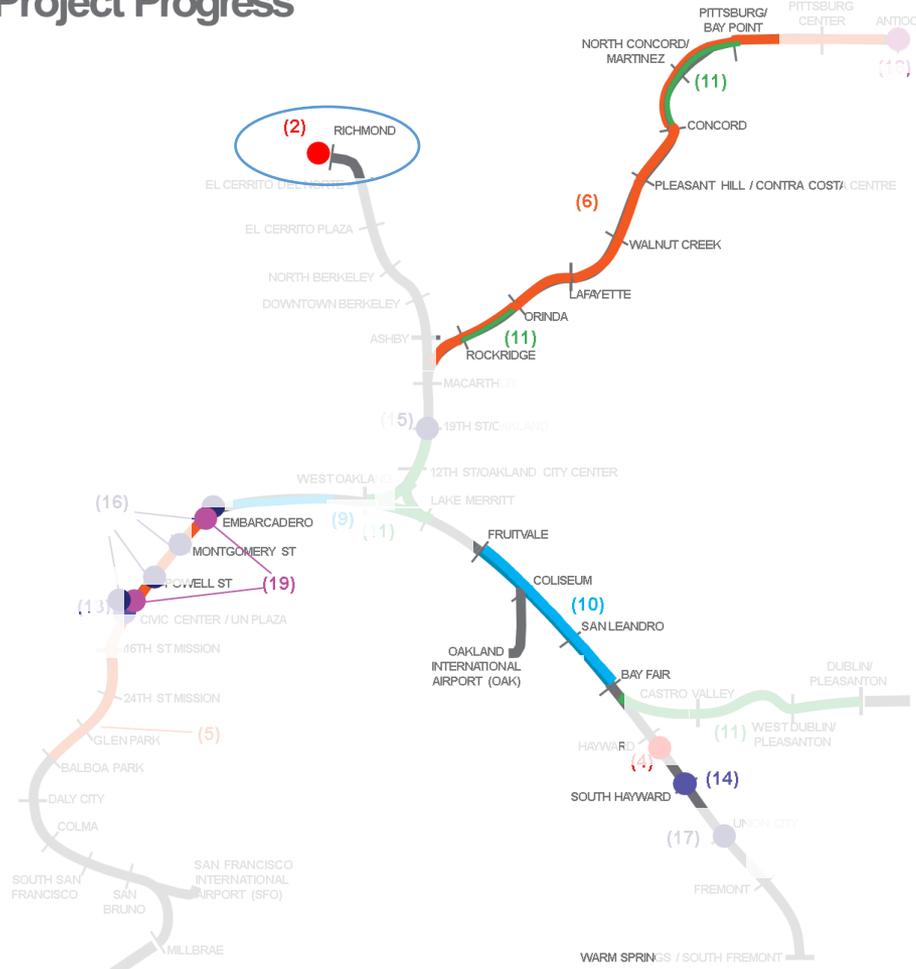
*Updated projects

Projects with Accelerated work due to COVID-19 service reduction



Updated Projects

Measure RR - Project Progress



Renew Track

- 1 Replace Direct Fixation Pads (Systemwide Not Mapped) – Ongoing Construction
- 2 **R65 Track Interlocking Replacement – Ongoing Construction***
- 3 Rail Relay – Ongoing Construction - (Systemwide Not Mapped)
- 4 A65/A75 Track Interlocking Replacement – Ongoing Construction

Renew Power Infrastructure

- 5 M-Line 34.5kV Cable Replacement - Ongoing Construction
- 6 **C-Line 34.5kV Cable Replacement – Ongoing Construction***
- 7 Third Rail Replacement (Systemwide Not Mapped) – Ongoing Construction

Renew Tunnel & Structures

- 8 Substation Walls – Ongoing Construction (Systemwide Not Mapped)
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- 10 **Aerial Fall Protection A line North – Ongoing Construction***

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- 20 Safe Route to BART Grant Program – Awarded (Not Mapped)

Replace Train Control/Increase Capacity

- 21 CBTC Design Build Contract – NTP (Systemwide Not Mapped)



