San Francisco Bay Area Rapid Transit District

2021 Annual Report: **Sustainability**

Let's go.

General Manager Message

Taking BART to the same place every day for one month emits less CO2 than driving the same route just once. That eye-opening information is just one example of why BART is one of the greenest travel options for Bay Area residents – and providing green options has never been more critical.

A flagship report issued by the United Nations in April 2022 indicated that harmful carbon emissions in the past decade were the highest in human history. UN Secretary General António Guterres said, "This is not fiction or exaggeration. It is what science tells us."

It's still possible to cut emissions in half by 2030, the UN chief added. If you are a BART rider or employee, consider yourself part of the solution.

In the following pages, you will learn that BART is powered by 100% GHG-free electricity, that its design standards incorporate sustainability as a core value, and that it's working to increase the use of electric vehicles and micromobility vehicles such as bicycles or scooters.

The 2021 Annual Report: Sustainability includes data and case studies that explain in detail the positive impacts BART is making on the future of our planet.

And BART is being recognized for its efforts. Our new BART headquarters building is on track to receive Leadership in Energy and Environmental Design (LEED) Gold Certification, while the Antioch Maintenance Facility received LEED Silver Certification. Additionally, our Electric Vehicle Charging Policy and renewable energy initiatives, which will further decrease carbon emissions, have received positive press coverage.

There is much work to be done. We're developing a Sustainability Action Plan for 2025, updating the Local Hazard Mitigation Plan, and seeking increased funding for sustainability efforts. Our commitment to providing safe, affordable, equitable, and environmentally friendly public transportation will guide us toward our goals. We hope you will join us along the way.

Thank you for reading the following Sustainability Report and thanks for riding BART!

Robert M. Powers
General Manager
San Francisco Bay Area Rapid Transit District

BART Let's go.

BART 2021 Sustainability Highlights

over **15,000** gallons

of gas saved from all riders in one weekday by taking BART instead of driving

5,487

free round-trip tickets distributed to riders getting vaccinated against COVID-19 at Coliseum Station

286

Fleet of the Future Cars in service

25 lbs

of CO2e emissions avoided per average round trip, which is equivalent to about 30 miles driven in a passenger car

100%

of BART's contracted electric supply was GHG-free

Completed move to new headquarters

at 2150 Webster Street; pursuing LEED Gold certification

2

new renewable energy projects will provide approximately half of BART's electricity supply

Union City Intermodal Phase 2A Project

achieved 42% in recycled materials and 41% in regional materials

New EV Charging Policy

adopted by Board to support EV adoption and fleet electrification

Antioch Maintenance Facility

received LEED Silver certification

View the full report at bart.gov/sustainability

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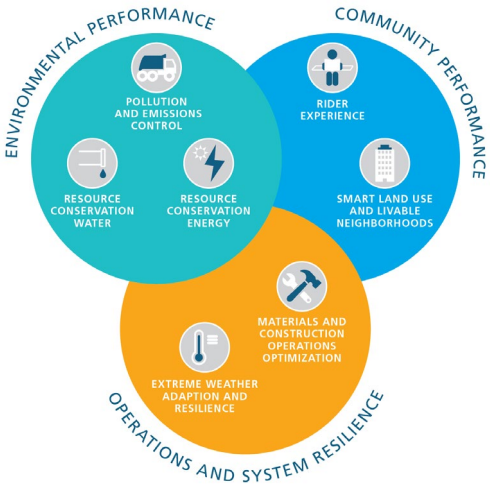
7 SUSTAINABILITY CATEGORIES



The *2021 Annual Report: Sustainability* communicates progress in BART's sustainability program. The purpose of the report is to provide transparency to the public and ensure BART's commitment to the goals of the program. The sustainability program aims to support a sustainable, healthy, and vibrant Bay Area through actions and investments that create a less car-dependent region and a greener transportation system.

Report Format

The report contains a collection of case studies that highlight BART's achievements in sustainability for the reporting period and a summary of BART's sustainability performance metrics. In the Appendix, there are additional details about energy use, greenhouse gas emissions, and water use as well as status updates on each of the 118 action items identified in BART's Sustainability Action Plan.

About the Sustainability Program

In concert with the District's Sustainability Policy, adopted in 2017, BART published a 10-year Sustainability Action Plan that details the targets, current progress, and future actions to integrate sustainability as a standard practice throughout BART. The plan was created with input from numerous BART departments and in coordination with broader regional and American Public Transportation Association (APTA) sustainability goals. The detailed roadmap includes performance metrics to measure outcomes of actions that support BART's commitment to provide safe, affordable, equitable, and environmentally-friendly transit. BART's energy, greenhouse gas emissions, and water targets were derived from Business as Usual (BAU) scenarios that utilize the baseline values in 2015 and planned growth in the number of stations, planned extensions to the existing lines, and expected improvements to the system. The committed and aspirational targets represent percentage reductions from the projected BAU values in 2025.

The Sustainability Action Plan contains 7 categories representing different aspects of BART's sustainability program. Each of the case studies, metrics, and actions contained in this report relate to goals identified in the Sustainability Action Plan for one or more of the categories.

The policy and action plan may be found at https://www.bart.gov/sustainability/policies.

Reporting Period

The report focuses on efforts from the 2021 calendar year (i.e., January 1 to December 31).

BART Moves to New Headquarters, Slated to Receive LEED Gold Certification

In 2021, BART completed its move to a new headquarters (BHQ) in downtown Oakland at 2150 Webster Street. The building, which was renovated in preparation for the move, incorporates many green building best practices and will help BART save millions of dollars over the next 25 years. BHQ is currently slated to achieve a LEED Gold certification, which recognizes sustainable achievement and leadership in buildings

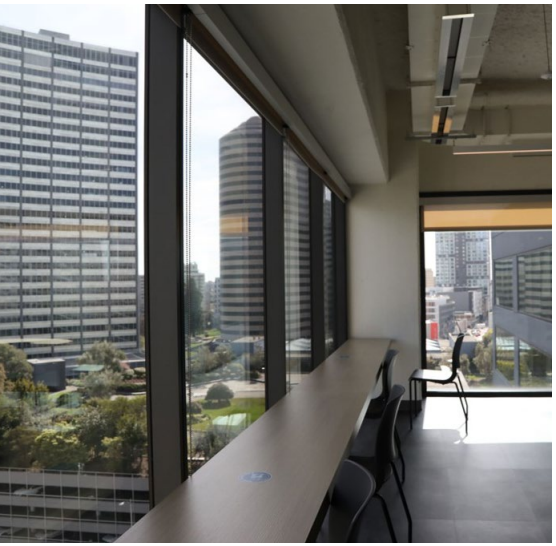
BART purchased the new building to coincide with the end of BART's lease at its former headquarters. In addition to saving money in the long term, purchasing a building instead of leasing one gave the design and construction team more flexibility to customize the design according to BART's unique needs. BART endeavors to minimize the environmental impacts associated with the construction and operation of all its facilities, so achieving Gold LEED was an early priority for the design team.

"From the beginning two years ago, we knew that we wanted LEED certification," Monica Meagher, BART's Sustainability Manager, said. "The biggest challenge is that we were trying to achieve this certification while staying under budget and on a tight schedule, which we were able to do. We're already doing a lot of things that would qualify for LEED, but actually getting the certification shows that we're serious about sustainability."

A major reason for the building's selection was its proximity to the 19th St Oakland BART Station, various AC Transit routes, and the Free Broadway Shuttle. Being less than a quarter mile from so many options, the building's location encourages BART employees to use transit instead of driving a motor vehicle to work. The site also offers outdoor and indoor parking for bikes. BHQ is the main work location for almost 900 BART employees and is the location of BART Board meetings.

BHQ offers a number of improvements in the realm of energy use. The new building uses electricity from BART's contracted electric supply, which is 100% GHG-free. The lighting uses high-efficiency LED fixtures to reduce electricity use. Occupancy and daylighting control systems minimize when lights are on. The window film on the first floor windows helps block heat from the sun and lessens the building's air conditioning needs. The building's HVAC system uses a variable refrigerant flow system, which allows for varying degrees of cooling instead of being on or off. The HVAC system also has heat recovery, which simultaneously heats and cools different spaces and recovers energy at different zones, conserving pump energy. These energy conservation methods help reduce the impacts related to energy generation.

Water-efficient fixtures, fittings, and appliances conserve potable water use by about 40% of the pre-existing conditions.



