



**SANTA CRUZ METROPOLITAN TRANSIT DISTRICT (METRO)  
CAPITAL PROJECTS STANDING COMMITTEE MEETING AGENDA**

**MARCH 11, 2022 – 10:30AM**

**DUE TO COVID-19, THIS MEETING WILL BE CONDUCTED VIA  
TELECONFERENCE ONLY (NO PHYSICAL LOCATION)  
PURSUANT TO ASSEMBLY BILL 361 (GOVERNMENT CODE SECTION 54953)**

**MEMBERS OF THE PUBLIC MAY NOT ATTEND THIS MEETING IN PERSON**

Directors, staff and the public may participate remotely via Zoom [at this link](#) and following the posted instructions or by calling 1-669-900-9128 - Meeting ID: 816 0736 6936 - Passcode: 533816

Public comment may be submitted via email to [boardinquiries@scmttd.com](mailto:boardinquiries@scmttd.com). Please indicate in your email the agenda item to which your comment applies. Comments submitted before the meeting will be provided to the Directors before or during the meeting. Comments submitted after the meeting is called to order will be included in the Board's weekly correspondence that is posted online at board meeting packet link.

The Capital Projects Standing Committee Meeting Agenda Packet can be found online at [www.SCMTD.com](http://www.SCMTD.com).

The Committee may take action on each item on the agenda. The action may consist of the recommended action, a related action or no action. Staff recommendations are subject to action and/or change by the Board of Directors.

**COMMITTEE ROSTER**

Director Donna Meyers	City of Santa Cruz
Director Bruce McPherson	County of Santa Cruz
Director Larry Pageler	County of Santa Cruz
Dawn Crummié	METRO Interim CEO/General Manager
Julie Sherman	METRO General Counsel

**MEETING TIME: 10:30AM**

NOTE: THE COMMITTEE CHAIR MAY TAKE ITEMS OUT OF ORDER

- 1 CALL TO ORDER**
- 2 ROLL CALL**

**3 ADDITIONS/DELETIONS FROM AGENDA/ADDITIONAL DOCUMENTATION TO SUPPORT EXISTING AGENDA ITEMS**

**4 ORAL AND WRITTEN COMMUNICATIONS TO THE CAPITAL PROJECTS STANDING COMMITTEE**

This time is set aside for Directors and members of the public to address any item not on the Agenda, but which is within the matter jurisdiction of the Committee. If you wish to address the Committee, please follow the directions at the top of the agenda. If you have anything that you wish distributed to the Committee and included for the official record, please include it in your email. Comments that require a response may be deferred for staff reply.

**5 RECOMMEND APPROVAL TO THE FULL BOARD OF DIRECTORS OF THE FY22 CAPITAL PROJECTS AND RECEIVE THE TEN-YEAR UNFUNDED CAPITAL LIST UPDATE**

John Urgo, Planning and Development Director

**6 RECOMMEND APPROVAL TO THE FULL BOARD OF DIRECTORS ADOPTING A RESOLUTION THAT APPROVES THE SANTA CRUZ METROPOLITAN TRANSIT DISTRICT ZERO-EMISSION BUS ROLLOUT PLAN AND AUTHORIZES THE CEO/GENERAL MANAGER TO SUBMIT THE ZEB ROLLOUT PLAN TO THE CALIFORNIA AIR RESOURCES BOARD IN ACCORDANCE WITH THE INNOVATIVE CLEAN TRANSIT REGULATION**

Margo Ross, COO

**7 REVIEW AND RECOMMEND APPROVAL TO THE FULL BOARD AN INCREASE IN THE CONTRACT AUTHORITY OF AN ADDITIONAL \$400,000 FOR MARK THOMAS & COMPANY FOR GENERAL ON-CALL CIVIL ENGINEERING AND SURVEYING SERVICES**

Freddy Rocha, Facilities Maintenance Manager

**8 ADJOURNMENT**

**Accessibility for Individuals with Disabilities**

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**Public Comment**

If you wish to address the Board, please follow the directions at the top of the agenda. If you have anything that you wish distributed to the Board and included in the official report, please include it in your email. Comments that require a response may be deferred for staff reply.



**DATE:** March 11, 2022  
**TO:** Capital Projects Standing Committee  
**FROM:** John Urgo, Planning & Development Director  
**SUBJECT: RECOMMEND APPROVAL TO THE FULL BOARD OF DIRECTORS OF THE FY22 CAPITAL PROJECTS AND RECEIVE THE TEN-YEAR UNFUNDED CAPITAL LIST UPDATE**

**I. RECOMMENDED ACTION**

**That the Capital Projects Standing Committee recommend approval to the full Board of Directors of the FY22 capital projects and receive the Ten-Year Unfunded Capital Project List.**

**II. SUMMARY**

- Santa Cruz Metropolitan Transit District (METRO) received \$524,355 in Federal Transit Administration (FTA) 5339a FY21 Bus and Bus Facilities Formula Program.
- METRO maintains and annually updates a Ten-Year Unfunded Capital Project List so that in the event that new funding becomes available, there is an identified set of projects from which to select.
- Staff has prioritized METRO's most immediate and critical non-bus replacement needs and recommends programming METRO's share of FTA 5339a FY21 funding towards the installation of Automatic Passenger Counters (APCs) in FY22.

**III. DISCUSSION/BACKGROUND**

The Santa Cruz Metropolitan Transit District (METRO) received \$524,355 in Federal Transit Administration (FTA) 5339a FY21 Bus and Bus Facilities formula funding. Staff has prioritized METRO's most immediate and critical non-bus replacement needs and proposes the installation of Automatic Passenger Counters (APCs) be funded from the FTA 5339a FY21 formula allocation in amount of \$524,355.

Automatic Passenger Counters (APCs)

APCs on buses are a core technology platform throughout the transit industry that will help METRO optimize efficiency, enhance service and facilities planning, and improve customer safety and reliability. The purchase and installation of an

automated, robust, and scalable ridership data management and analytics software platform, a first for METRO, will allow staff to collect real time boarding and alighting information on 100% of its fleet. Currently, ridership information is only available on an extremely limited basis through manually-conducted surveys. APCs will remove many of the current manual data entry steps required for collecting ridership data while alleviating laborious data processing activities and data manipulation. APCs will also help automate future FTA National Transit Database (NTD) and internal ridership reporting.

The information collected will provide METRO with a rich dataset that staff can use to optimize immediate capital and service planning needs. Two years into the COVID-19 pandemic, METRO ridership has only recovered to half of its pre-pandemic levels. Future service, fleet and facility needs depend on obtaining accurate ridership information on where and when customers are boarding. The information collected from APCs will help staff plan and optimize:

- Route and service changes
- Vehicle assignments and crowding
- The Bus Replacement Plan and future fleet needs
- Facility needs, including the proposed South County bus division

The APC module will also give passengers the opportunity to make informed decisions on which vehicle they feel comfortable riding. Having a fleet that is 100% APC-equipped will provide accurate passenger load information (PLI) for passengers on all buses, enhancing service quality and boosting customer confidence in METRO services during the COVID-19 pandemic and after.

If approved by the Board, the APC project can be implemented alongside METRO's Computer-Aided Dispatch / Automatic Vehicle Location (CAD/AVL) project, saving resources on project mobilization and installation.

#### Ten-Year Unfunded Capital Project List

METRO maintains a Ten-Year Unfunded Capital Project List that is updated periodically so that in the event that new grant or other sources of funding become available, there is an identified set of projects from which to select. Attachment A is the updated FY22– FY31 Unfunded Capital Projects List.

The projects are categorized in different groups corresponding to eligible project types offered by different grant solicitations.

#### **IV. STRATEGIC PLAN PRIORITIES ALIGNMENT**

The actions taken in this report tie to METRO's Safety, Financial Stability, Stewardship and Accountability, Service Quality and Delivery, and State of Good Repair Strategic Priorities.

## **V. FINANCIAL CONSIDERATIONS/IMPACT**

Fleet wide installation of APCs is estimated to cost \$640,000. Pre-award authority is available from the FY21 FTA 5339a allocation in the amount of \$524,355. Remaining funding is available from a number of sources, including Measure D, FTA 5311, and METRO capital reserves.

### Ten-Year Unfunded Capital Project List

The Unfunded Capital Project List does not have an immediate financial impact beyond identifying the shortfall in funding necessary to maintain METRO equipment and facilities in a state of good repair, which is projected to be approximately \$116 million.

## **VI. ALTERNATIVES CONSIDERED**

The Board could choose not to fund the APC project from the FY21 FTA 5339(a) formula program and/or choose to fund alternate projects from the Ten-Year Unfunded Capital Projects List. However, staff does not recommend this option given METRO's immediate capital and service planning needs. Future service, fleet and facility needs depend on obtaining accurate ridership information on where and when customers are boarding. As additional consideration, in order to comply with FTA grant agreement and third-party procurement requirements, it is preferable to fund one large project with FTA 5339a funding rather multiple smaller projects.

## **VII. ATTACHMENTS**

**Attachment A:** FY22 – FY31 Ten-Year Unfunded Capital Project List

Prepared by: John Urgo, Planning and Development Director

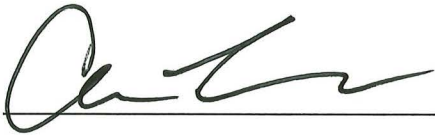
**VIII. APPROVALS**

John Urgo, Planning  
and Development Director



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Approved as to fiscal impact:  
Chuck Farmer, CFO



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Dawn Crummié, Interim CEO/General  
Manager



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# Attachment A

## 10 year METRO Unfunded Capital Projects - Summary

Category	5-yr need (000s)	10-yr need (000s)
Construction	\$ 73,700	\$ 149,350
Vehicle State of Good Repair (SGR)	\$ 25,943	\$ 30,997
Facilities Maintenance	\$ 4,012	\$ 7,847
Information Technology (IT)/Communications	\$ 12,970	\$ 15,705
<b>Total</b>	<b>\$ 116,625</b>	<b>\$ 203,899</b>

# Attachment A

Construction		22	23	24	25	26	27	28	29	30	31
#	Project	Description	Cost (000s)								
1	ParaCruz Operating Facility (Mobility Management Center)	Property Acquisition, Design, Right-of-Way and construction for new ParaCruz Operating Facility	\$ 6,300	\$ 2,000	\$ 2,000	\$ 2,250				\$ 50	
2	Cavallaro Transit Center roof replacement and solar panels	Shingle roof (\$50k) and solar panels (\$50k)	\$ 100	\$ 100							
3	Fluid Management System Phase 2, ParaCruz	Purchase and installation of fluid management system, ParaCruz	\$ 40	\$ 40							
4	Maintenance Facility Bay 11 Modifications	Modify Bay 11 to better accommodate articulated buses	\$ 125	\$ 125							
5	Solar Panels at Ops, Maintenance, Admin	Energy cost reduction through installation of roof-mounted solar panels at the Judy K. Souza Operations Facility, Golf Club, and Vernon	\$ 2,000	\$ 1,000	\$ 1,000						
6	Fluid Management System Phase 3	Automate all fluids in the shop	\$ 200	\$ 200							
7	Exterior Returb of Vernon Building. Paint, Roof, Gutter, Fascia, Bird Abatement	\$125 Paint, \$150 Roof Shingle replacement, Gutter, Fascia Remove decorative eave supports due to bird nesting	\$ 275		\$ 275						

