State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

MEMORANDUM

To: CHAIR AND COMMISSIONERS
CALIFORNIA TRANSPORTATION COMMISSION

CTC Meeting: June 24-25, 2020

From: STEVEN KECK, Chief Financial Officer

Reference Number: 2.1s.(1), Action Item

Prepared By: Kyle Gradinger, Chief
Division of Rail & Mass Transportation

Subject: **LOCAL PARTNERSHIP PROGRAM (COMPETITIVE) – SCOPE CHANGE AMENDMENT FOR THE ALAMEDA-CONTRA COSTA TRANSIT DISTRICT (AC TRANSIT) PURCHASE HYBRID BUSES PROJECT RESOLUTION LPP-1920-06**

ISSUE:

Should the California Transportation Commission (Commission) approve the Alameda-Contra Costa Transit District's (AC Transit) request to amend the Purchase Hybrid Buses project (PPNO 2320B) scope, programmed in the 2018 Local Partnership Program (Competitive)?

RECOMMENDATION:

The California Department of Transportation (Department) recommends the Commission approve the request to amend the Purchase Hybrid Buses project scope, programmed in the 2018 Local Partnership Program (Competitive).

BACKGROUND:

On May 16, 2018, the Purchase Hybrid Buses project was adopted in the 2018 Local Partnership Program (Competitive). The project was programmed for $15,000,000 of LPP Competitive funds for the procurement of 59 hybrid diesel-electric buses. The project was selected from 90 project applications seeking in excess of over $900 million from the Local Partnership Program (Competitive).

The original scope was for the procurement of 59 new 40-foot hybrid diesel-electric buses equipped with real-time bus dispatch and tracking systems, electronic and cash fare collection, and bike racks to replace existing diesel buses that are due for retirement from fleet.

On March 16, 2020, AC Transit submitted a scope change request for the Purchase Hybrid Buses project (PPNO 2320B).

The proposed scope change will procure 40 zero-emission replacement buses (20 hydrogen-fuel cell electric buses, 20 battery electric buses). All procured buses will be equipped with California Integrated Travel Project-compliant real-time bus dispatch, tracking and fare collection systems, traffic signal systems and bike racks.

Originally the project was adopted into the 2018 LPP Competitive Program to purchase 59 hybrid diesel-electric buses. In May 2018, there was an opportunity to leverage SB1 funds to enhance the agency's Transit and Intercity Rail Capital Program (TIRCP)-funded zero-emissions bus purchase project. LPP and TIRCP scopes were merged into a single project to acquire 40 zero-emission buses (20 hydrogen-fuel cell electric buses, 20 battery-electric buses). This presented a great opportunity for both meeting the state's objectives for innovative clean transit and for the local agency to become a leader in zero emission bus technology as they convert their bus fleet into a zero-emission fleet.

Although there is a reduction in the number of buses to be purchased due to combining both projects and a higher cost for zero-emission buses, the benefits of the project will increase as compared to the original project scope. Overall throughput decreases slightly with the reduced quantity of buses purchased, but ridership levels per bus will increase with the new scope. Service to disadvantaged communities will remain unchanged from the original scope, and greenhouse gas emissions will be reduced significantly with the purchase of zero-emission buses as compared to the original scope.

The Department and Commission staff have discussed the proposed scope change and worked with AC Transit to resolve any questions and concerns regarding the request.
The Local Partnership Program (Competitive) provides discretionary funding for projects that excel through an evaluation process. And although the initial project was evaluated and scored based on the scope of work and project benefits, the proposed project scope change would have scored similarly to the initial project scope, because there are no negative changes to the benefits.

The Department has determined that although the type and number of buses purchased will change, there are increased project benefits. Therefore, the Department recommends Commission approval of the scope change.

Attachment:

- Attachment A: Department Analysis and Recommendation

Project Scope Change Request
Caltrans (Department) Analysis and Recommendations

Submittal Date: March 16, 2020

PROJECT NAME: Purchase Hybrid Buses
IMPLEMENTING AGENCY: Alameda Contra Costa Transit District (AC Transit)
PPNO: 2320B
DATE OF AGENCY/CT COORDINATION MEETING(S): Eight meetings between 08/30/19 – 04/28/20

APPROVED PROJECT SCOPE: This project is for the purchase of up to 59 new 40-foot hybrid diesel-electric buses equipped with real-time bus dispatch and tracking systems, electronic and cash fare collection, and bike racks to replace existing diesel buses that are due for retirement from fleet.

PROPOSED REVISED SCOPE: This project will procure 40 zero-emission replacement buses (20 hydrogen-fuel cell electric buses, 20 battery-electric buses). All buses purchased will be equipped with California Integrated Travel Project (Cal-ITP) compliant real-time bus dispatch, tracking and fare collection systems, traffic signal systems and bike racks.

Purpose

This document serves as supplemental information for a REQUEST FOR PROJECT SCOPE CHANGE completed by Alameda Contra Costa Transit District and submitted to the Department on 03/16/19.

