



2020 Annual Report: Sustainability

Let's go.





General Manager Message

2020 was unlike any year in our lifetimes. The challenges it presented to the world, and by extension to BART, were one-of-a-kind, yet our transit agency has moved into 2021 with one of its most important goals intact: to be a leader in sustainability.

I want to express my profound gratitude to BART employees for making this so. Each of our 4,000-plus workers contributes to sustainability in ways both small and large. Without our dedicated, talented and adaptable workforce, we would not be able to share such an impressive list of accomplishments the reader will find in the following pages.

There were many highlights during the year. BART continued to provide safe, reliable low-carbon transportation seven days a week throughout the shelter-in-place orders for tens of thousands of people, many of whom had no other option to get where they needed to go.

Even at the height of the pandemic, BART was looking ahead: the much anticipated first phase of the Silicon Valley extension opened, providing a sustainable travel alternative along one of the region's historically most congested corridors. More Fleet of the Future rail cars were introduced into service – they now comprise a majority of the service hours for our customers.

Two apartment buildings at Pleasant Hill and MacArthur were completed in 2020, adding 602 new residential units, of which 56 are affordable. Improvements to bike stations and new passenger loading zones increase accessibility at our stations.

The above improvements are easy to see; however, BART is also focused on sustainability in ways that may not be apparent to the public. Our new BART Headquarters incorporates sustainability in all phases of design. BART's electrical sources are at least 92% greenhouse gas free. The Central Warehouse at Hayward Maintenance Facility received LEED (Leadership in Energy and Environmental Design) Silver certification.

There is no shortage of challenges ahead for BART. The future of remote work, public confidence in returning to situations with reduced social distancing, and the viability of a primarily fare-based revenue model are among the uncertainties we face as we strive to meet our 2025 Sustainability Goals.

BART's commitment to sustainability is unwavering, and we are both literally and figuratively on the right track.

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

BART 2020 Sustainability Highlights



\$700 million

issued in green bonds to invest in climate-friendly mass transportation



\$3.54 million

awarded to improve station access as part of the Safe Routes program



65.9 mpg

fuel efficiency equivalent in a BART car as compared to average single-occupancy car



280

Fleet of the Future Cars in operation



26 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 two transit-oriented development (TOD) projects

which added 602 new residential units, of which 56 are affordable



2 tons
(estimated)

of oily rags diverted from waste



92

secure on-demand electronic BikeLink locker spaces purchased and installed



Free masks and hand sanitizer

offered at stations systemwide



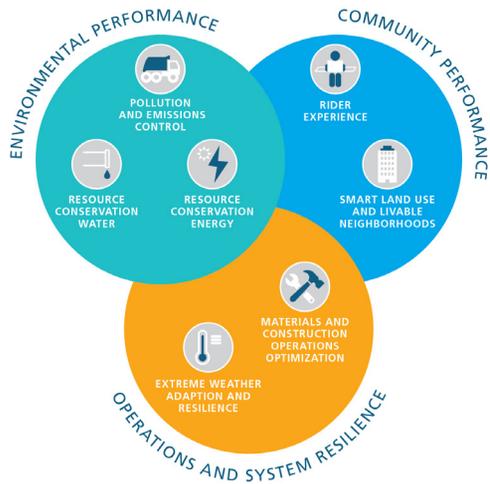
Berryessa and Milpitas stations

opened with sustainability features

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7 SUSTAINABILITY CATEGORIES



Introduction

The *2020 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 2020 calendar year (i.e., January 1 to December 31).

2019 POWER CONTENT LABEL		
San Francisco Bay Area Rapid Transit District (BART)		
BART Electric Supply Portfolio		
ENERGY RESOURCES	Power Mix	2019 CA Power Mix
Eligible Renewable¹	5.1%	31.7%
Biomass & Biowaste	0.0%	2.4%
Geothermal	0.0%	4.8%
Eligible Hydroelectric	3.3%	2.0%
Solar	1.8%	12.3%
Wind	0.0%	10.2%
Coal	0.0%	3.0%
Large Hydroelectric	86.3%	14.6%
Natural Gas	0.0%	34.2%
Nuclear	0.8%	9.0%
Other	0.0%	0.2%
Unspecified sources of power²	7.9%	7.3%
TOTAL	100%	100%
Percentage of Retail Sales Covered by Retired Unbundled RECs³	0.0%	

¹The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.

²Unspecified power is electricity that has been purchased through open market transactions and is not traceable to a specific generation source.

³Renewable energy credits (RECs) are tracking instruments issued for renewable generation. Unbundled renewable energy credits (RECs) represent renewable generation that was not delivered to serve retail sales. Unbundled RECs are not reflected in the power mix or GHG emissions intensities above.

For specific information about this electricity product, contact:	BART 510-917-9990
For general information about the Power Content Label, please visit:	http://www.energy.ca.gov/pcl/
For additional questions, please contact the California Energy Commission at:	Toll-free in California: 844-454-2906 Outside California: 916-653-0237

Power Content Label

In 2020, BART published its first annual Power Content Label¹ (PCL) under the California Energy Commission's Power Source Disclosure (PSD) program,² which profiles the supply sources comprising BART's 2019 wholesale electric portfolio. BART's PCL is produced using a standardized methodology developed by the California Energy Commission (CEC) and is independently verified by a third-party auditor to validate the composition of BART's electric supply. Based on final accounting, upwards of 92% of BART's 2019 power supply was sourced from greenhouse gas-free (GHG-free) energy sources.³

Moving forward, BART will prepare a PCL annually to enhance the transparency of its electric supply sources and to demonstrate progress against its clean energy commitments. Although BART does not serve a retail load like other PSD program participants, the PCL enables a "like-for-like" comparison of BART's electric supply against retail providers across the state and California's "grid average" power mix.

Speaking on the importance of transparency, BART's Energy Division Manager Paul Bostrom highlighted that BART "has made a series of ambitious clean energy commitments through 2045, and we'll need to continue demonstrating progress against those commitments. It's important that we're holding ourselves accountable to BART's Board and the broader public using a credible methodology with third-party verification."

To substantiate the electricity deliveries received from each power source, BART compiles hourly generation data and power purchase agreements, and inventories its renewable energy credits (RECs) generated throughout each calendar year. In 2019, 92% of BART's power supply was sourced from GHG-free energy sources, including 5% from eligible renewable resources. In California, bioenergy, geothermal, solar photovoltaic, solar thermal, small hydroelectric, and wind energy resources are all designated as eligible renewable resources under California's Renewables Portfolio Standard (RPS).⁴ Notably, large hydroelectric resources represented BART's largest source of GHG-free electricity and are not defined as eligible renewable resources under California state law.

The PCL enables a "like-for-like" comparison of BART's electric supply against retail providers across the state and California's grid average power mix. In 2019, upwards of 92% of BART's power supply was sourced from greenhouse gas-free (GHG-free) energy sources.



