



**AGENDA**  
**REGULAR BOARD OF DIRECTORS MEETING**  
**WEDNESDAY, NOVEMBER 2, 2022 – 10:00 A.M.**  
GCTD ADMINISTRATIVE FACILITY  
1901 AUTO CENTER DRIVE  
OXNARD, CA 93036-7966  
[www.GoldCoastTransit.org](http://www.GoldCoastTransit.org)

**The meeting will be IN PERSON / HYBRID**  
**Hybrid / Remote Participation is available via ZOOM Webinar**  
<https://us02web.zoom.us/j/85412871325>

DUE TO THE THREAT OF NOVEL CORONAVIRUS (COVID-19), GOVERNOR NEWSOM DECLARED A STATE EMERGENCY, WHICH DECLARATION IS STILL IN EFFECT. IN ACCORDANCE WITH AB 361 AND AT THE RECOMMENDATION OF THE VENTURA COUNTY PUBLIC HEALTH OFFICER THE MEETING WILL BE VIRTUAL. AB 361 ALLOWS THE DISTRICT TO HOLD BOARD MEETINGS VIA TELECONFERENCING AND ALLOWS FOR MEMBERS OF THE PUBLIC TO OBSERVE AND ADDRESS THE MEETING TELEPHONICALLY OR ELECTRONICALLY.

MEMBERS OF THE PUBLIC MAY PARTICIPATE IN THE BOARD MEETING EITHER **IN PERSON AT 1910 Auto Center Drive, Oxnard, CA** OR BY EMAILING THEIR PUBLIC COMMENTS TO THE CLERK OF THE BOARD PRIOR TO 9:00 AM ON NOVEMBER 2, 2022. IN ADDITION, MEMBERS MAY PARTICIPATE IN THE MEETING BY LOGGING INTO ZOOM **HERE** ANY MEMBER OF THE PUBLIC REQUESTING ACCOMMODATION TO PARTICIPATE IN THIS MEETING VIA PHONE, MAY CONTACT THE CLERK OF THE BOARD PRIOR TO 9:00 AM ON NOVEMBER 2, 2022 AT 805-483-3959 X 160 OR ADELGADO@GCTD.ORG.

**CALL TO ORDER**

**ROLL CALL**

Chair – Bryan MacDonald, City of Oxnard  
Vice Chair – Matt LaVere, County of Ventura  
Director – Mike Johnson, City of Ventura  
Director – Richard Rollins, City of Port Hueneme  
Director – Randy Haney, City of Ojai

**CEREMONIAL CALENDAR**

- **Pledge of Allegiance**
- **Employee Recognition**

**October**

**Michelle Jillson, Operations Supervisor, 15 years**  
**Roberto Magana, Operator, 15 years**

**GOLD COAST TRANSIT DISTRICT**

## **GENERAL PUBLIC COMMENT PERIOD**

The GCTD Board of Directors will consider public comment for business matters that are not on the agenda. Each speaker is limited to three (3) minutes. The presiding officer shall enforce the time limit. Such matters cannot be discussed by the Board at the time of presentation but may be referred to the general manager/secretary for administrative action or public report at a later meeting or scheduled on a subsequent agenda for consideration. This rule shall not prohibit a member of the Board, at this time, from briefly responding to a public statement, or question or proposed initiative, as provided in Government Code Section 54954.2. Speakers are requested to complete a green speaker form, available from the Clerk of the Board, and file it with the Clerk before speaking.

## **BOARD OF DIRECTORS' REPORTS**

**AGENDA REVIEW** - Any changes to the agenda may be made at this time.

## **CONSENT AGENDA**

1. [Consider Approval of Minutes of October 5, 2022, Board of Directors Meeting](#)
2. [Consider Approval of Expenditures for the Month of July](#)
3. [Consider Approval of Expenditures for the Month of August](#)
4. [Consider Approval of Expenditures for the Month of September](#)
5. [Consider Approval of Budget Income Statement for Month Ending June 2022](#)
6. [Report of Contracts Awarded – Marlena Kohler, Purchasing Manager & DBE Officer](#)
7. [Consider Reconfirming Resolution 2021-09 Authorizing Virtual Board and Committee Meetings Pursuant to AB 361 - Vanessa Rauschenberger, General Manager](#)

## **GENERAL MANAGER'S REPORT**

8. [General Manager's Report – Vanessa Rauschenberger, General Manager](#)

## **FORMAL ITEMS - PUBLIC COMMENTS ON AGENDA ITEMS**

The GCTD Board of Directors will consider public comment on any item appearing on the agenda at the time that agenda item has been called by the presiding officer and after the staff report has been given. Each speaker is limited to five (5) minutes comment total on all agenda items. Speakers are requested to complete a green speaker form, available from the Clerk of the Board or on the speaker's podium, and file it with the Clerk before speaking.

9. [Consider Award of Contract for Audit Services to Nigro & Nigro– Marlena Kohler, Purchasing Manager & DBE Officer](#)
10. [Consider Award of Contract for Tire Maintenance and Service to Daniels Tires– Tanya Hawk-Buyer](#)

**Gold Coast Transit District**  
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11. [Receive Presentation and Provide Input on Draft Zero Emissions Transition Plan – James Beck, Director of Operations & Maintenance, David Verbich, Senior Associate Transportation, Stantec](#)

**INFORMATIONAL ITEMS**

12. [Quarterly Human Resources Update – Alex Zaretsky, Director of Human Resources](#)
13. [Fixed Route and ACCESS Flexible Services Quarterly Update – Cynthia Torres Duque, Director of Planning & Marketing](#)
14. [Future Agenda Items – Vanessa Rauschenberger, General Manager](#)

**CLOSED SESSION**

CONFERENCE WITH LABOR NEGOTIATORS - Agency designated representatives:  
General Manager or designee Employee organization: TEAMSTERS LOCAL 186

**REGULAR SESSION**

15. Consideration of Proposed COVID-19 Recognition & Incentive Grant (TEAMSTERS LOCAL 186)

The next regular meeting of the GCTD Board of Directors will be held on **DECEMBER 7, 2022, at 10:00 A.M. at 1901 Auto Center Drive, Oxnard CA 93036**. Copies of administrative reports relating to the Board agenda are available on-line at [www.GoldCoastTransit.org](http://www.GoldCoastTransit.org) or from the Clerk of the Board, Gold Coast Transit District, 1901 Auto Center Drive, Oxnard, CA, 93036-7966.

IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT, IF YOU NEED SPECIAL ASSISTANCE TO PARTICIPATE IN THE MEETING, PLEASE CONTACT THE CLERK OF THE BOARD AT (805) 483-3959, Ext. 160, OR E-MAIL [adelgado@gctd.org](mailto:adelgado@gctd.org) OR THROUGH THE CALIFORNIA RELAY SERVICE AT 711. NOTIFICATION 72 HOURS PRIOR TO THE MEETING WILL ENABLE GCTD TO MAKE REASONABLE ACCOMMODATIONS TO ENSURE ACCESSIBILITY TO THE MEETING.