## 5A.2



# Attachment A

Construction		22	23	24	25	26	27	28	29	30	31
#	Project	Description	Cost (000s)								
8	Vernon Street Bus Stop	Move (Route 4) bus stop to lower Admin parking lot. Install base and concrete to bus stop pad and maneuvering apron. Necessary precursor to fully securing maintenance facility.	\$ 600			\$ 300	\$ 300				
9	Maintenance Facility Wing 2 (to accommodate articulated buses)	Property Acquisition (including 1231 River St), Design, Right-of-Way and Construction for second wing of Maintenance Facility	\$ 15,850			\$ 15,850					
10	Soquel/Freedom Traffic Signal Priority/Pre-emption for Buses	Enable coach operators to actuate traffic signals to prolong green or change red lights to improve transit running time	\$ 2,000			\$ 2,000					
11	Mid-county Park and Ride	New mid-county park and ride to replace Soquel Park & Ride.	\$ 10,000			\$ 10,000					
12	Watsonville Park and Ride Lot	South County P&R to support Hwy 1 commuters (200 spaces)	\$ 10,000			\$ 10,000					
13	Cavallaro Transit Center Parking Structure	3-Story Parking Structure to support Hwy 17 Express commuters and City activities	\$ 26,400			\$ 26,400					
14	Upgrade Pasatiempo Northbound stop	Design, engineering, and construction of shelter pad and waiting area	\$ 50			\$ 50					
15	Remove Diesel Tank (move to facilities tab)	Remove tank after replacement of last diesel bus fleet (Last bus is year 2014).	\$ 50						\$ 50		
16	South County Ops. & Maint. Facility	Auxiliary Operating (including ParaCruz) & Maintenance Facility in Watsonville.	\$ 50,000								\$ 50,000
17	New Watsonville Transit Center	Replacement (or Remodel in 2026) of current transit center	\$ 25,000								
18	Misc TBD	For small capital items	\$ 360	\$ 30	\$ 30	\$ 30	\$ 40	\$ 40	\$ 40	\$ 40	\$ 40
		<b>Unfunded Capital Costs thru FY2031</b>	<b>\$ 149,350</b>	<b>\$ 3,155</b>	<b>\$ 3,480</b>	<b>\$ 3,055</b>	<b>\$ 64,590</b>	<b>\$ 390</b>	<b>\$ 40</b>	<b>\$ 90</b>	<b>\$ 75,040</b>
		<b>Unfunded Capital Costs thru FY2026</b>	<b>\$ 73,700</b>								

5A.3

# Attachment A

UNFUNDED CAPITAL PROJECTS (000s)												
Vehicle SGR		Description	Cost (000s)	23	24	25	26	27	28	29	30	31
#	Project			23	24	25	26	27	28	29	30	31
1	ParaCruz Replacements	5 new vehicles per year FY20-22; 3 new vehicles per year FY23-29	\$ 2,426									
2	Bus Replacements 2023	Bus Replacements										
3	Diesel-electric Hybrid Battery Replacements	Replace (16) CNG buses 10 buses - replace 4 batteries per year in FY21-22; 2 in FY23 (\$40k/battery)	\$ 11,200	??								
4	Medium Duty Trash Truck	Specialty truck for safer and more efficient bus stop trash cleanup	\$ 150									
5	Bus Replacements 2024	Bus Replacements Replace (0) buses	\$ -									
6	Bus Replacements 2025	Bus Replacements Replace (7) CNG buses	\$ 5,145									
7	Bus Replacements 2026	Bus Replacements Replace (10) CNG buses	\$ 7,710				\$ 7,710					
8	Bus Replacements 2027	Bus Replacements Replace (0) buses	\$ -									
9	Bus Replacements 2028	Bus Replacements Replace (0) buses	\$ -									
10	Bus Replacements 2029	Bus Replacements Replace (4) buses (3 CNG; 1 ZEB)	\$ 3,590							\$ 3,590		
11	Non-revenue Vehicle Replacements	Non-revenue trucks and cars	\$ -									
12	Misc TBD	For small capital items	\$ 360	\$ 30	\$ 30	\$ 30	\$ 40	\$ 40	\$ 40	\$ 40	\$ 40	\$ 40
		<b>Unfunded Capital Costs thru FY2031</b>	<b>\$ 30,997</b>	<b>\$ 190</b>	<b>\$ 11,908</b>	<b>\$ 373</b>	<b>\$ 8,030</b>	<b>\$ 334</b>	<b>\$ 348</b>	<b>\$ 3,953</b>	<b>\$ 379</b>	<b>\$ 40</b>
		<b>Unfunded Capital Costs thru FY2026</b>	<b>\$ 25,943</b>									
		*** Based on 10/31/19 Long-Range Bus Replacement Plan										
		*** Based on 2019 cost assumptions: CNG 35' & 40' - \$700k; artics - \$850k; ZEBs - \$1.25M										
		*** The project year (Bus Replacements 20XX) is the year the bus needs replacement. The funding need is placed in the previous fiscal year because it takes about a year from purchase to receive the bus.										

## 5A.4

# Attachment A

UNFUNDED CAPITAL PROJECTS (000s)												
Facilities Maintenance		Cost (000s)	22	23	24	25	26	27	28	29	30	31
#	Project	Description										
2	Capital upgrade of existing transit facilities	Capital upgrade of bus stops, parking lots, transit centers, buildings	\$ 775	\$ 75	\$ 75	\$ 75	\$ 75	\$ 80	\$ 80	\$ 80	\$ 80	\$ 80
	Trash Containers for transit hubs	Up to 16 in total										
3	Facilities Equipment Replacement	Vacuums, Buffers, Scrubbers, Pressure Washers, Landa Trailer (2023, \$20K), etc	\$ 260	\$ 20	\$ 30	\$ 20	\$ 20	\$ 30	\$ 30	\$ 30	\$ 30	\$ 30
4	Landscaping/Irrigation	Re-landscape & irrigate all sites	\$ 265	\$ 30	\$ 30	\$ 30	\$ 30	\$ 35	\$ 35	\$ 35	\$ 35	\$ 35
5	Furniture	All Facilities	\$ 150	\$ 50	\$ 50	\$ 50	\$ 50					
6	Golf Club Parts Washers (3)	Replace the JRI units purchased 2010 \$80K is funded with FTA FY20 5339a. Est \$148K	\$ 68	\$ 68								
7	Gates at JKS	Need additional funding to automate the two gates at JKS. Total Est is: \$257K	\$ 129	\$ 129								
8	Replace Pressure Washer System	Pressure washer for engine cleaning.	\$ 580	\$ 580								
9	Golf Club Interior Painting	Golf Club Interior Repair and Painting (Shop Area and Parts Room)	\$ 150		\$ 150							
10	Fuel and Wash Facility - rust removal and repaint, Bird Abatement	Refurb walls and underside of roof. Remove rust and repaint bus fuel and wash facility (interior and exterior) and equipment	\$ 200		\$ 200							
11	Shop bay door drainage	French drain or other solution for shop bay door drainage.	\$ 200		\$ 200							
12	Parallelogram Lift Replacement	Bus Lift for Steam Bay	\$ 225		\$ 225							
13	Portable Bus Lifts	1 set of 4 standard lifts, \$75k.	\$ 75		\$ 75							
14	Administration Remodel	Office remodel of 110 Vernon St.	\$ 1,000		\$ 1,000							
15	Golf Club Flooring	Refurbish Flooring in Bus Shop and Parts Dept	\$ 450		\$ 450							
16	Reassembling Parking Lots, all sites	paving and striping	\$ 110	\$ 25	\$ 25	\$ 25	\$ 30	\$ 30	\$ 30	\$ 30	\$ 30	\$ 30
17	Fueling Station	Roof replacement and mid-life rehab.	\$ 250		\$ 250				\$ 250			
18	Golf Club Generator Replacement		\$ 200						\$ 200			
19	Bus Washer Replacement		\$ 700							\$ 700		
20	In-ground Bus Lifts	Remove and replace in-ground lifts	\$ 1,700								\$ 1,700	
21	Misc TBD	For small capital items	\$ 360	\$ 30	\$ 30	\$ 30	\$ 40	\$ 40	\$ 40	\$ 40	\$ 40	\$ 40
		<b>Unfunded Capital Costs thru FY2031</b>	<b>\$ 7,847</b>	<b>\$ 372</b>	<b>\$ 790</b>	<b>\$ 980</b>	<b>\$ 615</b>	<b>\$ 215</b>	<b>\$ 435</b>	<b>\$ 415</b>	<b>\$ 2,585</b>	<b>\$ 185</b>
		Unfunded Capital Costs thru FY2026	\$ 4,012									
		<b>Total FY22 FTA 5339a Funding</b>	<b>\$ 4,012</b>									

5A.5

# Attachment A

## UNFUNDED CAPITAL PROJECTS (000s)

		IT										UNFUNDED CAPITAL PROJECTS (000s)											
#	Project	Description	FTA FY22 candidate	Priority	Cost (000s)	22		23		24		25		26		27		28		29		30	
1	Misc Items	Eligibility Coordinator ID Card Printer (\$6K) Servers Printers Security Cameras			\$ 540	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50
2	Security System New for Scotts Valley Location	Install new security system at Scotts Valley Transit Center		\$51	\$ 51	\$ 51																	
3	Security System Replacement for All Locations	Replace security system at end-of-life			\$ 450	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50
4	Surveillance Camera Replacement for All Locations	Replace security camera at end-of-life/failure			\$ 50	\$ 10						\$ 10										\$ 10	\$ 10
5	Logos for VTA Shelters & Benches: 2021 or early 2022				\$ 30	\$ 10																	\$ 20
6	Digital Signage at Transit Centers: 2022				\$ 30	\$ 10																	\$ 20
7	Digital Signage Onboard Buses: 2022 or 2023				\$ 55							\$ 25											\$ 30
8	Account-based Fare Collection Upgrade (Masabi)	Account-based fare collection upgrade to replace GFI paper and plastic pass system (excluding fareboxes and vaults) (2023: \$300K for hardware installation of validators on remaining buses and potentially ParaCruz Vans) 2027: \$500K is for replacement hardware as the equipment may be outdated, plan for every 4-5 years as technology changes			\$ 1,300	\$ 300																\$ 500	\$ 500
9	GFI TVMs - replacements and additional for outdated equipment that may need upgrading	Pending decision on new fare system, as TVMs may no longer be required. Goal is to remove TVMs and switch to Masabi			\$ 250	\$ 250																	
	Financial Management Software (ERP)	Financial, Payroll, Timekeeping Software Enterprise Asset Management System (This would replace MaintStar) (\$600K in 2024)			\$ 6,600	\$ 4,000	\$ 2,600																



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**DATE:** March 11, 2022

**TO:** Capital Projects Standing Committee

**FROM:** Margo Ross, Chief Operations Officer

**SUBJECT: RECOMMEND APPROVAL TO THE FULL BOARD OF DIRECTORS ADOPTING A RESOLUTION THAT APPROVES THE SANTA CRUZ METROPOLITAN TRANSIT DISTRICT ZERO-EMISSION BUS ROLLOUT PLAN AND AUTHORIZES THE CEO/GENERAL MANAGER TO SUBMIT THE ZEB ROLLOUT PLAN TO THE CALIFORNIA AIR RESOURCES BOARD IN ACCORDANCE WITH THE INNOVATIVE CLEAN TRANSIT REGULATION**