R65 Interlocking Replacement

Scope

- Replace four turnouts and associated traction power and train control equipment
 - Replace 2000ft of 3rd rail, insulators, and coverboard
 - Replace train control coils, loops, and junction boxes
 - Replace all traction power and train control infrastructure (i.e. duct banks and cabling)
 - Maintenance Way access improvement
- Increase turnout curve radius to improve train traffic flow



Site Challenges

- Interlocking is at the end of the line and services Richmond Yard, requiring it to remain in operation during construction (bus bridge around the interlocking not possible)
- Trains cannot be staged outside of work area to support operations
- Up to 270 trains move through interlocking daily (pre COVID-19)
- Only interlocking in BART system where tracks diverge across the interlocking instead of remaining parallel
- Limited crane staging area for installing new turnouts



R65 Interlocking Replacement



Overcoming Site Challenges

- ✓ Richmond station shutdown
 - ✓ Bus bridge between El Cerrito del Norte and Richmond stations
- ✓ Saturday shutdowns for turnout installations
 - ✓ All trains dispatched from the yard in the morning and return in the evening
 - ✓ 10-hour shutdown window between morning and evening train movement for positioning turnouts



R65 Interlocking Replacement



- 350-ton crane used to move turnouts – Largest Crane ever erected and used on BART property
 - Crane pick distance up to 150 ft
 - Each turnout piece weighs 87 tons (two pieces per turnout)
 - Each turnout piece is lifted into place separately
- All other work (i.e. ballast installation, 3rd rail replacement, switch point alignment, etc.) occurs while trains single track to and from the yard through the work site



R65 Construction Time Lapse Video

[R65 Track Interlocking Replacement Time Lapse Video](#) (link)



Individual Program Milestones



Renew Track

STATUS & MILESTONES

EXPENDED Thru 01/2021: \$243.0

FORECAST Thru 9/2023: \$382

TOTAL PROGRAM VALUE: \$625

PERIOD CASHFLOW: \$19.2

STATUS – Renew Track

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
1	2	3	8	6	20

MILESTONES

Completed (Nov 2020– Jan 2021)	Q3 (Feb 2021 – Mar 2021)	Q4 (Apr 2021 – Jun 2021)	Q1 (Jul 2021 – Sep 2021)
<ul style="list-style-type: none"> Mobilization/Construction Begin for R65 Interlocking Replacement (near Richmond Station) Mobilization/Construction Begin for Oakland Yard Track Geometry Vehicle Storage Shed Completion of Construction of C25 	<ul style="list-style-type: none"> Completion of Construction Shutdowns for R65 Interlocking Replacement (near Richmond Station) 	<ul style="list-style-type: none"> Completion of Construction Shutdowns for A75 Interlocking Replacement (near Hayward Yard) <i>Issue for Bid A77 Interlocking Replacement Special Trackwork (Near Hayward Yard)</i> Completion of Design for Friction Modification Study Completion of Construction for R65 Interlocking Replacement (near Richmond Station) 	<ul style="list-style-type: none"> Contract Award for A77 Interlocking Replacement Special Trackwork Issue for Bid Richmond Yard Track Rehabilitation Special Trackwork

Watchlist:

- Material acquisition for Richmond Yard Track Replacement

Italic: Modified milestones from previous report.



Renew Power STATUS & MILESTONES

EXPENDED Thru 01/2021: \$300.9

FORECAST Thru 9/2023: \$573

TOTAL PROGRAM VALUE: \$1,225

PERIOD CASHFLOW: \$42.2

STATUS – Renew Power Infrastructure

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
0	7	5	15	2	29

MILESTONES

Completed (Nov 2020– Jan 2021)	Q3 (Feb 2021 – Mar 2021)	Q4 (Apr 2021 – Jun 2021)	Q1 (Jul 2021 – Sep 2021)
<ul style="list-style-type: none"> • Completion of Design for 34.5kV Blocking Scheme Systemwide • Complete Commissioning of new Substation at San Leandro Station 	<ul style="list-style-type: none"> • Issue for Bid R Line 34.5kV Cable Replacement • Contract Award for material purchase of fiber optic cables and cable troughs for the C, K and R Lines 34.5kV Cable Replacement 	<ul style="list-style-type: none"> • <i>Contract Award for R Line 34.5kV Cable Replacement</i> • <i>Completion of Design for Station Fire Alarm Replacement Phase 4</i> 	<ul style="list-style-type: none"> • <i>Issue for Bid Walnut Creek Traction Power Substation Replacement</i> • <i>Issue for Bid Station Fire Alarm Replacement Phase 3</i>

Watchlist:

- Bid Package Development for Walnut Creek Traction Power Substation Replacement

Italic: Modified milestones from previous report.