BART Moves to New Headquarters, Slated to Receive LEED Gold Certification (continued)

The building has dedicated areas for the collection and storage of recyclable and compostable materials. Employees receive training on proper sorting and the waste hauler regularly performs waste audits to highlight areas for training. These actions reduce the amount of waste hauled to landfills for disposal. Additionally, batteries and electronic waste are safely collected, stored, and disposed of separately from other waste streams.

Prior to moving from the old headquarters, BART took inventory to identify items to be reused, redistributed to other functions, or donated. Much of the furniture in the new headquarters was reused from the old building, while items like unused computers and electronics were moved to other sites that needed them. Given the smaller square footage compared to the previous headquarters, the District implemented a digitization strategy to minimize the amount of paper being stored in the office and discourage excessive printing.

BART is committed to remain in the building for at least 10 years. As part of the LEED certification process, BART will continue monitoring the performance of the building in the coming years.

Sky River Wind is a 30-megawatt wind project located in the Tehachapi Mountains. It is a repower project that replaced an older wind project with newer, larger, and more efficient wind turbines. Pictured here are Paul Bostrom, BART's Energy Division Manager, and a NextEra Energy Resources technician standing atop a turbine. Photo courtesy of NextEra Energy Resources.

BART Increases Share of Electricity Procured from Renewable Energy Sources

In 2021, BART onboarded two new renewable energy projects, Sky River Wind (30 megawatts) and Slate Solar (50.5 megawatts) that will provide electricity under long-term power purchase agreements (PPAs). Together, these new projects are expected to provide approximately 50% of BART's total annual electricity supply over the next two decades.

Given the scope of its operations, BART is one of the largest individual consumers of electricity in the Bay Area, using approximately 340,000 megawatt hours a year as of 2021. Sourcing electricity from renewable and greenhouse gas-free sources allows BART to provide critical transit service to the region while avoiding the negative environmental impacts associated with fossil fuels.

BART's unique access to California's wholesale power markets enables the District to purchase power directly from wholesale generators rather than conventional utilities or other retail providers. This gives BART greater control of its electricity supply and more ability to choose greener sources of power. PPAs are a common way to leverage the scale of wholesale generators, resulting in greater affordability. Under a PPA, a third-party provider organizes the design, permitting, financing, and construction of a system, and sells the generated power to an off-taker such as BART, often at a fixed rate.

BART's Wholesale Electricity Policy, which guides decisions about the composition of BART's wholesale electricity portfolio, sets a goal of transitioning to 100% renewable energy by 2045. The new wind and solar power purchase agreements, whose contracts were initially executed in 2017, put BART on a path to meet that goal, by increasing BART's share of renewable energy supply from approximately 5% in 2020 to a projected 50% in 2022.

One of those projects, Sky River Wind, is a 30-megawatt wind farm in California's Tehachapi Mountains consisting of ten 3-megawatt turbines. It is a repower project that replaced a preexisting wind farm with newer, larger, and more efficient wind turbines. The turbines are approximately 300 feet tall, or about the length of 4.5 BART train cars. Operations at the site began in September 2021 and the project is under contract with BART over a 20-year term.

Paul Bostrom, BART's Energy Division Manager, expressed gratitude for BART's opportunity to participate in the project in a recent podcast. "BART's very fortunate to sign a contract with a project located in the Tehachapi Mountains because today there's really not much developable land left for wind sites in California. It's one of the richest [wind] resources in the West and certainly one of the richest in the state."[1]

[1] Podcast: The future is now for BART's renewable power initiatives | BART

The 390 MW Slate Solar project is expected to displace almost 369,310 metric tons of carbon dioxide emissions annually. 50.5 MW of the project's total capacity serves BART under a long-term contract.

Photo courtesy of Goldman Sachs Renewable Power.

BART Increases Share of Electricity Procured from Renewable Energy Sources (continued)

The other project, Slate Solar, is a 390-megawatt solar plus storage portfolio project in Kings County, California. It was developed to serve five California-based organizations under long-term PPAs, including BART, which has contracted 50.5 MW of the total solar capacity under its phase of the project. Slate Solar is among the state's largest photovoltaic solar facilities comprised of 900,000+ panels spread across 2,120 acres of land, which is the size of about 1,600 football fields. The project is equipped with an articulating tracking system which adjusts the tilt of the panels to maximize production based on the sun's position in the sky. The total project displaces almost 369,310 metric tons of carbon dioxide emissions annually, the equivalent of 71,858 average U.S. homes' electricity use each year.[2]

The electricity generated by these new projects is supplemented by other large and small hydroelectric sources in BART's portfolio. Notably, large hydroelectric sources, defined as sources larger than 30 megawatts under state law, are not considered eligible renewable in California, but are fully greenhouse gas free and tend to be more capable of providing firm generation. With respect to BART's overall portfolio composition, "What we really strive for is diversity in our power portfolio," Bostrom explained. "As much as possible, we want to be taking clean, renewable energy, but we want to […] supplement that with what we call firmer sources of generation."

Previously in 2020, BART reached its goal of transition to 100% greenhouse gas-free contracted electric supply for the first time in its history using a diverse mix of hydroelectric and solar generation.

[2] Greenhouse Gas Equivalencies Calculator | US EPA

The bioretention areas help capture stormwater and trap pollutants in the soil and roots of vegetation, where they can be broken down by bacteria.

Low-Impact Development and Accessibility Improvements at Antioch Parking Lot

BART expanded the Antioch Parking lot and implemented features that improve passenger access. The project includes low-impact development in the form of bioretention areas for stormwater treatment and other sustainability enhancements.

The expansion adds 850 new parking spots at the lot and makes other station access improvements. The new spots eliminate the previous waiting list for monthly parking at the station.

When designing the expansion, BART employed low-impact development (LID) practices to help prevent issues like flooding from excessive stormwater runoff. Low-impact development "refers to systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat."[1]

For example, when rain events occur, pollutants that have leaked onto the pavement from automobiles are picked up by stormwater flowing across the parking lot. The four new bioretention areas, which are on the north side of the lot along Slatten Road, help capture the stormwater and trap those pollutants in the soil and roots of vegetation, where they can be broken down by bacteria. To help with that process and enhance the landscaping, the areas were planted with native and drought-tolerant species.

In addition, the expansion project added new LED lighting with energy-saving dimming features that sense pedestrian and vehicular traffic. New trees planted around the lot are designed to provide shading and minimize heat island effect associated with large swaths of pavement. The lot and its northern perimeter have about 1 tree for every 8 parking stalls.

"For a project like this, we try to incorporate sustainability however we can," said David Silva, BART Project Manager for the expansion. "There aren't always a lot of opportunities to make a parking lot sustainable, but sometimes there are ways to take advantage of the landscape while also minimizing costs. And in the big picture, expanding this lot will improve access to transit and hopefully encourage people to drive fewer vehicle miles by taking BART to reach their final destinations."

Other improvements related to accessibility include a dedicated ADA-compliant sidewalk to the Antioch Station; improved passenger pick-up/drop-off and bus lane circulation; improved wayfinding for pedestrians, cyclists, transit passengers, and drivers; and a new multi-use pedestrian and bicycle path. In 2023, art panels at the new fence by the lot will be installed.

[1] Urban Runoff: Low Impact Development | US EPA

BART Board Adopts New EV Charging Policy

In 2021, the BART Board unanimously adopted its first ever electric vehicle (EV) charging policy to guide the District's approach to providing and maintaining EV charging infrastructure. Developing the policy involved collaboration between groups within BART and other stakeholders.

The policy acknowledges BART's critical role in reducing the environmental footprint of the Bay Area's transportation sector. Since BART owns and manages more vehicle parking than any other rail operator in California, BART can support electric vehicles through charging infrastructure at BART locations. The policy proposes providing electric vehicle charging stations at BART locations to support EV adoption and fleet electrification where technically feasible and as funding allows. BART locations include passenger stations, employee work locations, and BART shops and yards.

"Although we're still in the early stages of EV adoption, BART as a clean-energy leader is setting the framework for the future with this policy," said BART Director Mark Foley. "If people need to drive themselves to a BART station, let's find ways to encourage them to do so in a zero-emission vehicle."

To support widespread EV adoption, more publicly accessible EV chargers will be needed. This is especially relevant for drivers who do not have the ability to charge an EV at home, such as renters and residents living in multi-family buildings. Additionally, BART parking facilities are often located in or near underserved communities and providing chargers in these locations can reduce barriers to EV ownership for lower-income drivers. To understand the EV-related needs of such communities and others, BART conducted extensive outreach to stakeholders, including the International Council on Clean Transportation, the Environmental Defense Fund, the Bay Area Air Quality Management District, and over a dozen other entities. The policy incorporates feedback received from this outreach.