## **I. RECOMMENDED ACTION**

**That the Capital Projects Standing Committee recommend approval to the full Board of Directors adopting a resolution that approves METRO ZEB Rollout Plan and authorizes the CEO/General Manager to submit the ZEB Rollout Plan to CARB in accordance with ICT regulation.**

## **II. SUMMARY**

- At its September 25, 2015 meeting, the Santa Cruz Metropolitan Transit District (METRO) Board of Directors (Board) adopted its first Electric Bus Implementation Strategy authorizing METRO to pursue grant funding to deploy electric buses.
- At its May 19, 2017 meeting, the Board adopted a resolution to set a goal for achieving a fully zero-emission fleet by 2040 and to support a fleet management plan that phases out the purchase of Compressed Natural Gas (CNG) buses by 2030.
- On December 14, 2018, the California Air Resources Board (CARB) passed the Innovative Clean Transit (ICT) regulation, which set a goal of fully transitioning all bus fleets in the state to Zero Emission Buses (ZEBs) by 2040. This regulation requires transit agencies to submit a rollout plan detailing their plans to transition their fleets to ZEBs.
- On June 28, 2029, METRO entered into a contract with the Center for Transportation and the Environment (CTE) to develop ZEB Transition Plan and Renewable Energy Analysis, and to assist METRO staff with a ZEB Rollout Plan.
- Pursuant to the ICT, the Zero Emission Bus Rollout Plan must be approved by the METRO's Board of Directors through the adoption of a resolution prior to submission to CARB by July 1, 2023.

- Staff recommends that the Capital Projects Standing Committee recommend approval to the full Board of Directors to adopt a resolution that approves METRO ZEB Rollout Plan and authorizes the CEO/General Manager to submit the ZEB Rollout Plan to CARB in accordance with ICT regulation.

### III. DISCUSSION/BACKGROUND

At its September 25, 2015 meeting, the Board authorized METRO to begin pursuing grant funding to deploy electric buses and adopted its first Electric Bus Implementation Strategy, which documented a favorable technological, regulatory, operating and financial environment for ZEB deployment, and proposes a timeline to implement ZEBs incrementally, beginning with the first acquisition in 2016.

At its May 19, 2017 meeting, the Board adopted a resolution setting a goal of 2040 to attain a 100% ZEB fleet and phasing out the purchase of Compressed Natural Gas (CNG) buses after 2030. The resolution also states Board support for the FY2017 - FY2040 Fleet Management Plan, which outlines METRO's detailed vehicle-specific plan for transitioning the fleet to all ZEBs.

On December 14, 2018, CARB adopted its ICT regulation, which requires all transit agencies designated as a small transit agency to transition their bus fleet to all ZEBs beginning in 2026. Under the new regulation, CARB will require METRO's new bus purchases to be a minimum of 25% ZEBs beginning in 2026 and ramping up to 100% of future bus purchases in 2029, with the goal of transitioning the state's entire transit fleet to 100% ZEBs by 2040. METRO is also required to submit a board-approved ZEB Rollout Plan to CARB that describes their plan to transition to a 100% zero emission fleet by 2040 with specific required components by July 1, 2023.

At its June 28, 2019 meeting, the Board authorized the CEO/General Manager to enter into a sole source contract with CTE for Zero Emission Bus Deployment and Transition Planning. Since then, CTE has provided assistance in the deployment of METRO's first four ZEBs, ZEB Transition Plan, and a ZEB Rollout Plan.

The ZEB Rollout Plan (Attachment B) outlines a path for METRO to transition the bus fleet to zero-emission by 2040 set by the ICT Regulation.

1. **Rollout Plan Fleet Procurement Approach:** METRO will begin to purchase hydrogen fuel cell electric buses (FCEB) in 2026 to achieve the duty cycles of longer routes and blocks with larger energy demands. Keeping the traditional, non-ZEBs in service until their 14-year end of life allows METRO the time to build infrastructure and acquire enough FCEBs to support the more demanding routes. METRO will continue to procure FCEB's in subsequent years, eventually achieving a 62% ZEB fleet by 2040. The procurement schedule assume in METRO; if more funds



become available, METRO will attempt accelerate its zero-emission bus procurement timeline.

2. **Facilities and Infrastructure Modifications:** Anticipated infrastructure required to accommodate METRO's fleet transition as laid out in the ZEB Rollout Plan includes two major phases of build out of a hydrogen fueling station, with each build out supporting a 50 FCEB capacity. Currently, METRO's facilities are not adequate in size to support the full build out of hydrogen fueling infrastructure needed. METRO is proactively exploring several options in order to adapt the Bus Rollout Plan; including a facility in South County and a redesign of Judy K Souza Operations and Bus Park Facility (JKS).

METRO will continue to analyze the facility program and will engage the Board for advice and policy guidance on the various potential approaches. These will also be further evaluated in the METRO's Zero-Emission Bus Fleet Transition Study, which is a more comprehensive plan and is still in the development stage.

METRO ZEB Rollout Plan complies with CARB's ICT regulation. Pursuant to the ICT, the ZEB Rollout Plan must be approved by the METRO's Board of Directors through the adoption of a resolution prior to submission to CARB by July 1, 2023.

Staff recommends that the Capital Projects Standing Committee recommend approval to the full Board of Directors to adopt a resolution that approves METRO ZEB Rollout Plan and authorizes the CEO/General Manager to submit the ZEB Rollout Plan to CARB in accordance with ICT regulation.

#### **IV. STRATEGIC PLAN PRIORITIES ALIGNMENT**

The actions taken in this report tie to METRO's Financial Stability, Stewardship and Accountability and State of Good Repair.

#### **V. FINANCIAL CONSIDERATIONS/IMPACT**

Since the ZEB Rollout Plan is a document intended to communicate all required planning before the purchase requirements of the ICT commence, it has no immediate funding impact. However, transitioning to ZEB fleet will require significant capital investment in charging infrastructure and will require modification of existing METRO facilities to accommodate ZEB buses in the future.

#### **VI. ALTERNATIVES CONSIDERED**

No alternatives were considered. The development of the METRO's ZEB Rollout Plan is a requirement by CARB and the ICT regulation.

## **VII. ATTACHMENTS**

**Attachment A:** Resolution approving the Santa Cruz Metropolitan Transit District ZEB Rollout Plan and authorizing the CEO/General Manager to submit the ZEB Rollout Plan to the California Air Resources Board in accordance with the Innovative Clean Transit regulation

**Attachment B:** Santa Cruz Metropolitan Transit District Zero-Emission Bus Rollout Plan

**Attachment C:** Santa Cruz METRO ICT Rollout Plan

Prepared by: Wondimu Mengistu, Grants/Legislative Analyst

**VIII. APPROVALS**

Margo Ross, COO



Approved as to fiscal impact:  
Chuck Farmer, CFO



Dawn Crummié, Interim CEO/GM



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# Attachment A



## BEFORE THE BOARD OF DIRECTORS OF THE SANTA CRUZ METROPOLITAN TRANSIT DISTRICT

Resolution No. \_\_\_\_\_

On the Motion of Director: \_\_\_\_\_

Duly Seconded by Director: \_\_\_\_\_

The Following Resolution is Adopted: \_\_\_\_\_

### **RESOLUTION APPROVING THE SANTA CRUZ METROPOLITAN TRANSIT DISTRICT ZERO-EMISSION (ZEB) ROLLOUT PLAN AND AUTHORIZING THE CEO/GENERAL MANAGER TO SUBMIT THE ZEB ROLLOUT PLAN TO THE CALIFORNIA AIR RESOURCES BOARD IN ACCORDANCE WITH THE INNOVATIVE CLEAN TRANSIT REGULATION**

**WHEREAS**, The Santa Cruz Metropolitan Transit District (METRO) has been a national leader in supporting sustainable, reduced or zero emissions revenue transit vehicles; and

**WHEREAS**, On September 25, 2015, METRO Board of Directors (Board) adopted its first Electric Bus Implementation Strategy authorizing METRO to pursue grant funding to deploy electric buses; and

**WHEREAS**, On December 14, 2018, the California Air Resources Board (CARB) passed the Innovative Clean Transit (ICT) regulation which set a goal of fully transitioning all bus fleets in the state to Zero Emission Buses (ZEBs) by 2040; and

**WHEREAS**, Title 13 of the California Code of Regulation § 2023 (13 CCR § 2023.1 through 2023.11) requires all public transit agencies to gradually transition their bus fleet to zero-emission technologies; and

**WHEREAS**, METRO's ZEB Rollout Plan must be submitted to CARB by July 1, 2023; and

**WHEREAS**, The Rollout Plan is intended as a living document and a snapshot in time, and will be updated by METRO and those updates submitted to CARB; and

**WHEREAS**, METRO's goal is to fully transition to zero-emission technologies by 2040, that avoids early retirement of Compressed Natural Gas (CNG) buses and a CNG fueling station, and can be achieved with available funds; and

**NOW THEREFORE, BE IT RESOLVED** that the CEO/General Manager is authorized to submit the METRO's ZEB Rollout Plan, and any other documents or instruments required by CARB for the submittal and adoption of the ZEB Rollout Plan, in accordance with the ICT Regulations.

# Attachment A

**PASSED AND ADOPTED** by the Board of Directors of the Santa Cruz Metropolitan Transit District this 25<sup>th</sup> Day of March 2022 by the following vote:

**AYES:** Directors -

**NOES:** Directors -

**ABSTAIN:** Directors -

**ABSENT:** Directors -

**APPROVED**

---

LARRY PAGELER, Board Chair

**ATTEST**

---

DAWN CRUMMIÉ  
Interim CEO/General Manager

**APPROVED AS TO FORM:**

---

JULIE SHERMAN  
General Counsel

# Attachment B



## **Santa Cruz Metropolitan Transit District Zero-Emission Bus Rollout Plan**

**SUBMITTAL DATE**  
**Month Day, [YEAR]**

**Created by Santa Cruz Metropolitan Transit District  
with assistance from  
the Center for Transportation and the Environment**



# Attachment B

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Section A: Transit Agency Information

Santa Cruz Metropolitan Transit District (METRO) provides bus and paratransit service throughout Santa Cruz County, California, serving approximately 273,213 people in the service area. METRO’s service territory spans (or is contained within) the Monterey Bay Air Resources District within the North Central Coast Air Basin. To maintain transit service for these communities, METRO operates a maximum of 85 buses annually.

METRO is headquartered at 110 Vernon, Santa Cruz, CA 95060. For more information on METRO, contact Margo Ross/Chief Operations Officer at 831-420-2577 or mross@scmtd.com.