¹<https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure/power-content-label>

²<https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure>

³The PCL described in this case study is for calendar year 2019. GHG calculations for 2020 reported in other sections refer to BART's 2020 Power Source Disclosure Report, which will be finalized later in 2021.

⁴https://www.cpuc.ca.gov/RPS_Overview/



Power Content Label (continued)

In 2019, BART's electric power portfolio was composed of specified imports of large hydroelectric and asset-controlling supplier (ACS) power⁵ sourced from the Pacific Northwest; federal preference hydroelectric power from Western Area Power Administration (WAPA); renewable hydroelectric power generated by the Lake Nacimiento hydroelectric project; and photovoltaic solar power from the Gridley #2 solar project and other onsite solar projects located on BART property.

To meet its future clean energy commitments, BART is actively pursuing opportunities to increase its supply of renewable energy. In 2017, BART entered into two new power purchase agreements⁶ for solar and wind energy, which are expected to become operational in 2021. The new projects are collectively projected to serve approximately 50% of BART's annual electricity requirements with renewable generation beginning in calendar year 2022.

Part of BART's electric power portfolio included photovoltaic solar power from the Gridley #2 solar project.



⁵<https://ww2.arb.ca.gov/mrr-acs>

⁶<https://www.bart.gov/news/articles/2017/news20171207-1>

To see our full label, please visit: <https://www.bart.gov/sustainability/energy/powercontentlabel>

Clipper Card Conversion and New Means-based Fare Program



Riders purchasing fares at ticket vending machines must use Clipper cards, which can be purchased at all BART stations, at select retailers, and online.



In December of 2020, BART completed our conversion to Clipper-only sales at stations and eliminated fare machines dispensing magnetic stripe (magstripe) tickets.¹ Riders purchasing fares at ticket vending machines must use Clipper cards, which are reloadable and contactless smart cards that can be purchased at all BART stations, at select retailers, and online. Clipper cards are easier and safer to use and the conversion will reduce the amount of waste generated at our stations.

BART began piloting Clipper-only sales at several stations in 2019 and accelerated the change across the system in 2020. Using Clipper cards allows for a touchless experience, since riders can hold their cards over the card reader to open the fare gates. Clipper is used by almost all the transit agencies in the Bay Area, creating an integrated fare payment system for multimodal riders.²

Eliminating the magstripe tickets reduces the waste generated at stations because Clipper cards are reusable and more durable than the magstripe tickets. The magstripe tickets were not recyclable, so discarded tickets were sent to the landfill or ended up as litter. In fiscal year 2019, 11.4 million magstripe tickets were sold. If all those tickets were lined up lengthwise, they would reach from Oakland to Salt Lake City. The magstripe tickets are also less reliable; they can jam fare gates, causing delays and requiring maintenance. Finally, registered Clipper cards offer additional security over magstripe tickets by allowing riders to reclaim their value if a card is lost or stolen. While magstripe tickets purchased before the transition may still be used at the fare gates, riders can also receive a refund for magstripe tickets with a value greater than \$1 by speaking to a station agent or mailing BART's Treasury Department.

In addition to helping manage waste, Clipper cards are integral for BART's discounted fare programs, which help make BART more accessible for many riders. BART began participating in the Metropolitan Transportation Commission's (MTC) new means-based fare program called Clipper START. Initiated in 2020 by the MTC and 21 of the Bay's transit agencies, the 18-month pilot program provides discounts to riders between ages 19 and 64 with household incomes no more than twice the federal poverty rate. Riders receive a personalized Clipper Card that can be reloaded like a standard Clipper card. The discounted fares are applied upon use of the card.³ As in previous years, Clipper discounts are also available for youth between ages 5 and 18 and seniors aged 65 and above.

¹These tickets are sometimes referred to as paper tickets but are made of a paper-like plastic that is neither recyclable nor compostable.

²For more information about BART & Clipper fares, please visit <https://www.bart.gov/tickets>

³For more information on the Clipper Start program, please visit <https://www.clipperstartcard.com/s/faqs>

Additional source: <https://www.bart.gov/news/articles/2020/news20201214>



MacArthur Transit Village

The MacArthur Transit Village is a multi-use development located near MacArthur BART Station built as part of BART’s transit-oriented development (TOD) strategy. The project was first envisioned in the 1990s and was completed in 2020. By providing attractive, high-density residential apartments and commercial space near a transit hub, the project helps address the region’s housing shortage while encouraging low-carbon transportation like walking, biking, and public transit.

The development includes 877 high-density residential units, approximately 35,000 square feet of commercial space, and a 481-space BART parking garage. The newest building, called the Skylyne and completed by Boston Properties in 2020, is a 24-story residential tower with 402 units and fantastic views of the bay and hills. This new building adds 56 affordable units, bringing the total to 146 affordable units across all three residential developments that make up the Transit Village. Hines Interests completed their 385-unit MacArthur Commons apartment development just a year earlier in 2019 and Bridge Housing completed their 90-unit, 100% affordable Mural apartment development in 2015. All three offer the convenience of being just steps away from the MacArthur BART Station and its newly renovated plaza.

The Skylyne, completed in 2020, is a 24-story residential tower with 402 total units, and 56 affordable units.



Consistent with the 2016 BART TOD Policy, BART reduced the commuter parking supply for this project, with parallel investments in other more sustainable forms of access (e.g., bus shuttle circulation improvements, bike station improvements, and plaza upgrades). The village was constructed on top of a former BART parking lot. Two streets were created during construction. The new 39th Street offers an east-west connection between Telegraph and Frontage Road (aka Walter Miles Way) and is intended to be the main pedestrian and vehicle thoroughfare for the project. The new Turquoise Street offers a north-south avenue from 39th Street to the southern boundary of the village.¹

The new buildings and development dovetail with other improvements made to MacArthur Plaza in 2019, which included a new bike station, improved lighting and wayfinding, and additional seating for riders.

This project involved collaboration between BART, the City of Oakland’s Redevelopment Agency, developers, and other stakeholders.

¹<https://www.oaklandca.gov/projects/macarthur-transit-village-project>

Additional source: Discussion with BART staff



The Berryessa station, pictured here, opened for passenger service in June of 2020 as part of the Silicon Valley BART extension.

Milpitas and Berryessa/North San José Stations

On June 13, 2020, BART and Valley Transportation Authority (VTA) opened the Milpitas and Berryessa/North San José stations for passenger service. Sustainability is a core aspect in the design of the stations and supporting infrastructure.

The \$2.4 billion project was completed in just over 8 years and represents the first phase of the planned Silicon Valley BART extension, which will extend BART to Santa Clara. The extension is expected to relieve traffic congestion between the East Bay and Santa Clara County and shorten transit travel times in the area. VTA built and owns the extension and the two new transit centers, while BART maintains and operates the train system.

The stations and infrastructure have many features that enhance sustainability. Tire-derived aggregate, which is a 100% recycled material, was used underneath the trackway to reduce vibration. Using this material saved the equivalent of 300,800 tires from being sent to waste.