The Department's Recommendation(s)

As a result of the Department's review of the Alameda Contra Costa Transit District Scope Change Request documentation and subsequent discussions with Alameda Contra Costa Transit District staff, the Department recommends the following action:

APPROVE AS A MAJOR SCOPE CHANGE

Scope to Be Changed

AC Transit is planning to purchase 40 zero-emission buses instead of 59 hybrid diesel-electric buses. The new project will procure 40 replacement zero-emission buses (20 hydrogen-fuel cell electric buses, 20 battery-electric buses).

Reason for the Scope Change

Originally the project was adopted into the 2018 Local Partnership Program (LPP) to purchase 59 hybrid diesel-electric buses. In May 2018, there was an opportunity to leverage LPP funds to enhance the agency's Transit and Intercity Rail Capital Program (TIRCP)-funded zero-emissions bus purchase project. LPP and TIRCP scopes were merged into a single project to acquire 40 zero-emission buses. This presented a great opportunity for both meeting the state's objectives for innovative clean transit and for the local agency to become a leader in zero emission bus technology as they convert their bus fleet into a zero-emission fleet.

Summary of the Department's Analysis
The Department supports this request for the following reasons:

1. Use of 40 zero-emission buses (ZEB) significantly reduces greenhouse gas emissions (GHG) as compared 59 hybrid diesel-electric buses in the original project scope.

2. The overall project cost, scope, and schedule have been minimally impacted and LPP funding will still be used for bus procurement as stated in the application.

Proposed scope change's affect to benefits:
Net Increase/No change/Net Decrease
The proposed scope change is expected to have the following impacts as compared to the original scope:

NET INCREASE TO BENEFITS

1. While the number of buses decreases in quantity from 59 to 40 due to zero-emission buses being more expensive, service to disadvantaged communities remains unchanged from information provided in the original application. Purchasing 40 zero-emission buses as opposed to 59 hybrid diesel-electric buses will help advance meeting the state's objectives for clean transit.

2. While overall throughput decreases slightly with the reduced quantity of buses purchased, from 59 to 40, ridership levels per bus increase with the new scope. Average daily passengers increase from 300 (59 hybrid diesel-electric) to 337 (40 zero-emission) with the new scope:

Summary of Emissions					
	Emissions Produced				
Per bus	Diesel	Diesel Hybrid	BEV	Hydrogen fuel cell	Avg of BEV + Hydroge
Average Daily Passengers	300	300	337.575	337.575	337.575
PM 2.5 (metric tons)	0.00275	0.0021	0.00012	0.00012	0.00012
PM10 (metric tons)	0.00275	0.0021	0	0	0
CO2 (metric tons)	81.92	61.4400	0	0	0
VOC	0	0.0000	0	0	0
SOx	0	0.0000	0	0	0
CO (metric tons)	0.6625	0.4969	0	0	0
NOx (metric tons)	0.3375	0.2531	0	0	0

3. As noted in the table below, there is a substantial increase in GHG reduction benefits.

Greenhouse Gas Type	59 Diesel Hybrid Buses	40 Zero Emission Buses	Percentage reduction
PM 2.5 (metric tons)	0.1217	0.0024	97%
PM10 (metric tons)	0.1217	0	100%
CO2 (metric tons)	3624.9600	0	100%
CO (metric tons)	29.3156	0	100%
NOx (metric tons)	14.9344	0	100%
CO2e per mile	125,198	43,120	50%

Additional Comments
The Department concurs with the information provided for REQUEST FOR PROJECT SCOPE CHANGE. The agency has coordinated with the Department to provide the most accurate information possible.

The Department's Coordination with Requesting Agency
The Department, CTC staff, and the local agency had at least eight meetings between 08/30/19 – 04/29/20 to discuss scope change proposals. The Department's project management staff worked directly with and in detail with the local agency, providing consultation and guidance.

Impact to Project Cost
The original project cost, as stated in the application, is $47,200,000. The revised project cost is $46,006,000.

Impact to Project Schedule
The local agency has received an allocation extension until June 30, 2020. This impacted the schedule in the original application. The agency is ready to allocate in June 2020 and award a contract to procure zero-emission buses by December 31, 2020.

ATTACHMENTS
1. Revised PPR
2. Revised Project Report
3. Letter from Agency

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised Mar, 1 2018 v7.08) *General Instructions*

Amendment (Existing Project) Yes					**Date:**	03/10/20
District	**EA**	**Project ID**	**PPNO**	**MPO ID**	**Alt Proj. ID / prg.**	
04		0419000094	2320B			

County	**Route/Corridor**	**PM Bk**	**PM Ahd**	**Project Sponsor/Lead Agency**	
ALA				Alameda Contra Costa Transit District	
				MPO	**Element**
				MTC	MT

Project Manager/Contact	**Phone**	**E-mail Address**
Evelyn Ng	(510) 891-5405	eng@actransit.org

Project Title

Purchase Zero Emission Buses - Phase 2

Location (Project Limits), Description (Scope of Work)

In Alameda and Contra Costa counties across 13 densely populated cities and adjacent unincorporated areas. This project will procure 40 zero-emission replacement buses (20 fuel cell and 20 battery electric). All procured buses will be equipped with real-time bus dispatch and tracking systems, electronic and cash fare collection, traffic signal priority systems and bike racks.

