

Pictured: Sky River Wind, a new wind farm providing electricity for BART.

Photo Courtesy: NextEra Energy Resources



2021 Annual Report - Sustainability

Board Presentation

July 28, 2022



Agenda

- Sustainability at BART
- 2021 Highlights & Case Studies
- Metrics & Actions
- Priorities & Opportunities

Sustainability at BART

- Transportation accounts for 40% of greenhouse gas (GHG) emissions in CA, and of those, 70% are produced by passenger vehicles¹.
- BART supports a shift from driving alone to transit and thereby contributes significantly to the reduction of GHG emissions from Transportation in the Bay Area.
- ~409,000 passenger trips per weekday in CY 2019; ~81,000 passenger trips per weekday in CY 2021
- In addition, BART is committed to integrating sustainability into its daily operations and future transit investments.
- BART published a [Sustainability Action Plan \(SAP\)](#) (Dec 2017) which includes specific types of projects that BART has/is/will implement to pursue and achieve the APTA sustainability categories goals and BART specific targets.
- BART publishes annual reports documenting our progress on the SAP
 - [2018](#), [2019](#), [2020](#), 2021

¹2020 CA Air Resources Board (CARB) *California Emissions Trends Report: 2000 – 2018*

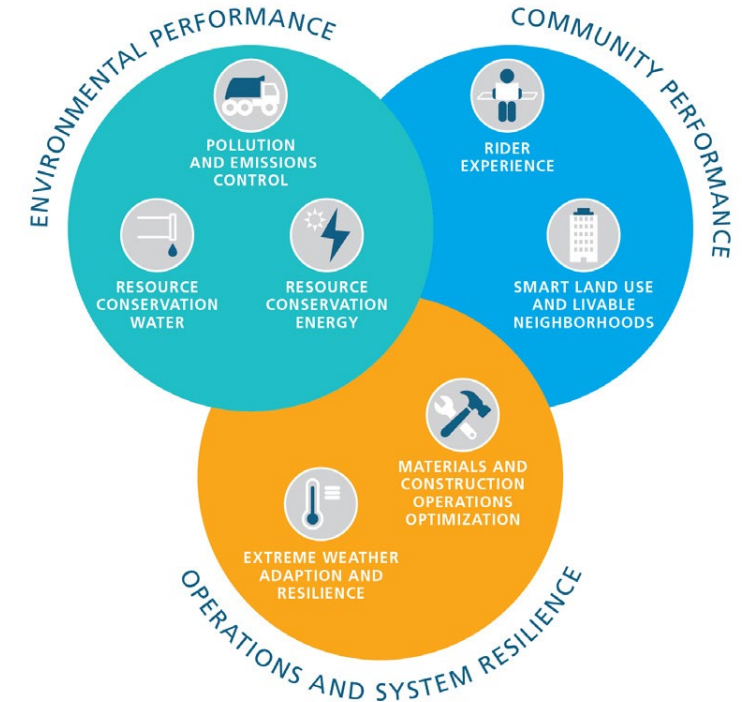
Sustainability at BART: Sustainability Action Plan Overview

TARGETS

- Time Horizon: 2015 (baseline year) to 2025
- Types of targets:
 - Commitment – based on commitment to high scoring actions, implementation is constrained by potential funding limitations
 - Aspiration – assumes full plan implementation and fewer budget constraints

ACTIONS

- The Plan contains **55** Actions (**120** sub-actions) covering the seven Sustainability Categories that align with APTA Sustainability Indicators
- **20** Priority Actions are highlighted as near-term focus areas
- See the 2021 report for current status on all Actions



Different BART departments
lead in the implementation of
Actions in their area of control

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

Case Studies

See 2021 Report for detailed writeups



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



Station modernization and sustainability improvements at El Cerrito del Norte Station



BART adopts new EV charging policy



Moved to BHQ; pursuing LEED Gold certification



Low-impact development and accessibility improvements at Antioch Station parking lot



COVID-19: vaccination sites at stations and BART shops, free tickets at Coliseum, vaccine mandate for employees