Tunnels & Structures

STATUS & MILESTONES

EXPENDED Thru 01/2021: \$85.2

FORECAST Thru 9/2023: \$136

TOTAL PROGRAM VALUE: \$570

PERIOD CASHFLOW: \$21.8

STATUS – Repair Tunnels & Structures

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
1	12	0	9	4	26

MILESTONES

Completed (Nov 2020– Jan 2021)	Q3 (Feb 2021 – Mar 2021)	Q4 (Apr 2021 – Jun 2021)	Q1 (Jul 2021 – Sep 2021)
<ul style="list-style-type: none"> • Completion of Construction for Platform Rehabilitation at Hayward Station • <i>NTP for Richmond Yard Fence Rehabilitation</i> • <i>Completion of Construction for Safety Barriers by Contractor</i> • <i>Construction begin for Aerial Fall Protection A Line North</i> • <i>Issue for Bid Cross Passage Doors (Systemwide)</i> 	<ul style="list-style-type: none"> • Completion of Construction for Substation Walls 	<ul style="list-style-type: none"> • Begin Construction for Richmond Yard Fence Rehabilitation 	<ul style="list-style-type: none"> • Completion of Design for Water Intrusion at Track and Platform Joint at C and R Lines • Completion of Design for Water Intrusion at Track and Platform Joint at A Line

Watchlist:

Italic: Modified milestones from previous report.



Renew Mechanical

STATUS & MILESTONES

EXPENDED Thru 01/2021: \$47.2

FORECAST Thru 9/2023: \$77

TOTAL PROGRAM VALUE: \$135

PERIOD CASHFLOW: \$8.2

STATUS – Renew Mechanical

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
1	6	6	11	1	25

MILESTONES

Completed (Nov 2020– Jan 2021)	Q3 (Feb 2021 – Mar 2021)	Q4 (Apr 2021 – Jun 2021)	Q1 (Jul 2021 – Sep 2021)
<ul style="list-style-type: none"> • Completion of Construction Concord Yard Fire Services • Completion of Design for Hayward Yard Fire Services • Construction Begin for Oakland Yard fire Services 	<ul style="list-style-type: none"> • Completion of Construction for Rotoclones Replacement • <i>Completion of Construction Coverboard Enhancement</i> 	<ul style="list-style-type: none"> • Contract Award of Design for Concord Yard Turntable Replacement • Issue for Bid the Concord Yard Wheel Truing Machine • Completion of Construction for Vacuum System at Oakland Shop 	<ul style="list-style-type: none"> • Construction Complete for Access Ladders

Watchlist:

- Unforeseen site conditions for Rotoclone Replacement

Italic: Modified milestones from previous report.