Santa Cruz Metropolitan Transit District	
1. Transit agency’s name	
2. Mailing address	Number, street: 110 Vernon Street City, County, Zip: Santa Cruz, CA 95060
3. Name of transit agency’s air districts	Monterey Bay Air Resources District 4. Name of Transit agency’s air basin(s) North Central Coast Air Basin
5. Total number of buses in Annual Maximum Service	100 6. Population of the urbanized area transit agency is serving as last published by the Census Bureau before 12/31/17 273,213
7. Contact information of the general manager, chief operating officer, or equivalent	A: Contact name Dawn Crummie B: Title Interim CEO/General Manager C: Phone number 831-420-2501 D: Email DCrummie@scmtd.com
8. Is your transit agency part of a Joint Group (13 CCR § 2023.1(d)(3))?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

# Attachment B

## Section B: Rollout Plan General Information

1. **Does your transit agency's Rollout Plan have a goal of full transition to zero-emission technologies by 2040 that avoids early retirement of conventional transit buses (13 CCR § 2023.1(d)(1)(A))?**

While METRO's fleet will not reach the 100% zero-emission goal by 2040, METRO's Rollout Plan is designed to follow the ICT's zero-emission bus (ZEB) transition timeline of purchasing requirements that begins in 2026. Following these requirements and avoiding early retirement of conventional transit buses results in 62% of METRO's fleet being zero-emission by 2040.

2. **The ICT regulation requires 100% ZEB purchase in 2029. Conventional transit buses that are purchased in 2028 could be delivered in or after 2029. Please explain how your transit agency plans to avoid potential early retirement of conventional buses in order to meet the 2040 goal.**

METRO has committed to purchasing the required percentage of zero-emission buses as required by the ICT. All procurements are planned in corresponding end-of-life years for its historical fleets of diesel and CNG buses. METRO will begin to purchase fuel cell electric buses (FCEB) in 2026 to achieve the duty cycles of longer routes and blocks with larger energy demands than the current battery electric bus (BEB) achievable ranges on the market allow. Keeping the traditional, non-zero-emission vehicles in service until their 14-year end of life allows METRO the time to build infrastructure and acquire enough FCEBs to support the more demanding routes.

3. **When did your transit agency's board or governing body approve the Rollout Plan?**
  - a. **Rollout Plan's approval date**
  - b. **Resolution number (optional)**
  - c. **Is a copy of the board approved resolution attached to the Rollout Plan submitted to CARB (13 CCR § 2023.1(d)(2))?** (Yes/No) (required)

This Rollout Plan was approved by Santa Cruz Metropolitan Transit District on March 25, 2022 via [RESOLUTION NUMBER]. A copy of the board approved resolution is attached to the Rollout Plan as {SECTION NAME/NUMBER}.

4. **Please provide contact information for CARB to follow up on details of the Rollout Plan, if needed.**
  - a. **Contact name:** Dawn Crummié
  - b. **Title:** CEO
  - c. **Phone Number:** 831-426-6080
  - d. **Email:** [DCrummie@scmtd.com](mailto:DCrummie@scmtd.com)

5. **Who has created the Rollout Plan?**

This Rollout Plan was created by METRO with assistance from the Center for Transportation and the Environment (CTE).

# Attachment B

## Section C: Technology Portfolio

### 1. What type(s) of zero-emission bus technologies does your transit agency plan to deploy through 2040? (13 CCR § 2023.1(d)(1)(B))

METRO provides bus and paratransit service throughout Santa Cruz County, California, providing more than 246,191 trips a year. With a fleet of approximately 100 buses, METRO operates 24 bus lines, carrying approximately 5,045,972 passengers annually. METRO operates four transit centers in Santa Cruz County: Santa Cruz Metro Center (located in downtown Santa Cruz), Cavallaro Transit Center (located in Scotts Valley), Capitola Mall Transit Center (located in Capitola), and Watsonville Transit Center (located in Watsonville). METRO recently took delivery of four BEBs into their fleet, with 2 of the BEBs operating on the newly established Watsonville Circulate and 2 BEBs the remaining vehicles operate on various routes throughout the METRO service area.

METRO intends to continue to transition their fleet to zero-emission through both BEBs and FCEBs. Figure 1 shows METRO's projected procurement schedule that supports a realistic timeline for infrastructure build, considers route achievability, and maintains vehicles through the end of their useful life.

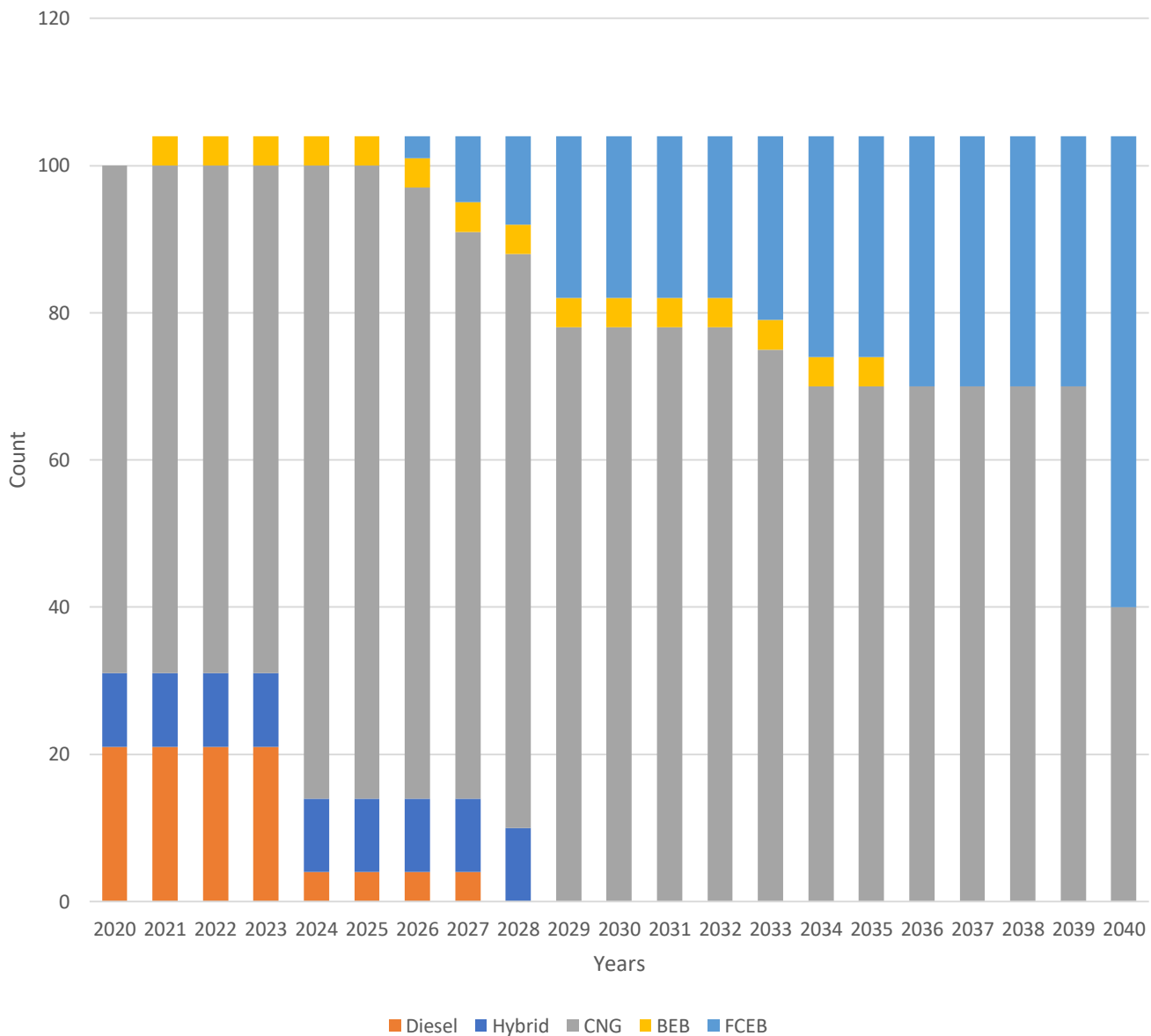
As detailed in Figure 1, METRO's transition to ZEBs began in 2021 with the deployment of 4 BEBs. Between 2026 and 2029, METRO will begin procuring FCEBs. By 2030, more than a quarter of METRO's fleet will be zero-emission. With FCEB purchases scheduled to begin in 2026, this will allow METRO time to plan and deploy the required hydrogen fueling infrastructure as well as prepare operations and maintenance teams in receiving and supporting this new technology.

METRO will continue to procure FCEBs in subsequent years, eventually achieving a 62% ZEB fleet by 2040. The procurement schedule is based upon current grant funding accessible to METRO.

If more funds become available, METRO intends to accelerate the ZEB procurement timeline. METRO is actively monitoring grant funding opportunities and will continue to do so in hopes of moving up their transition timeline. However, depending on budget constraints in the later years of the 2030s it may be more cost effective for METRO to overhaul CNG buses in their fleet extending their useful life well beyond 2040.

# Attachment B

**Figure 1: METRO’s Fleet Composition Over 20-Year ZEB Transition Period**



# Attachment B

## Section D: Current Bus Fleet Composition and Future Bus Purchases

1. **Please complete Table 1 with information on each individual bus in your current bus fleet.** *Please identify the fuel type of each individual conventional bus as diesel, compressed natural gas (CNG), liquefied natural gas (LNG), diesel hybrid (dHEB), gasoline hybrid (gHEB), propane, or gasoline. For zero-emission technologies, identify the fuel type as hydrogen or electricity and indicate which charging technology (depot, wireless, and/or on-route) will be used. Bus types include standard, articulated, over-the-road, double decker and cutaway buses.*

METRO’s fleet currently consists of 69 CNG buses, 21 diesel buses, 10 hybrids buses, and 4 battery electric buses. Table 1 is representative of the METRO’s fleet as of September 2021. It lists vehicles that are routinely operated in service, as well as a supporting contingency fleet.