Performance Metrics and Targets

From 2021 Report

	Units	2015 Baseline	2016	2017	2018	2019	2020	2021	Target 2025	
<div> RESOURCE CONSERVATION: ENERGY & GHG EMISSIONS</div>										
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	1.65	0.23	0.25	0.26	0.11	0.10	Committed 0.31	Aspirational 0.24
<div> RESOURCE CONSERVATION: WATER</div>										
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
<div> SMART LAND USE AND LIVABLE NEIGHBORHOODS</div>										
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	




Performance Metrics and Targets

From 2021 Report

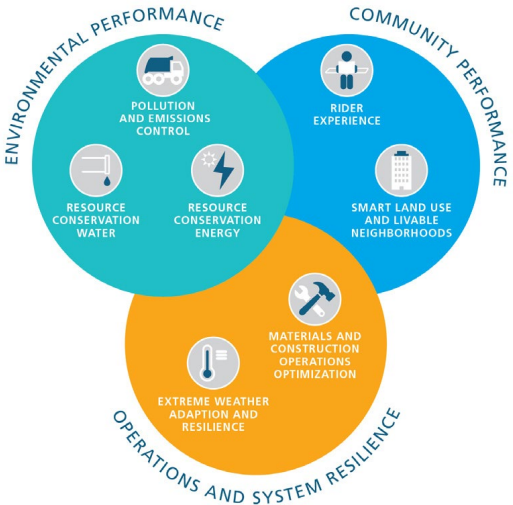
	Units	2015 Baseline	2016	2017	2018	2019	2020	2021	Target 2025
<div> SMART LAND USE AND LIVABLE NEIGHBORHOODS</div>									
Mode share: active (walking and bicycling)	%	44%	Will be measured again after next Station Profile Survey, which is being coordinated with MTC (date TBA)						52%
Mode share: shared 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
<div> RIDER EXPERIENCE</div>									
Quarterly reporting of safety and performance indicators		Completed							Completed
Has BART met all adopted Performance Standards for Safety and Patron Comfort?		No							Yes