Replace Train Control

STATUS & MILESTONES

EXPENDED Thru 01/2021: \$32.1

FORECAST Thru 9/2023: \$89

TOTAL PROGRAM VALUE: \$400

PERIOD CASHFLOW: \$3.9

STATUS – Replace Train Control / Increase Capacity

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
0	0	1	4	0	5

MILESTONES

Completed (Nov 2020– Jan 2021)	Q3 (Feb 2021 – Mar 2021)	Q4 (Apr 2021 – Jun 2021)	Q1 (Jul 2021 – Sep 2021)
<ul style="list-style-type: none"> • Notice to Proceed for CBTC Design Build Contract 49GH-110/Mobilize Payment Paid • Start Conceptual Design for CBTC Design Build Contract • Issued CBTC Change Notice 61 NTP/NTE for Bombardier Conceptual Design Review for D-Cars 	<ul style="list-style-type: none"> • Advertise Contract 49GH-130 for Power Supply Cabinets & Switch Machine/Train Control power cables • Issue CBTC Change Notice 005 NTP/NTE for Hitachi to provide Preliminary and Final Design review for the D-Cars • CBTC Baseline Schedule submitted and approved • <i>CBTC to start Field Survey Wayside</i> • <i>Issue CN 001 Cost Proposal for Yard Interlock Modifications</i> 	<ul style="list-style-type: none"> • Complete CBTC Conceptual Design Review • Start CBTC Preliminary Design Review • Open Bids – Contract 49GH-130, Power Supply Cabinets & Switch Machine/Train Control Cable • <i>Finalize Demo Lidar Survey Data on S-Line</i> 	<ul style="list-style-type: none"> • <i>Continue CBTC Preliminary Design</i> • <i>Begin Phase 1 ATS Development & Manufacturing</i> • <i>Award and Notice to Proceed for Contract 49GH-130, Power Supply Cabinets & Switch Machine/Train Control Cable</i>

Watchlist:

- None

Italic: Modified milestones from previous report.



Renew Stations

STATUS & MILESTONES

EXPENDED Thru 01/2021: \$31.5
 FORECAST Thru 9/2023: \$125
 TOTAL PROGRAM VALUE: \$210
 PERIOD CASHFLOW: \$7.5

STATUS – Renew Stations

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
1	2	0	6	0	9

MILESTONES

Completed (Nov 2020– Jan 2021)	Q3 (Feb 2021 – Mar 2021)	Q4 (Apr 2021 – Jun 2021)	Q1 (Jul 2021 – Sep 2021)
<ul style="list-style-type: none"> Market St. Escalator Project - Perform the installation of first group of escalators <i>Market St. Entry Canopies – Performed subsurface investigations</i> Powell St. Station Modernization - Begin Hazmat abatement work Walnut Creek North Stairs - Complete 100% Design 19th St. Modernization – Complete construction of staircase modernization at 1 location 	<ul style="list-style-type: none"> Market St. Escalator Project – Complete, inspect, test, and commission first group of escalators and begin installation of 2nd group of escalators <i>Market St. Entry Canopies – Begin installations of systems infrastructure within Montgomery Station</i> Powell St. Station Modernization – Begin lighting improvements <i>El Cerrito Del Norte - Phase 1 opening</i> <i>Union City Station Modernization - Completion and acceptance of Southeast escalator and vestibule expansion</i> 	<ul style="list-style-type: none"> Union City Station Modernization - Southeast Escalator Commissioning & Turnover completion El Cerrito Del Norte - Phase 2 Opening, Substantial Construction Completion 	<ul style="list-style-type: none"> <i>Union City Station modernization - Final Project Completion</i> <i>El Cerrito Del Norte – Begin Closeout</i> <i>19th St. Modernization - Substation Completion of public restrooms</i>

Watchlist:

- Funding Walnut Creek North Stairs Construction
- 19th St. Station Modernization

Italic: Modified milestones from previous report.



Station Access STATUS & MILESTONES

EXPENDED Thru 01/2021: \$22.9

FORECAST Thru 9/2023: \$37

TOTAL PROGRAM VALUE: \$135

PERIOD CASHFLOW: \$3.4

STATUS – Expand Safe Access to Stations

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
0	12	1	6	6	25

MILESTONES

Completed (Nov 2020– Jan 2021)	Q3 (Feb 2021 – Mar 2021)	Q4 (Apr 2021 – Jun 2021)	Q1 (Jul 2021 – Sep 2021)
<ul style="list-style-type: none"> Awarded and executed funding agreements with jurisdiction for Safe Routes to BART (SR2B) Grant Program Began planning with BART forces for Bicycle Stair Channel project 	<ul style="list-style-type: none"> Begin work with BART forces to construct the bicycle stair channels at seven stations Submit Accessibility Improvement (Phase 1) Bid Documents to Procurement to prepare for advertising Initiate Construction of the San Francisco 5th Street project (SR2B) <i>El Cerrito Del Norte – Phase 1 Opening</i> 	<ul style="list-style-type: none"> eBart Antioch Parking Lot - Substantial Completion Advertise Accessibility Improvement (Phase 1) Construction Completion of the Warm Springs West Pedestrian Bridge and Plaza Project Initiate Construction of Pittsburg Center (SR2B) <i>El Cerrito Del Norte Mod – Phase 2 Opening, Substantial Construction Completion</i> 	<ul style="list-style-type: none"> <i>Initiate Construction Dublin Iron Horse Trail Bridge project (SR2B)</i> <i>Initiate Construction of North Berkeley Active Access project</i>

Italic: Modified milestones from previous report.