**Table 1: Individual Bus Information for Current Bus Fleet**

Bus Series	Number of Buses	Engine Model Year	Bus Model Year	Fuel Type	Bus Type
<b>9800</b>	9	1998	1998	Diesel	New Flyer Standard 35 Foot
<b>9800</b>	8	1998	1998	Diesel	New Flyer Standard 40 Foot
<b>2200</b>	14	2007	2002	CNG	New Flyer Standard 35 Foot
<b>2200</b>	10	2007	2002	CNG	New Flyer Standard 40 Foot
<b>2300</b>	4	2002	2002	Diesel	New Flyer Articulated 60 Foot
<b>2600</b>	2	2019	2006	CNG	New Flyer Standard 40 Foot
<b>2800</b>	13	2008	2008	CNG	New Flyer Standard 40 Foot
<b>1000</b>	5	2011	2011	CNG	New Flyer Standard 40 Foot
<b>1200</b>	11	2012	2012	CNG	New Flyer Standard 40 Foot
<b>1300</b>	6	2013	2013	CNG	New Flyer Standard 35 Foot
<b>4200</b>	10	2014	2014	Hybrid	GILLIG Standard 40 Foot
<b>1600</b>	3	2016	2016	CNG	New Flyer Standard 40 Foot
<b>1900</b>	5	2019	2019	CNG	GILLIG Standard 40 Foot
<b>0320/0420</b>	4	2020	2020	Depot charged	Proterra 660kWh 40 Foot

# Attachment B

2. Please complete Table 2 regarding expected future bus purchases, including the number of buses in total expected to be purchased or leased in the year of purchase. Identify the number and percentage of zero-emission buses of the total bus purchases each year, as well as bus types and fuel types. Identify the same type of information for purchases of conventional buses. Bus types include standard, articulated, over-the-road, double decker and cutaway buses. For zero-emission technologies, please identify the fuel type as hydrogen or electricity and the type of charging technology (depot, wireless, and/ or on-route). For conventional technologies, identify the fuel type as diesel, compressed natural gas (CNG), liquefied natural gas (LNG), diesel hybrid (dHEB), gasoline hybrid (gHEB), propane, or gasoline. (13 CCR § 2023.1(d)(1)(D))

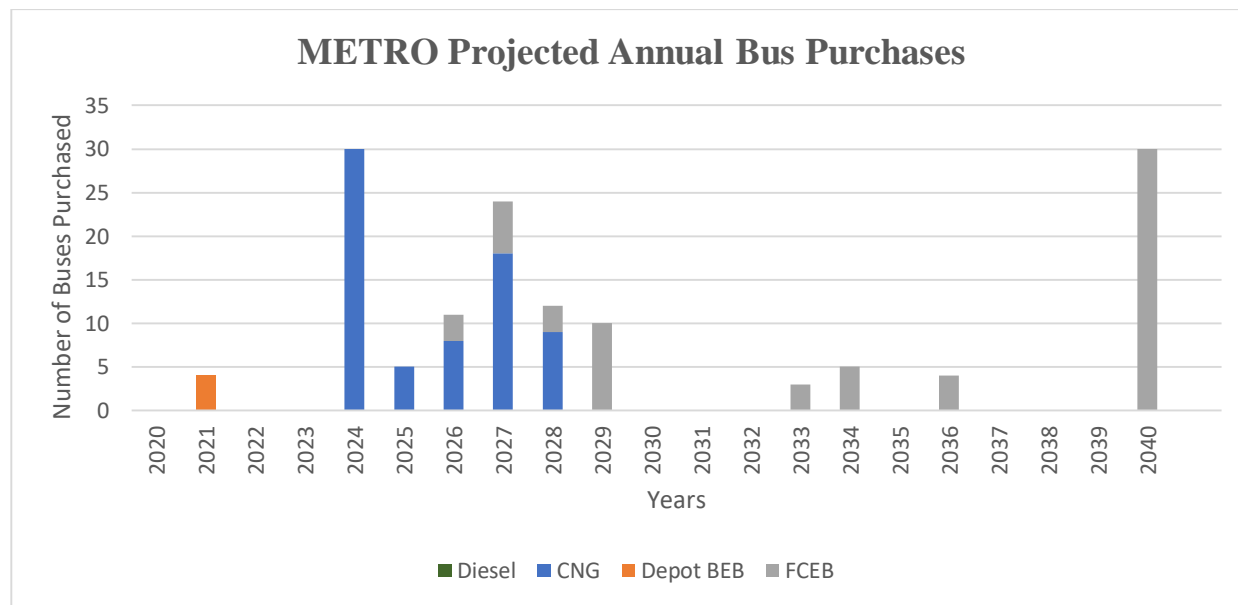
As described in Section C Technology Portfolio, METRO intends to transition their current fleet composition to a mixed fleet of both BEBs and FCEBs. Figure 2 presents METRO’s projected schedule of bus purchases. This schedule allows METRO to maintain the same level of service and achieve the energy demands of the current regular service. It also reflects the 14-year life span of the current fleet and the first ZEB replacement cycle which takes place in 2036 when the initial 4 Proterra BEBs will be replaced.

As show in Figure 2, beginning in 2026 METRO’s bus procurements will be in accordance with the ICT regulation requiring 25% of all new buses purchased be ZEB. And in 2029 METRO will adhere to the 100% ZEB requirement of the ICT transition timeline.

As previously stated, METRO’s current purchase schedule is based on available grant funding. If more funding becomes available METRO will look for opportunities to move up the transition timeline.

Table 2 provides a breakdown of each annual purchase and associated ZEBs. It also includes the anticipated phasing of the required hydrogen fueling infrastructure.

**Figure 2: METRO’s Projected Annual Bus Procurements**



# Attachment B

**Table 2: METRO’s Projected Annual Bus ZEB Procurement Details**

Timeline (Year)	Total Number of Buses to Purchase	Number of ZEB Purchases	Percentage of Annual Bus Purchases	ZEB Bus Type(s) / ZEB Fuel Type(s)	Number of Conventional Vehicles
2021	--	--	--	4 BEB	--
2024	30	0	0%	--	30 CNG
2025	5	0	0%	--	5 CNG
<b>2026 : Phase 1 Hydrogen Fueling Infrastructure</b>					
2026	11	3	27%	3 FCEB	8 CNG
2027	24	6	25%	6 FCEB	18 CNG
2028	12	3	25%	3 FCEB	9 CNG
2029	10	10	100%	10 FCEB	--
2033	3	3	100%	3 FCEB	--
2034	5	5	100%	5 FCEB	--
2036	4	4	100%	4 FCEB	--
<b>2040 : Phase 2 Hydrogen Fueling Infrastructure</b>					
2040	30	30	100%	30 FCEB	--

# Attachment B

3. Following the same bus purchase timeline as identified in Table 2, please identify in Table 3 the required operational range your future zero-emission buses should have to be able to serve in your fleet. Please provide the estimated cost of each bus with that required operational range.

The price shown in Table 3 reflects the price of the 40' New Flyer FCEB on the California state contract, because at this time it is the only 40' FCEB option currently listed on the contract. Table 3 reflects METRO's historic configurable options costs and the state tax. Table 3 also lists the required operational range needed from a ZEB for METRO's operations.

**Table 3: Estimated Costs and Range Requirements of Future ZEB Purchases**

	Cost Requirements			Range Requirement	
	Average Bus Base Price from CA State Contract	Estimated Cost of Configurable Options	Tax	Estimated Total Cost *	METRO's Required Operational Range
40' FCEB	\$1,015,000	\$88,000	3.5%	\$1,489,050	285 miles

\*2021 pricing shown. The general expectation is that FCEB prices will fall, although there is not enough information to make a confident projection in future pricing.

4. Is your transit agency considering converting some of the conventional buses in service to zero-emission buses (13 CCR § 2023.1(d)(1)(E))?

No.



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## Section E: Facilities and Infrastructure Modifications

- 1. Please complete Table 5 with names, locations, and main functions of transit agency divisions or facilities that would be involved in deploying and maintaining zero-emission buses.** *Please limit the facilities to bus yards and facilities with maintenance, fueling, and charging functions, and exclude other operational functions like training centers, information and trip planning offices, and administrative buildings. Please identify which facility(ies) require construction, infrastructure modifications, or upgrades to support your transit agency's long-term transition to zero-emission technologies and the estimated timeline for such an upgrade. Please also specify the type(s) of infrastructure planned in each division or facility and provide their service capacities (e.g., en-route high-power charging system to deploy 20 BEB in 2025). (13 CCR § 2023.1(d)(1)(C)).*

METRO currently has one facility, JKS, that includes a service lane, a CNG fueling station, parking, 4 BEB charging stations with conduit ready for an addition 6 charging stations. The parking available to METRO is not sufficient to house its entire fleet, with about 10% of the fleet being required to park at the maintenance facility across the street from JKS.

Determining how METRO will fuel their fleet of ZEBs is one of the biggest hurdles in their transition to ZEBs. METRO's current facility is not adequate in size for hydrogen fueling infrastructure or a full scale BEB charging operation. METRO is proactively exploring several options to expand its facilities. These options include repurposing additional land across the street from the JKS facility and/or purchasing land in south county to build a new satellite facility.

The potential South County Facility will serve as the base of operations for buses currently deadheading from Santa Cruz to Watsonville to conduct local service in south county. The South County Facility has the potential to significantly improve operational efficiency and ZEB feasibility through reduced deadheading.

METRO is planning to procure consultant services to lead the development of a hydrogen infrastructure master plan for the JKS facilities and the additional parcel of land across the street. Additionally, METRO recently submitted a RAISE grant requesting funds to conduct planning and a design study for the South County Facility.

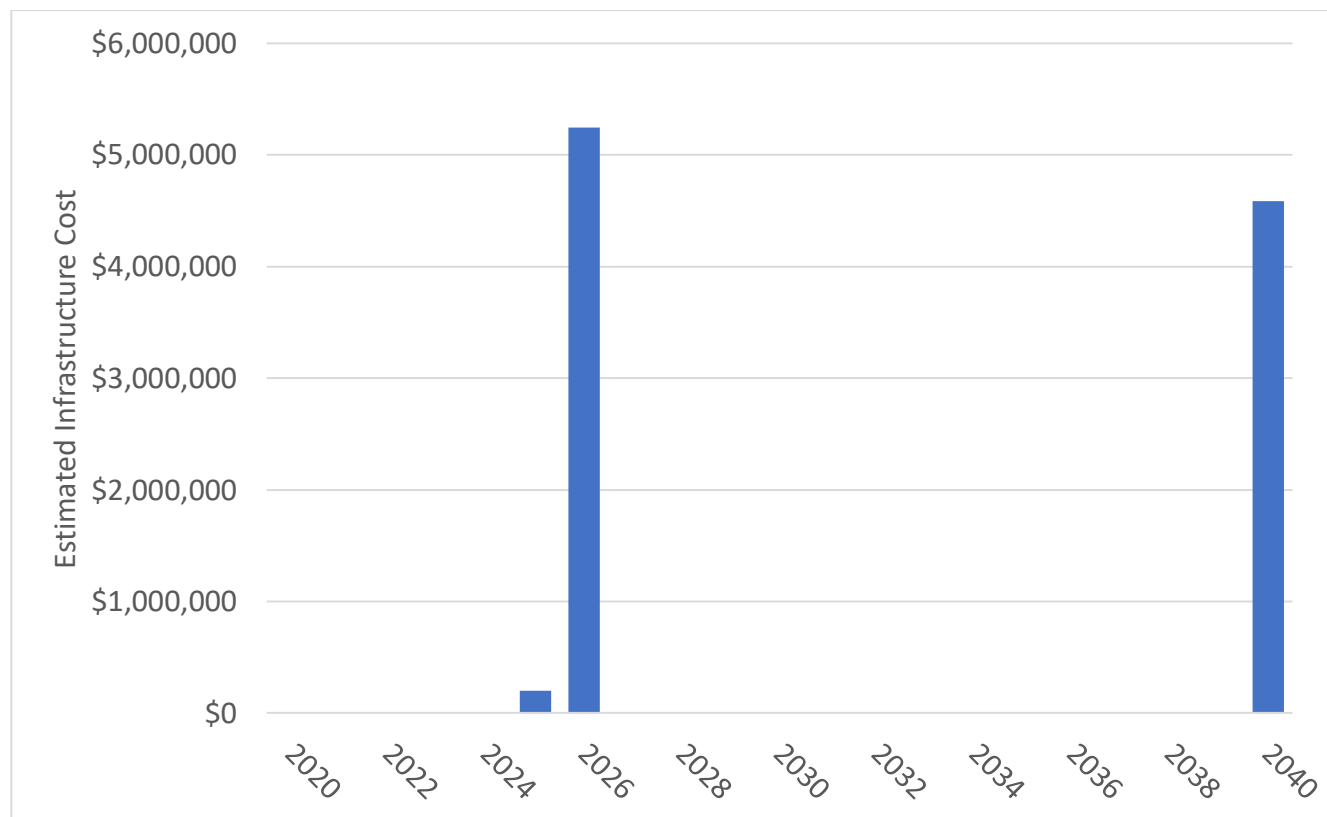
Figure 3 reflects the anticipated infrastructure required to accommodate METRO's fleet transition. The infrastructure builds are planned to support the buses identified in the Figure 2 procurement schedule. Each infrastructure project cost is associated with the project year in the Figure 3 timeline and the related procurements of the vehicles that require that phase of infrastructure development. METRO assumes \$200,000 is expended for infrastructure master planning and design in the year prior to construction. Hydrogen infrastructure costs include maintenance bay upgrades for H2 detection, ventilation systems, and the build-out of a hydrogen fueling station, including design, construction, and equipment installation costs. For planning purposes, CTE assumed two major phases of build out of the hydrogen fueling station. For cost estimation purposes, a 50 FCEB capacity was assumed for each phase. The estimated FCEB fleet size will remain below 50 buses until the planned purchase of 30 buses in 2040, requiring an

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upgrade to the station to support the increased throughput demand. This phased approach serves to optimize system efficiency and reduce operating costs.