# EMPLOYEE RECOGNITIONS

November, 2022





## 15 Years Service Award

Michelle has been a GCTD Operations Supervisor since July 2011. She is now one of our lead dispatchers. Michelle is a native of Oxnard and enjoys working for GCTD as an Operations Supervisor because she can help provide a vital service to our community.

# Roberto Magana,

## Bus Operator



### **15 Years Service Award**

Robert Magana is one of the top Bus Operator performers in on time performance. On a regular basis, Robert stays on schedule more than 90% of the time. Robert enjoys driving our buses and being able to talk to new people. He states that his customers like to speak to him because he is a great listener. Robert is planning to serve the public through this job at GCTD until he retires.



Item #1

**MINUTES OF THE REGULAR BOARD OF DIRECTORS MEETING  
WEDNESDAY, OCTOBER 5, 2022 – 10:00 am.  
THIS MEETING WAS HELD IN PERSON & VIA ZOOM (HYBRID)**

**Call to Order**

Chair Bryan MacDonald called the regular meeting of the Board of Directors of Gold Coast Transit District to order at 10:05 am at the GCTD Administrative Facility, 1901 Auto Center Drive, Oxnard, California, and via Zoom. Due to COVID-19, this meeting was also made available via Zoom for the public.

**Roll Call**

Chair Bryan MacDonald – City of Oxnard  
Vice-Chair Matt LaVere – County of Ventura  
Director Mike Johnson – City of Ventura - absent  
Director Richard Rollins – City of Port Hueneme  
Director Randy Haney – City of Ojai – absent

**Staff Present**

Vanessa Rauschenberger, General Manager  
Steven DeBaun, General Counsel – Remote via-zoom  
Angie Delgado, Clerk of the Board  
Dawn Perkins, Director of Finance  
James Beck, Director of Operations & Maintenance  
Cynthia Torres Duque, Director of Planning & Marketing  
Margaret Heath-Schoep, Paratransit & Special Projects Manager  
Chiharu Endo-Lee, Operations Manager  
Marlena Kohler, Purchasing Manager & DBE Officer  
Robert Keys, IT Manager  
Tanya Hawk, Buyer  
Veronica Navarro, Accounting Analyst  
Matt De La Rosa, IT Technician

**Ceremonial Calendar**

Director Rollins led the pledge of allegiance

**Employee Recognition**

- **Ronilo Asuria, Maintenance - 20 yrs.**
- **Mauro Tapia, Maintenance - 10 yrs.**

Chair MacDonald thanked the employees for their service and stated all employees are the heart and soul of the agency.

**GOLD COAST TRANSIT DISTRICT**



Vice-Chair LaVere's thanked the employees and showed appreciation for the lengthy service and commitment to the agency. Director Rollins thanked the employees for their dedication and service.

### **General Public Comment**

None

### **Board of Directors Reports**

None

### **Consent Agenda**

1. [Consider Approval of Minutes of July 6, 2022, Board of Directors Meeting](#)
2. [Consider Approval of Expenditures for the Month of May/June 2022](#)
3. [Consider Approval of Treasurer's Report for May 2022](#)
4. [Consider Approval of Treasurer's Report for June 2022](#)
5. [Consider Approval of Financial Statements & Money Transfers for May/June 2022](#)
6. [Receive and File of GCTD FY 20-21 Annual Comprehensive Financial Report \(ACFR\) - Dawn Perkins, Director of Finance, Prepared by Brown Armstrong CPA](#)
7. [Report of Contracts Awarded – Marlena Kohler, Purchasing Manager & DBE Officer](#)
8. [Consider Update of Communications & Marketing Manager Job Description– Cynthia Torres Duque, Director of Planning & Marketing, Alex Zaretsky, Director of Human Resources](#)
9. [Consider Reconfirming Resolution 2021-09 Authorizing Virtual Board and Committee Meetings Pursuant to AB 361 - Vanessa Rauschenberger, General Manager](#)

Vice-Chair LaVere moved to approve Consent Agenda Items 1 through 8. Director Rollins seconded the motion.

**The motion passed unanimously.**

## **GENERAL MANAGER'S REPORT**

### **10. General Manager's Report – Vanessa Rauschenberger, General Manager**

Ms. Rauschenberger made a special announcement, not mentioned in her report that GCTD participated in the Annual City of Ventura's Corporate Games, which due to COVID, had not participated in in the last two years. This year GCTD won the Bronze Medal for Kickball and Gold Medal for Cornhole. Ms. Rauschenberger stated how proud she is of the team and looking forward to the remaining games.

Ms. Rauschenberger congratulated Lee Judie on his promotion from Bus Operator to Maintenance Material Specialist. Lee has previous experience working for Riverside Transit.

GCTD Fee Rides for youth have been about 15,000 per week since the service started, a significant increase at schools. GCTD is currently working with the school district and Principals to properly etiquette students to provide a safe passenger experience for all passengers.

The Health and Wellness room had its Grand Opening available for all employees to enjoy.

Ms. Raushenberger provided the board with an update on the 301 Facility progress; the demolition is complete. Rincon will discuss with GCTD staff the RFP document to prepare it for release once the environmental report is complete.



Lastly, the Annual Pumpkin patch is coming back for our employees to pick a pumpkin starting on October 14<sup>th</sup>

### **FORMAL ITEMS - PUBLIC COMMENTS ON AGENDA ITEMS**

The Gold Coast Transit District Board of Directors will consider public comment on any item appearing on the agenda at the time that agenda item has been called by the presiding officer and after the staff report has been given. Each speaker is limited to three (3) minutes comment total on all agenda items. Members of the public must submit their request by email to the Clerk of the Board prior to 9 am on the day of the Board Meeting.

### **THERE WERE NO COMMENTS**

#### **11. Consider Adoption of Resolution 2022-10 on CA Clean Air Day & Receive Presentation on Planning for Ventura County Clean Air Summit – Cynthia Torres Duque – Director of Planning & Marketing**

Ms. Duque spoke about Clean Air Day, a statewide program built on the idea that shared experiences and actions unite people and improve community health. Ms. Duque stated that all members of the organization and community are encouraged to participate and pledge by visiting [www.cleanairday.org](http://www.cleanairday.org). The idea is that individual actions collectively will affect addressing air pollution and improving our air quality.

### **RECOMMENDATION**

It is recommended that the Board of Directors adopt Resolution 2022-10, Establishing GCTD's Support for and Declaration of "California Clean Air Day" on October 5, 2022.

Vice Chair LaVere moved to approve Consider Adoption of Resolution 2022-10 on CA Clean Air Day & Receive Presentation on Planning for Ventura County Clean Air Summit. Chair MacDonald seconded the motion.

**The motion passed unanimously.**

#### **12. Consider Approval of Update to Transit Asset Management Plan (TAM) – Juan De la Rosa, Fleet Manager**

Mr. De La Rosa presented the board with the 2022 updated Transit Asset Management Plan (TAM). GCTD's updated 2022 Transit Asset Management Plan consists of an overview of the state of good repair (SGR) of all rolling stock, equipment, and facilities owned by the District. As required by the Federal Transit Administration (FTA), transit agencies must update their TAM plan at least every four years. Therefore, GCTD's practice has been to review and update this plan yearly or as significant changes occur.