The BART EV Charging Policy supports federal and state goals for zero-emission vehicle (ZEV) adoption, charging infrastructure installation, and clean energy integration. The Biden-Harris Electric Vehicle Charging Action plan has a target of 50% of EV sale shares in the U.S. by 2030.[1] California has a goal of having 5 million ZEVs on the roads by 2030 and for all new passenger cars and trucks to be ZEV by 2035.[2] In terms of supporting infrastructure, California has a goal of 250,000 public EV charging stations by 2025[2] and "to accelerate deployment of affordable fueling and charging options for ZEVs, in ways that serve all communities and in particular low-income and disadvantaged communities."[3] These goals are supported by budget allocations, which BART aims to pursue to reduce direct present and future costs to the District.

In addition to supporting light-duty EV adoption, BART is helping bus transit agencies achieve their electrification goals. The California Air Resources Board's Innovative Clean Transit regulation requires all public transit agencies to gradually transition to a 100% zero-emission bus fleet.[4] BART is working with bus operators that require en route electric charging at BART stations to electrify their buses.

[1] Biden-Harris Electric Vehicle Charging Action plan | The White House
[2] Executive Order B-48-18 | Office of the Governor of California
[3] Executive Order N-79-20 | Office of the Governor of California
[4] ICT Clean Final Reg. Order | California Air Resources Board

El Cerrito del Norte is the fourth station to be completed in BART's Station Modernization Program. New glass walls and art murals improve the overall ambiance of the station.

Station Modernization at El Cerrito del Norte

In Spring 2021, BART completed improvements to the El Cerrito del Norte Station to enhance rider experience and accessibility. Additional sustainability features include new energy-efficient lighting, new water-efficient fixtures, and stormwater pollution prevention solutions.

BART's Station Modernization Program seeks to improve existing stations and their surroundings to encourage ridership and enhance the quality of life in and around the stations. El Cerrito del Norte is the fourth station to be completed in this program. During the planning process, the project team worked to bring the station into compliance with requirements outlined in the BART Facilities Standards and in the Americans with Disabilities Act Standards. As part of that effort, new sustainability and access features were also implemented.

To help minimize energy use and brighten the station, all the old lighting fixtures within and outside of the stations were replaced with new LED lighting, along with a new code-compliant lighting controller. The added brightness of the new fixtures enhances security inside and outside of the station.

Several features were included to minimize water use. New restrooms contain water-efficient fixtures and a water bottle filling station was installed to encourage riders to bring their own reusable bottles. Additionally, two bioswales were added on opposite sides of the west permit parking lot. The bioswales, which help capture and treat runoff water during rain events, are sited to take advantage of the natural slope of the property and minimize irrigation for landscaping.

To improve access around the station, two new elevators were installed, as well as a new stairwell leading to the platform. New ADA-compliant crosswalk ramps were constructed at various locations throughout the station, such as leading to and from the parking structure, San Pablo Ave and the bus islands.

Finally, new glass walls and art murals improve the overall ambiance of the station. According to Wahid Amiri, BART's project manager for the modernization, "Our riders at El Cerrito del Norte have acknowledged a huge improvement in terms of opening the station up and bringing in natural light. The station was very small before. But now it has expanded to include updated features that help riders feel more welcome."

Keeping Riders, Employees, and the Bay Area Safe During the COVID-19 Pandemic

BART continues to ensure that the system, BART's workplace, and the Bay Area community remain safe despite the COVID-19 pandemic. Throughout 2021, BART encouraged the vaccine rollout by offering incentives to riders who took BART to get their vaccine, creating vaccination sites at our stations, and instituting a vaccine mandate for all BART employees and contractors. These efforts have helped build awareness of transit's relationship to public health, which is a component of BART's Sustainability Action Plan.

To incentivize vaccinations, BART offered a free $7 fare ticket to riders who showed their completed vaccination card from the Oakland Coliseum mass vaccination site. The vaccination site was opened in February by the California Office of Emergency Services (Cal OES) and the Federal Emergency Management Agency (FEMA) at the Oakland Coliseum, adjacent to BART's Coliseum station. The site was created to ensure that underserved communities could have better access to vaccines. BART handed out 5,487 free tickets as part of this effort.

In addition, BART has worked with community partners and local governments to site COVID-19 testing sites and vaccination sites near BART stations, which are often in central locations and are accessible to a broad range of communities. Stations where testing and vaccination sites were set up include Fruitvale, 24th Street Mission, 16th Street Mission, San Leandro, Bay Fair, and the aforementioned Coliseum station. For BART employees and their families, the District also coordinated several vaccination events at some of BART's shops and yards.

To help mitigate the impact of COVID-19 among the BART workforce, in October of 2021, the BART Board approved a vaccine mandate requiring BART employees, Board members, contractors, and consultants "that perform work on BART property to be fully vaccinated against COVID-19, …with exceptions made only for those who qualify for a reasonable accommodation or a religious exemption."[1]

Please visit the following webpage to stay informed of the latest COVID-19 updates and protocols while riding BART: Covid-19 updates | BART

[1] BART Memorandum & Policy Statement Regarding Mandatory COVID-19 Vaccination | BART

Performance Metrics

	Units	2015 Baseline	2016	2017	2018	2019	2020	2021	Target 2025[1,2,3,4]	
RESOURCE CONSERVATION: ENERGY & GHG EMISSIONS										
Total energy use	Megajoules (MJ) / vehicle revenue mile (VRM)	21.19	19.93	20.52	20.89	21.18	23.70	21.74	**Committed 19.52**	**Aspirational 19.19**
Total greenhouse gas (GHG) emissions	Metric tons of carbon dioxide equivalent (MT CO2e) / thousand VRM	1.92	1.66	0.22	0.25	0.26	0.11	0.10	**Committed 0.31**	**Aspirational 0.24**
RESOURCE CONSERVATION: WATER										
Total potable water use	Gallons / VRM	0.64	0.65	0.86	0.95	0.85	0.98	0.78	**Committed 0.43**	**Aspirational 0.38**
SMART LAND USE AND LIVABLE NEIGHBORHOODS										
Residential units	# of units built (cumulative since 1993)	1,416	1,506	1,975	1,975	2,649	3,251	3,251	**7,000**	
Affordable residential units	# of affordable units built (cumulative since 1993)	256	346	613	613	845	901	901	**2,400**	
Office/commercial square footage	Square feet built (cumulative since 1993)	188,590	188,590	194,590	194,590	637,590	643,690	643,690	**1,000,000**	

[1]Total energy use: see Appendix for additional charts and information

[2]Total GHG emissions: see Appendix for additional charts and information

[3]Total potable water use: see Appendix for additional charts and information

[4]Residential units, affordable residential units, and office/commercial square footage: https://www.bart.gov/about/business/tod

Performance Metrics

	Units	2015 Baseline	2016	2017	2018	2019	2020	2021	Target 2025[5,6,7,8]
SMART LAND USE AND LIVABLE NEIGHBORHOODS									
Mode share: active (walking and bicycling)	%	44%	Will be measured again after next Station Profile Survey, which is being coordinated with MTC (date TBA)						**52%**
Mode share: shared mobility	%	29%	Will be measured again after next Station Profile Survey, which is being coordinated with MTC (date TBA)						**32%**
Mode share: drive & park	%	27%	Will be measured again after next Station Profile Survey, which is being coordinated with MTC (date TBA)						**16%**
GHG emissions associated with passenger access to the station	%	TBD	Will be measured again after next Station Profile Survey, which is being coordinated with MTC (date TBA)						**-24% reduction from 2015 baseline**
RIDER EXPERIENCE									
Quarterly reporting of safety and performance indicators			Completed						**Completed**
Has BART met all adopted Performance Standards for Safety and Patron Comfort?			No						**Yes**

[5]Mode share: https://www.bart.gov/about/planning/station-access/policy

[6]GHG emissions associated with passenger access to the station: methodology yet to be finalized

[7]Reporting on safety and performance indicators: https://www.bart.gov/about/reports

[8]The adopted Performance Standards for Safety and Patron Comfort consist of the following KPIs:
Safety KPI: https://www.bart.gov/kpi/safety
Customer Satisfaction KPI: https://www.bart.gov/kpi/experience