Watchlist:

- None



Relieve Crowding STATUS & MILESTONES

EXPENDED Thru 01/2021: \$39.5

FORECAST Thru 9/2023: \$76

TOTAL PROGRAM VALUE: \$200

PERIOD CASHFLOW: \$6.0

STATUS – Design / Engineer to Relieve Crowding

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
2	3	1	1	1	8

MILESTONES

Completed (Nov 2020– Jan 2021)	Q3 (Feb 2021 – Mar 2021)	Q4 (Apr 2021 – Jun 2021)	Q1 (Jul 2021 – Sep 2021)
<ul style="list-style-type: none"> Evaluate bids for Hayward Maintenance Complex Phase 2: Civil/Grading 	<ul style="list-style-type: none"> Award and NTP for Hayward Maintenance Complex Phase 2: Civil/Grading NTP for Hayward Maintenance Complex Phase 2: Trackwork Procurement Evaluate Proposals for the NTRC (Link21) Program <i>Finalize Contract Documents for Embarcadero New Platform Elevator</i> <i>Final Design of 19th Street/Oakland Bike Station</i> 	<ul style="list-style-type: none"> <i>Award for contracts NTRC (Link21) Program</i> <i>90% design submittal for East Storage Yard</i> <i>Procurement of Millbrae Tail Tracks Extension</i> <i>Complete Redesign and Advertise for Embarcadero New Platform Elevator</i> <i>Begin Steel Erection for Civic Center Station Scissor Stairs</i> 	<ul style="list-style-type: none"> <i>Prepare IFB package for Hayward Maintenance Complex Phase 2: East Storage Yard</i> <i>Award Contract for Embarcadero New Platform Elevator</i>

Watchlist:

- Funding for Embarcadero Platform Elevator

Italic: Modified milestones from previous report.



Budget and Schedule Status



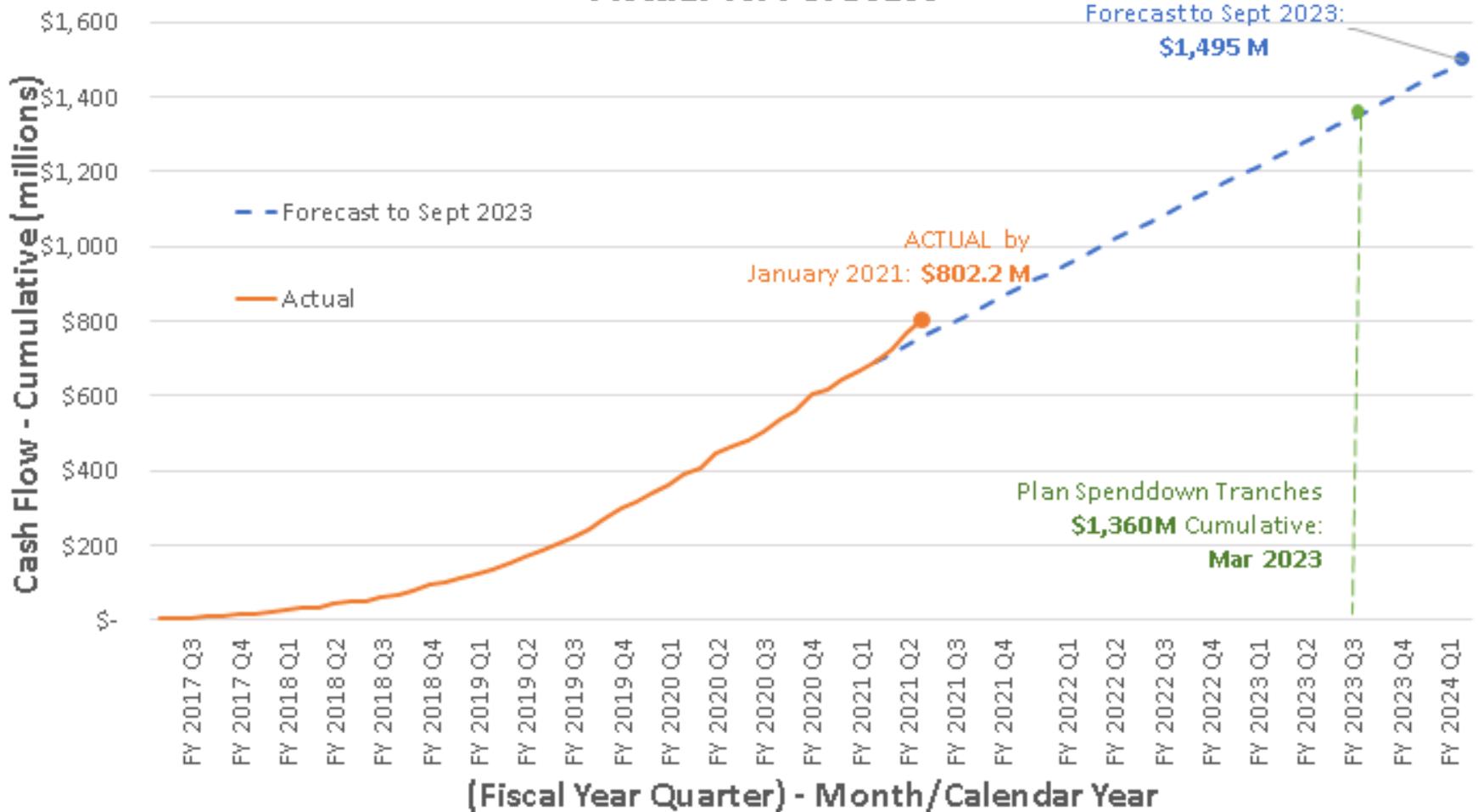
Measure RR Cashflow (\$ Millions) – Mid-Term & Long-Term Outlook