Component	**Implementing Agency**
PA&ED	Alameda Contra Costa Transit District
PS&E	Alameda Contra Costa Transit District
Right of Way	Alameda Contra Costa Transit District
Construction	Alameda Contra Costa Transit District

Legislative Districts

Assembly:	15,17,18,20,25	**Senate:**	9,10,11	**Congressional:**	11,12,13,15

Project Benefits

The benefits of this project include 1. reducing greenhouse gases as all buses purchased will be zero emission buses 2. meet increasing demand for transit service 3. increase connections to other modes of travel including rail and ferry and 4. serve Disadvantaged Communities better by providing greater air and environmental quality with new zero emission buses.

Purpose and Need

Forty buses will replace diesel buses that are due for retirement. With buses retiring, there is a need to purchase new buses to replace them in order to maintain fleet size and service levels.

Category	**Outputs/Outcomes**	**Unit**	**Total**
Intercity Rail/Mass Trans	Rail car(s) / transit vehicle(s)	Each	40

ADA Improvements No	Bike/Ped Improvements No	Reversible Lane analysis No
Inc. Sustainable Communities Strategy Goals Yes	Reduces Greenhouse Gas Emissions Yes	

Project Milestone			**Existing**	**Proposed**
Project Study Report Approved				
Begin Environmental (PA&ED) Phase				06/01/19
Circulate Draft Environmental Document	**Document Type**	ND		12/01/19
Draft Project Report				
End Environmental Phase (PA&ED Milestone)				02/28/20
Begin Design (PS&E) Phase			10/01/2018	03/31/20
End Design Phase (Ready to List for Advertisement Milestone)			12/01/2018	07/01/20
Begin Right of Way Phase				
End Right of Way Phase (Right of Way Certification Milestone)				
Begin Construction Phase (Contract Award Milestone)			12/01/2018	12/31/20
End Construction Phase (Construction Contract Acceptance Milestone)			06/01/2020	12/31/22
Begin Closeout Phase			07/01/2020	03/01/23
End Closeout Phase (Closeout Report)				03/01/24

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Additional Information

The project milestone schedule and funding info provided are for Phase 1 and Phase 2 of the project. The environmental benefits of replacing 40 diesel buses with 40 zero-emission buses are significant, estimated at an 97% reduction in particulate matter PM2.5, and 100% reduction in other greenhouse gases. In addition, 40 zero-emission buses also save much more in terms of greenhouse gas production, measured by grams of CO2e per mile. The 40 zero-emission buses would produce only 33% of what 59 diesel-hybrid buses would emit, based on 1,078 grams of CO2e per mile for a zero-emission bus, compared to 2,212 grams for a diesel-hybrid bus. Significant amounts of greenhouse gases will be reduced by purchasing 40 zero-emission buses instead of 59 diesel hybrids. The environmental benefits of purchasing 40 zero-emission buses instead of 59 diesel hybrid buses are compared in this table:

Greenhouse Gas Type	59 Diesel Hybrid Buses	40 Zero Emission Buses	Percentage reduction
PM 2.5 (metric tons)	0.1217	0.0024	97%
PM10 (metric tons)	0.1217	0	100%
CO2 (metric tons)	3624.9600	0	100%
CO (metric tons)	29.3156	0	100%
NOx (metric tons)	14.9344	0	100%
CO2e per mile	125,198	43,120	50%

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised Mar, 1 2018 v7.08)

Date: 03/10/20

District	County	Route	EA	Project ID	PPNO	Alt. ID
04	ALA, ,	, ,		0419000094	2320B	
Project Title:	Purchase Zero Emission Buses - Phase 2					

Existing Total Project Cost ($1,000s)									
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	**Implementing Agency**
E&P (PA&ED)		253						253	Alameda Contra Costa Transit
PS&E									Alameda Contra Costa Transit
R/W SUP (CT)									Alameda Contra Costa Transit
CON SUP (CT)									Alameda Contra Costa Transit
R/W									Alameda Contra Costa Transit
CON		61,947						61,947	Alameda Contra Costa Transit
TOTAL		62,200						62,200	
Proposed Total Project Cost ($1,000s)									**Notes**
E&P (PA&ED)		1,006						1,006	
PS&E				5,000				5,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		40,000						40,000	
TOTAL		41,006		5,000				46,006	

Fund No. 1:	**State SB1 LPP - Local Partnership Program - Formula distribution (LPP-F)**								**Program Code**
Existing Funding ($1,000s)									30.10.724.100
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	**Funding Agency**
E&P (PA&ED)		253						253	CTC
PS&E									$253 PAED voted 10/17/18
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL		253						253	
Proposed Funding ($1,000s)									**Notes**
E&P (PA&ED)		253						253	These funds were used for Phase 1.
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL		253						253	