### **RECOMMENDATION**

It is recommended that the Board of Directors consider approval of the updated 2022 Transit Asset Management (TAM) Plan

Chair Mac Donald moved to approve Amended Motion to Consider Approval of Update to Transit Asset Management Plan (TAM). Vice-Chair LaVere seconded the motion.

**The motion passed unanimously.**

**13. Consider Approval of Bus Stop Improvement Plan – Austin Novstrup, Transit Planner II**

Mr. Novstrup presented the board with the Bus Stop Improvement Plan. He stated the plan is to identify the needed improvements throughout the GCTD service area and provide a sustainable and equitable approach for future transit infrastructure investments. The project also included public feedback, frontline knowledge, and stop level and demographic data to create lists of prioritized projects in four improvement areas: Safety and Accessibility, Amenity Maintenance, New Amenities, and Operational Improvements. Improvements recommended in the plan include ADA-accessible boarding areas, accessible pedestrian pathways, crosswalks, new amenities, a regular replacement schedule for existing amenities, further study of stop balancing along major corridors, and new stops at several locations.

**RECOMMENDATION**

It is recommended that the Board of Directors consider approval of the GCTD Bus Stop Improvement Plan.

Vice Chair LaVerre moved to approve Consider Approval of Bus Stop Improvement Plan. Director Rollins seconded the motion.

**The motion passed unanimously.**

**INFORMATIONAL ITEMS**

**14. Update on Transit Integration & Efficiency Study (TIES) - Vanessa Rauschenberger, General Manager**

**The report was received and filed.**

**15. Future Agenda Items – Vanessa Rauschenberger, General Manager**

**The report was received and filed.**

**CLOSED SESSION**

- CONFERENCE WITH LABOR NEGOTIATORS  
Agency designated representatives: General Manager or designee  
Employee organization: SEIU Local #721

**REGULAR SESSION**

**16. Consideration of Proposed COVID-19 Recognition & Incentive Grant (SEIU)**

Ms. Rauschenberger provided consideration for the Proposed COVID-19 Recognition & Incentive Grant (SEIU). In recognition of work performed by frontline employees during the COVID-19 pandemic, GCTD wishes to make a one-time grant of up to \$2,500 to bargaining union employees to thank them for their hard work during the challenging times and as an incentive for continuing employment.

Jed Johnson, Jeremy Adams, and Doug Overton spoke during Item #16

**There being no further business, Chair MacDonald adjourned the Board of Directors meeting at 11:40 am.**

Minutes recorded by: Angie Delgado, Clerk of the Board of Directors

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Vanessa Rauschenberger  
Secretary of the Board of Directors

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Chair Bryan MacDonald  
Board of Directors

Unless otherwise determined by the Board of Directors, the next meeting of the GCTD Board of Directors will be on **November 2, 2022, at 10:00 am**. Copies of administrative reports relating to the Board agenda are available online at [www.gctd.org](http://www.gctd.org) or from the Clerk of the Board, Gold Coast Transit District, 1901 Auto Center Drive, Oxnard, CA 93036.



Item #2

**DATE** November 2, 2022

**TO** GCTD Board of Directors

**FROM** Dawn Perkins, Director of Finance *dp*

**SUBJECT** **Consider the Approval of Expenditures for the Month of July 2022.**

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Attached is a list of expenditures for the month of July 2022 from the various GCTD Accounts.

If any member of the Board wishes to review a particular item, please contact me to have the necessary documentation on hand for the meeting.

Attachments:  
Accounts Payable Disbursement List – July 2022

**GENERAL MANAGER'S CONCURRENCE**

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Vanessa Rauschenberger  
General Manager

**GOLD COAST TRANSIT DISTRICT**

# Accounts Payable Disbursement List

Vendor #	Name	Check #	Date	Amount	Voided	Comments
76103-C0121	CALIFORNIA PUBLIC EMPLOYEES RET.	ACH	7/31/2022	\$214,626.51	<input type="checkbox"/>	HEALTH INSURANCE
76103-C0133	CAL PERS	ACH	7/31/2022	\$432,936.80	<input type="checkbox"/>	PENSION CONTRIBUTIONS
76103-C0147	CALPERS FISCAL SERVICES DIV.	ACH	7/31/2022	\$1,565,977.00	<input type="checkbox"/>	UNFDED ACCRD LIAB CLASSIC
76103-C1904	BENEFIT COORDINATORS COMPANY	ACH	7/31/2022	\$9,732.56	<input type="checkbox"/>	LONG TERM DISABILITY PREMIUMS
76103-E1320	EMPOWER RETIREMENT	ACH	7/31/2022	\$4,050.00	<input type="checkbox"/>	DEFERRED COMPENSATION CONT.
76103-M0926	MISSIONSQUARE RETIREMENT	ACH	7/31/2022	\$8,540.83	<input type="checkbox"/>	DEFERRED COMPENSATION CONT.
76103-S0518	SERVICE EMPLOYEES INT'L UNION LOC	ACH	7/31/2022	\$13,823.48	<input type="checkbox"/>	P/R DEDUCTION
76103-U2003	USCM/WEST	ACH	7/31/2022	\$24,045.00	<input type="checkbox"/>	P/R DEDUCTION
A0100	A 1 AUDIO VIDEO	84450	7/6/2022	\$350.00	<input type="checkbox"/>	AUDIO VIDEO BOARD RM
A0109	AFFORDABLE AUTO GLASS	84537	7/20/2022	\$304.26	<input type="checkbox"/>	AUTO GLASS REPAIR
A0918	AIRGAS USA, LLC	84488	7/13/2022	\$113.34	<input type="checkbox"/>	MAINTENANCE SUPPLIES
A1219	ERICH KREIG	84451	7/6/2022	\$495.00	<input type="checkbox"/>	SERVICES
A1623	APTA	84489	7/13/2022	\$26,000.00	<input type="checkbox"/>	MEMBERSHIP DUES
A1801	ARAMARK UNIFORM & CAREER APPAR	84490	7/13/2022	\$190.54	<input type="checkbox"/>	UNIFORMS
A1801	ARAMARK UNIFORM & CAREER APPAR	84538	7/20/2022	\$183.77	<input type="checkbox"/>	UNIFORMS
A1801	ARAMARK UNIFORM & CAREER APPAR	84585	7/27/2022	\$373.54	<input type="checkbox"/>	UNIFORMS
A1806	JORGE M ARELLANO	84539	7/20/2022	\$543.15	<input type="checkbox"/>	TOOL ALLOWANCE
A1900	ASBURY ENVIRONMENTAL SERVICES	84540	7/20/2022	\$130.00	<input type="checkbox"/>	HAZ MAT DISPOSAL SERVICES
A1900	ASBURY ENVIRONMENTAL SERVICES	84586	7/27/2022	\$65.00	<input type="checkbox"/>	HAZ MAT DISPOSAL SERVICES
A1917	RONILO H. ASPURIA	84452	7/6/2022	\$1,000.00	<input type="checkbox"/>	TOOL ALLOWANCE
A1920	ASSURANT EMPLOYEE BENEFITS	84453	7/6/2022	\$1,342.26	<input type="checkbox"/>	DENTAL PREMIUMS
A2020	AT&T	84541	7/20/2022	\$398.93	<input type="checkbox"/>	TELEPHONE SERVICES
A2501	LUIS M. AYALA	84491	7/13/2022	\$1,000.00	<input type="checkbox"/>	TRAINING
A2503	LINDA AZUETA	84542	7/20/2022	\$30.00	<input type="checkbox"/>	REFUND GO ACCESS e-balance
B0211	BEST BEST & KRIEGER LLP	84454	7/6/2022	\$4,614.50	<input type="checkbox"/>	GENERAL COUNSEL SERVICE
B0211	BEST BEST & KRIEGER LLP	84492	7/13/2022	\$14,410.60	<input type="checkbox"/>	GENERAL COUNSEL SERVICE
B0211	BEST BEST & KRIEGER LLP	84543	7/20/2022	\$943.20	<input type="checkbox"/>	GENERAL COUNSEL SERVICE
B0219	B&B SERVICE	84544	7/20/2022	\$200.71	<input type="checkbox"/>	DIRECT MAIL FOR MARKETING
B0503	BECNEL UNIFORMS	84455	7/6/2022		<input checked="" type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84456	7/6/2022		<input checked="" type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84457	7/6/2022		<input checked="" type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84458	7/6/2022		<input checked="" type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84459	7/6/2022	\$1,480.27	<input type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84493	7/13/2022	\$65.84	<input type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84545	7/20/2022	\$44.25	<input type="checkbox"/>	UNIFORMS