Program	Expended (thru October 2020)	Expended (thru January 2021)	Period Cashflow (November 2020 - January 2021)	% Expended out of Total Bond Investment	Forecast Expenditures		
					SHORT- TERM (thru September 2023)	MID-TERM (thru 2025)	LONG-TERM (thru End of Bond)
Renew Track	\$223.8	\$243.0	\$19.2	39%	\$382	\$400	\$625
Renew Power Infrastructure	\$258.7	\$300.9	\$42.2	25%	\$573	\$608	\$1,225
Repair Tunnels & Structures	\$63.5	\$85.2	\$21.8	15%	\$136	\$268	\$570
Renew Mechanical	\$39.0	\$47.2	\$8.2	35%	\$77	\$65	\$135
Replace Train Control/Increase Capacity	\$28.2	\$32.1	\$3.9	8%	\$89	\$286	\$400
Renew Stations	\$24.1	\$31.5	\$7.5	15%	\$125	\$148	\$210
Expand Safe Access to Stations	\$19.5	\$22.9	\$3.4	17%	\$37	\$86	\$135
Design/Engineer to Relieve Crowding	\$33.5	\$39.5	\$6.0	20%	\$76	\$69	\$200
Total	\$690.2	\$802.2	\$112.0	23%	\$1,495	\$1,930	\$3,500



RR Overall Program Budget Progress

BART Measure RR Program Spending Actual vs. Forecast





Earned Value Rollup by Program

RR Program	Total RR Budget	Physical % Complete	Planned Value	Earned Value	RR Accrued to Date	CPI	SPI
Renew Track	\$625	46%	\$283.67	\$288.65	\$278.54	1.04	1.02
Renew Power	\$1,225	27%	\$388.50	\$335.69	\$360.00	0.93	0.86
Repair Tunnels and Structures	\$543	13%	\$89.96	\$69.46	\$72.29	0.96	0.77
Renew Mechanical	\$162	30%	\$55.86	\$48.66	\$48.89	1.00	0.87
Replace Train Control/ Increase Capacity	\$400	10%	\$40.20	\$38.02	\$34.46	1.10	0.95
Renew Stations	\$210	13%	\$33.15	\$27.71	\$25.01	1.11	0.84
Expand Safe Access to Stations	\$135	21%	\$38.10	\$27.74	\$33.76	0.82	0.73
Design/Engineer to Relieve Crowding	\$200	23%	\$52.17	\$45.29	\$38.40	1.18	0.87
Total	\$3,500	25%	\$974.10	\$880.95	\$890.29	0.99	0.90