Fund No. 2:	**Local Funds - Local Transportation Funds (LTF)**								**Program Code**
Existing Funding ($1,000s)									20.10.400.100
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	**Funding Agency**
E&P (PA&ED)									AC Transit
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		46,947						46,947	
TOTAL		46,947						46,947	
Proposed Funding ($1,000s)									**Notes**
E&P (PA&ED)		253						253	Match to SB1 LPP Formula funds. These funds were used for Phase 1.
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL		253						253	

Fund No. 3:	State SB1 LPP - Local Partnership Program - Competitive program (LPP-C)								Program Code
Existing Funding ($1,000s)									30.10.724.100
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)									CTC
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		15,000						15,000	
TOTAL		15,000						15,000	
Proposed Funding ($1,000s)									Notes
E&P (PA&ED)									These funds will be used in Phase 2 for bus purchases. One year allocation extension granted by CTC in June 2019.
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		15,000						15,000	
TOTAL		15,000						15,000	

Fund No. 4:	TIRCP								Program Code
Existing Funding ($1,000s)									
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)									CalSTA
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding ($1,000s)									Notes
E&P (PA&ED)		500						500	$500,000 was used for Phase 1. $5 million will be used for Phase 2.
PS&E				5,000				5,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL		500		5,000				5,500	

Fund No. 5:	Transit Capital Priorities (Federal Formula)								Program Code
Existing Funding ($1,000s)									
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)									FTA, MTC
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding ($1,000s)									Notes
E&P (PA&ED)									These funds will be used for Phase 2 bus purchases and serve as match for SB1 LPP funds.
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		25,000						25,000	
TOTAL		25,000						25,000	

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised Mar, 1 2018 v7.08)

Complete this page for amendments only

Date: 03/10/20

District	County	Route	EA	Project ID	PPNO	Alt. ID
04	ALA			0419000094	2320B	

SECTION 1 - All Projects

Project Background

Originally SB1 Competitive funds were for 59 diesel-hybrid buses. AC Transit was approached by TIRCP to combine that grant with SB1 Competitive to purchase zero-emission buses.

Programming Change Requested

Purchase 40 zero-emission buses instead of 59 diesel hybrid buses.

Reason for Proposed Change

AC Transit does not wish to purchase any more hybrid buses going forward as the fleet will be transitioning into a zero emission fleet. Combining the SB1 grant with the TIRCP grant will enable us to purchase a sizeable zero emission fleet and infrastructure to get a headstart on this transition.

If proposed change will delay one or more components, clearly explain 1) reason the delay, 2) cost increase related to the delay, and 3) how cost increase will be funded

1. A project to acquire 40 zero-emission buses requires very detailed facilities and service planning and consider several operational options including which zero emission technology would work best for our service needs. 2. There are no specific cost increases due to the delay, cost increases are related to change in scope items. 3. Cost increases will be funded by FTA formula funds and other regional grant funds.

Other Significant Information

SECTION 2 - For SB1 Projects Only

Project Amendment Request (Please follow the individual SB1 program guidelines for specific criteria)

SECTION 3 - All Projects

Approvals

I hereby certify that the above information is complete and accurate and all approvals have been obtained for the processing of this amendment request.*

Name (Print or Type)	Signature	Title	Date
Eve Ng	Eve Ng	Capital Planning and Grants Manager	3/16/2020

Attachments

1) Concurrence from Implementing Agency and/or Regional Transportation Planning Agency