Bioretention facilities and low-flow pumps were installed to help mitigate flooding from stormwater, rainwater, and groundwater during large rain events. Considering preconstruction conditions, the sites have been designed to prevent any increase in stormwater runoff. In terms of potable water consumption, the facilities have water-conserving fixtures and drought-tolerant plants to minimize irrigation.



To reduce lighting energy use and improve the ambiance, overhead skylights were installed in several areas at both stations, most notably in the Milpitas concourse area. The south end of the platform at Milpitas, which is below ground level, is also open for natural light. Throughout both stations and their parking areas, energy-efficient LED lights are used for additional lighting as needed. The parking garages also have solar photovoltaic power generation systems on the roofs that will help offset energy use from the transit centers.



The escalators at the sites use motion sensors to detect passenger traffic. If there is no traffic, they slow down to conserve energy. The escalators also have regenerative variable frequency drives that return energy to the system instead of it being wasted.



Finally, both stations serve as intermodal transit stops. Milpitas offers transfers between BART, VTA's light rail, several VTA bus lines, and an AC Transit bus line, while Berryessa connects BART and several of VTA's bus lines. Racks, lockers, and stations with over 180 bike parking spots are available at each of the transit stations. For drivers of EV vehicles, there are 24 electric vehicle charging stations at each location.¹

¹<https://www.vta.org/projects/bart-sw/phase-i/sustainability-efforts>

Additional Sources:

<https://sustainableinfrastructure.org/project-awards/vtas-berryessa-transit-center/>

<https://www.vta.org/blog/vtas-berryessa-transit-center-honored-commitment-sustainability>



Wildfire Risk Mitigation and Goats

To mitigate future wildfire risks, BART uses goats to graze and cut firebreaks on about forty-five acres of BART's properties, with additional areas planned for 2021. The goats are a natural and environmentally-friendly landscaping alternative that reduce BART's reliance on fossil fuels.

With 4.2 million acres burned statewide in 2020, California experienced one of its most devastating wildfire seasons in modern history. Some of BART's extensive real estate is in high wildfire potential zones and contains vegetated habitat. Due to climate change, increased precipitation in these areas during the rainy season may spur overgrown vegetation, which can dry out and serve as wildfire fuel during torrid summers. Uncontrolled wildfires pose a risk to BART assets and other nearby built structures, so BART proactively manages any overgrowth on its properties to help prevent fires from starting or spreading.

Twice a year, BART contracts local goat herders to bring 300-500 goats that graze nearly 45 acres of BART's properties. Prior to using goats, BART relied on fossil fuel-powered equipment and tractors to mow grasses on these properties. This required employees to traverse steep inclines with the equipment, which was time-consuming and posed safety risks. By contrast, the goats can access hard-to-reach areas more easily and can clear vegetation at the sites within two weeks, while causing less soil erosion than equipment would. The goats also leave behind natural compost as they graze, further enriching the soil quality.

In other areas where using goats is too risky, such as near the tracks, BART began using woodchips and mulch to prevent weed growth and erosion. BART procures the woodchips free of cost from local tree companies seeking to unload excess product. This helps provide a low-cost landscape management tool and maintain a clean presentation.¹

The goats are a natural and environmentally-friendly landscaping alternative that reduces BART's reliance on fossil fuels.



¹Source: Discussion with BART staff



Affordable Housing and Sustainable Communities Grants

BART partnered with developers and local agencies to secure \$191 million in funding through the Affordable Housing and Sustainable Communities (AHSC) grant program in the past year. The projects will build affordable housing, provide new rail cars for BART, improve access to BART stations, and foster transit-oriented development (TOD), particularly in disadvantaged communities.

Using auction proceeds from California Air Resources Board’s (CARB) Cap-and-Trade Program¹, the AHSC program helps fund “land-use, housing, transportation, and land preservation projects to support infill and compact development that reduce greenhouse gas (“GHG”) emissions.”² The applications involved collaboration between BART and many other regional partners, including community and development organizations, city governments, and the local community. Out of the total funding, nearly \$39 million will be provided to help fund 24 new Fleet of the Future rail cars for BART, pedestrian/bike access improvements, station signage and wayfinding. The projects will also fund over 900 affordable apartments that nonprofit developers will build at or near BART stations. Six of the projects will be in low-income communities. Below are a few details about each of the projects³:

An AHSC grant awarded to the Fruitvale Transit Village IIB project will provide funding for 181 new affordable housing units, 4 Fleet of the Future BART train cars, bicycle lanes, and other enhancements.



Picture credit: SVA Architects and The Unity Council

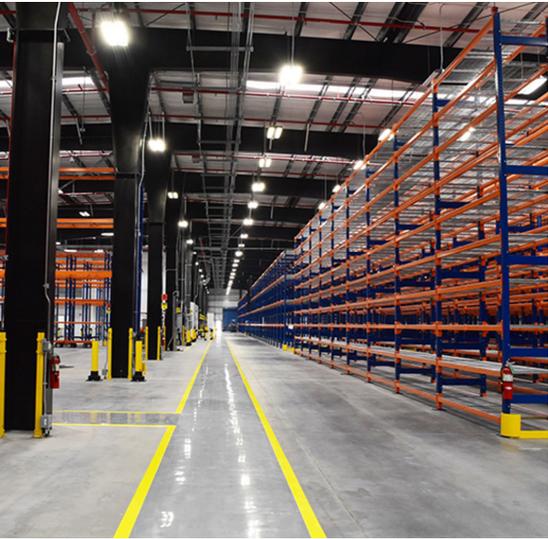
Affordable Housing Project	Location	# of affordable housing units	# of BART cars funded	Additional Improvements
266 4th Street	San Francisco	69	3	New bikeway, streetcar access ramps, ADA-accessible curb ramps, streetscape improvements
Balboa Park Upper Yard	San Francisco	131	3	Improve pedestrian access and circulation at Balboa Park BART station
Blake Apartments	Berkeley	63	3	Connect Ohlone Greenway directly to North Berkeley BART station
Fruitvale Transit Village IIB	Oakland	181	4	Bicycle lanes, enhanced sidewalks and crossings, landscaping, and lighting between E. 12th Street and Alameda Avenue
Galindo Terrace	Concord	62	3	New bike lanes, pedestrian improvements, wayfinding, and traffic calming measures. BART will provide a job training program for residents
Madrone Terrace	San Leandro	79	2	New and improved sidewalks, safety enhancements to crosswalks, new bike lanes, street trees, benches, and street lighting
Mandela Station	Oakland	237	3	New 400-bike parking facility, wayfinding signage, other improvements to the nearby roads and sidewalks
Maudelle Miller Shirek Community	Berkeley	87	3	New two-way cycle track at the Ashby BART station, bike boulevard, intersection crossing improvements, and wayfinding improvements

¹<https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program>

²<https://www.hcd.ca.gov/grants-funding/active-funding/ahsc.shtml>

³Summaries for each of the projects and others can be found here:

https://sgc.ca.gov/programs/ahsc/docs/20200810-AHSC_R5Awards_Appendix_B.pdf



Central Warehouse at Hayward Maintenance Complex Earns LEED Silver

In 2020, BART completed construction of the new Central Warehouse in Hayward that will store parts for trains. The building earned a Leadership in Energy and Environmental Design (LEED) Silver certification by incorporating green building best practices¹.