Performance Metrics and Targets

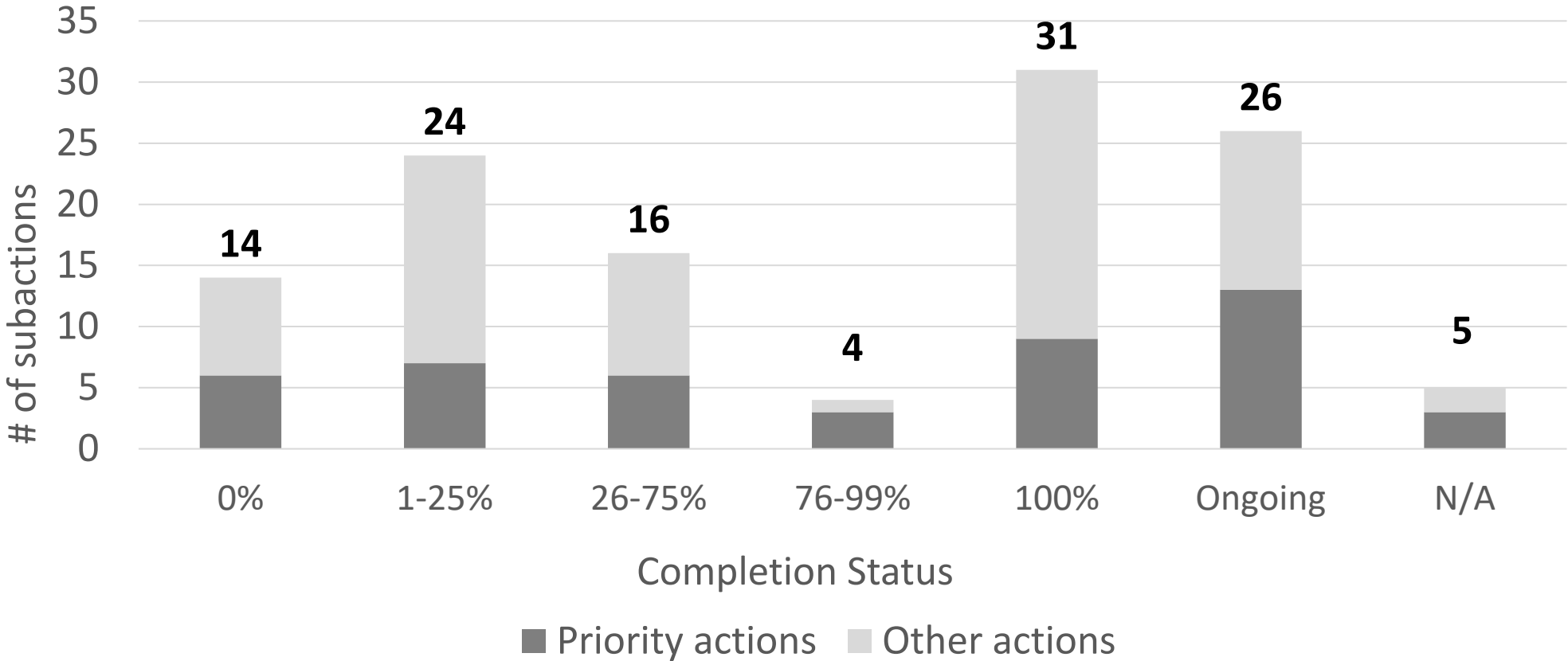
From 2021 Report

	Units	2015 Baseline	2016	2017	2018	2019	2020	2021	Target 2025
<div>EMISSION AND POLLUTION CONTROL</div>									
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.							
<div>MATERIALS AND CONSTRUCTION OPERATIONS OPTIMIZATION</div>									
Percentage of BART Project Delivery Staff trained in BART Facilities Standards (BFS) Sustainability Controls	%	Training commenced in 2021.						18%	100%
<div>EXTREME WEATHER ADAPTATION AND RESILIENCE</div>									
Percentage of High Priority Actions in the BART Local Hazard Mitigation Plan (LHMP) Actions underway or complete	%	Tracking commenced in 2021.						86%	100%

Sustainability Action Plan – Progress Completing Actions through CY2021



Sustainability Action Plan contains 55 actions and 120 sub-actions to be completed by 2025



Priorities for 2022 and 2023

Energy Use & GHG Emissions

- Complete retrofit of parking garages with LED lighting
- Complete station LED lighting study; develop implementation plan
- Develop pilot for electrification of non-revenue vehicle fleet (pending funding)

Water

- Collect data to inform our water reduction strategies in shops & yards
- Engage with relevant departments for opportunities on managing water more efficiently

Emission and Pollution Control

- Complete pilot at BHQ to estimate dumpster fill rate for waste calculations
- Expand recycling and composting to shops & yards

Materials & Construction Operations Optimization

- Continue training project delivery staff on sustainability controls in BFS
- Engage with Procurement team on green purchasing strategies

Extreme Weather Adaptation

- Update and re-adopt Local Hazard Mitigation Plan

Opportunities

- Funding opportunities
 - Low Carbon Fuel Standard (LCFS) credit revenues allocated to Sustainability
 - LED lighting
 - EV Charging Investments
 - Bipartisan Infrastructure Law (BIL)
 - CalSTA's Climate Action Plan for Transportation Infrastructure (CAPTI)
 - State funding for resiliency projects
- Technology enhancements
 - New water-efficient fixtures used for station modernization, new buildings
 - EV technology improvements make EVs viable for BART operations
- Communication with internal and external audiences
 - Greater awareness/urgency of climate change
 - Collaboration with local transit agencies and other organizations

Appendix



2017 Sustainability Action Plan: Priority Actions

ENVIRONMENTAL PERFORMANCE PRIORITY ACTIONS

Resource Conservation – Energy and Greenhouse Gas Emissions

RCE 1	Increase Capacity to Support Regional Greenhouse Gas Goals
RCE 2	Adopt a Strategic Energy Plan
RCE 3	Make Renewable Energy Purchases
RCE 4	Invest in On-site Energy Generation
RCE 7	Invest in District Lighting Retrofits
RCE 8	Onboard new Energy Efficient Train Cars