2) Project Location Map

Project Report

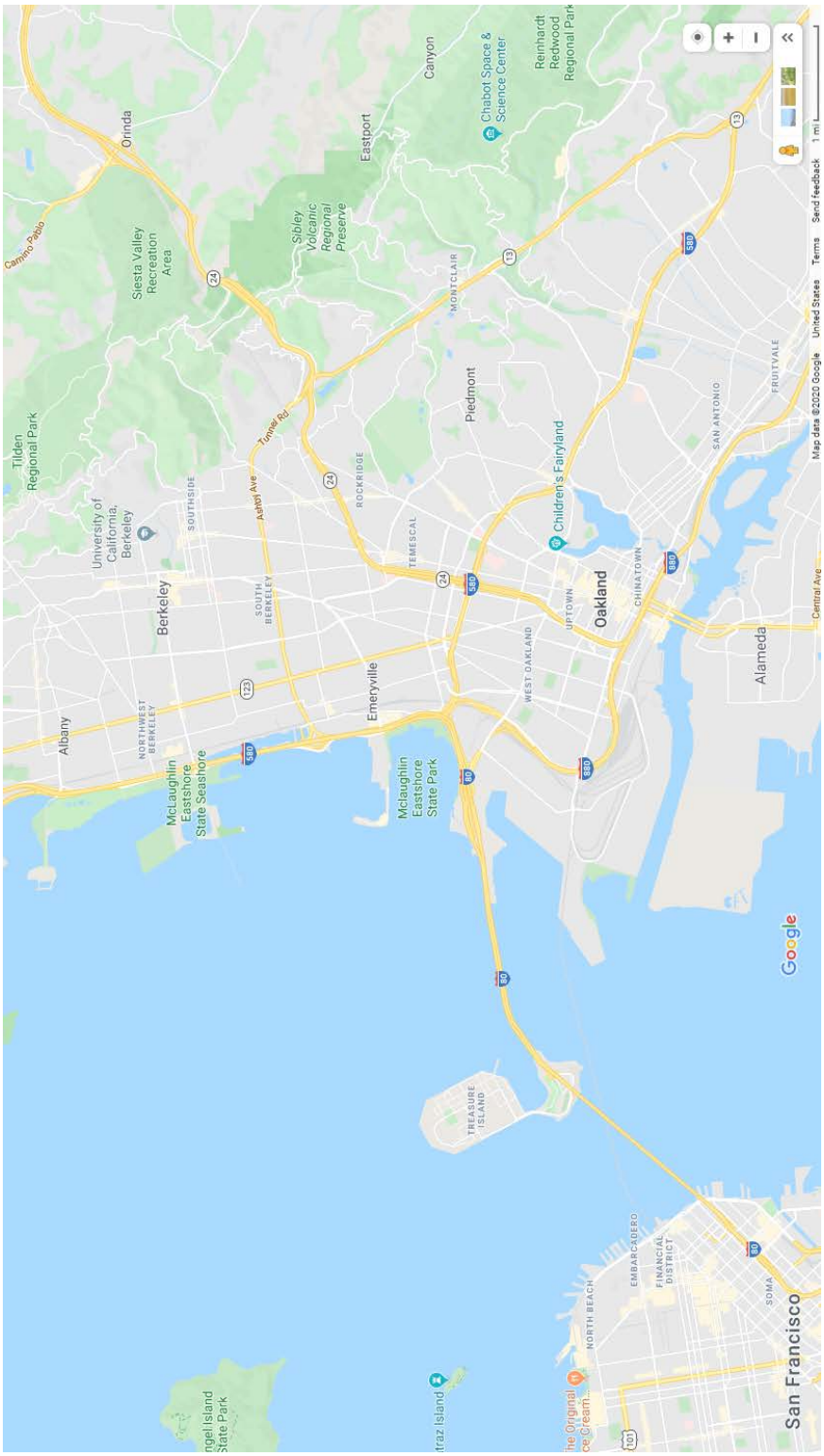
Alameda-Contra Costa Transit District

Purchase Zero-emission Buses Phase 2

PROJECT APPROVED by

Alameda-Contra Costa Transit District Board of Directors on February 26, 2020

Vicinity Map



1. INTRODUCTION

Original Project Title: Purchase 59 Hybrid Buses

New Project Title: Purchase Zero-Emission Buses Phase 2

2. BACKGROUND

Originally the project was adopted into the 2018 LPP Competitive Program to purchase 59 hybrid buses. However, in May 2018 we had an opportunity to leverage the SB1 funds to enhance our TIRCP-funded zero-emissions bus purchase project. In essence, we are combining our SB1 and TIRCP grant awards into a single project to acquire 40 zero-emission buses. This presented a great opportunity for both meeting the state's objectives for innovative clean transit and for our agency to become a leader in zero-emission bus technology as we convert our bus fleet into a zero-emission fleet. Overall the greenhouse gas emissions reduction from 40 zero-emission buses will be greater than for 59 diesel hybrid buses.

Original Project Scope:

This project is for the purchase of up to 59 new 40-foot hybrid diesel-electric buses equipped with realtime bus dispatch and tracking systems, electronic and cash fare collection, and bike racks to replace existing diesel buses that are due for retirement from fleet.

New Project Scope:

The Alameda-Contra Costa Transit District (AC Transit) is planning to purchase 40 zero-emission buses. This project will procure 40 replacement zero-emission buses. The project will be carried out in these phases:

Phase 1. Planning for facilities and service planning.

This phase included preliminary engineering and planning to determine the options for bus technology types and readiness of AC Transit's bus yards to install charging infrastructure. It also produced preliminary costs and schedule for the project. This phase was completed in March 2020.

Phase 2. Purchase of 40 replacement buses (20 fuel cell and 20 battery electric).

All buses purchased will be equipped with real-time bus dispatch and tracking systems, electronic and cash fare collection, traffic signal priority systems and bike racks. The SB1 Competitive funds will be used for Phase 2.

3. PURPOSE AND NEED

Original Project:

The purpose of purchasing up to 59 new hybrid buses is to replace buses that are due for retirement at the end of their 12-year useful life. With buses retiring, there is a need to purchase new buses to replace them in order to maintain fleet size and service levels. Changing the bus propulsion method from diesel to diesel-electric hybrid will reduce emissions and improve fuel economy.