METRO has 11 maintenance bays that are currently CNG compliant; METRO assumes each maintenance bay will cost \$60,000 to upgrade gaseous fuel detection and ventilation systems to comply with the requirements for hydrogen facilities, totaling to \$660,000 in maintenance facility upgrades. Hydrogen storage and dispensing capacity is assumed to be 50 FCEBs per project. Since METRO plans to have under 50 FCEBs until 2040, the build out of the hydrogen station is phased, with an initial build in 2026 to support the first FCEBs and an expansion planned in 2040 to support the remaining 30 FCEBs scheduled for procurement that year. The first phased build is estimated to cost \$5.25M while the second phase is estimated to be \$4.6M, including all storage, compression, and dispensing equipment. In addition, planning costs are accounted for in 2024, with an estimated \$200,000 for development of a master facilities plan.

**Figure 3: METRO’s Estimated Annual Infrastructure Costs**



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**Table 5: Facilities Information and Construction Timeline**

Division/Facility Name	Address	Main Function(s)	Type(s) of ZEB Infrastructure	Service Capacity	Needs Upgrade?
JKS Facility	1200 River St, Santa Cruz, CA 95060	Bus Storage, Fueling and Daily Service	Electric Charging Depot and Planned Hydrogen Fueling Station	Entire Fleet	Yes, planned hydrogen fueling infrastructure installation
METRO Maintenance Facility	171 Vernon , Santa Cruz, CA 95060	Bus Maintenance and Storage	Planned hydrogen detection system	Entire Fleet	Yes, planned hydrogen detection system
South County Facility	TBD	Bus Storage, Fueling and Daily Service	TBD	TBD	No.

**Regarding the information provided in Table 5, please explain the types of necessary upgrades or infrastructure modifications each facility or division needs to support your transit agency’s long-term transition to ZEB. Please also provide the specification of each infrastructure in the related facility or division before and after the upgrades or modifications.**

JKS will require a hydrogen station including storage, compression, maintenance facility upgrades and dispensers to support 64 FCEBs. The hydrogen fueling infrastructure will be installed in two projects with a nominal 50-bus capacity per project.

The METRO Maintenance Facility will require upgrades to gaseous fuel detection and ventilation systems to comply with the requirements for supporting hydrogen vehicles. These upgrades will apply to all 10 bays at the facility.

2. **Do you expect to make any modifications to your bus parking arrangements? Explain the modifications and why they are needed.**  
No.
3. **Do you expect to need additional parking spaces for completing the transition to zero-emission technologies? Explain why.**  
No, METRO does not need additional parking spaces for completing their transition.
4. **In Table 6, please identify the propulsion system of all buses that will be dispatched from the facilities identified in Table 5.**
5. **Please identify the electric utilities in your transit agency’s service area.**  
METRO provides transit service within PG&E service territories.

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**Table 6: NOx-Exempt Area and Electric Utilities’ Territories**

<b>Division/Facility Name</b>	<b>Type(s) of Bus Propulsion Systems Dispatched</b>	<b>Located in NOx-Exempt Area?</b>	<b>Name(s) of Electric Utility in Service Area</b>
JKS	Diesel, CNG, BEB, FCEB	No	PG&E

*Note: The ICT regulation defines "NOx Exempt Areas" (13 CCR § 2023(b)(39)) as the following counties and air basins: Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, Eastern Kern (the portion of Kern County within the Eastern Kern Air Pollution Control District), Glenn, Humboldt, Inyo, Lake, Lassen, Mariposa, Mendocino, Modoc, Mono, Monterey, Nevada, Northern Sonoma (as defined in title 17, California Code of Regulations, section 60100(e)), Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Northern Sutter (the portion of Sutter County that is north of the line that extends from the south east corner of Colusa County to the southwest corner of Yuba County), the portion of El Dorado County that is within the Lake Tahoe Air Basin (as defined in title 17, California Code of Regulations, section 60113), the portion of Placer County that is East of Highway 89 or within the Lake Tahoe Air Basin, Trinity, Tehama, Tuolumne, and Yub*

## Section F: Providing Service in Disadvantaged Communities

1. **Does your transit agency serve one or more disadvantaged communities, as listed in the latest version of CalEnviroScreen?**
  - a. **If yes, please describe how your transit agency is planning to deploy zero-emission buses in disadvantaged communities (13 CCR § 2023.1(d)(1)(F)).**
  - b. **Please complete Table 7 with the estimated number of zero-emission buses your transit agency is planning to deploy in disadvantaged communities and the estimated timeline.**

METRO provides service to one unique disadvantaged community (DAC). The current METRO fleet serves the DAC with nine routes, which are shown in the map provided in Appendix A.

METRO is currently deploying two BEB buses in Watsonville for a Circulator route; this route provides frequent service to desirable destinations in Watsonville between noon and 7:45pm.

The new Watsonville route is funded by a \$489,213 grant from the California Department of Transportation’s Low Carbon Transit Operations Program (LCTOP). METRO will use the grant funds to deploy two new battery-electric buses in downtown Watsonville and offer free fares to the public to encourage ridership and promote public transportation through a one-year pilot program.

Due to the difficulty in assigning specific future bus procurements to routes, and with respect to METRO’s needs to frequently arrange and adapt service, the Expected Year of First ZEB Deployment is indicative of when METRO expects to deploy and house ZEBs. Because the end date of METRO’s transition is to be determined there is not a definite date for completion of route electrification at this time.

# Attachment B

**Table 7: Service in Disadvantaged Communities**

METRO Route	Expected Year of First ZEB Deployment	Year of Complete Route Electrification	Location of Disadvantaged Community By Census Tract Number
<b>69A</b>	2026		6053010101 6087110400 6087110300
<b>69W</b>	2026		6053010101 6087110400 6087110300
<b>71</b>	2026		6053010101 6087110400 6087110300
<b>72</b>	2026		6053010101 6087110400 6087110300
<b>72W</b>	2026		6053010101 6087110400 6087110300
<b>75</b>	2026		6053010101 6087110400 6087110300
<b>75S</b>	2026		6053010101 6087110400 6087110300
<b>79</b>	2026		6053010101 6087110400 6087110300
<b>91</b>	2026		6053010101 6087110400 6087110300
<b>Watsonville Circulator</b>	2021	2021-2024	6053010101 6087110400 6087110300

*Note: The ICT regulation defines the "CalEnviroScreen" (13 CCR § 2023(b)(10)) as a mapping tool that is developed by the Office of Environmental Health Hazard Assessment (OEHHA) at the request of the California Environmental Protection Agency (CalEPA) to identify California's most pollution-burdened and vulnerable communities based on geographic, socioeconomic, public health, and environmental hazard criteria. The CalEnviroScreen is available for public use at <https://oehha.ca.gov/calenviroscreen>.*

# Attachment B

## Section G: Workforce Training

- 1. Please describe your transit agency's plan and schedule for the training of bus operators and maintenance and repair staff on zero-emission bus technologies (13 CCR § 2023.1(d)(1)(G)).**

METRO plans to implement ZEB training programs for bus operators, mechanics, utility maintenance workers, and supervisors on an annual basis, including new operator training and the State Mandated Annual Refresher Training (SMART).

Training courses include Operator Refresher Training, New Operator Training, Bus Familiarization, and Bus Refresher Training. The annual training programs reach approximately 160 operators, 21 Transit Service Delivery (TSD) Supervisors, 2 Trainers and 1 TSD Superintendents in the Transit Service Delivery department. In the Maintenance divisions, annual trainings prepare 21 Mechanics, 9 Utility Personnel, 2 Maintenance Supervisors, 1 Senior Account Manager, and the Fleet Maintenance Manager. Trainings encompass all propulsion technologies at METRO.

The in-house curriculum includes New Bus Training, which incorporates pre-trip inspections, door operations, emergency equipment operations, steering, operational concerns, DMV pre-trip, bus components, and other portions of the bus functions and operations across bus technologies. Maintenance trainings are also an important element of a bumper-to-bumper technical training curriculum for mechanics, utility workers, and supervisors. These trainings focus on preventive maintenance requirements, hazards related to high voltage, personal protective equipment, component training, and charging and fueling source training.

METRO also takes advantage of trainings from manufacturers of ZEB equipment, whether it is the bus, charge management software, or charging equipment. OEM trainings provide critical information on operations and maintenance aspects specific to the equipment model procured. Additionally, many procurement contracts include train-the-trainer courses through which small numbers of agency staff are trained and subsequently train agency colleagues. This method provides a cost-efficient opportunity to provide widespread agency training on new equipment and technologies.

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## Section H: Potential Funding Sources

- 1. Please identify all potential funding sources your transit agency expects to use to acquire zero-emission technologies (both vehicles and infrastructure) (13 CCR § 2023.1(d)(1)(H)).**

METRO is prepared to pursue funding opportunities at the federal, state, and local level, as necessary and as available.

METRO is exploring federal grants through the following funding programs: Federal Transit Administration's (FTA) Urbanized Area Formula program; discretionary grant programs such as the Bus and Bus Facilities (B&BF) program, Low or No Emission Vehicle Deployment Program (LoNo), and Better Utilizing Investments to Leverage Development (BUILD) grant; and other available federal discretionary grant programs.

METRO will also seek funding from state resources through grant opportunities including but not limited to Senate Bill 1 State of Good Repair (SGR), Transit and Intercity Rail Capital Program (TIRCP), Low Carbon Transit Operations Program (LCTOP) funding, the California Energy Commission's Clean Transportation Program as well as Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) for bus purchases when available.

## Section I: Start-up and Scale-up Challenges

- a. Please describe any major challenges your transit agency is currently facing in small scale zero-emission bus deployment. How might CARB assist you to overcome these challenges? Please share your recommendations.**

Currently, METRO is not facing any major challenges to ZEB deployment.