The new warehouse has more than 100,000 square feet of storage and will serve as BART's primary warehouse and distribution operations center. Its modernized digital inventory system will help mechanics and technicians easily locate parts that are needed to keep trains rolling with fewer equipment-related delays, resulting in a better customer experience for BART riders.

"It is exceedingly simple, utilitarian, and it works," said Roland Fowlks, the Logistics Manager who oversees BART's Logistics and Stores operation. "There's a great utility in the way the building is set up."

The new warehouse has over 100,000 square feet of storage space and includes a modernized digital inventory system to help mechanics and technicians easily locate parts.



Including best practices in green building was a focal goal throughout the construction and LEED certification process. Features like energy-efficient HVAC and lighting will cut energy consumption by more than 30%. Landscape design choices will reduce outdoor water consumption by more than 80%, while water-efficient fixtures will reduce indoor water consumption by over 25%. Permanent entryways, isolated exhaust systems, and air filters are intended to minimize occupant exposure to hazardous chemicals and pollutants.

For the building materials, over 30% by cost included recycled content, over 20% by cost were purchased regionally, and over 80% of the limited wood materials by cost were FSC certified². Additionally, 99% of construction waste was diverted from landfills.

Finally, the site offers environmentally friendly amenities for employees such as secure bike storage and electric vehicle charging stations, which both encourage low-carbon transportation to the site. When fully operational, the warehouse will be the job site for at least 30 employees across multiple shifts.

BART earned the prestigious LEED Silver certification through a collaborative effort involving the AECOM design team, Clark Construction Group, The Allen Group/TRC Companies and BART's Sustainability team.

¹For more information about LEED: <http://leed.usgbc.org/leed.html>

²For more information about FSC Certification: [https://us.fsc.org/en-us/certification#:~:text=FSC%20certification%20ensures%20that%20products,FSC%20US%20National%20Standard%20\(v1](https://us.fsc.org/en-us/certification#:~:text=FSC%20certification%20ensures%20that%20products,FSC%20US%20National%20Standard%20(v1).



Masks are available with station agents at select stations.



BART's COVID-19 Response

BART is committed to keeping riders and our employees safe. In response to the challenges presented by the COVID-19 pandemic, we made a variety of changes to ensure operations continue to reflect this commitment while providing a critical service to the region. Many of these changes exemplify BART's efforts to build awareness of transit's relationship to public health, which is an action outlined in BART's Sustainability Action Plan.

Implemented a 15-step plan to welcome back riders

In May 2020, BART released a plan detailing the immediate steps we took to help prevent transmission of the novel coronavirus. Key steps include:

- BART revamped daily cleaning procedures across the system. Frequently-touched surfaces are wiped down regularly and the ventilation systems installed on the BART fleet replace each car's air about every 70 seconds.
- Despite lower ridership compared to pre-pandemic levels, BART continues to run long trains to ensure riders can socially distance. BART piloted a new seating configuration for the Fleet of the Future cars to better encourage distancing. The system closed at 9PM to facilitate the new cleaning procedures.¹
- Masks are now available with station agents at select stations. BART also updated signage and promoted art that celebrates the rich culture of mask-wearing. For the duration of the pandemic, all riders above the age of 2, unless exempted per the State of California order, must wear masks that cover both their nose and mouth while inside the system.²

Collaborated with local partners on COVID-testing, funding, and communication

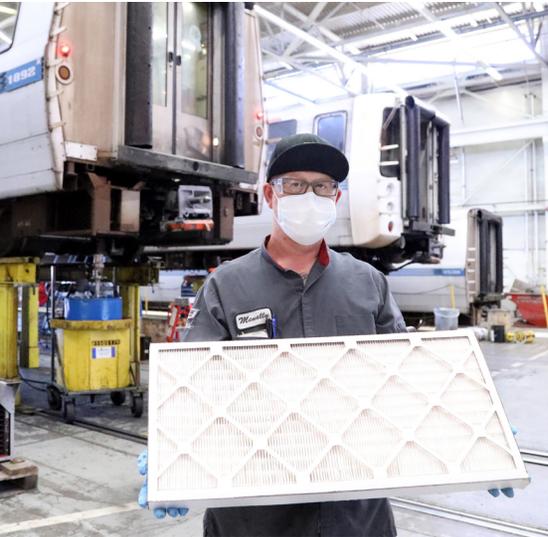
As a public transit agency, BART strives to make our stations easily accessible for the public. A co-benefit of this accessibility is that BART can leverage our spaces to provide essential resources to the community.

BART worked with local partners to open COVID testing sites at six BART stations, including 24th St. Mission, Union City, West Oakland, Fruitvale, North Berkeley, and Coliseum. At 24th St. Mission, BART collaborated with UC San Francisco infectious disease specialists and community partners in SF's Mission District to set up an accessible COVID-testing site near the station. The effort was intended to help detect and contain the spread of COVID-19 among heavily impacted Latinx communities and essential workers by providing this free service at a central transit hub.³ In 2021, BART worked with regional partners to set up community vaccination sites throughout the system.

¹As of August 2, 2021, the weekday and Saturday closing time has returned to midnight.

²For more information about BART's 15-step plan, please see the following website: <https://www.bart.gov/news/articles/2020/news20200526>

³<https://www.bart.gov/news/articles/2020/news20200729>



The ventilation systems installed on the BART fleet replaces each car's air about every 70 seconds.



BART's COVID-19 Response (continued)

At the federal level, BART helped advocate for and secure \$1.3 billion in COVID-19 emergency operating support for the Bay Area, of which \$377 million was allocated to BART. BART worked closely with the Metropolitan Transportation Commission (MTC) and regional partners to negotiate and communicate BART's needs.

Finally, BART partnered with 24 other Bay Area transit agencies to "develop common commitments and expectations for employees and passengers in our Bay Area transit systems." This work resulted in the Bay Area Healthy Transit Plan, which standardizes many of the safety initiatives that each agency committed to following and provides a framework for measuring how well they are being adhered to. This includes tracking mask compliance among riders and occupancy levels.

Enhanced digital resources for riders, stakeholders, and employees

To help riders avoid crowds and maintain social distance, BART began publishing weekly Occupancy Level Charts in a joint effort between the Operations Planning and Communications departments. The charts show riders the timetable of scheduled departures at individual stations and the expected number of people riding the trains. This information can help riders make decisions on when and how to ride safely.

BART Board meetings have been conducted virtually for the safety of the public, the Board of Directors, and BART staff. Public stakeholders can now address the Board via phone or video conferencing and the Board packets have been digitized, helping save paper in the process.