Vendor #	Name	Check #	Date	Amount	Voided	Comments
B0902	LOS ANGELES TRUCK CENTERS, LLC	84494	7/13/2022		<input checked="" type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84495	7/13/2022	\$6,429.10	<input type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84587	7/27/2022	\$4,569.87	<input type="checkbox"/>	PARTS/SERVICE
B1808	BRINK'S, INCORPORATED	84546	7/20/2022	\$953.62	<input type="checkbox"/>	ARMORED CAR SERVICES
B1814	BROWN ARMSTRONG ACCOUNTANCY	84547	7/20/2022	\$3,500.00	<input type="checkbox"/>	FINANCIAL AUDIT SERVICES
C0103	CALIFORNIA HOSE, INC	84548	7/20/2022	\$211.64	<input type="checkbox"/>	PARTS
C0103	CALIFORNIA HOSE, INC	84588	7/27/2022	\$246.80	<input type="checkbox"/>	PARTS
C0113	CALTIP	84460	7/6/2022	\$12,164.42	<input type="checkbox"/>	LIABILITY INSURANCE
C0113	CALTIP	84549	7/20/2022	\$247,501.00	<input type="checkbox"/>	LIABILITY INSURANCE
C0148	CATTLIDGE, WILL	84461	7/6/2022	\$163.82	<input type="checkbox"/>	EMPLOYEE REIMBURSEMENT
C0517	CENTRAL COURIER LLC	84589	7/27/2022	\$1,351.39	<input type="checkbox"/>	DELIVERY SRVC BUS BOOKS
C0922	CITI CARDS	84462	7/6/2022	\$1,878.95	<input type="checkbox"/>	OFFICE SUPPLIES
C1202	CLEAN ENERGY	84496	7/13/2022	\$107,385.37	<input type="checkbox"/>	REPAIRS
C1202	CLEAN ENERGY	84550	7/20/2022	\$44,580.45	<input type="checkbox"/>	REPAIRS
C1202	CLEAN ENERGY	84590	7/27/2022	\$1,811.19	<input type="checkbox"/>	REPAIRS
C1504	COASTAL OCCUPATIONAL MEDICAL G	84551	7/20/2022	\$2,165.00	<input type="checkbox"/>	PHYSICALS/DRUG SCREENS
C1540	COMPUWAVE, INC.	84552	7/20/2022	\$9,769.34	<input type="checkbox"/>	LAPTOPS
C1544	RUDOLPHO COBOS	84497	7/13/2022	\$7,628.98	<input type="checkbox"/>	FIRE SUPPRESSION
C1550	LYNETTE COVERLY	84553	7/20/2022	\$3,678.75	<input type="checkbox"/>	PROFESSIONAL SERVICES
C1903	PUBLIC RISK INNOVATION SOLUTIONS	84463	7/6/2022		<input checked="" type="checkbox"/>	WORKER'S COMP/EAP PROVIDER
C1903	PUBLIC RISK INNOVATION SOLUTIONS	84464	7/6/2022	\$75,460.93	<input type="checkbox"/>	WORKER'S COMP/EAP PROVIDER
C1903	PUBLIC RISK INNOVATION SOLUTIONS	84554	7/20/2022	\$257,471.00	<input type="checkbox"/>	WORKER'S COMP/EAP PROVIDER
C1904	BENEFIT COORDINATORS COMPANY	84498	7/13/2022		<input checked="" type="checkbox"/>	LONG TERM DISABILITY PREMIUMS
C1904	BENEFIT COORDINATORS COMPANY	84499	7/13/2022	\$9,798.84	<input type="checkbox"/>	LONG TERM DISABILITY PREMIUMS
C2019	MANUEL R CONTRERAS	84500	7/13/2022	\$1,000.00	<input type="checkbox"/>	TRAINING
C2115	CUMMINS PACIFIC LLC	84555	7/20/2022	\$3,821.73	<input type="checkbox"/>	PARTS
C2115	CUMMINS PACIFIC LLC	84591	7/27/2022	\$10,668.32	<input type="checkbox"/>	PARTS
D0114	DANIELS TIRE SERVICE	84501	7/13/2022	\$1,063.35	<input type="checkbox"/>	TIRES/SERVICES
D0114	DANIELS TIRE SERVICE	84592	7/27/2022	\$543.84	<input type="checkbox"/>	TIRES/SERVICES
D0928	WEX HEALTH, INC.	84502	7/13/2022	\$266.70	<input type="checkbox"/>	FSA ADMINISTRATION FEE
D1504	MR COPY INC	84503	7/13/2022	\$0.00	<input checked="" type="checkbox"/>	SERVICE FOR COPIER
D1504	MR COPY INC	84583	7/21/2022	\$692.13	<input type="checkbox"/>	SERVICE FOR COPIER
E0409	EDISON CO.	84465	7/6/2022	\$24,680.61	<input type="checkbox"/>	ELECTRICAL POWER
E0412	EDM TECHNOLOGY, INC.	84593	7/27/2022	\$8,775.00	<input type="checkbox"/>	TRANSFER TICKETS
E1422	USA WASTE OF CALIFORNIA, INC.	84556	7/20/2022	\$4,833.14	<input type="checkbox"/>	HAZ WASTE REMOVAL
E1904	FRANCISCO ESCOBAR	84557	7/20/2022	\$1,000.00	<input type="checkbox"/>	PAYCHECK REISSUED
F0505	FEDERAL EXPRESS CORP.	84504	7/13/2022	\$19.25	<input type="checkbox"/>	MAIL SERVICES