Track Program Drill Down

Project	Count
Number of Projects (>25% Spent)	14
CPI <0.9 or >1.1	5
SPI <0.9 or >1.1	4
Number of Risk Register Updates Performed in Previous Period	3
Number of Project Quality Reviews Performed in Previous Period	18

Project	Physical % Complete	CPI	SPI	Comments
C25 Interlocking Replacement	97%	1.19	0.98	Realized savings during construction.
Replace Direct Fixation Pads	76%	1.12	2.29	45,900 pads installed. Continuing to benefit from extended blanket hours due to COVID-19 response
Frog Capital Maintenance	61%	0.98	1.11	184 frogs improved. Benefitting from extended blanket hours due to COVID-19 response.
Rail Replacement	48%	0.84	0.90	Expending more than anticipated and expect to recover over project duration. Schedule delay is result of rail delivery. Installation is on schedule.
Switch Replacement	28%	0.81	1.11	Material cost exceeded plan. 24 switch points installed. Benefitting from extended blanket hours due to COVID-19.
Rail Reprofilng	25%	0.80	0.88	Contractor equipment failure. Expending more than anticipated on inspections. Expect to recover over project duration.



Power Program Drill Down

Project	Count
Number of Projects (>25% Spent)	12
CPI <0.9 or >1.1	5
SPI <0.9 or >1.1	7
Number of Risk Register Updates Performed in Previous Period	2
Number of Project Quality Reviews Performed in Previous Period	7

Project	Physical % Complete	CPI	SPI	Comments
Transbay Tube Emergency Generator	66%	0.92	0.74	Differing site conditions and strategic resequencing of work. No impact to program.
Train Control Room UPS Replacement	67%	1.50	0.95	Completing deep dive into cost to determine if contingency can be released
K Line 34.5kV Cable Replacement	47%	0.93	0.69	Strategic resequencing of work to support R line. Self performing a portion of work to reduce cost. No impact to overall program.
MPR Install & Rectifier Rehab	40%	1.24	0.82	Completing deep dive into cost to determine if contingency can be released
San Leandro and Transbay Tube East Substation Replacements	39%	0.60	0.39	Commissioning of San Leandro substation complete. Budget and schedule recovery planning in progress for Transbay Tube East substation construction.
CWS Bulk Supply Transformer	33%	0.83	0.83	Contractor delay. Expect to recover budget and schedule as construction progresses.
34.5kV Blocking Scheme	30%	0.78	0.35	Self performing work to reduce cost and recover schedule.
Cast Coil Transformer Replacement	29%	0.91	0.53	Rejected all bids. Strategic resequencing of work. No impact to program.