Performance Metrics

	Units	2015 Baseline	2016	2017	2018	2019	2020	2021	Target 2025[9]
EMISSION AND POLLUTION CONTROL									
Total solid waste and landfill diversion rate	BART's Sustainability Team is developing a Waste Management Plan to address and improve landfill, recycling, and composting across BART's facilities. As part of this Waste Management Plan, BART will collect data in order to establish a baseline and set realistic targets.								
MATERIALS AND CONSTRUCTION OPERATIONS OPTIMIZATION									
Percentage of BART Project Delivery Staff trained in BART Facilities Standards (BFS) Sustainability Controls	%	Training commenced in 2021.						18%	**100%**
EXTREME WEATHER ADAPTATION AND RESILIENCE									
Percentage of High Priority Actions in the BART Local Hazard Mitigation Plan (LHMP) Actions underway or complete	%	Tracking commenced in 2021.						86%	**100%**

[9]High Priority Actions in the LHMP: https://www.bart.gov/about/planning/policies/hazard

Appendix

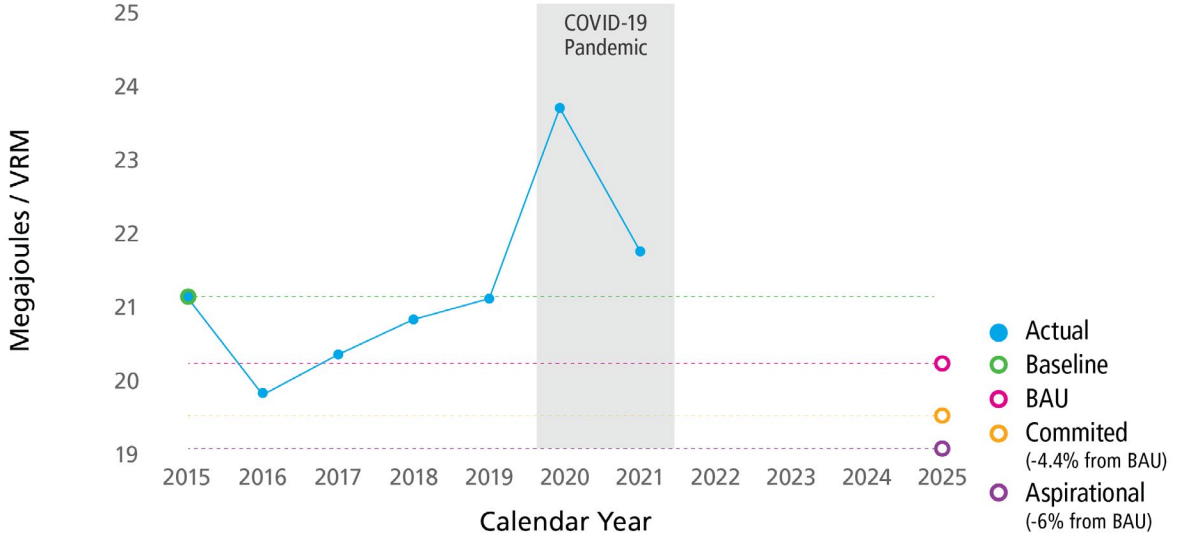
Energy Use

In August 2021, BART returned to near pre-pandemic levels of service, which increased the amount of traction energy use compared to 2020. Vehicle revenue miles (VRM) increased at an even faster rate, which caused the energy use/VRM to trend downward from the spike in 2020. That spike was caused by disruptions due to the COVID-19 pandemic and accompanying reductions in service, which continued partially into 2021 until the return of full service in August. Data for what is expected to be an entire year of full service in 2022 will provide a clearer comparison to pre-pandemic values for this metric.

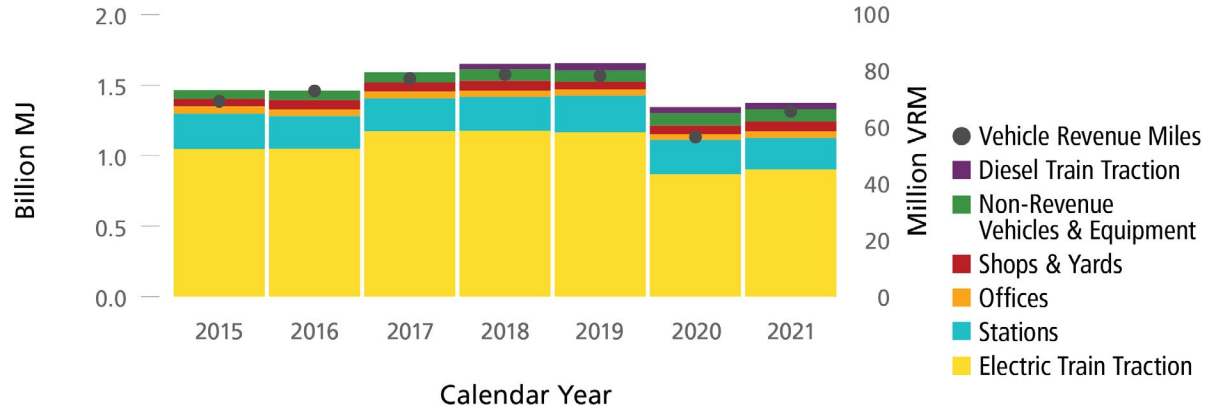
For the 2015-2019 period, BART generally increased energy usage due to increased train service and the addition of new stations. BART's Warm Springs Extension, a 5.4-mile extension connecting the existing Fremont station to the new Warm Springs/South Fremont station, opened in March 2017. The eBART Extension, a 10-mile extension connecting the Pittsburg/Bay Point and Antioch stations, opened in May 2018. eBART trains require more energy per VRM than the BART trains due to the different vehicle technology used; eBART uses diesel multiple unit technology instead of BART's electrified rail.

BART is undertaking actions to make the system more energy efficient. BART is continuing to increase the number of Fleet of the Future cars in service. These cars are built to be at least 7% more energy efficient than legacy vehicles and have features such as LED lighting, improved regenerative braking, and lightweight exteriors. BART is also pursuing LED lighting upgrades at stations across the system and retrofitting the lighting at parking garages and parking lots.

Energy Use per Vehicle Revenue Mile (VRM)



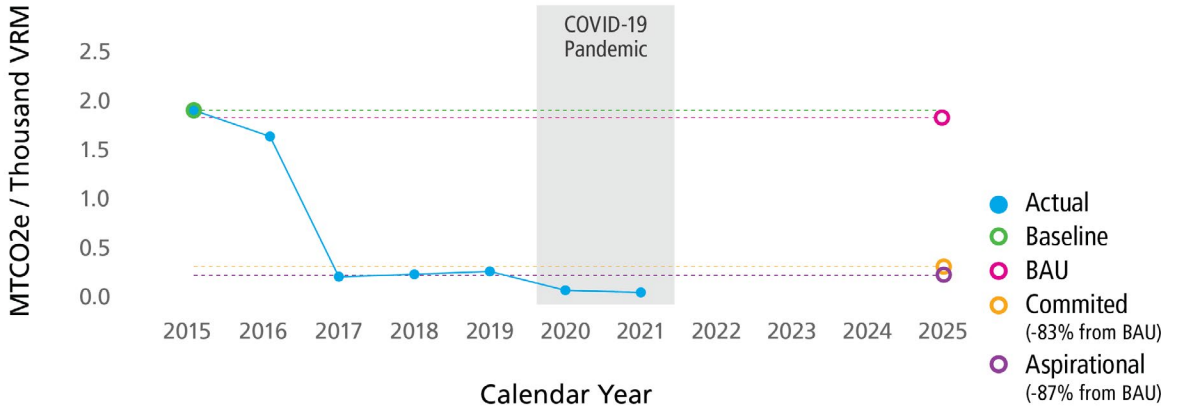
Energy Use by Asset Category



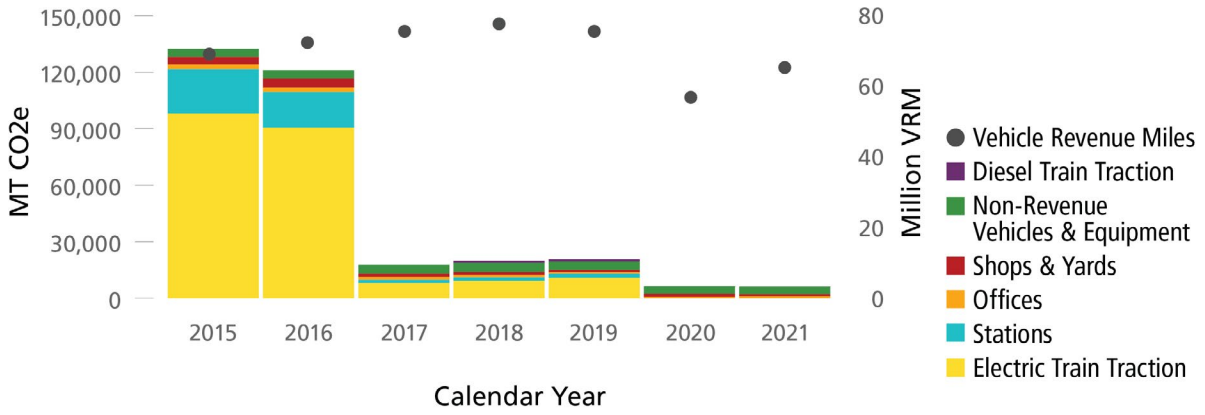
Greenhouse Gas Emissions

In 2021, 100% of BART's contracted electricity supply was GHG-free for the second consecutive year. Since adopting the District's Wholesale Electricity Policy, BART has shifted its energy sourcing away from unspecified power sources in favor of specified GHG-free sources, which has significantly reduced BART's GHG emissions. Additionally, the District has transitioned from conventional diesel to renewable diesel for use in eBART trains and the diesel-powered non-revenue fleet.