Vendor #	Name	Check #	Date	Amount	Voided	Comments
F0505	FEDERAL EXPRESS CORP.	84594	7/27/2022	\$19.31	<input type="checkbox"/>	MAIL SERVICES
F1221	FLUID NETWORKS	84505	7/13/2022	\$55.80	<input type="checkbox"/>	SERVICES
F1815	FRONTIER COMMUNICATIONS	84506	7/13/2022	\$851.76	<input type="checkbox"/>	INTERNET PRVDER - PTSIT CNTOR
F1815	FRONTIER COMMUNICATIONS	84558	7/20/2022	\$497.95	<input type="checkbox"/>	INTERNET PRVDER - PTSIT CNTOR
F1815	FRONTIER COMMUNICATIONS	84595	7/27/2022	\$130.98	<input type="checkbox"/>	INTERNET PRVDER - PTSIT CNTOR
G0120	THE GAS COMPANY	84507	7/13/2022	\$37,107.28	<input type="checkbox"/>	NATURAL GAS
G0120	THE GAS COMPANY	84596	7/27/2022	\$601.23	<input type="checkbox"/>	NATURAL GAS
G0912	GILLIG LLC	84466	7/6/2022	\$1,683.97	<input type="checkbox"/>	PARTS
G0912	GILLIG LLC	84508	7/13/2022	\$2,843.37	<input type="checkbox"/>	PARTS
G0912	GILLIG LLC	84559	7/20/2022	\$901.16	<input type="checkbox"/>	PARTS
G0912	GILLIG LLC	84597	7/27/2022	\$3,900.03	<input type="checkbox"/>	PARTS
G1214	GLOBAL CTI GROUP, INC.	84598	7/27/2022	\$3,856.00	<input type="checkbox"/>	SOL-GPS AND DIAGNOSTIC-VERIZON
G1801	GRAINGER	84560	7/20/2022	\$80.17	<input type="checkbox"/>	MISC. PARTS/SUPPLIES
G1801	GRAINGER	84599	7/27/2022	\$111.94	<input type="checkbox"/>	MISC. PARTS/SUPPLIES
H0109	THE HANOVER INSURANCE GROUP	84509	7/13/2022	\$41,976.00	<input type="checkbox"/>	COMMERCIAL PROPERTY INSURANCE
H0510	HELIOX TECHNOLOGY NORTH AMERIC	84510	7/13/2022	\$29,210.90	<input type="checkbox"/>	CHARGING STATIONS
H1520	DCH (OXNARD) INC	84600	7/27/2022	\$169.03	<input type="checkbox"/>	REPAIRS/SUPPLIES
I1400	INFINITY CNG SERVICES, INC.	84601	7/27/2022	\$575.00	<input type="checkbox"/>	CNG STATION REPAIR SERVICES
I1414	IRON MOUNTAIN, INC.	84602	7/27/2022	\$107.25	<input type="checkbox"/>	SHREDING SERVICES
I1423	INTERSTATE BATTERIES	84511	7/13/2022	\$515.18	<input type="checkbox"/>	BATTERIES
I1423	INTERSTATE BATTERIES	84603	7/27/2022	\$772.77	<input type="checkbox"/>	BATTERIES
I1433	INSTRUMENT CONTROL SERVICES	84604	7/27/2022	\$5,660.81	<input type="checkbox"/>	PARTS
J2019	J-W POWER COMPANY	84561	7/20/2022	\$1,684.76	<input type="checkbox"/>	MAINTENANCE SUPPLIES
J2019	J-W POWER COMPANY	84605	7/27/2022	\$4,039.98	<input type="checkbox"/>	MAINTENANCE SUPPLIES
J2115	ANDRES JUAREZ	84467	7/6/2022	\$1,000.00	<input type="checkbox"/>	TOOL ALLOW/EXP REIM
K0511	KELLY CLEANING & SUPPLS, INC.	84468	7/6/2022	\$3,306.00	<input type="checkbox"/>	JANITORIAL SERVICES
K0915	KIMBALL MIDWEST	84606	7/27/2022	\$562.49	<input type="checkbox"/>	PARTS
L0507	CHIHARU ENDO	84607	7/27/2022	\$331.38	<input type="checkbox"/>	EXP REIMBURSEMENT
L0908	LIGHTGABLER	84512	7/13/2022	\$6,277.50	<input type="checkbox"/>	LEGAL SERVICES
L1527	LOWE'S	84562	7/20/2022	\$375.15	<input type="checkbox"/>	SUPPLIES
L1529	LOPEZ NESTOR	84563	7/20/2022	\$1,000.00	<input type="checkbox"/>	TOOL ALLOW/EXP REIM
M0104	MACVALLEY OIL COMPANY	84513	7/13/2022	\$633.96	<input type="checkbox"/>	FUEL
M0104	MACVALLEY OIL COMPANY	84608	7/27/2022	\$380.76	<input type="checkbox"/>	FUEL
M0130	MAURO TAPIA	84469	7/6/2022	\$1,000.00	<input type="checkbox"/>	TUITION AND BOOK REIMBURSEMENT
M0140	MBA MECHANICAL INC.	84514	7/13/2022	\$872.25	<input type="checkbox"/>	HVAC
M1501	MOBILE CREATE USA, INC.	84470	7/6/2022	\$671.89	<input type="checkbox"/>	2 WAY RADIO EQUIPMENT/SERVICE
M1501	MOBILE CREATE USA, INC.	84609	7/27/2022	\$671.89	<input type="checkbox"/>	2 WAY RADIO EQUIPMENT/SERVICE