Accelerated capital projects, maintenance, and other initiatives

Given that the system closed earlier to accommodate new nightly cleaning protocols, BART leveraged the increased downtime to accelerate work on several capital projects and maintenance initiatives. Such projects include rail grinding, rail replacement, the Transbay Tube Cathodic Protection project, and the 19th Street Modernization Project, among others. Due to low ridership, BART also increased the amount of track work on weekends, which minimizes disruptions during busier times.

¹For more information about the Bay Area Healthy Transit Plan, please see the following website: <https://www.bart.gov/news/articles/2020/news20200818>

²<https://www.bart.gov/schedules/crowding-charts>

Additional source: Discussions with BART staff

Performance Metrics

	Units	2015 Baseline	2016	2017	2018	2019	2020	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	Committed 19.52	Aspirational 19.19
Total greenhouse gas (GHG) emissions	Metric tons of carbon dioxide equivalent (MT CO2e) / thousand VRM	1.92	1.65	0.23	0.25	0.26	0.11	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	1.00	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	7,000	
Affordable residential units	# of affordable units built (cumulative since 1993)	256	346	613	613	845	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	1,000,000	

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

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

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

⁴Residential 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	Target 2025 ^{5,6,7,8}
 SMART LAND USE AND LIVABLE NEIGHBORHOODS								
Mode share: active (walking and bicycling)	%	44%	Pending Station Profile Survey planned for 2022				52%	
Mode share: shared mobility	%	29%	Pending Station Profile Survey planned for 2022				32%	
Mode share: drive & park	%	27%	Pending Station Profile Survey planned for 2022				16%	
GHG emissions associated with passenger access to the station	%	TBD	Pending Station Profile Survey planned for 2022				-24% reduction from 2015 baseline	
 RIDER EXPERIENCE								
Quarterly reporting of safety and performance indicators			Complete				Complete	
Has BART met all adopted Performance Standards for Safety and Patron Comfort?			No				Yes	

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

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

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

⁸The 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	Target 2025 ⁹
 EMISSION AND POLLUTION CONTROL								
Total solid waste and landfill diversion rate		BART's Sustainability Team is developing a Master Waste Management Plan to address and improve landfill, recycling and composting across BART's facilities. As part of this Master 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 will commence in 2022.						100%
 EXTREME WEATHER ADAPTATION AND RESILIENCE								
Percentage of High Priority Actions in the BART Local Hazard Mitigation Plan (LHMP) Actions underway or complete	%	Will be measured in 2022 when LHMP is updated.						100%

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

Appendix

Energy Use

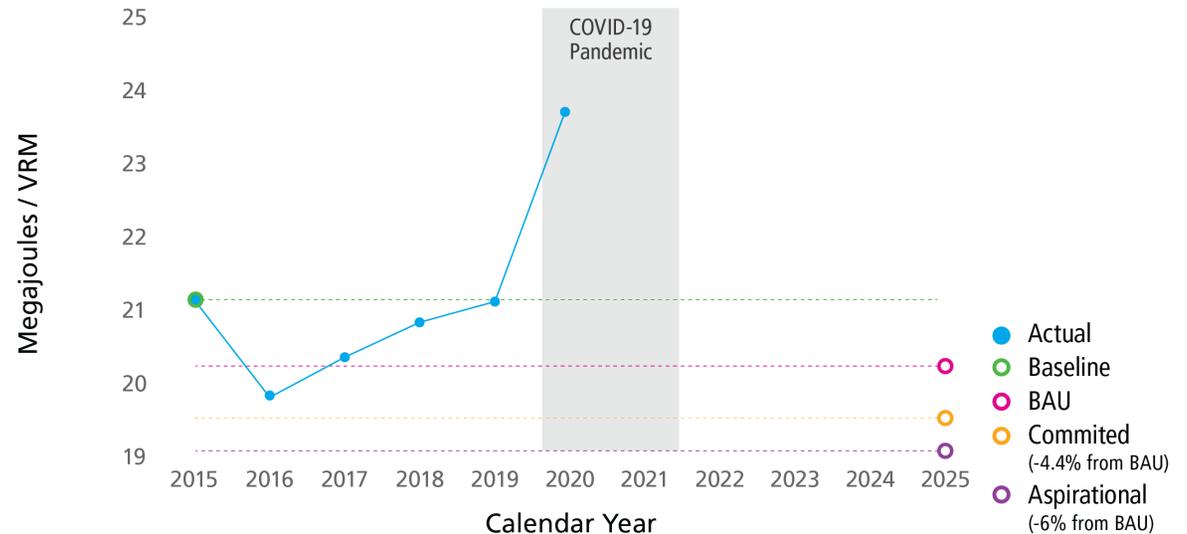


Due to the major public health and economic disruption of the COVID-19 pandemic, performance metrics for the period will be outliers when compared to earlier, and potentially future trends. In 2020, BART's overall energy use declined, primarily due to the pandemic. Train service was reduced in response to lower ridership and the Bay Area's shelter-in-place orders. However, BART's vehicle revenue miles decreased at a faster rate than energy use, which caused the metric to trend upward for the year.

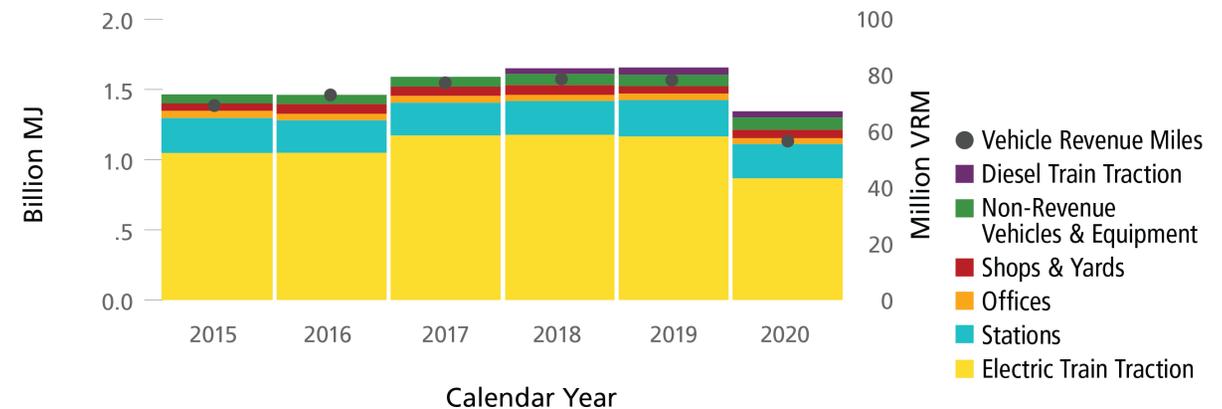
For the 2015-2019 period, BART generally increased energy usage due to increased train service and the addition of new stations. BART's Warm Springs Extension, a 5.4-mile extension connecting the existing Fremont station to the new Warm Springs/South Fremont station, opened in March 2017. The eBART Extension, 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