Resource Conservation – Water

RCW 1	Regularly Audit Water Use and Correct Issues
RCW 3	Upgrade Water Fixtures

Emissions and Pollution Control

EP 1	Support Solid Waste Reduction
EP 4	Improve Recycling at All District Shops and Yards
EP 9	Clean and Reuse Water

OPERATIONS & SYSTEM RESILIENCE PRIORITY ACTIONS

Materials and Construction Operations Optimization

MC 2	Update the BART Facilities Standards (BFS) for Construction Activities
MC 6	Develop Sustainability Design Guidance

Extreme Weather Adaptation and Resilience

EWA 1	Coordinate with Regional Agencies in Climate Adaptation Planning and Implementation
EWA 2	Conduct Hazard Mitigation Planning

Smart Land Use and Livable Neighborhoods

SLU 1	Improve Station Character and Community Fit
SLU 2	Continue to Lead the Region in Transit-Oriented Development
SLU 3	Connect to Community – Station Access

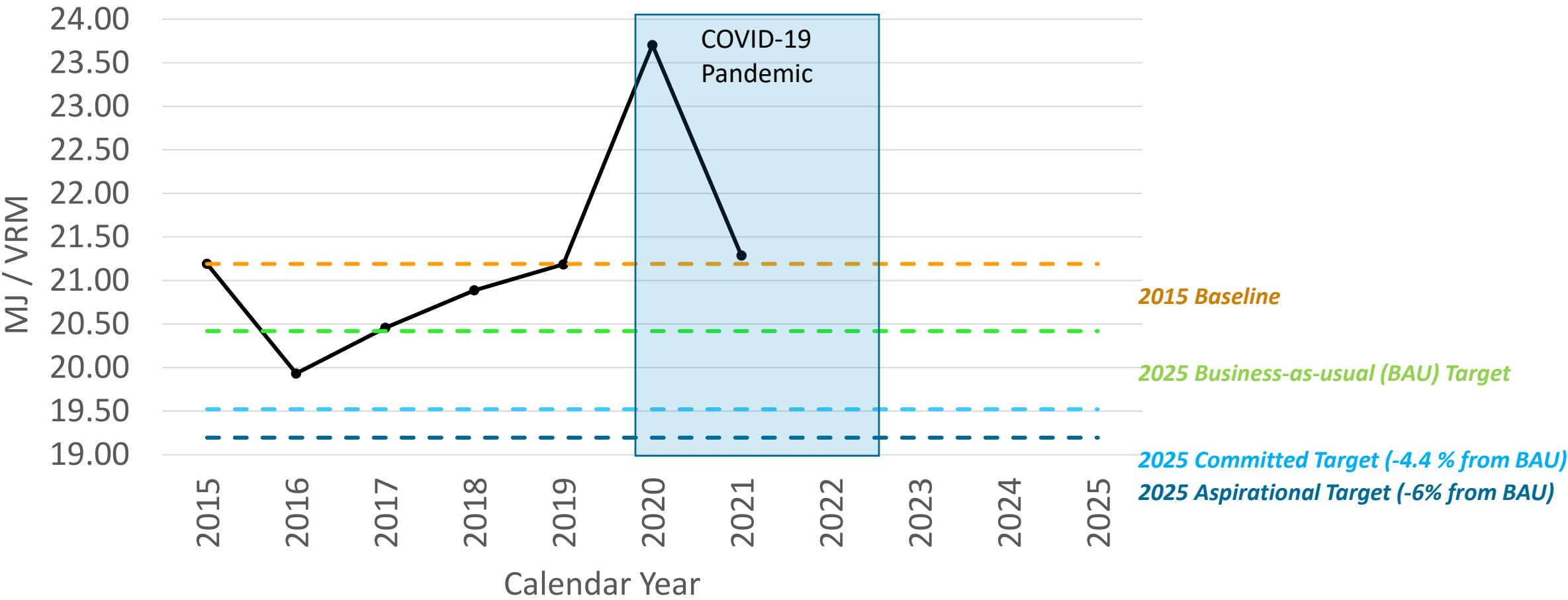
Rider Experience

RE 1	Create Cleaner Station Environments
RE 2	Create Safer Station Environments

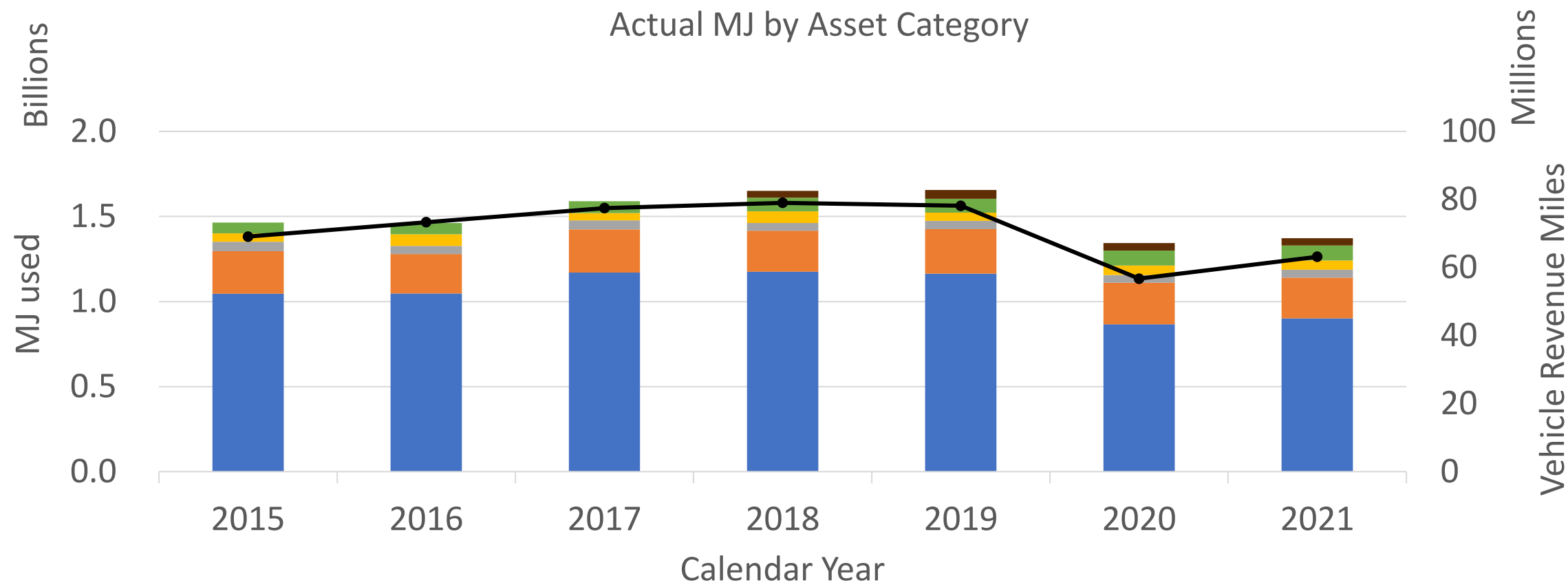
COMMUNITY EXPERIENCE PRIORITY ACTIONS

District Energy Use

Energy Use Per VRM



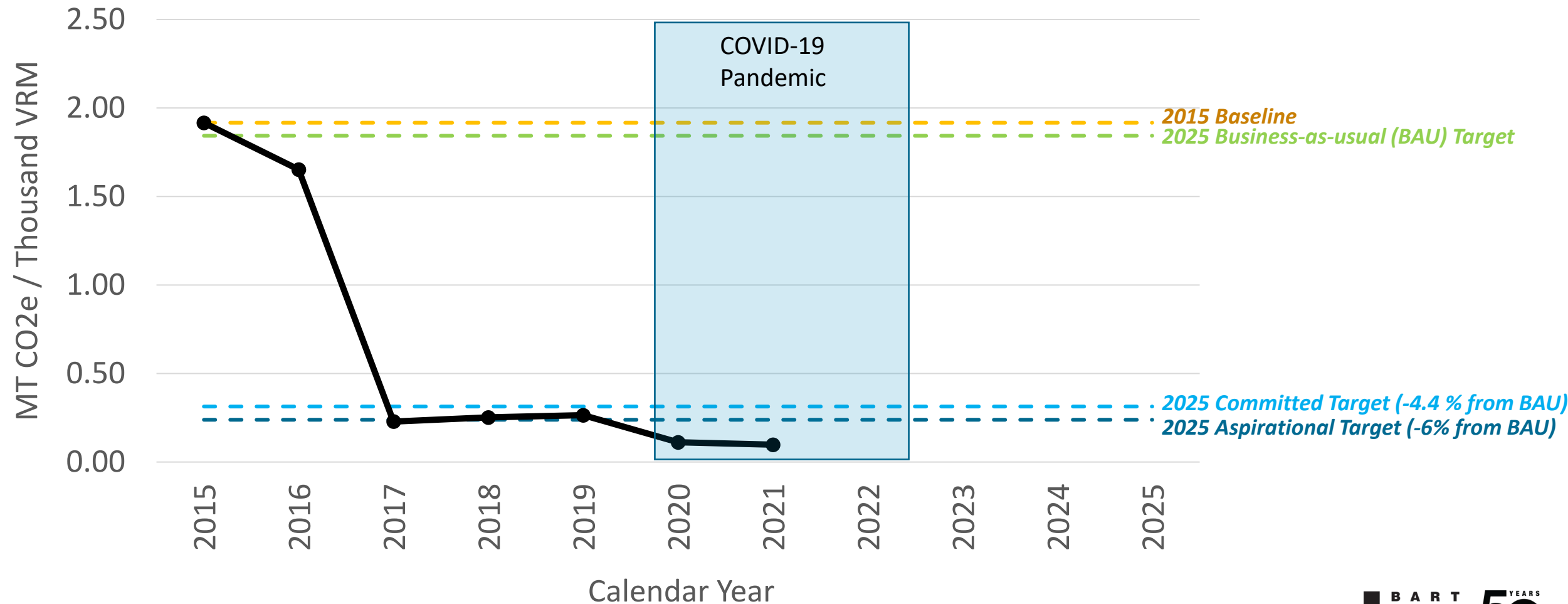
District Energy Use



- Electric Traction
- Offices
- Non-Revenue Vehicles & Equipment
- Vehicle Revenue Miles
- Stations
- Shops & Yards
- Diesel Traction