GHG Emissions per Vehicle Revenue Mile (VRM)



GHG Emissions by Asset Category

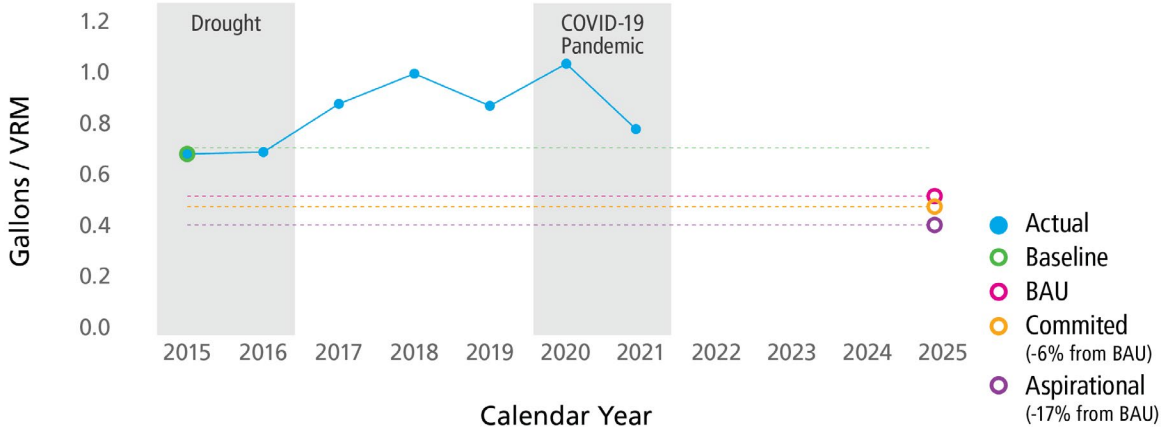


Potable Water Use

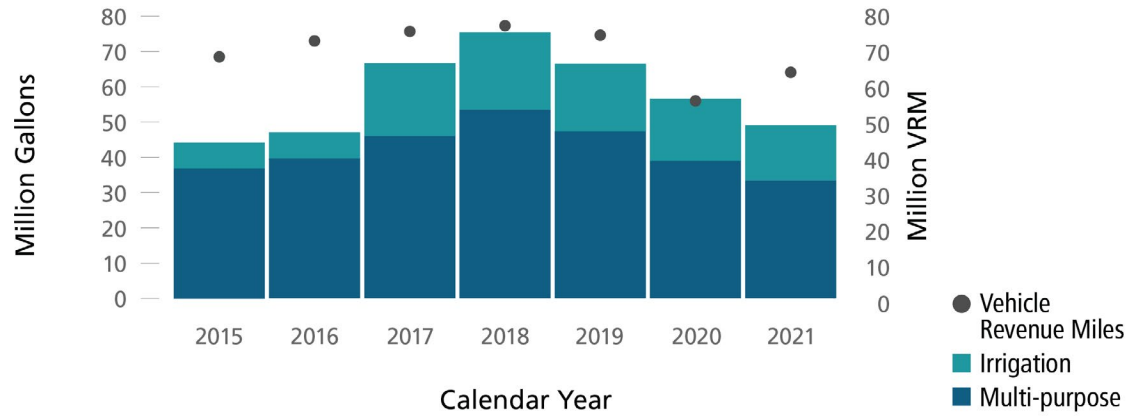
In 2021, BART's overall water use declined from the previous year, primarily due to COVID-related impacts. There were fewer riders passing through the stations and fewer employees working on site due to the Bay Area's shelter-in-place order. Additionally, water use for irrigation has declined as new plantings at a variety of sites have become more established and require less irrigation. Since water use declined and vehicle revenue miles increased from 2020, the water use/VRM declined in 2021.

Compared to the baseline year, BART's water use has increased. Due to drought conditions in 2015 and 2016, BART maintained low water usage by reducing the frequency of train car washing and irrigation. As drought conditions improved since late 2016, train car washing returned to the prior frequency and previously deactivated water fixtures for irrigation were reactivated, causing water use to increase. Additionally, the Warm Springs Extension added a number of sites that increased water consumption in recent years. A wetland mitigation project near Fremont Central Park was initiated in 2017 as part of the extension. The project required irrigation of over 50,000 plantings of native species on a 10-acre site. Irrigation at the site was reduced in late 2020 and will be eliminated in the coming years pending adequate establishment of the plantings. To help address these trends, particularly in recognition of emerging drought conditions in late 2020, new cross departmental working groups were created in 2020 to optimize water use for irrigation and at BART's shops and yards. These groups will continue enhancing long and short-term analysis of trends and will be developing new standard operating procedures accordingly.

Water Use per Vehicle Revenue Mile (VRM)



Water Use by Type



Municipal Solid Waste Generation and Diversion

BART staff are taking a phased approach to refining waste metrics in line with the expansion of our compost program. As staff return to the office at our new headquarters, staff are auditing the bin fill rates to refine our model. This will allow us to estimate total municipal solid waste generated and total municipal solid waste diverted from landfill at our office. BART staff are expanding the compost program to our other office locations in 2022.

After expanding the compost program to offices, BART staff will pilot and implement compost at our shops and yards and passenger stations over the next couple of years.

Action Table

Each of the actions and subactions described in BART's Sustainability Action Plan were reviewed to determine their status as of December 2020. Actions in the Plan were inspired by BART initiatives that were either proposed or underway, as well as best practices from other transit agencies. The District's internal peer review of these actions reflects the professional input of relevant groups. The table below summarizes the status of each of the 118 actions and subactions.

* STATUS UPDATE FOR 2021 Ongoing | 100% | 76%-99% | 26%-75% | 1%-25% | 0%

RESOURCE CONSERVATION: ENERGY & GHG EMISSIONS

ACTION	SUB-ACTION	STATUS	SUMMARY
RCE 1 - Increase Capacity to Support Regional GHG Goals	Enable expanded service for additional riders; increasing ridership capacity		**As of 12/2021, 286 train cars out of a planned total of 775 in the current order have been accepted. Conceptual engineering for new train control system completed May 2021; preliminary engineering scheduled to be completed June 2022. Entered into a Full Funding Grant Agreement with the Federal Transit Administration for a $1.17 billion Capital Investment Grant to help fund the Transbay Corridor Core Capacity Project.**
RCE 2 - Adopt a Strategic Energy Plan	2.1 - Develop plan to achieve low-carbon energy procurement targets		Energy plan developed and targets identified.
	2.2 - Develop Wholesale Electricity Portfolio Policy		Wholesale Electricity Portfolio Policy adopted by Board.
	2.3 - Track and report energy indicators; set performance goal		Energy use by location and power type reported annually and used to develop performance goals. Exploring options to better analyze energy use over time.
RCE 3 - Make Renewable Energy Purchases	Continue to invest in wholesale low-carbon, zero-carbon, and renewable electricity purchases	*	**BART staff negotiated two power purchase agreements for output from a 50.5-megawatt solar project and a 30-megawatt wind project. Projects became operational in 2021.**
RCE 4 - Invest in On-site Energy Generation	4.1 - Move forward with on-site solar power generation		Solar energy systems in place at Lafayette, Warm Springs, Richmond, and Hayward. Additional systems being considered for new stations.
	4.2 - Solar power generation vs. TOD and housing policies		5 potential solar sites were identified for solar generation that do not have plans for any TOD development within the next 20 years.
	4.3 - Seek funding to support photovoltaic (PV) installations and storage		Funding pursued as needed for new projects.
RCE 5 - Investigate Investment in Renewable Diesel	Explore feasibility of renewable fuels for eBART and non-revenue fleet		BART has transitioned to renewable diesel for both eBART and non-revenue vehicles.