New Project:

The purpose of the project is to purchase 40 replacement zero-emission buses.

AC Transit has several diesel buses that have reached end of useful life and need to be replaced. With buses retiring, there is a need to purchase new buses to replace them in order to maintain fleet size and service levels.

The 40 Zero-Emission Bus Project will be the largest ZEB deployment for AC Transit that will involve both electric and hydrogen technologies. It will provide much needed and valuable information to further assess the viability of ZEBs on a larger scale, and will allow the District to continue to deploy zero-emission buses in preparation for compliance with the California Air Resources Board (CARB) Innovative Clean Transit (ICT) Regulation. CARB has a target of having all transit buses in the state be zero-emission by 2040, which would mean all bus purchases by 2028 need to be zero-emission.

4. FUNDING, PROGRAMMING AND ESTIMATE

Original Project:

The cost estimate for a 40ft hybrid electric bus is approximately $800,000 per bus. Additional funds required for the project will come from a mix Federal Transit Administration 5307 and 5339 funds and regional bridge toll funds (AB664 and BATA) as stated in the Metropolitan Transportation Commission's FY2017-18 to FY2019-20 Transit Capital Priorities Program. AC Transit will apply for other sources of matching funds or provide District funds to cover any additional costs. Total project cost for 59 buses is approximately $47.2 million.

New Project:

Forty zero-emission buses will replace diesel buses that are due for retirement. The main sources of funding are from TIRCP and SB1 grant funds. The project will also

use FTA formula funds (a mix Federal Transit Administration 5307 and 5339 funds) and regional bridge toll funds (AB664 and BATA).

The funding in the table below indicates the funding sources for Phase 2 of the project, which is to purchase 40 zero-emission buses.

Project Items *(in $millions)*	**TYPE OF FUNDS**			**Total**
	TIRCP	**SB1**	**FTA / MTC**	
Bus purchase	$5.0	$15.0	$25.0	$45.0
Total	**$5.0**	**$15.0**	**$25.0**	**$45.0**

Programming

Phase 1: PA & ED $1,006,000
Phase 2: Bus purchase $45,000,000

Fund Source	Fiscal Year Estimate								
20.XX.###.###	Prior	18/19	19/20	20/21	21/22	22/23			Total
Component	In thousands of dollars ($1,000)								
PA&ED	1,006								1,006
Bus purchase		15,000		30,000					45,000
Total	1,006	15,000		30,000					46,006

6. PROEJCT SCHEDULE

Original Project:

Confirmation of vehicle specifications and purchasing process – October 2018
Purchase contract issued – December 2018
Delivery of vehicles – June 2020
Vehicles put into service – July 2020

New Project:

Phase 1 of the project will be completed by March 2020.

Phase 2 is beginning in June 2020 with requesting permission from AC Transit Board of Directors to purchase 40 zero-emission vehicles, followed by negotiation and award of contracts to bus manufacturers between July – December 2020.

The table below indicates anticipated dates for start and end of each milestone.

Phase	Project Milestones	Milestone Date Start	Milestone Date End
1	PA & ED – Preliminary engineering and environmental clearance	02/28/2020	02/28/2020
2	Contract award of 40 replacement zero-emission buses (through state contracts)	07/01/2020	12/31/2020
	Delivery of buses	06/01/2022	12/31/2022
	Testing and acceptance	01/01/2023	06/01/2023
	Close out	06/01/2023	03/01/2024

7. RISKS

Risks for this project are minimal. Bus prices are predetermined as they are currently published by California and Virginia state contracts.

8. PROJECT BENEFITS

A. Reduction of Greenhouse Gas Emissions

Original Project:

Purchasing 59 hybrid buses to replace diesel buses will have a significant impact on emissions. According to a 2008 study done by the National Renewable Energy Lab, hybrid electric vehicles have approximately 43% better fuel economy and lower emissions of CO, CO2, NOx PM10 etc. In addition regenerative braking reduces costs to the brake system (NREL 2008, NREL/CP-540-42534).

New Project:

The environmental benefits of replacing 40 diesel buses with 40 zero-emission buses are significant, estimated at an 97% reduction in particulate matter PM2.5, and 100% reduction in other greenhouse gases. In addition, 40 zero-emission buses also save much more in terms of greenhouse gas production, measured by grams of CO2e per mile. The 40 zero-emission buses would produce only 33% of what 59 diesel-hybrid buses would emit, based on 1,078 grams of CO2e per mile for a zero-emission bus, compared to 2,212 grams for a diesel-hybrid bus.

Significant amounts of greenhouse gases will be reduced by purchasing 40 zero-emission buses instead of 59 diesel hybrids. The environmental benefits of purchasing 40 zero-emission buses instead of 59 diesel hybrid buses are compared in this table:

Greenhouse Gas Type	59 Diesel Hybrid Buses	40 Zero Emission Buses	Percentage reduction
PM 2.5 (metric tons)	0.1217	0.0024	97%
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CO2 (metric tons)	3624.9600	0	100%
CO (metric tons)	29.3156	0	100%
NOx (metric tons)	14.9344	0	100%
CO2e per mile	125,198	43,120	50%

B. Disadvantaged Communities

For both the original and new project, the benefits for Disadvantaged Communities is the same as the buses would have been put into service throughout our service area.