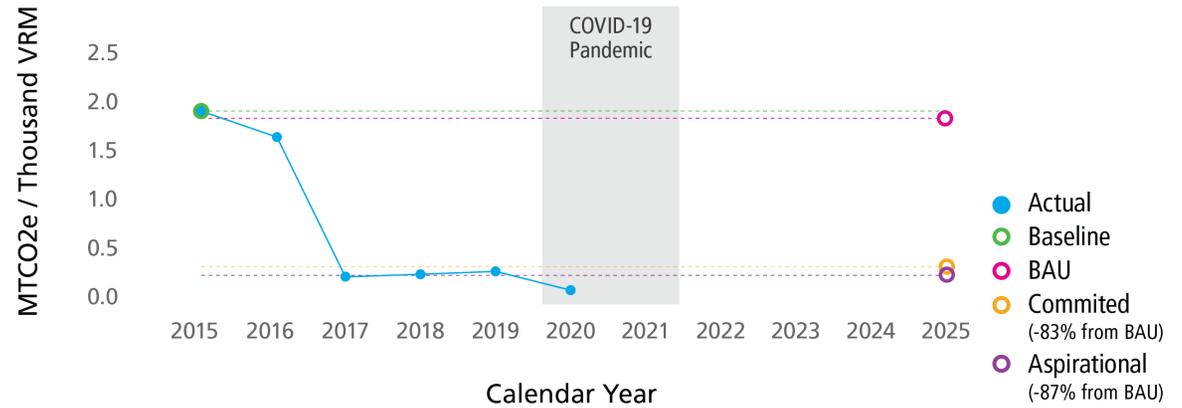


Greenhouse Gas Emissions

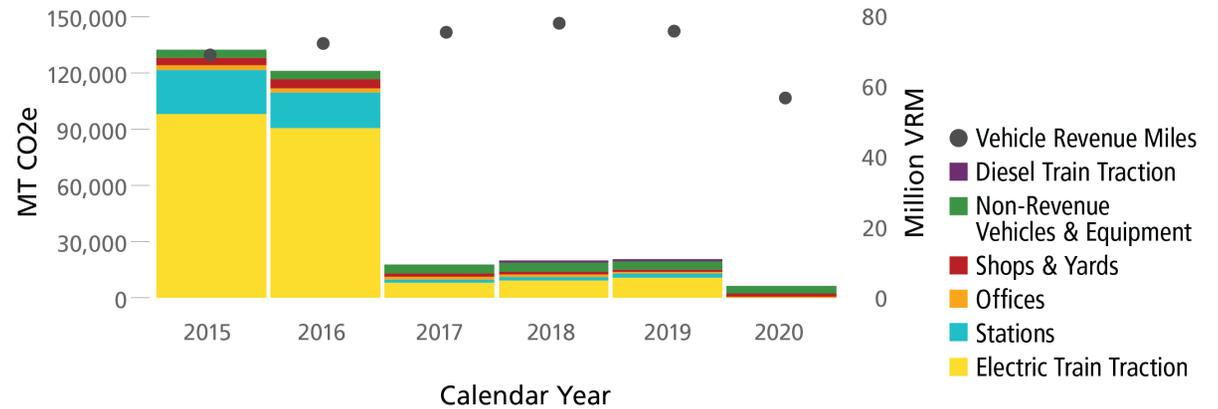


In 2020, 100% of BART's contracted electricity supply was GHG-free. Since adopting the District's Wholesale Electricity Policy, BART has shifted its energy sourcing away from unspecified power sources in favor of specified GHG-free sources, which has significantly reduced BART's GHG emissions. Additionally, 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

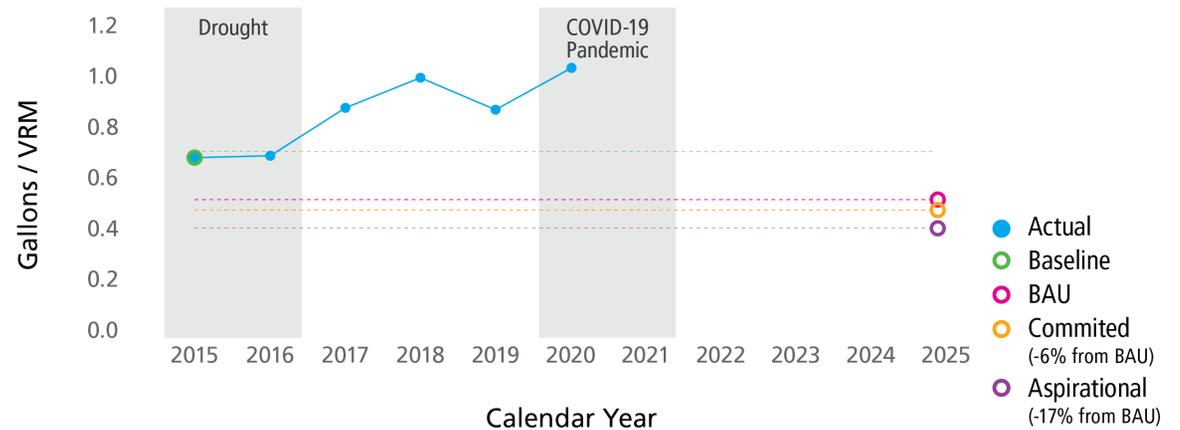


In 2020, BART's overall water use declined from the previous year, primarily due to COVID-related impacts. There were fewer riders passing through the stations and fewer employees working on site due to the Bay Area's shelter-in-place order. Additionally, train service was reduced to align with the lower ridership, which allowed for less frequent train washing and water savings. However, BART's vehicle revenue miles decreased at a faster rate than overall water use, which caused the metric to trend upward for the year.

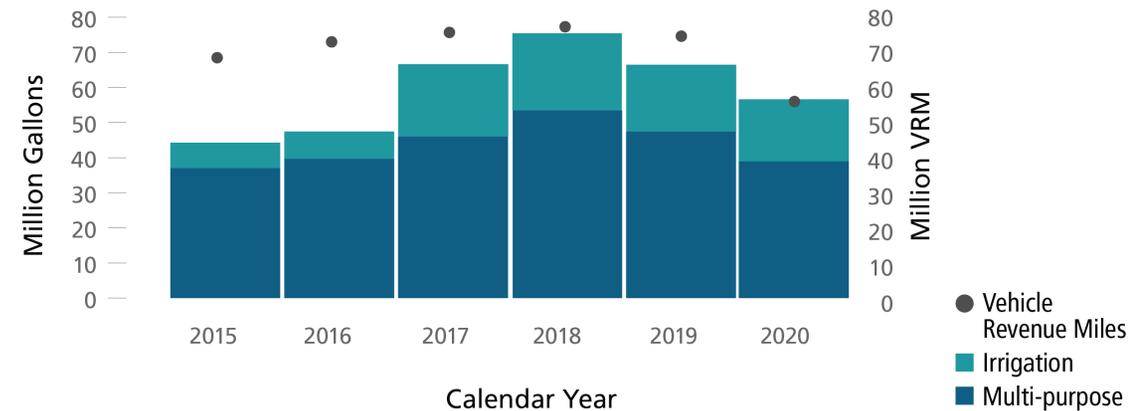
Compared to the baseline year, BART's water use has increased. Due to drought conditions in 2015 and 2016, BART maintained low water usage by reducing the frequency of train car washing and irrigation. As drought conditions improved since late 2016, train car washing returned to the prior frequency and 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 developed a preliminary model to estimate the total municipal solid waste generated and total municipal solid waste diverted from landfill. The model uses information about BART's bin sizes, bin count and hauling frequency to estimate the calculations. Staff are exploring opportunities to refine the model by auditing bin fill rates and determining contamination rates for the recycling and composting streams. The baselines and targets for each of the metrics will be finalized upon completion of the model.