Action Table

* STATUS UPDATE FOR 2021 Ongoing | 100% | 76%-99% | 26%-75% | 1%-25% | 0%

RESOURCE CONSERVATION: ENERGY & GHG EMISSIONS

ACTION	SUB-ACTION	STATUS	SUMMARY
RCE 6 - Conduct Station Energy Consumption Analysis	Complete energy monitoring study for representative stations		A study was completed examining three representative stations. Based on the lessons learned, BART has no further plans to study 3 additional underground stations.
RCE 7 - Invest in District Lighting Retrofits	7.1 - Prioritize stations for energy-efficient lighting retrofits		10 of 48 stations, 1 of 15 parking garages, and 10 of 29 parking lots have been retrofitted.
	7.2 - Develop robust lighting design guidance	*	**Work plan process completed; project to start in 2022.**
RCE 8 - New Energy-Efficient Train Cars	Continue to fund the new train car procurement; conduct testing to confirm energy efficiency gains		**As of 12/2021, 286 new train cars out of a planned total of 775 in the current order have been accepted.**
RCE 9 - Reduce Electricity Losses from Traction Power	Explore and apply potential improvements to reduce traction power losses		BART will be installing reversible rectifiers at appropriate substations as the substations are replaced.
RCE 10 - Explore Opportunities for Energy Storage	10.1 - Funding options in coordination with new train car procurement		The Self-Generation Incentive Program (SGIP) offered by the California Public Utilities Commission was explored but would not apply for funding batteries for regenerative braking system. BART will continue exploring other options for funding as opportunities arise.
	10.2 - Engineering-level study of systemwide energy storage		Study completed in 2016 indicated that storing energy from regenerative braking is not feasible due to battery limitations. Potential opportunities will be revisited at a later date.
RCE 11 - Green Non-Revenue Fleet	11.1 - Replace retired vehicles with hybrids		There are 3 electric motorcycles and 1 hybrid SUV in the police fleet, with the potential for future purchases.
	11.2 - Right-size heavy equipment to save fuel		Department superintendents provide guidance on vehicle uses prior to replacement by maintenance. Multi-use vehicles are pursued when possible.
	11.3 - Implement operational strategies, e.g., anti-idle and fuel saving driving	*	**New logistics trucks are designed to shut off after 5 minutes according to CA regulations. Maintenance & Engineering employees are required to take driver safety course.**
RCE 12 - Employee Trip Reduction in Non-Revenue Vehicles	Reduce fuel and emissions for BART employee work-related travel		Not started
RCE 13 - Support Energy Efficiency Operations in Offices	Assess the feasibility of reducing BART's corporate energy use via employee training		Not started

Action Table

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RESOURCE CONSERVATION: ENERGY & GHG EMISSIONS

ACTION	SUB-ACTION	STATUS	SUMMARY
RCE 14 - Electric Vehicle (EV) Charging Policy and Implementation	14.1 - Pursue funding for installing EV charging stations	Ongoing *	**Explored state funding through California Energy Commission (CEC) and California Air Resources Board (CARB) and submitted comment letters to CEC and Department of Transportation (DOT)/Federal Highway Adminstration (FHWA) about their proposed EV charging funding programs.**
	14.2 - Pilot EV charging at Warm Springs Station	100%	The EV charging pilot at Warm Springs has been implemented.
	14.3 - Develop expansion of station EV charging	26%-75%	**EV Charging at BART Policy adopted by the Board in November.**
	14.4 - Install EV charging at shops/ yards to enable EVs in non-revenue fleet	1%-25%	**EV charging stations available at eBART and Hayward Maintenance Complex for employees and non-revenue fleet. Planning is underway for further expansion.**
	14.5 - Install EV charging for convenient employee use	1%-25%	**EV charging stations available at eBART and Hayward Maintenance Complex for employees and non-revenue fleet. New dual-port charges added to the Hayward Maintenance Complex.**

Action Table

* STATUS UPDATE FOR 2021 Ongoing | 100% | 76%-99% | 26%-75% | 1%-25% | 0%

RESOURCE CONSERVATION: WATER

ACTION	SUB-ACTION	STATUS	SUMMARY
RCW 1 - Regularly Audit Water Use and Correct Issues	1.1 - Allocate resources to pilot water use data tracking		Water use is tracked systemwide by meter. Piloted data dashboard using newly implemented cloud analytics tool. Cross-departmental team has begun compiling additional data about meters and site-specific water use throughout system. Irrigation at several locations has been optimized as a result of analysis.
	1.2 - Leak detection and fixes		Calsense flow meters have been installed at 5 locations, including Warm Springs/South Fremont, to aid prompt leak detection. Leak detection at shops & yards will be enhanced upon installation of new water mains and piping. Water billing data and manual inspection techniques are used at other locations.
	1.3 - Electronic data from water suppliers		BART developed a proposal for enhancing data intake for water data.
RCW 2 - Address Irrigation Usage and Infrastructure	2.1 - Prioritize and conduct irrigation upgrades		**Developed dashboards and spreadsheets to assist with auditing water meters and consumption trends at key locations. Water use for irrigation declined by nearly 10 percent from 2020 to 2021.**
	2.2 - Remote access controllers pilot and lessons learned		Pilot was completed at Warm Springs and lessons will be applied to future projects.
	2.3 - Update irrigation maintenance manual		Not started
RCW 3 - Upgrade Water Fixtures	3.1 - Prioritize and install water-saving fixtures		Water fixtures are upgraded during station modernization efforts. Other water fixtures needing repair are maintained according to their current specifications.
	3.2 - Audit existing fixtures		Audit completed to identify plumbing fixtures that are not low flow and do not meet current water efficiency requirements.
	3.3 - Pilot low-flow fixtures and apply findings		**Low-flow pilot only applicable to new facilities. For existing toilets, not feasible to retrofit due to low slope of sewage pipe.**
RCW 4 - Replace Water Systems in Shops and Yards	Identify leaks; consider upgrades to water systems		**Water main replacements are complete at Concord Yard, Oakland Shops and Richmond Yard, with more efficient distribution, a greater number of valves, and fire line flow monitoring. Hayward Yard Fire Protection project awarded in 2021 and will provide more efficient water distribution for separated domestic and fire mains, a greater number of valves for better control of the system, and better monitoring for high flow.**

Action Table

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RESOURCE CONSERVATION: WATER

ACTION	SUB-ACTION	STATUS	SUMMARY
RCW 5 - Investigate Train Car Washing	Determine the most water-efficient cycle/schedule		An audit of the train car washing schedule will be considered once the new cars are the majority of the fleet (anticipated late 2022).
RCW 6 - Engage Operations Staff for Water Conservation	Educate and engage relevant staff on ideas for water conservation in the workplace		Cross-departmental team created to address water consumption at shops and yards and develop standard operating procedures to better manage activities.
RCW 7 - Participate in Water District Conservation Programs	Explore available rebates, incentives, and technical assistance		12th St. Oakland City Center Station has received the Water Smart Business Certification.

Action Table

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SMART LAND USE AND LIVABLE NEIGHBORHOODS

ACTION	SUB-ACTION	STATUS	SUMMARY
SLU 1 - Improve Station Character and Community Fit	1.1 - Implement the "Connect & Create Great Places" work plan		**2 projects completed in 2021: El Cerrito Del Norte Station Modernization Project completed to provide better accessibility, improved lighting, and stormwater pollution prevention. Union City Phase 2A completed to improve accessibility and enhance station infrastructure. Overall, 13 capital projects identified: 5 complete, 5 in progress, 2 on hold, and 1 not started.**
	1.2 - Seek funding for place-making investments via grants, bonds, etc.		**$350,000 Federal Transit Administration grant recieved for A-Line Jobs Attraction Strategy.**
	1.3 - Partner to implement complementary improvements on city streets		Overall 5 capital projects identified: 2 complete, 3 in progress.
SLU 2 - Continue to Lead the Region in Transit-Oriented Development (TOD)	2.1 - Implement TOD Policy		**4 TODs are under construction: Millbrae, Fruitvale Phase 2A, Balboa Park and Walnut Creek.** **4 TODs are being negotiated: West Dublin, Lake Merrit, West Oakland, and El Cerrito Plaza.**
	2.2 - Coordinate with local partners on Specific Plans or Station Area Plans		**Conducted zoning conformance coordination with local jurisdictions regarding AB2923. Progress on R-Line Access Study and El Cerrito San Pablo Specific Plan Update. Berkeley Zoning draft environmental impact report released.**
	2.3 - Activate stations in coordination with system expansion		**Initiated the update to system expansion policy. Supported city station area plans for Berryessa and stations for BART Silicon Valley Phase 2.**