Vendor #	Name	Check #	Date	Amount	Voided	Comments
M2116	MUNCIE RECLAMATION AND SUPPLY C	84610	7/27/2022	\$133.45	<input type="checkbox"/>	PARTS
M2118	JOSE MURILLO	84471	7/6/2022	\$1,000.00	<input type="checkbox"/>	TOOL ALLOWANCE
M2220	MV TRANSPORTATION, INC.	84472	7/6/2022	\$173,370.91	<input type="checkbox"/>	GCT ACCESS SERVICE
M2220	MV TRANSPORTATION, INC.	84564	7/20/2022	\$188,227.88	<input type="checkbox"/>	GCT ACCESS SERVICE
N0132	NATURAL GREEN LANDSCAPE INC.	84473	7/6/2022	\$4,266.00	<input type="checkbox"/>	LANDSCAPING SERVICES
N0132	NATURAL GREEN LANDSCAPE INC.	84611	7/27/2022	\$1,500.00	<input type="checkbox"/>	LANDSCAPING SERVICES
N0529	THE AFTERMARKET PARTS COMPANY,	84474	7/6/2022	\$90.39	<input type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84515	7/13/2022		<input checked="" type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84516	7/13/2022	\$8,754.17	<input type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84565	7/20/2022	\$2,704.95	<input type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84612	7/27/2022	\$344.11	<input type="checkbox"/>	PARTS/BUSES
O1805	FIRST CALL AUTO PARTS	84517	7/13/2022	\$128.53	<input type="checkbox"/>	PARTS
O2402	VENTURA COUNTY AUTO SUPPLY	84518	7/13/2022	\$153.53	<input type="checkbox"/>	PARTS
O2402	VENTURA COUNTY AUTO SUPPLY	84613	7/27/2022	\$254.43	<input type="checkbox"/>	PARTS
O2413	CITY OF OXNARD	84566	7/20/2022	\$1,270.80	<input type="checkbox"/>	MONTHLY RENT OTC
O2414	CITY OF OXNARD	84519	7/13/2022	\$120.65	<input type="checkbox"/>	UTILITIES/TRASH
O2414	CITY OF OXNARD	84567	7/20/2022		<input checked="" type="checkbox"/>	UTILITIES/TRASH
O2414	CITY OF OXNARD	84568	7/20/2022	\$4,254.37	<input type="checkbox"/>	UTILITIES/TRASH
O2429	CITY OF OXNARD FIRE/CUPA	84520	7/13/2022	\$3,129.00	<input type="checkbox"/>	CUPA INSPECTION
P0119	PARKHOUSE TIRE, INC.	84521	7/13/2022	\$3,358.05	<input type="checkbox"/>	TIRES
P0203	PITNEY BOWES INC	84614	7/27/2022	\$114.71	<input type="checkbox"/>	POSTAGE MACH
P1601	PLATINUM TOW AND TRANSPORT INC.	84522	7/13/2022	\$750.00	<input type="checkbox"/>	TOWING SERVICES
P1601	PLATINUM TOW AND TRANSPORT INC.	84569	7/20/2022	\$300.00	<input type="checkbox"/>	TOWING SERVICES
Q1900	QC PACIFIC INC.	84615	7/27/2022	\$1,123.55	<input type="checkbox"/>	CAR WASH CHEMICALS/EQUIPMENT
R0126	RAYNE WATER CONDITIONING	84523	7/13/2022	\$226.39	<input type="checkbox"/>	WATER COOLER BREAK ROOM
R0504	RED WING SHOE STORE	84475	7/6/2022	\$212.87	<input type="checkbox"/>	SAFETY SHOES
R0504	RED WING SHOE STORE	84570	7/20/2022		<input checked="" type="checkbox"/>	SAFETY SHOES
R0504	RED WING SHOE STORE	84571	7/20/2022	\$1,842.57	<input type="checkbox"/>	SAFETY SHOES
R0504	RED WING SHOE STORE	84616	7/27/2022		<input checked="" type="checkbox"/>	SAFETY SHOES
R0504	RED WING SHOE STORE	84617	7/27/2022		<input checked="" type="checkbox"/>	SAFETY SHOES
R0504	RED WING SHOE STORE	84618	7/27/2022		<input checked="" type="checkbox"/>	SAFETY SHOES
R0504	RED WING SHOE STORE	84619	7/27/2022	\$4,083.94	<input type="checkbox"/>	SAFETY SHOES
R0510	ROMAINE ELECTRIC CORPORATION	84524	7/13/2022	\$419.04	<input type="checkbox"/>	BUS PARTS
R0510	ROMAINE ELECTRIC CORPORATION	84572	7/20/2022	\$715.59	<input type="checkbox"/>	BUS PARTS
R0913	RINGLEADER, INC	84573	7/20/2022	\$364.61	<input type="checkbox"/>	TELEPHONE/LONG DISTANCE SRVC
R1400	ACCONTEMPS A ROBERT HALF COMP	84476	7/6/2022	\$957.95	<input type="checkbox"/>	TEMPORARY HELP
R1400	ACCONTEMPS A ROBERT HALF COMP	84525	7/13/2022	\$531.25	<input type="checkbox"/>	TEMPORARY HELP

Vendor #	Name	Check #	Date	Amount	Voided	Comments
R1400	ACCOMTEMP A ROBERT HALF COMP	84574	7/20/2022	\$1,061.23	<input type="checkbox"/>	TEMPORARY HELP
R1400	ACCOMTEMP A ROBERT HALF COMP	84620	7/27/2022	\$2,494.76	<input type="checkbox"/>	TEMPORARY HELP
R2102	RUBBER NECK SIGNS	84621	7/27/2022	\$1,275.37	<input type="checkbox"/>	SERVICES
S0319	SCRITTC	84622	7/27/2022	\$960.00	<input type="checkbox"/>	MEMBERSHIP DUES
S0919	SITEONE LANDSCAPE SUPPLY, LLC	84526	7/13/2022	\$73.49	<input type="checkbox"/>	MAINTENANCE SUPPLIES
S1925	STANTEC CONSULTING SERVICES INC.	84575	7/20/2022	\$16,972.74	<input type="checkbox"/>	CONSULTING SERVICES
S2000	STAPLES ADVANTAGE	84576	7/20/2022	\$734.59	<input type="checkbox"/>	OFFICE SUPPLIES
S2102	DEPT OF TOXIC SUBSTANCES CONTRO	84623	7/27/2022	\$0.00	<input checked="" type="checkbox"/>	FILING FEE
S2119	SUPERIOR SANITARY SUPPLIES	84527	7/13/2022	\$1,677.99	<input type="checkbox"/>	SUPPLIES
S2119	SUPERIOR SANITARY SUPPLIES	84577	7/20/2022	\$689.52	<input type="checkbox"/>	SUPPLIES
S2119	SUPERIOR SANITARY SUPPLIES	84624	7/27/2022	\$1,458.91	<input type="checkbox"/>	SUPPLIES
S2126	SUPERIOR PRINTING & GRAPHICS, INC	84477	7/6/2022	\$695.10	<input type="checkbox"/>	PRINTING SERVICES
S2126	SUPERIOR PRINTING & GRAPHICS, INC	84578	7/20/2022	\$616.17	<input type="checkbox"/>	PRINTING SERVICES
S2126	SUPERIOR PRINTING & GRAPHICS, INC	84625	7/27/2022	\$147.49	<input type="checkbox"/>	PRINTING SERVICES
T0415	3D OF OXNARD SUPPLY	84626	7/27/2022	\$347.13	<input type="checkbox"/>	SUPPLIES
T0503	TEAMSTERS LOCAL 186	84478	7/6/2022	\$1,307.00	<input type="checkbox"/>	PAYROLL DEDUCTION
T0503	TEAMSTERS LOCAL 186	84579	7/20/2022	\$100.00	<input type="checkbox"/>	PAYROLL DEDUCTION
T0512	TELCOM COMMUNICATION	84528	7/13/2022	\$173.71	<input type="checkbox"/>	RADIO REPAIRS
T0514	TELCOM COMMUNICATIONS	84627	7/27/2022	\$1,190.55	<input type="checkbox"/>	PARTS
T0800	TAFT ELECTRIC COMPANY	84529	7/13/2022	\$4,950.00	<input type="checkbox"/>	ELECTRIC CONT.
T0810	THINK INK	84479	7/6/2022	\$257.89	<input type="checkbox"/>	TONER
T1506	GREG'S PETROLEUM SERVICE, INC	84530	7/13/2022	\$2,024.75	<input type="checkbox"/>	OIL SUPPLIER
T1512	TWIW INSURANCE SERVICES,	84480	7/6/2022	\$50,735.20	<input type="checkbox"/>	LIABILITY INSURANCE
T1512	TWIW INSURANCE SERVICES,	84531	7/13/2022	\$0.00	<input checked="" type="checkbox"/>	LIABILITY INSURANCE
T1512	TWIW INSURANCE SERVICES,	84584	7/21/2022	\$50,000.00	<input type="checkbox"/>	LIABILITY INSURANCE
T1824	TRANSIT INFORMATION PRODUCTS	84481	7/6/2022	\$3,097.02	<input type="checkbox"/>	RCH SCHEDULE HOLDER
T1910	TST PRIVATE SECURITY	84482	7/6/2022	\$21,135.60	<input type="checkbox"/>	SECURITY SERVICES
T1914	THE SHERIDAN GROUP	84532	7/13/2022	\$84.43	<input type="checkbox"/>	FURNITURE FOR NEW FACILITY
U1423	UNITED WAY OF VENTURA CO.	84483	7/6/2022	\$72.00	<input type="checkbox"/>	P/R DEDUCTION
U1802	URBAN TRANSPORTATION	84580	7/20/2022	\$1,080.00	<input type="checkbox"/>	AUTO PASSENGER COUNT SYST
U1902	U.S. BANK	84484	7/6/2022	\$10,873.95	<input type="checkbox"/>	CALCARD PAYMENT
U1919	USSC GROUP, INC	84485	7/6/2022	\$2,165.43	<input type="checkbox"/>	REPAIR PARTS
U1919	USSC GROUP, INC	84533	7/13/2022	\$575.07	<input type="checkbox"/>	REPAIR PARTS
V0112	VALLEY POWER SYSTEMS, INC.	84486	7/6/2022	\$28.16	<input type="checkbox"/>	REPAIR PARTS/SERVICE
V0112	VALLEY POWER SYSTEMS, INC.	84581	7/20/2022	\$51.09	<input type="checkbox"/>	REPAIR PARTS/SERVICE
V0117	RED.VECTOR.COM LLC	84628	7/27/2022	\$0.00	<input checked="" type="checkbox"/>	EMPLOYEE EDUCATIONAL SOLUTIONS
V0505	VENTURA COUNTY APCD	84582	7/20/2022	\$678.00	<input type="checkbox"/>	CNG FEES