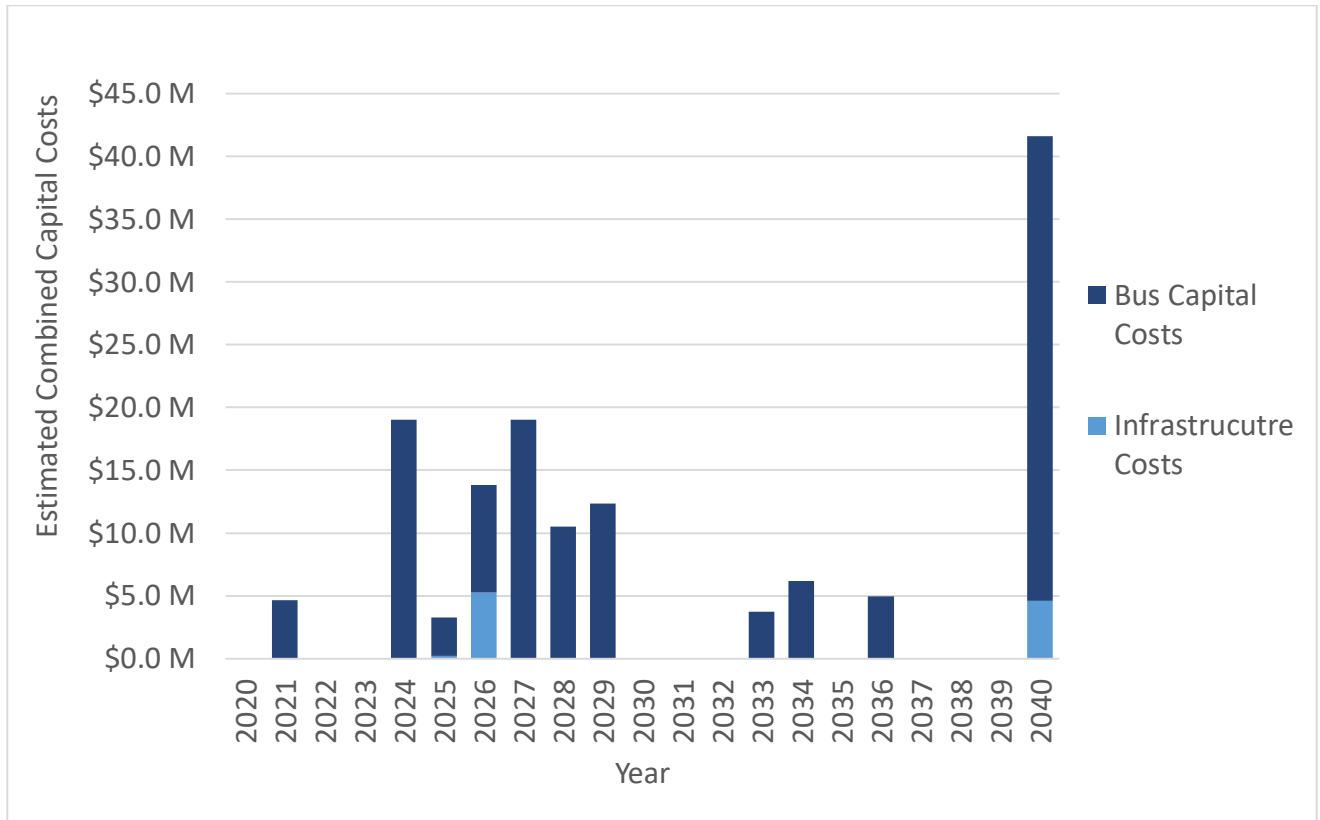
- b. Please describe any challenges your transit agency may face in scaling up zero-emission bus deployment. How might CARB assist you to overcome these challenges? Please share your recommendations.**

Challenges can arise with any new propulsion technology, its corresponding infrastructure, or in training operators and maintenance staff. While not all challenges can be foreseen, nearly all transit agencies must contend with the cost hurdles posed by these new zero-emission technologies. The current market cost of ZEBs is between \$750,000 and \$1,200,000, which is about \$250,000 to \$700,000 more costly than traditional diesel buses. METRO will seek financial support to cover the incremental cost of ZEBs from the resources discussed in Section H.

Costs of required fueling infrastructure and fueling operations for ZEB technologies pose another hurdle for transit agencies transitioning to zero-emission service. The combined estimated capital costs for bus procurement and hydrogen fueling infrastructure are shown in Figure 4.

**Figure 4:** Metro's Estimated Combined Annual Capital Costs

# Attachment B



Continued support for the capital cost of this new infrastructure is imperative, but creating cost efficiencies for fueling operations cannot be overlooked. For alternative fuels such as hydrogen, support for hydrogen supply chains and increasing economies of scale on the production side will ultimately benefit transit agencies deploying and planning for FCEBs.

Beyond cost hurdles, transit agencies must also ensure that available zero-emission technologies can meet basic service requirements of the agency’s duty cycles. The applicability of specific zero-emission technologies will vary widely among service areas and agencies. As such, it is critical that transit agencies in need of technical and planning support have access to these resources to avoid failed deployment efforts. Support in the form of technical consultants and experienced zero-emission transit planners will be critical to turning Rollout Plans into successful deployments and tangible emissions reductions.

CARB can support METRO by ensuring continued funding for the incremental cost of zero-emission buses, as well as infrastructure funding and legislative support. These support activities should emphasize proper transition and deployment planning and should not preclude hiring consultants to ensure best practices and successful deployments. Availability and the price of hydrogen, both renewable and not, continue to be an affordability challenge that can be allayed by legislation subsidizing renewable fuel production.



# Attachment B

## Appendix A: METRO Disadvantaged Community and Low-Income Service Map



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A large, dark blue rectangular graphic with a white and light blue curved line design on the left side. The text is centered within the graphic.

**Santa Cruz METRO ICT Rollout Plan**

March 2022



## Overview

- Review ICT Rollout Plan
  - Technologies Deployed & Annual Purchases
  - Transition Through 2040
  - Facilities
- Submitting Rollout Plan



## ICT Rollout Plan

- ICT requires each transit agency to submit a complete Zero-Emission Bus (ZEB) Rollout Plan (Rollout Plan), approved by its governing body, showing how it plans to achieve a full transition to zero-emission buses.
- Rollout Plan is a living document and is meant to guide the implementation of ZEB fleets and help transit agencies work through many of the potential challenges and explore solutions.
- METRO’s Rollout plan designed to follow ICT ZEB Transition Timeline and METRO’s fleet replacement schedule.

CARB ICT ZEB Transition Timeline for Small Agencies

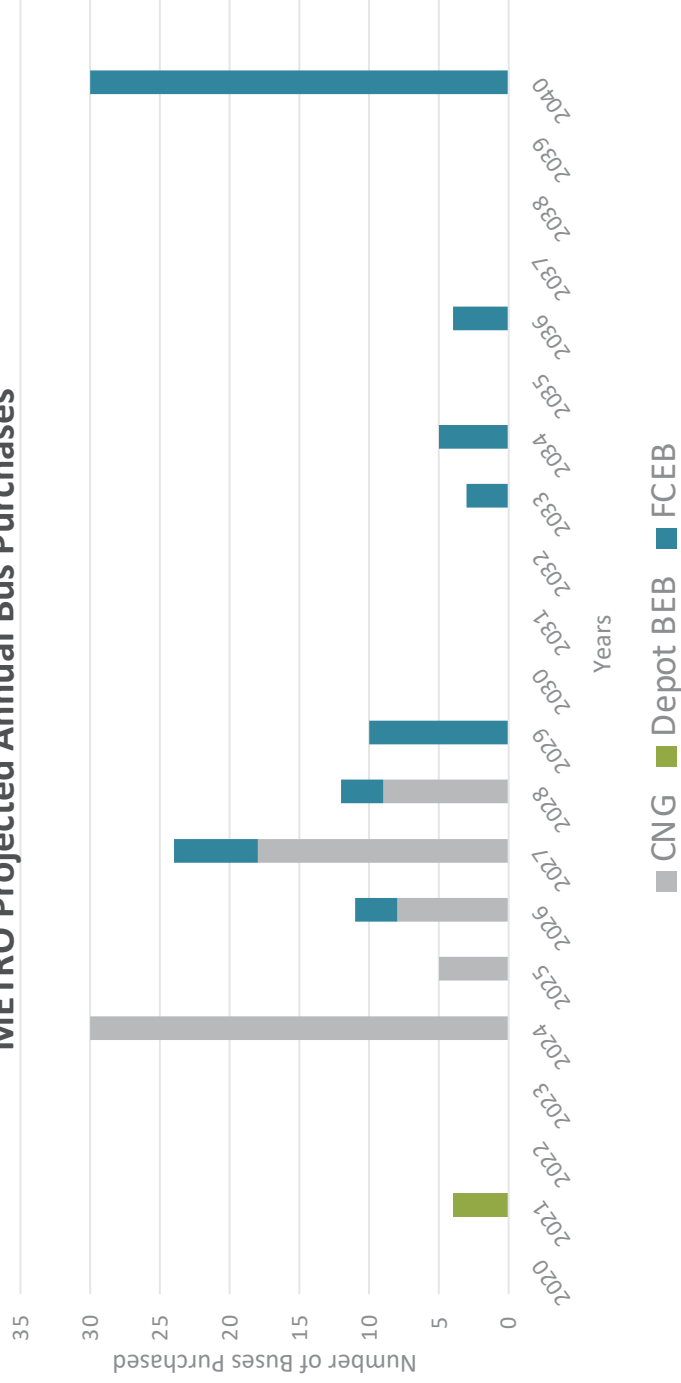
Starting January 1	ZEB Purchase Requirement
2026	25%
2027	25%
2028	25%
2029	100%