Action Table

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SMART LAND USE AND LIVABLE NEIGHBORHOODS

ACTION	SUB-ACTION	STATUS	SUMMARY
SLU 3 - Station Access – Connect to Community	3.1 - Implement the Station Access Policy	Ongoing	**Completed multi-modal upgrades to Antioch parking lot. Measure RR-funded projects in construction at Warm Springs and North Berkeley. Improvements made to access safety and placemaking along the Ohlone Greenway near El Cerrito del Norte. Other Measure RR-funded projects are in the design phase.**
	3.2 - Implement the BART Bike Plan and Bike Parking Capital Program	76%-99%	Purchased and installed 92 secure on-demand electronic BIkeLink locker spaces at West Oakland, El Cerrito Plaza, San Leandro, and Hayward. Modernized and/or remodeled bike stations at Embarcadero, Civic Center, Ashby, Fruitvale, MacArthur, and Downtown Berkeley.
	3.3 - Incorporate Multimodal Access Design Guidelines into the BFS	100%	The guidelines are listed as an appendix in the BFS.
	3.4 - Improve multi-modal transfers; fund access upgrades	Ongoing	**El Cerrito Del Norte Station Modernization completed: new platform elevator inside paid area, bus racks and lockers relocated, bus bays reconstructed to comply with ADA requirements, and new bus shelters installed. MacArthur BART access improvements completed: bus stops moved closer to station entrance; passenger loading, taxi and BART station agent, police, maintenance parking moved. Antioch parking and access improvements completed: Antioch parking and access improvements completed: new passenger loading zone, new bus lane, new wayfinding signage, new bike/pedestrian path to station.**
SLU 4 - Participate in Local/Station and Regional Partnerships	4.1 - Identify opportunities for effective Plan Bay Area implementation	Ongoing	**Plan Bay Area 2050 completed and adopted in October 2021.** **BART will continue to coordinate with Plan Bay Area for implementation.**
	4.2 - Serve on Technical Advisory Committees, lend expertise	Ongoing	**BART supports the City of Berkeley's Adeline Corridor Specific Plan by coordinating with the city on TOD and access improvements at Ashby and North Berkeley. Research being conducted on SF Congestion Pricing with a focus on equity.**
	4.3 - Participate in state legislation and rule making to support TOD	Ongoing	**BART supported legislation including Senate Constitutional Amendment 2 (Allen and Wiener), CA Assembly Bill 1401 (Friedman), and CA Assembly Bill 455 (Wicks).**

Action Table

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SMART LAND USE AND LIVABLE NEIGHBORHOODS

ACTION	SUB-ACTION	STATUS	SUMMARY
SLU 5 - Support Affordable Fares	Continue to explore strategies to support affordable fares		**The Clipper START pilot providing means-based fare discounts was extended to July 15, 2023.** **BART and Metropolitan Transportation Commission (MTC) continue co-leading regional fare coordination/integration efforts, including an all-agency pass pilot called Clipper BayPass which has launched at four universities/colleges and twelve affordable housing developments.**

Action Table

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RIDER EXPERIENCE

ACTION	SUB-ACTION	STATUS	SUMMARY
RE 1 - Create Clean Station Environments	1.1 - Invest in the Station Brightening Program and increase staff	Ongoing	**11/70 actions completed for Fremont Brightening Project. Hiring halted due to COVID-19. Station Monitoring effort began in 2021 to identify and report quality of life issues at all stations.**
	1.2 - Additional grounds maintenance crews to improve parking lot cleanliness	1%-25%	2 positions have been filled on maintenance crew. Other positions to be considered in the future.
RE 2 - Create Safer Station Environments	2.1 - Support community-based policing	Ongoing	**The Progressive Policing and Community Engagement Bureau continued its expansion efforts with the addition of 14 of 20 Crisis Intervention Specialists (CIS) and 6 of 10 Police Officers. The CIS and Officers are engaged in a co-responder model of policing to increase safety and address quality of life issues on the BART system. The Community Oriented Policing and Problem Solving (COPPS) Unit re-started the Coffee with a Cop program. The Transit Ambassadors are fully staffed and participated in community policing efforts through high visibility and attending community events. The Bureau staffing is at approximately 85% of its goal.**
	2.2 - Analysis of high crime stations; leverage data to optimize police presence and support equitable policing practices	Ongoing	BART Police Department adjusted officer presence based on COVID-19 safety protocols and ridership numbers. Fare Inspection Officers conduct strategic Proof of Payment inspections. Community Service Officers were re-deployed from parking lots to provide visible presence in stations and on trains.
	2.3 - Update audibility of Public Announcement (PA) system	1%-25%	**The Stations PA Improvement project includes Powell St and Lafayette stations. Project is in procurement as of end of 2021.**
	2.4 - Improve real-time display (RTD) messages to communicate safety messages	76%-99%	**30 real-time displays installed at downtown Oakland and SF stations.**
RE 3 - Support Art in Transit	Develop an art program master plan	100%	In 2020, BART completed an art collection analysis that details maintenance and cleaning. The Arts Master Plan, which includes guidelines, procedures, and metrics is now complete. Funding is currently on a project by project basis.

Action Table

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RIDER EXPERIENCE

ACTION	SUB-ACTION	STATUS	SUMMARY
RE 4 - Invest in Employee Health and Wellness	Implement programs to enhance worker safety and wellness		**Continued implementation of BART's COVID-19 prevention program. Program efforts include station cleaning, train car cleaning, customer and employee communication, and procurement of PPE and disinfectant supplies. As part of regional collaboration, BART provided facilities and parking lots as sites for community testing and vaccination. In October 2021, BART adopted a COVID-19 vaccine mandate for employees and contractors.**
RE 5 - Design Stations for Patron Comfort	Develop guidelines and other procedural tools to promote quality of life at stations		Patron comfort addressed in various guidelines and requirements including the Station Experience Design Guideline, Powell Station improvement Guideline, and the BFS.
RE 6 - Attenuate Noise	6.1 - Feasibility of piloting a physical barrier to mitigate local noise impacts		Upon analysis, a physical barrier at West Oakland was deemed infeasible.
	6.2 - Continue regular wheel and rail maintenance to mitigate noise		BART converted 95 percent of our fleet wheels and 40 percent of the rails to a new profile that together help to reduce the screeching noise frequently heard on BART. In the worst areas of the system, interior train car noise measurements decreased from 95dB to 75dB.
	6.3 - Specify materials in the BART Facilities Standards (BFS) that help noise attenuation		BFS architecture criteria for passenger stations include noise attenuation requirements.
RE 7 - Support an Enhanced Wayfinding Program	Update wayfinding program; expand the use of electronic signs with realtime information		**Wayfinding Phase 4 design is 95% complete. Construction of Macarthur and Ashby anticipated to start at end of 2022.**
RE 8 - Build Awareness: Transit's Relationship to Public Health	8.1 - Explore opportunities for healthy behaviors, e.g. public art		**BART provides daily updates about COVID-19. The 15-step plan for returing to BART provides reassurance that service is as safe as possible and social distancing is followed. BART has an active educational campaign about required face coverings with overhead announcements every 15 minutes, messages on the platform signs, and posters across the system.**
	8.2 - Reflect public health benefits in emerging guidance for station design		BFS architecture criteria for passenger stations include requirements for bike stair channel to promote bike usage.