Vendor #	Name	Check #	Date	Amount	Voided	Comments
V0513	VENTURA COUNTY STAR	84629	7/27/2022	\$286.37	<input type="checkbox"/>	ADVERTISING
V0537	VENTURA COUNTY TRANSPORTATION	84534	7/13/2022	\$1,486.35	<input type="checkbox"/>	SMARTCARD SLS
V1517	NEXUS HOLDING LLC	84535	7/13/2022	\$4,778.50	<input type="checkbox"/>	REPAIRS
V1525	VOYAGER	84487	7/6/2022	\$1,233.33	<input type="checkbox"/>	CNG FUEL FOR ACCESS
V1809	VERIZON	84536	7/13/2022	\$595.61	<input type="checkbox"/>	PHONE SRVC - CSC
W0911	F G WILCOX, INC	84630	7/27/2022	\$15.84	<input type="checkbox"/>	PARTS/SUPPLIES

**Total:** \$3,931,415.80



Item #3

**DATE** November 2, 2022  
**TO** GCTD Board of Directors  
**FROM** Dawn Perkins, Director of Finance *dp*  
**SUBJECT** Consider the Approval of Expenditures for the Month of August 2022.

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Attached is a list of expenditures for the month of August 2022 from the various GCTD Accounts.

If any member of the Board wishes to review a particular item, please contact me to have the necessary documentation on hand for the meeting.

Attachments:  
Accounts Payable Disbursement List – August 2022

**GENERAL MANAGER'S CONCURRENCE**

A handwritten signature in black ink, reading 'Vanessa Rauschenberger', is written over a horizontal line.

Vanessa Rauschenberger  
General Manager

**GOLD COAST TRANSIT DISTRICT**

# Accounts Payable Disbursement List

Vendor #	Name	Check #	Date	Amount	Voided	Comments
01075	WILLIAM BUSICCHIA	84714	8/17/2022	\$626.79	<input type="checkbox"/>	
76742-C0121	CALIFORNIA PUBLIC EMPLOYEES RET.	ACH	8/31/2022	\$217,110.48	<input type="checkbox"/>	HEALTH INSURANCE
76742-C0133	CAL PERS	ACH	8/31/2022	\$178,940.50	<input type="checkbox"/>	PENSION CONTRIBUTIONS
76742-C1904	BENEFIT COORDINATORS COMPANY	ACH	8/31/2022	\$9,865.44	<input type="checkbox"/>	LONG TERM DISABILITY PREMIUMS
76742-E1320	EMPOWER RETIREMENT	ACH	8/31/2022	\$2,740.00	<input type="checkbox"/>	DEFERRED COMPENSATION CONT.
76742-M0926	MISSIONSQUARE RETIREMENT	ACH	8/31/2022	\$6,809.88	<input type="checkbox"/>	DEFERRED COMPENSATION CONT.
76742-S0518	SERVICE EMPLOYEES INT'L UNION LOC	ACH	8/31/2022	\$9,879.21	<input type="checkbox"/>	P/R DEDUCTION
76742-U2003	USCM/WEST	ACH	8/31/2022	\$15,491.00	<input type="checkbox"/>	P/R DEDUCTION
A0100	A 1 AUDIO VIDEO	84631	8/3/2022	\$350.00	<input type="checkbox"/>	AUDIO VIDEO BOARD RM
A0109	AFFORDABLE AUTO GLASS	84715	8/17/2022	\$250.00	<input type="checkbox"/>	AUTO GLASS REPAIR
A0109	AFFORDABLE AUTO GLASS	84776	8/31/2022	\$450.00	<input type="checkbox"/>	AUTO GLASS REPAIR
A0918	AIRGAS USA, LLC	84666	8/10/2022	\$116.31	<input type="checkbox"/>	MAINTENANCE SUPPLIES
A1219	ERICH KREIG	84667	8/10/2022	\$495.00	<input type="checkbox"/>	SERVICES
A1305	AMERICAN PLASTICS CORP	84777	8/31/2022	\$2,044.78	<input type="checkbox"/>	SUPPLIES
A1308	AMERICAN MOVING PARTS	84778	8/31/2022	\$8,923.31	<input type="checkbox"/>	BRAKE SHOES
A1801	ARAMARK UNIFORM & CAREER APPAR	84668	8/10/2022	\$189.77	<input type="checkbox"/>	UNIFORMS
A1801	ARAMARK UNIFORM & CAREER APPAR	84779	8/31/2022	\$763.72	<input type="checkbox"/>	UNIFORMS
A1900	ASBURY ENVIRONMENTAL SERVICES	84780	8/31/2022	\$65.00	<input type="checkbox"/>	HAZ MAT DISPOSAL SERVICES
A1920	ASSURANT EMPLOYEE BENEFITS	84632	8/3/2022	\$1,342.26	<input type="checkbox"/>	DENTAL PREMIUMS
A2020	AT&T	84760	8/24/2022	\$398.93	<input type="checkbox"/>	TELEPHONE SERVICES
A2502	MANUEL M. AYALA	84781	8/31/2022	\$1,791.49	<input type="checkbox"/>	WAGES PAYABLE
B0211	BEST BEST & KRIEGER LLP	84669	8/10/2022	\$9,512.00	<input type="checkbox"/>	GENERAL COUNSEL SERVICE
B0503	BECNEL UNIFORMS	84633	8/3/2022	\$38,354.94	<input type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84716	8/17/2022		<input checked="" type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84717	8/17/2022	\$1,190.85	<input type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84761	8/24/2022	\$21.80	<input type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84782	8/31/2022	\$272.92	<input type="checkbox"/>	UNIFORMS
B0902	LOS ANGELES TRUCK CENTERS, LLC	84634	8/3/2022	\$4,610.03	<input type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84670	8/10/2022		<input checked="" type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84671	8/10/2022	\$0.00	<input checked="" type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84710	8/16/2022		<input checked="" type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84711	8/16/2022	\$14,454.21	<input type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84762	8/24/2022	\$5,119.72	<input type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84783	8/31/2022		<input checked="" type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84784	8/31/2022	\$6,907.98	<input type="checkbox"/>	PARTS/SERVICE