In preparation for BART's move to our new headquarters, employees have been participating in a new document digitization process that will help minimize paper waste going forward. BART staff are also planning to expand the composting program to more locations.



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 2020 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 1/2020, 280 new trains out of planned total of 775 have been accepted. 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. Executed \$798 million contract for new Communications-Based Train Control system to Hitachi Rail and issued notice to proceed on 11/2/20.
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 purchasing agreements with Recurrent Energy (for output from the 50.5 megawatt Slate 1 solar project) and with NextEra Energy (for output from the 30 megawatt Sky River wind project). Projects are expected to become 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 PV installations and storage		Ongoing. 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 2020



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		BART drafted work plan for Station Lighting Design Guidelines.
RCE 8 - New Energy-Efficient Train Cars	Continue to fund the new train car procurement; conduct testing to confirm energy efficiency gains		As of 1/2020, 280 new trains out of planned total of 775 have been accepted. Entered into a Full Funding Grant Agreement with the Federal Transit Administration for a \$1.17 billion Capital Investment Grant, which will help fund the Transbay Corridor Core Capacity Project. Executed \$798 million contract for new Communications-Based Train Control system to Hitachi Rail and issued notice to proceed on 11/2/20.
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		SGIP program would not apply for funding batteries for regenerative braking system. BART will continue exploring 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.
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. One hybrid purchased for police fleet in 2020.
	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		Not started
RCE 12 - Employee Trip Reduction in Non-Revenue Vehicles	Reduce fuel and emissions for BART employee work-related travel		Not started

Action Table

* STATUS UPDATE FOR 2020



RESOURCE CONSERVATION: ENERGY & GHG EMISSIONS

ACTION	SUB-ACTION	STATUS	SUMMARY
RCE 13 - Support Energy Efficiency Operations in Offices	Assess the feasibility of reducing BART's corporate energy use via employee training		Not started
RCE 14 - EV Charging Policy and Implementation	14.1 - Pursue funding for installing EV charging stations		BART evaluated the California Electric Vehicle Infrastructure Project, programs offered by community choice agencies, and BAAQMD Charge! as possible funding sources to install EV charging.
	14.2 - Pilot EV charging at Warm Springs Station		The EV charging pilot at Warm Springs has been implemented.
	14.3 - Develop expansion of station EV charging		The Sustainability Group met with stakeholders and used input to draft new policy on EV charging at passenger stations.
	14.4 - Install EV charging at shops/ yards to enable EVs in non-revenue fleet		EV charging stations available at eBART and Hayward Maintenance Complex for employees and non-revenue fleet.
	14.5 - Install EV charging for convenient employee use		EV charging stations available at eBART and Hayward Maintenance Complex for employees and non-revenue fleet.

Action Table

* STATUS UPDATE FOR 2020



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		Began audit of water meters to gain additional information about meter specifications and water consumption trends at key locations. Two locations have had their irrigation reduced based on data.
	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 toilet was installed at Bay Fair. Design Matching Product (DMP) was updated to remove products that were noncompliant for water efficiency.
RCW 4 - Replace Water Systems in Shops and Yards	Identify leaks; consider upgrades to water systems		Measure RR funding being used to replace old water mains at Concord, Richmond, and Hayward. New mains will improve leak detection capabilities. Construction has been completed at Concord Yard and is progressing at Richmond Yard. Final designs for the Hayward Yard are complete, and procurement preparation for bid advertisement are in progress.

Action Table

* STATUS UPDATE FOR 2020



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

* STATUS UPDATE FOR 2020



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		1 project completed in 2020: Embarcadero and Civic Center Bike Station modernizations to improve safety, security, and functionality. Overall, 11 capital projects identified: 3 complete, 7 in progress, and 1 not started.
	1.2 - Seek funding for place-making investments via grants, bonds, etc.		\$38 million in Affordable Housing and Sustainable Communities Program for rail cars, other BART-related improvements, and 913 affordable apartments across 8 housing developments. 3 planning grants awarded totaling over \$3M for transit-oriented development work along A and R lines (2 Federal Transit Administration grants, 1 Caltrans grant).
	1.3 - Partner to implement complementary improvements on city streets		1 project completed in 2020: Balboa Eastside Connection which expanded station access on the eastside platform and replaced a glass canopy with a new headhouse. Overall, 6 capital projects identified: 2 complete, 4 in progress
SLU 2 - Continue to Lead the Region in Transit-Oriented Development (TOD)	2.1 - Implement TOD Policy		Completed MacArthur Parcel B (402 residential units) and Pleasant Hill (200 residential units) TODs. Projects at Millbrae and Walnut Creek are under construction. Projects at West Dublin, Lake Merritt and West Oakland are being negotiated. 10-year workplan developed for identifying properties for TOD advancement.
	2.2 - Coordinate with local partners on Specific Plans or Station Area Plans		AB2923 completed zoning conformance guide for cities. 10-year workplan developed for identifying properties for transit-oriented development advancement. Memorandum of understanding signed with City of Berkeley for Ashby and North Berkeley property; Adeline corridor plan adopted by City of Berkeley. El Cerrito plan is ongoing. BART continues to engage with cities on plans for Bay Fair, Hayward, and downtown Oakland stations.
	2.3 - Activate stations in coordination with system expansion		BART worked with VTA on station area plans for Silicon Valley BART Extension. BART supported city of Fremont in writing a station area plan for Irvington. Updating system expansion policy and plan to include equity as part of policy.