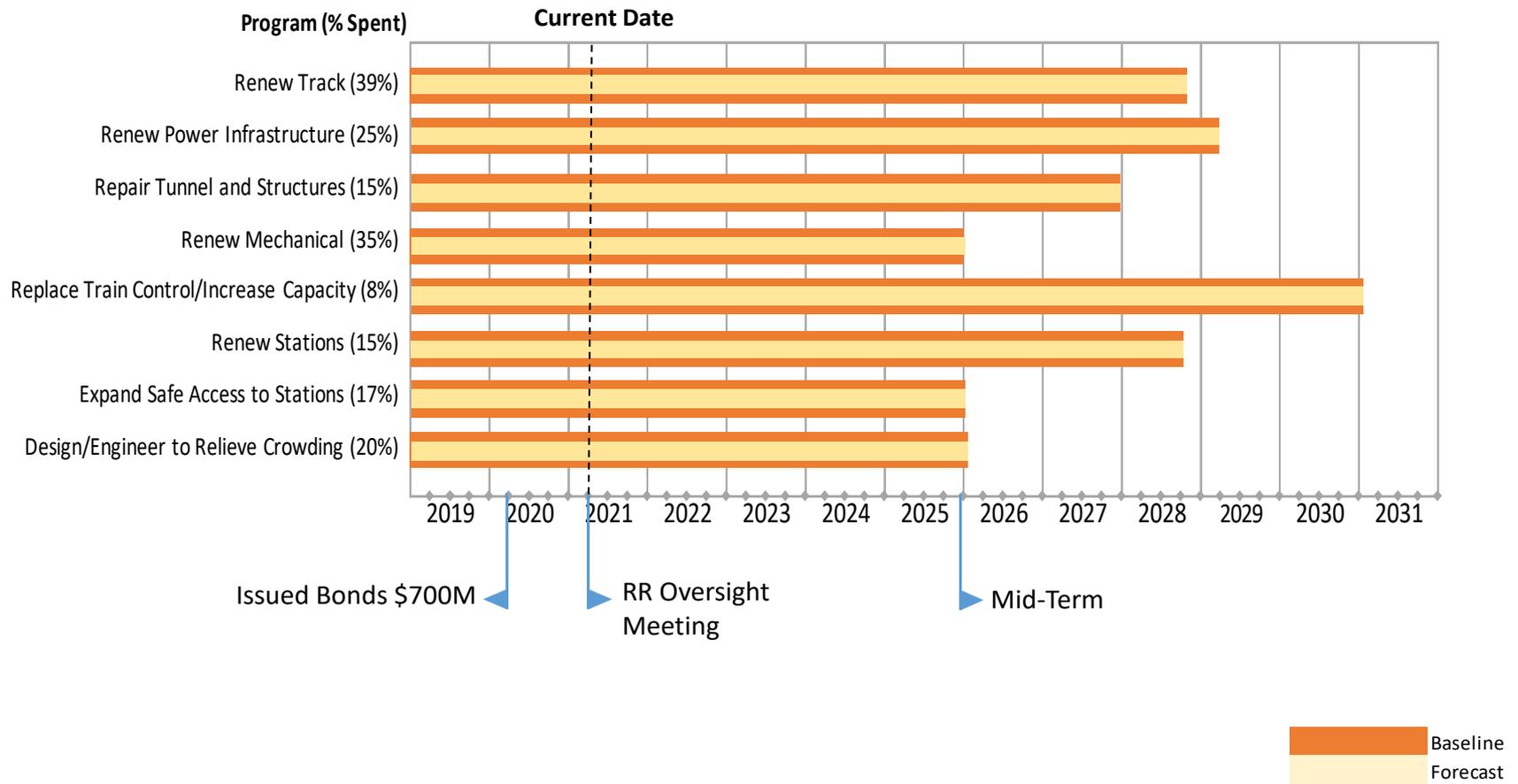
Mechanical Program Drill Down

Project	Count
Number of Projects (>25% Spent)	18
CPI <0.9 or >1.1	3
SPI <0.9 or >1.1	6
Number of Risk Register Updates Performed in Previous Period	2
Number of Project Quality Reviews Performed in Previous Period	11

Project	Physical % Complete	CPI	SPI	Comments
Install Access Ladders	93%	0.98	1.22	71 ladders installed. Benefitting from extended blanket hours due to COVID-19 response
Richmond Yard Fire Services	90%	0.97	1.39	Benefitting from reduced train movement in the yards due to COVID-19 response
Replace Fire Hoses and Piping	83%	2.67	1.40	17 hose cabinets replaced. Self performing to reduce cost. Benefitting from reassignment of labor resources due to COVID-19 response. Team completing deep dive into cost to determine if contingency can be released.
Facilities HVAC Equipment Replacement Systemwide	52%	1.18	0.76	Managing differing site conditions to recover schedule
Rotoclones Replacement (Wet Dust Collectors)	52%	1.08	0.63	Coaching new to BART contractor and managing differing site conditions to recover schedule
Replace Backflow Preventers	39%	1.17	0.76	No bids received. Work self performed at 2 locations. Plans being developed for remaining locations.



Program Level Schedule Update



Future updates may include additional projects as programs mature.



Next Steps

- Ongoing Development:
 - Manage resources as a result of the early retirement incentive
 - Continue interlocking shutdown
 - Continue 34.5 kV cable replacements and traction power substation installations
- Under Development
 - June 2021 Bond Oversight Meeting
 - July 2021 Board Update Meeting
 - Measure RR Annual Report