Action Table

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EMISSIONS AND POLLUTION CONTROL

ACTION	SUB-ACTION	STATUS	SUMMARY
EP 1 - Support Solid Waste Reduction	1.1 - Review station recycling pilot; targets for landfill diversion and waste reduction		BART estimated total waste and diversion based on volume of waste containers and pickup frequency at all stations and offices.
	1.2 - Renegotiate waste hauling and recycling contracts	N/A	BART compiled all waste hauler contracts and service agreements, which were franchise agreements. Contract negotiations were not feasible.
	1.3 - Public education and marketing campaigns for recycling		Not started
	1.4 - Hire workers to service and support station recycling		Current System Service workforce is sufficient to meet projected recycling management needs.
EP 2 - Pilot Station Dumpster Enclosures	Implement pilot project for dumpster enclosures	*	**Project completed to determine best practices for dumpster enclosure design. Rather than completing a pilot, accepted requirements were incorporated into BART Facilities Standards. New construction or future upgrades to dumpster enclosures will capture and use these best practices.**
EP 3 - Pilot Facility-based Sustainability Program at Shop(s)/Yard(s)	3.1 - Opportunities for pilot of Sustainability Plan at shops/yards		Not started
	3.2 - Evaluate pilot; develop sustainability program for shops/yards		Not started
EP 4 - Improve Recycling at All District Shops and Yards	4.1 - Review Oakland shops' recycling, create plans for all other shops/yards	*	**Visited Oakland shop in December 2021 to document current waste streams and collection process. Plan to start a recycling and composting pilot at a smaller shop with fewer departments.**
	4.2 - Identify costs and resources needed for systemwide reycling plan		Not started

Action Table

* STATUS UPDATE FOR 2021 | Ongoing | 100% | 76%-99% | 26%-75% | 1%-25% | 0%

EMISSIONS AND POLLUTION CONTROL

ACTION	SUB-ACTION	STATUS	SUMMARY
EP 5 - Incorporate Composting in Employee Worksites	5.1 - Develop composting and recycling program for administration offices		300 Lakeside has recycling and composting. Program will continue at 2150 Webster upon move.
	5.2 - Recycling and composting in staff rooms at shops/yards systemwide	*	**Visited Oakland shop in December 2021 to document current waste streams and collection process. Plan to start a recycling and composting pilot at a smaller shop with fewer departments.**
	5.3 - Investigate potential to include composting at BART stations		Research completed and pilot plan drafted.
EP 6 - Improve Office Recycling and Re-use	6.1 - Inter-District "green team" to advance waste reduction strategies		**Office of Chief Information Officer (OCIO) Digitization team implemented e-signatures and other resources to reduce processes that require paper. Initial outreach for "green team" creation and signup has begun.**
	6.2 - Develop paperless policy; Board of Directors all-digital pilot; review union contracts		**Per BART 2020 Record Retention Manual, unless otherwise required, standard for all District record storage created on or after January 1, 2021 shall be digital format. District employees and contractors are required to limit amount of paper produced. Board meetings in 2021 were held virtually. Union contracts were reviewed for paper and printing requirements.**
	6.3 - Searchable database of materials available for salvage/re-use		Not started
EP 7 - Reduce District Hazardous Waste	7.1 - Specify non-hazardous materials in capital projects; seek alternatives		**Project submittals coming through System Safety are reviewed with regard to hazardous materials; those with unacceptable risks are rejected.**
	7.2 - Expand program for reusing and laundering oily rags		BART has contract to launder and reuse rags at the BART vehicle shops. Nearly 2 tons of rags are diverted from waste annually due to the program.
EP 8 - Minimize and clean stormwater runoff	8.1 - Construct trash interceptors/ storm drain diversion structures		**Work plan development has begun and is anticipated to be completed by June 2022. Goal is to reach compliance by 2030.**
	8.2 - Increase crews to improve cleanliness and inspect storm drain inlets		2 of 9 planned positions have been filled on maintenance crew. Other positions to be considered in the future.
	8.3 - Pilot the capture, storage, and reuse of rainwater		A potential pilot is currently unfunded. BART is actively exploring and applying for grants to fund this initiative.
	8.4 - Update BART Facilities Standards drainage sections to reflect best practices	*	**BART Facilities Standards (BFS) update for drainage completed for BFS 3.2.1 to be released in 2022.**

Action Table

* STATUS UPDATE FOR 2021 Ongoing | 100% | 76%-99% | 26%-75% | 1%-25% | 0%

EMISSIONS AND POLLUTION CONTROL

ACTION	SUB-ACTION	STATUS	SUMMARY
EP 9 - Clean and Reuse Water	9.1 - Explore and implement the reuse of sump pump water	N/A	Upon analysis, reuse of sump pump water is currently infeasible for BART's operations.
	9.2 - Explore and implement grey water systems at the shops and yards	N/A	Due to public health concerns and metals in water discharge, grey water systems are currently infeasible for BART's operations.
	9.3 - Explore and implement storm water capture		Not started
EP 10 - Invest in Tree Planting	10.1 - Direct resources to prioritize tree coverage		Several transit-oriented development projects at and around stations include tree planting as part of design. Trees are also considered and prioritized during planning for new stations. However, funding and staffing for maintaining existing and newly established trees have been identified as obstacles.
	10.2 - Include tree requirements in the BART Facilities Standards as possible		Updates added to landscape and vegetation control section of BFS.
EP 11 - Replace Gas-Powered Tools with Electric	11.1 - Prioritize landscaping tool replacement		BART replaces tools on an ongoing basis. Electric tools are tested prior to implementation to ensure they meet our needs.
	11.2 - Develop policy of purchasing electric (battery) tools		BART replaces tools on an ongoing basis. Electric tools are tested prior to implementation to ensure they meet our needs.
	11.3 - Outfit hi-rail crew trucks with outlets and areas to charge batteries		All hi-rail crew trucks have generators and outlets.

Action Table

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MATERIALS AND CONSTRUCTION OPERATIONS OPTIMIZATION

ACTION	SUB-ACTION	STATUS	SUMMARY
MC 1 - Select Green, Sustainable Materials and Products	1.1 - Green Purchasing Policy		**On hold due to changes in staffing.**
	1.2 - Department-specific procurement guidelines		**On hold due to changes in staffing.**
MC 2 - Update BART Facilities Standards (BFS) for Construction Activities	2.1 - Develop tools for BFS Sustainable Practices	*	**Not every company produces an Environmental Product Declaration so BART is unable to make this a requirement. At this time, BART is including sustainability in construction specifications where practical.**
	2.2 - Update BFS Construction Standard Specification		Not started
	2.3 - Modify BFS design standards to ensure resilient infrastructure design		Not started
MC 3 - Improve BFS Sustainability Guidance, Criteria and Standards	3.1 - Update guidelines and incorporate performance-based specifications		BFS Sustainability Guidelines have been revised.
MC 5 - Sustainable Contractual Tools (Capital Projects)	Explore contracting tools to best leverage sustainability		Not started
MC 6 - Develop Sustainability Design Guidance	6.1 - Project guidance (sustainability targets, financial resource allocation)		Not started
	6.2 - Experience with green building and LEED certification in new contracts		BART includes LEED experience as a desired qualification in RFPs for On-Call Agreements.
	6.3 - Pilot project with INVEST or Envision	*	**Provided information about third party sustainability certifications and cost premiums in internal "Sustainability in Project Delivery" training. VTA staff is pursuing Envision for BART Silicon Valley Phase II. BART staff is supporting their work and learning from the experience.**

Action Table

* STATUS UPDATE FOR 2021 | Ongoing | 100% | 76%-99% | 26%-75% | 1%-25% | 0%

EXTREME WEATHER ADAPTATION AND RESILIENCE

ACTION	SUB-ACTION	STATUS	SUMMARY
EWA 1 - Coordinate with Regional Agencies in Climate Adaptation Planning and Implementation	1.1 - Consider climate change impacts as a part of project design	*	**Design of BART projects are required per BART Facilities Standards to account for climate change impacts.**
	1.2 - Seek funding or partner to adopt adaptation strategies		No state, federal, or local grants awarded to District in 2021 for adaptation.
	1.3 - Modify BFS design standards to ensure resilient infrastructure design		Included requirements in BFS for climate change adaptation.
EWA 2 - Conduct Hazard Mitigation Planning	2.1 - Incorporate LHMP (2016) considerations into capital improvement plans	*	**As part of LHMP 2021/2022 update, LHMP actions are being integrated into District's capital improvement need inventories and programs.**
	2.2 - Update LHMP (every 5 years)	*	**District initiated update of LHMP. Completion anticipated by end of 2022.**
EWA 3 - Expand the Water Intrusion program to respond to sea-level rise and extreme weather events	3.1 - Upgrade systems that track water inundation		Sump pump systems provide alert to Operations Control Center of water in the system. System is adequate. Upgrade not warranted at this time.
	3.2 - Expand Water Intrusion Program to identify vulnerable assets; develop risk mitigation program		Several RR-sponsored projects are in progress.
	3.3 - Partnerships with local watershed jurisdictions for runoff analysis		Flood-prone areas were evaluated in the LHMP using FEMA FIRM maps.
	3.4 - Partner with jurisdictions to protect around Transbay Tube portals		**BART continued engagement with Port of San Francisco on Embacadero Seawall Program.**
	3.5 - Waterproof venting structures and entrances for underground stations		Not started
EWA 4 - Train Control Resiliency	Implement the Train Control Modernization Program		**Conceptual engineering completed May 2021. Preliminary engineering scheduled to be completed June 2022.**


BART