Action Table

* STATUS UPDATE FOR 2020

Ongoing 

100% 

76%-99% 

26%-75% 

1%-25% 

0% 



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	 *	3 RR-funded projects completed at: MacArthur (road repaved and curbs repainted to adjust curb zone allocation); Embarcadero (bike station improvements), and Civic Center (bike station improvements). RR-funded projects in construction at El Cerrito del Norte – Ohlone Greenway, Warm Springs, Antioch, and bicycle stair channels at 7 other stations. Other RR-funded projects are in the design phase.
	3.2 - Implement the BART Bike Plan and Bike Parking Capital Program	 *	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		The guidelines are listed as an appendix in the BFS.
	3.4 - Improve multi-modal transfers; fund access upgrades	 *	New passenger loading zones and bus shelters at El Cerrito Del Norte. New passenger loading zone at Millbrae's garage. New dedicated bus lane, improved passenger loading, and increased motorcycle parking at Antioch. In coordination with AC Transit, various improvements to bus zones, operator restrooms, and bus bays at San Leandro, Fruitvale, Hayward, and Fremont. Improvements to bike parking at Ashby, Embarcadero, and Civic Center. Daily fee and carpool parking payment available in BART official app.
SLU 4 - Participate in Local/Station and Regional Partnerships	4.1 - Identify opportunities for effective Plan Bay Area implementation	 *	BART continues to support the Plan Bay Area process. BART projects are articulated into the Plan Bay area programming.
	4.2 - Serve on Technical Advisory Committees, lend expertise	 *	Memorandum of understanding signed with City of Berkeley for Ashby and North Berkeley property; Adeline corridor plan adopted by City of Berkeley. El Cerrito plan is ongoing. Research conducted on SF Congestion Pricing with a focus on equity.
	4.3 - Participate in state legislation and rule making to support TOD	 *	Released the draft of a technical guide on zoning for AB2923; engaged various state officials on BART's TOD Work Plan to enhance potential partnerships and grants. BART supported SB 902, AB 3153, and SCA 1.
SLU 5 - Support Affordable Fares	Continue to explore strategies to support affordable fares	 *	As of July 15, 2020, BART is participating in the region's 18-month pilot means-based fare program known as Clipper START. Eligible riders get a 20% discount on BART fares for the duration of the pilot. MTC is funding half of the discount for BART.

Action Table

* STATUS UPDATE FOR 2020



RIDER EXPERIENCE

ACTION	SUB-ACTION	STATUS	SUMMARY
RE 1 - Create Clean Station Environments	1.1 - Invest in the Station Brightening Program and increase staff		11/70 actions completed for Fremont Brightening Project. Hiring frozen due to COVID-19.
	1.2 - Additional grounds maintenance crews to improve parking lot cleanliness		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		Zone Commanders established for each of the six policing zones. The Progressive Policing and Community Engagement Bureau was created and staffed with 10 Transit Ambassadors with plans to add 20 new positions of Crisis Intervention Specialists. 2 full-time Community Service Officers are assigned to the Community Policing and Problem Solving Unit. In-person events and initiatives have been delayed due to COVID-19.
	2.2 - Analysis of high crime stations; leverage data to optimize police presence and support equitable policing practices		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 PA announcement system		The Stations PA Improvement project involves improvements at Powell St and Lafayette stations. Design is 100% complete and contract is expected to advertise in mid-2021 for construction in Fall of 2021.
	2.4 - Improve real-time display (RTD) messages to communicate safety messages		Phase 3 of RTD Enhancement Project was completed in 2020. Scope for Phase 4, which is in design, has been reduced and will be providing RTDs at the MacArthur Stations and Ashby Stations.
RE 3 - Support Art in Transit	Develop an art program master plan		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.
RE 4 - Invest in Employee Health and Wellness	Implement programs to enhance worker safety and wellness		In May 2020, BART was one of the first transit agencies in the U.S. to release a comprehensive pandemic response plan with the launch of the 15-Step Welcome Back Plan. Completed and secured approval of BART's new Public Transportation Agency Safety Plan from the California Public Utilities Commission (CPUC). Began deployment of Automated External Defibrillators (AED) at passenger stations.
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.

Action Table

* STATUS UPDATE FOR 2020



RIDER EXPERIENCE

ACTION	SUB-ACTION	STATUS	SUMMARY
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 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		Phase 3 of Wayfinding & Signage Improvement Project was completed in 2020. Phase 4 scope has revised scope due to funding availability and only includes wayfinding improvements at MacArthur and Ashby Stations. Phase 5 scope has been revised to provide station site wayfinding signs in areas outside the BART station drip line. Phase 6 scope will include improvements to provide regulatory, station amenity, safety, security, and equipment signs.
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 returning 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

* STATUS UPDATE FOR 2020

Ongoing 

100% 

76%-99% 

26%-75% 

1%-25% 

0% 



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		Not started
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		Efforts to review shop/yard recycling to commence in 2021.
	4.2 - Identify costs and resources needed for systemwide recycling plan		Not started
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		Not started
	5.3 - Investigate potential to include composting at BART stations		Research completed and pilot plan drafted.

Action Table

* STATUS UPDATE FOR 2020



EMISSIONS AND POLLUTION CONTROL

ACTION	SUB-ACTION	STATUS	SUMMARY
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 is implementing e-signatures and other resources to reduce processes that require paper. "Green team" development not started.
	6.2 - Develop paperless policy; Board of Directors all-digital pilot; review union contracts		Efforts in 2020 included implementing videoconferencing for digital meetings, scanning services to digitize existing hardcopy records, and tools for digital signatures. As part of move to new headquarters, BART is eliminating personal printers, using cloud file storage for digital archiving, and switching to laptops as the standard computer.
	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		Implementation plan developed for trash capture.
	8.2 - Increase crews to improve cleanliness and inspect storm drain inlets		2 positions have been filled on maintenance crew.
	8.3 - Pilot the capture, storage, and reuse of rainwater		A rainwater catchment system for the Hayward Maintenance Complex is being pursued. A system at Colma station is also being considered.
	8.4 - Update BFS drainage sections to reflect best practices		Not started
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

Action Table

* STATUS UPDATE FOR 2020



EMISSIONS AND POLLUTION CONTROL

ACTION	SUB-ACTION	STATUS	SUMMARY
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 BFS 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

* STATUS UPDATE FOR 2020



MATERIALS AND CONSTRUCTION OPERATIONS OPTIMIZATION

ACTION	SUB-ACTION	STATUS	SUMMARY
MC 1 - Select Green, Sustainable Materials and Products	1.1 - Green Purchasing Policy		Procurement has begun developing a green purchasing policy and guideline. On hold due to changes in staffing.
	1.2 - Department-specific procurement guidelines		Procurement has begun developing a green purchasing policy and guideline. On hold due to changes in staffing.
MC 2 - Update BART Facilities Standards for Construction Activities	2.1 - Develop tools for BFS Sustainable Practices		Not started
	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		Not started

Action Table

* STATUS UPDATE FOR 2020



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		Not started
	1.2 - Seek funding or partner to adopt adaptation strategies		Awarded \$500K from Caltran's adaptation planning grant to conduct vulnerability assessment and adaptation development. Study completed in 2020.
	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		Not started
	2.2 - Update LHMP (every 5 years)		LHMP anticipated to be updated in 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 collaborated with SF Port and USACE on SF seawall vulnerability and adaptation work, and engaged Port of Oakland and City of Oakland on Oakland shoreline adaptation.
	3.5 - Waterproof venting structures and entrances for underground stations		Not started
EWA 4 - Train Control Resiliency	Implement the Train Control Modernization Program		Executed \$798 million contract for new Communication-Base Train Control system to Hitachi Rail and issued notice to proceed on 11/2/20.