Within AC Transit's service area, approximately fifty-four percent (54%) of the total miles driven are in area codes that have Disadvantaged Communities (DACs) within them. In addition, approximately forty-onepercent (41%) of the total stops of all local bus routes are within half a mile from a disadvantaged community. More than half of these routes have DACs within 50% of more of their total route.More than 60% of our service area encompasses Low-income Communities as defined by AB1550, and the majority of our service routes travel through these communities. (See attached Map of AC Transit Routeswithin Disadvantaged Communities and Low-Income Communities).

These new buses will be put in service throughout AC Transit's service area, and will therefore serve a great number of DACs as well as Low-income Communities.

9. ATTACHMENTS

A. Approval from AC Transit Board of Directors – February 26, 2020
B. Map of Low-Income Communities and Disadvantaged Communities AC Transit Routes and

ALAMEDA-CONTRA COSTA TRANSIT DISTRICT

Master Minute Order

File Number: 19-340a

Report ID: 19-340a **Type:** Regular - Planning **Status:** Agenda Ready

Agenda Section:

Meeting Body: Board of Directors - Regular Meeting

Report Created: 01/22/2020

Final Action:

Recommended Action: Consider the following actions associated with the 45 Zero Emission Bus (ZEB) Preliminary Design and Implementation Plan Project:

- Approve a mix of 45 zero emission buses by quantity and by type; and
- Authorize the release of solicitations associated with modifications to District facilities to accommodate an increase in the size of the battery electric bus fleet, including:

1) A Request for Qualifications (RFQ) for Design and Construction Administration (CA) services for the infrastructure required to support the expanded battery electric bus fleet;

2) A Request for Qualifications (RFQ) for Construction Management (CM) services for the infrastructure required to support the expanded battery electric bus fleet; and

3) An Invitation for Bid (IFB) for Construction Services to construct infrastructure required to support the expanded battery electric bus fleet.

Meeting Date: 02/26/2020

Agenda Number: 7.D.

Sponsors:

Enactment Date:

Attachments: STAFF REPORT, Att.1. Presentation

Enactment Number:

Hearing Date:

Effective Date:

History of Legislative File

Acting Body:	Date:	Action:	Sent To:	Due Date:	Return Date:	Result:

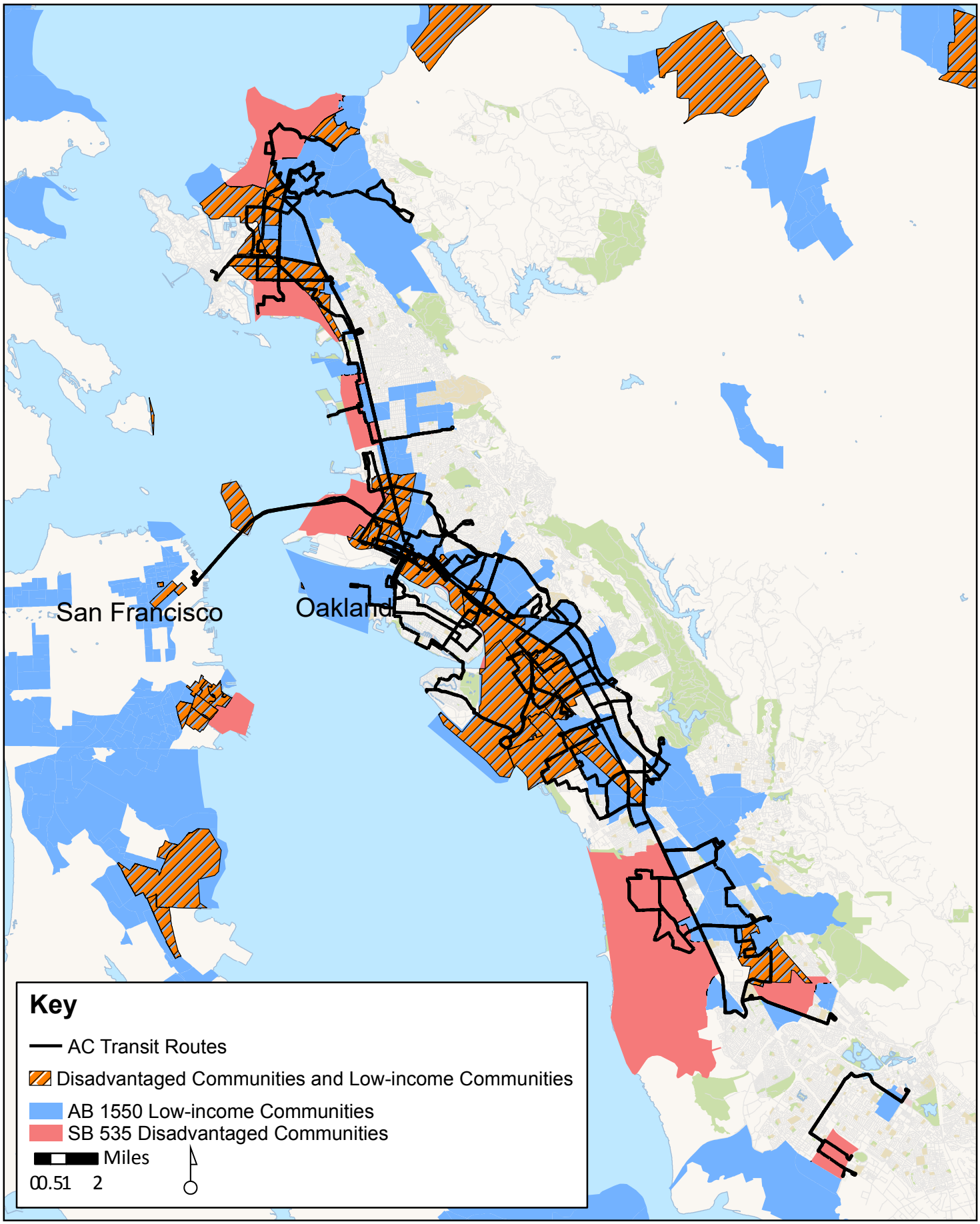
Board of Directors - Regular Meeting | 02/26/2020 Approved | Pass