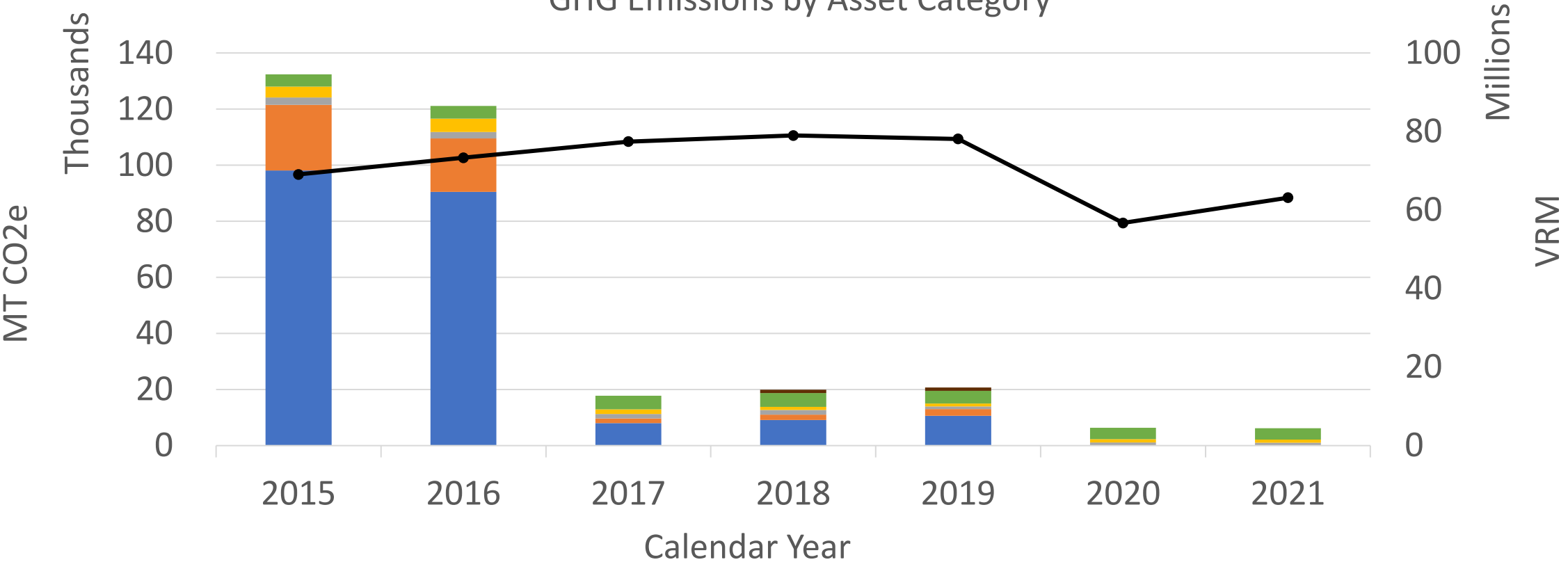
Greenhouse Gas (GHG) Emissions

GHG Emissions per Thousand VRM



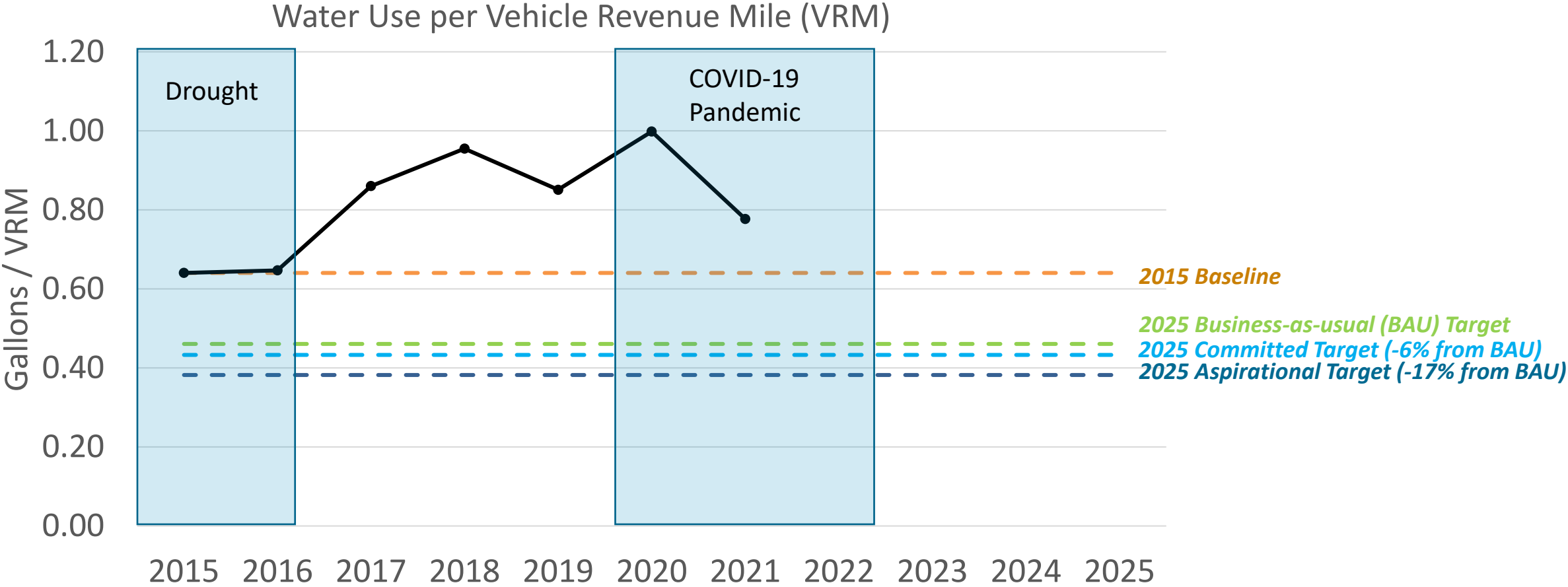
Greenhouse Gas (GHG) Emissions

GHG Emissions by Asset Category

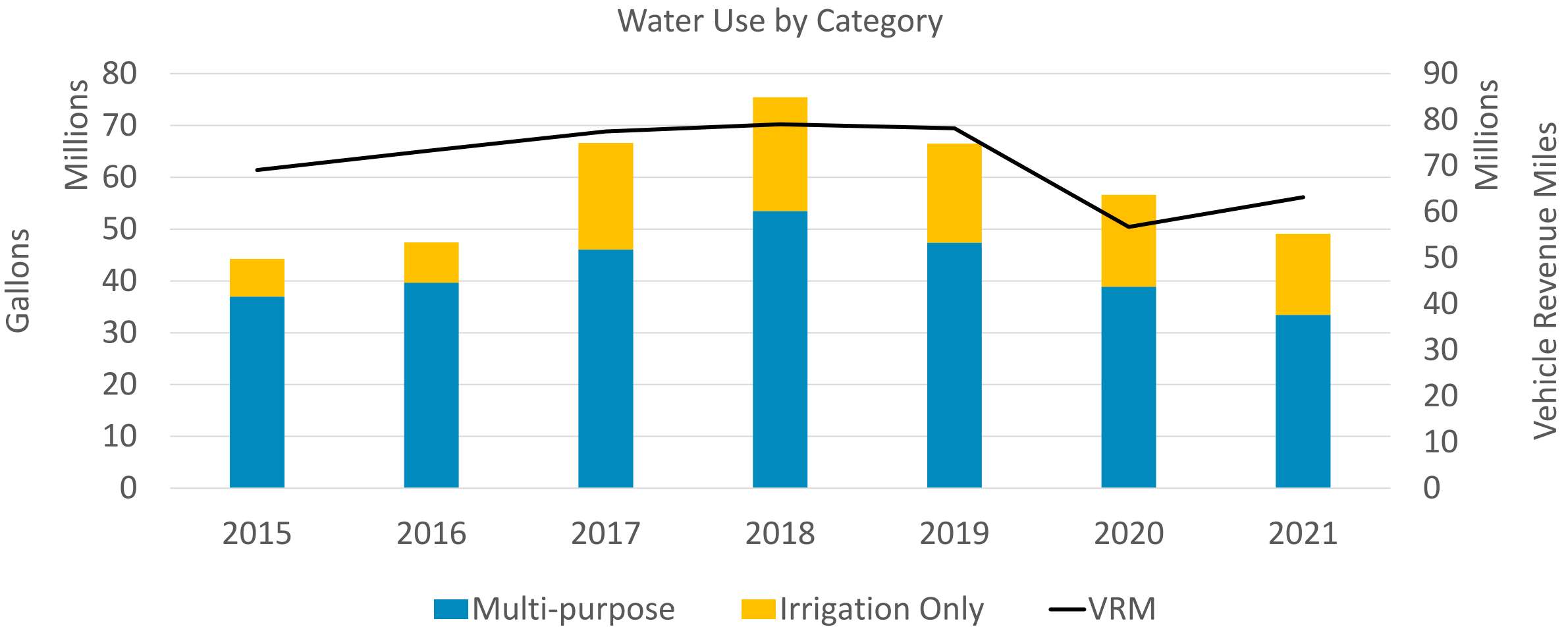


- Electric Traction
- Stations
- Offices
- Shops & Yards
- Non-Revenue Vehicles & Equip
- Diesel Traction
- Vehicle Revenue Miles

District Water Use



District Water Use



Sustainability Action Plan – YOY Comparison of Progress Completing Actions