## ICT Rollout Plan Annual Purchases

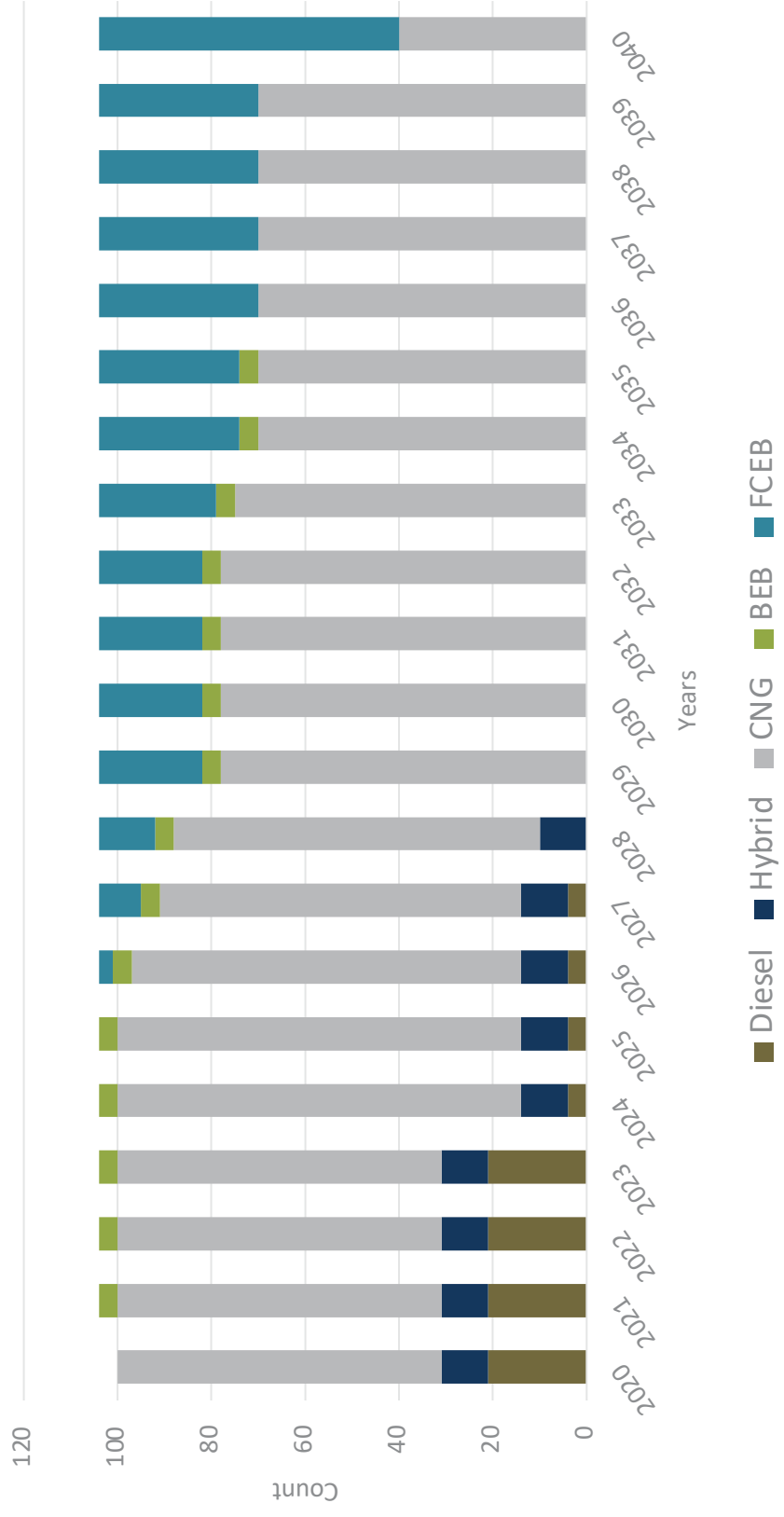
- 4 battery electric buses (BEBs) deployed in 2021 with supporting charging infrastructure.
- Beginning in 2026, METRO will procure fuel cell electric buses (FCEBs).
- METRO will continue to procure FCEBs in subsequent years, eventually achieving a **62% ZEB fleet by 2040.**

METRO Projected Annual Bus Purchases





# ICT Rollout Plan Fleet Composition Through 2040





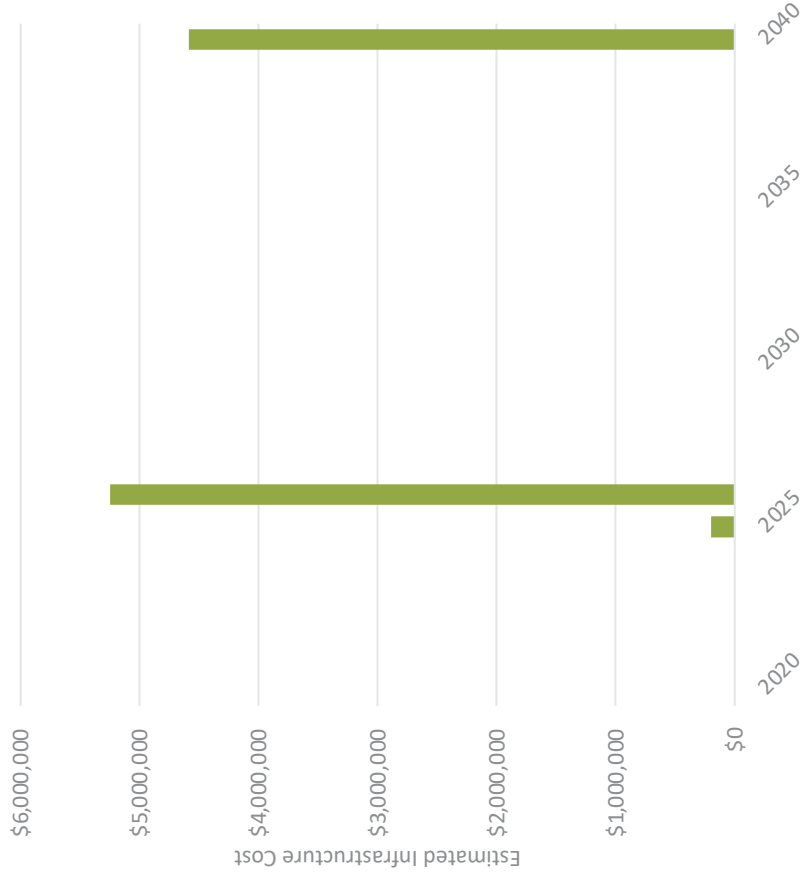
## ICT Rollout Plan Facilities Uncertainty

- METRO's current facility is not adequate in size for hydrogen fueling infrastructure, or a full scale BEB charging operation.
- METRO is proactively exploring several options to expand its facilities:
  - Repurposing existing land across the street to current facility (JKS)
  - Purchasing land in south county to build a new satellite facility
- The ICT Rollout Plan provides general estimates on the cost and timing of implementing hydrogen fueling, however, these plans will need to be refined as METRO moves towards implementation.





# METRO's Estimated Annual Infrastructure Costs



Assumed two major phases of build out of the hydrogen fueling station.

- 50 FCEB capacity was assumed for each phase
  - Phase 1: 2026
  - Phase 2: 2040



## ICT Rollout Plan Next Steps

- Board approval of plan
- Submission to CARB
  - Deadline: June 30, 2023



## Transition Plan Next Steps

- Several outstanding questions remain on the type(s) of technology that will be best suited and most cost effective for METRO
- CTE to conduct evaluation of activities required to refine transition plan.

**Deliverable:** ZEB Transition Action Plan Memo with brief explanation of each activity



# Potential Future ZEB Transition Activities

**ZEB Transition  
Action Plan**

- a. South County Operations Plan
- b. BEB Resilience Cost Assessment
- c. In-service BEB Feasibility Assessment with Proterra 660s
- d. FCEB Pilot
- e. River St. Hydrogen Fueling Master Plan



Questions?

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**DATE:** March 11, 2022  
**TO:** Capital Projects Standing Committee  
**FROM:** Freddy Rocha, Facilities Maintenance Manager  
**SUBJECT:** **REVIEW AND RECOMMEND APPROVAL TO THE FULL BOARD AN INCREASE IN THE CONTRACT AUTHORITY OF AN ADDITIONAL \$400,000 FOR MARK THOMAS & COMPANY FOR GENERAL ON-CALL CIVIL ENGINEERING AND SURVEYING SERVICES**

**I. RECOMMENDED ACTION**

**That the Capital Projects Standing Committee review and recommend approval of an increase in the contract authority of an additional \$400,000 for Mark Thomas & Company for General On-Call Civil Engineering and Surveying Services within the contract's initial three (3)-year term.**

**II. SUMMARY**

- The Santa Cruz Metropolitan Transit District (METRO) has a need for General On-Call Civil Engineering and Surveying Services.
- A formal procurement was conducted, and Mark Thomas & Company was selected as METRO's On-Call Civil Engineer in September 2020.
- Projects continue to move forward with Mark Thomas' assistance, and an increase in the not-to-exceed (NTE) total for the initial three (3)-year term is required at this time.

**III. DISCUSSION/BACKGROUND**

On-Call Civil Engineering firm Mark Thomas & Company has been utilized across multiple capital projects over the last seventeen months, resulting in expenditures reaching the original contract NTE of \$300,000. Projects utilizing these services include: New ParaCruz Facility, Rehabilitation of Pacific Station, Automating Gates at JKS, Non-Revenue EV Charging Stations, ZEB EV Charging Stations, and Project Management. These projects, as well as new upcoming projects, will continue to require support from Mark Thomas over the next several years.

Mark Thomas also contracts with sub-contractors to bring in expertise to assist on our projects, which has accelerated the spend on the NTE of \$300,000.

Spend Authorized to Date:

• ParaCruz Facility	\$119,206
• Pacific Station	\$ 7,430
• Automating Gates at JKS	\$ 95,950
• Project Management	<u>\$ 20,187</u>
	\$242,773

Proposed Spend for Upcoming Task Order Amendment:

• Automating Gates at JKS	\$65,672
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Proposed Spend for Upcoming New Task Order:

• Additional EV Bus Charging Stations	\$34,000
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Combined Spend Authorized to Date and Proposed Spend: \$342,445

Mark Thomas is well known in the transit industry for providing quality civil engineering services. They are very responsive, and have been a valuable partner in moving METRO's capital projects forward and meeting tight deadlines.

Staff is recommending that the Capital Projects Standing Committee recommend to the full Board that the contract authority for Mark Thomas & Company for General On-Call Civil Engineering and Surveying be increased by an additional \$400,000 for the initial 3-year term, which expires October 19, 2023.

The additional \$400,000 will support key projects such as the New ParaCruz Facility; the Redevelopment of Pacific Station; working towards the Zero Emissions goal by installing EV Chargers for non-revenue and revenue vehicles and supporting expansion of infrastructure; Renovations/Refurbishments to METRO Buildings and Facilities.

Mark Thomas & Company will provide all services meeting all METRO's specifications and requirements of the contract. Freddy Rocha, Facilities Maintenance Manager, will serve as the Contract Administrator and will ensure contract compliance.

#### **IV. STRATEGIC PLAN PRIORITIES ALIGNMENT**

This contract aligns with the following Strategic Priorities:

- Safety First Culture
- Service Quality and Delivery
- State of Good Repair
- Strategic Alliances and Community Outreach



## **V. FINANCIAL CONSIDERATIONS/IMPACT**

The Board previously granted authority to execute amendments increasing the NTE by an additional \$400,000 for the four one-year options to extend the contract term, up to a total anticipated contract value of \$700,000. Staff is now requesting authority to add an additional \$400,000 in contract authority. With the additional \$400,000 in contract authority, the total anticipated contract value would then be \$1,100,000.

Funds to support this contract will be included in the Operating or Capital budgets of multiple departments. Funding sources could include various state and/or federal grant funds, including FTA 5339(a). Since this is a multi-year task order-based contract, the respective department managers will be accountable for budgeting costs in future years, including any options exercised.

## **VI. ALTERNATIVES CONSIDERED**

- Instead of using our On-Call Civil Engineer for future capital projects, staff could initiate new formal procurements to seek new Civil Engineering firms, resulting in delays to projects and additional strain on staffing resources.
- METRO does not have in-house staff trained or certified to perform engineering services.


## **VII. ATTACHMENTS**

None

Prepared by: Sandi Woods, Project Manager  
Freddy Rocha, Facilities Maintenance Manager  
Joan Jeffries, Purchasing Manager  
Wondimu Mengistu, Grants/Legislative Analyst

**VIII. APPROVALS**

Freddy Rocha, Facilities  
Maintenance Manager



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Approved as to fiscal impact:  
Chuck Farmer, CFO



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Dawn Crummié,  
Interim CEO/General Manager



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