Action Text: MOTION: PEEPLES/WALLACE to approve Option D to Equalize Quantities of Fuel Cell Electric Buses and Battery Electric Buses; and authorize the release of solicitations associated with modifications to District facilities to accommodate an increase in the size of the battery electric bus fleet, including: 1) a Request for Qualifications (RFQ) for Design and Construction Administration (CA) services for the infrastructure required to support the expanded battery electric bus fleet; 2) a Request for Qualifications (RFQ) for Construction Management (CM) services for the infrastructure required to support the expanded battery electric bus fleet; and 3) an Invitation for Bid (IFB) for Construction Services to construct infrastructure required to support the expanded battery electric bus fleet. The motion carried by the following vote:

Ayes: 7 President Wallace, Vice President Ortiz, Director Harper, Director Williams, Director Shaw, Director Peeples, Director Young

Attachment B

SB 535 Disadvantaged Communities and AB 1550 Low-income Communities Served by AC Transit



Alameda-Contra Costa Transit District

May 7, 2020

Mitch Weiss
Executive Director
California Transportation Commission
1120 N Street, MS 52
Sacramento, CA 95814

Change of Scope Request for SB 1 Local Partnership Program (Competitive) Project

Dear Mr. Weiss,

I am writing to request a change of scope for our SB 1 Local Partnership Program (LPP) Competitive project from purchase of 59 hybrid buses to the purchase of 40 zero emission buses.

Originally the project was adopted into the 2018 LPP Competitive Program to purchase 59 hybrid buses. However, in May 2018 we had an opportunity to leverage the SB1 funds to enhance our TIRCP-funded zero-emissions bus purchase project. In essence, we are combining our SB1 and TIRCP grant awards into a single project to acquire 40 zero-emission buses. This presented a great opportunity for both meeting the state's objectives for innovative clean transit and for our agency lead in zero emission bus technology.

As approved by our Board of Directors, we are planning to acquire the 40 buses by purchasing 20 hydrogen fuel cell electric buses and 20 battery electric buses. The total cost of the buses is $45 million. The committed funding we have to deliver this project is a combination of SB1 LPP Competitive ($15 million), TIRCP ($5 million) and Federal Transit Administration formula funds ($25 million). We anticipate awarding contracts by December 2020 and the buses delivered and placed in service by March 2023.

Significant amounts of greenhouse gases will be reduced by purchasing 40 zero-emission buses instead of 59 diesel hybrids. The environmental benefits of purchasing 40 zero-emission buses instead of 59 diesel hybrid buses are compared in this table:

Greenhouse Gas Type	**59 Diesel Hybrid Buses**	**40 Zero Emission Buses**	**Percentage reduction**
PM 2.5 (metric tons)	0.1217	0.0024	97%
PM10 (metric tons)	0.1217	0	100%
CO2 (metric tons)	3624.9600	0	100%
CO (metric tons)	29.3156	0	100%
NOx (metric tons)	14.9344	0	100%
CO2e per mile	125,198	43,120	50%

We will also be able to improve the quality of low-income neighborhoods as the majority of these buses serve Disadvantaged Communities around Oakland and the East Bay. Zero-emission buses create significant reductions in air and noise pollution compared to diesel buses.

We hope to have your continued support as we embark on this important project. Please do not hesitate to contact me or Eve Ng, Capital Planning & Grants Manager, if you have any questions.

Sincerely,

Michael Hursh
General Manager