Vendor #	Name	Check #	Date	Amount	Voided	Comments
B1808	BRINK'S, INCORPORATED	84718	8/17/2022	\$959.49	<input type="checkbox"/>	ARMORED CAR SERVICES
B1811	BRIAN BYRNE	84763	8/24/2022	\$156.81	<input type="checkbox"/>	EXPENSE REIMBURSEMENT
B1814	BROWN ARMSTRONG ACCOUNTANCY	84719	8/17/2022	\$1,000.00	<input type="checkbox"/>	FINANCIAL AUDIT SERVICES
C0103	CALIFORNIA HOSE, INC	84720	8/17/2022	\$384.76	<input type="checkbox"/>	PARTS
C0103	CALIFORNIA HOSE, INC	84785	8/31/2022	\$255.32	<input type="checkbox"/>	PARTS
C0113	CALTIP	84764	8/24/2022	\$4,863.96	<input type="checkbox"/>	LIABILITY INSURANCE
C0150	CASEY PRINTING INC.	84721	8/17/2022	\$14,812.12	<input type="checkbox"/>	PRINTING SERVICES
C0306	CENTRAL CALIFORNIA FLUID SYSTEM T	84722	8/17/2022	\$147.07	<input type="checkbox"/>	PARTS
C0511	CENTRAL COAST FILTER & SUPPLY INC.	84723	8/17/2022	\$3,406.42	<input type="checkbox"/>	PAINT
C0517	CENTRAL COURIER LLC	84672	8/10/2022	\$389.00	<input type="checkbox"/>	DELIVERY SRVC BUS BOOKS
C0811	CHK AMERICA INC.	84724	8/17/2022	\$3,455.58	<input type="checkbox"/>	MAPPING SERVICES
C0922	CITI CARDS	84673	8/10/2022	\$1,166.67	<input type="checkbox"/>	OFFICE SUPPLIES
C1202	CLEAN ENERGY	84635	8/3/2022	\$95,945.88	<input type="checkbox"/>	REPAIRS
C1202	CLEAN ENERGY	84674	8/10/2022	\$12,147.56	<input type="checkbox"/>	REPAIRS
C1202	CLEAN ENERGY	84725	8/17/2022	\$2,170.00	<input type="checkbox"/>	REPAIRS
C1499	COAST CART INC	84726	8/17/2022	\$439.44	<input type="checkbox"/>	PARTS
C1504	COASTAL OCCUPATIONAL MEDICAL G	84727	8/17/2022	\$2,680.00	<input type="checkbox"/>	PHYSICALS/DRUG SCREENS
C1540	COMPUWAVE, INC.	84636	8/3/2022	\$7,243.27	<input type="checkbox"/>	LAPTOPS
C1550	LYNETTE COVERLY	84675	8/10/2022	\$3,248.75	<input type="checkbox"/>	PROFESSIONAL SERVICES
C1906	BENEFIT COORDINATORS CORP.	84637	8/3/2022		<input checked="" type="checkbox"/>	DENTAL PREMIUMS
C1906	BENEFIT COORDINATORS CORP.	84638	8/3/2022		<input checked="" type="checkbox"/>	DENTAL PREMIUMS
C1906	BENEFIT COORDINATORS CORP.	84639	8/3/2022		<input checked="" type="checkbox"/>	DENTAL PREMIUMS
C1906	BENEFIT COORDINATORS CORP.	84640	8/3/2022	\$25,027.60	<input type="checkbox"/>	DENTAL PREMIUMS
D0928	WEX HEALTH, INC.	84676	8/10/2022	\$272.55	<input type="checkbox"/>	FSA ADMINISTRATION FEE
D1504	MR COPY INC	84677	8/10/2022	\$74.93	<input type="checkbox"/>	SERVICE FOR COPIER
D2515	DYER SHEEHAN GROUP, INC.	84678	8/10/2022	\$4,398.75	<input type="checkbox"/>	301 REDEVELOPMENT CONSULTING
D2515	DYER SHEEHAN GROUP, INC.	84786	8/31/2022	\$1,270.00	<input type="checkbox"/>	301 REDEVELOPMENT CONSULTING
E0409	EDISON CO.	84728	8/17/2022	\$27,004.47	<input type="checkbox"/>	ELECTRICAL POWER
E0409	EDISON CO.	84787	8/31/2022	\$28,758.88	<input type="checkbox"/>	ELECTRICAL POWER
E2402	EXPRESS SERVICES INC	84765	8/24/2022	\$1,609.32	<input type="checkbox"/>	TEMPORARY HELP
F0505	FEDERAL EXPRESS CORP.	84729	8/17/2022	\$39.90	<input type="checkbox"/>	MAIL SERVICES
F0505	FEDERAL EXPRESS CORP.	84788	8/31/2022	\$41.45	<input type="checkbox"/>	MAIL SERVICES
F1221	FLUID NETWORKS	84730	8/17/2022	\$55.80	<input type="checkbox"/>	SERVICES
F1814	FROG ENVIRONMENTAL, INC.	84641	8/3/2022	\$1,250.00	<input type="checkbox"/>	ENVIRONMENTAL ASSESSMENT
F1815	FRONTIER COMMUNICATIONS	84679	8/10/2022	\$405.81	<input type="checkbox"/>	INTERNET PRVDER - PTSIT CNTOR
F1815	FRONTIER COMMUNICATIONS	84731	8/17/2022	\$913.91	<input type="checkbox"/>	INTERNET PRVDER - PTSIT CNTOR
F1815	FRONTIER COMMUNICATIONS	84766	8/24/2022	\$72.65	<input type="checkbox"/>	INTERNET PRVDER - PTSIT CNTOR

Vendor #	Name	Check #	Date	Amount	Voided	Comments
G0120	THE GAS COMPANY	84680	8/10/2022	\$35,691.88	<input type="checkbox"/>	NATURAL GAS
G0120	THE GAS COMPANY	84789	8/31/2022	\$828.60	<input type="checkbox"/>	NATURAL GAS
G0514	SOUTHERN COUNTIES FUELS	84642	8/3/2022	\$1,456.09	<input type="checkbox"/>	OIL/LUBE PRODUCTS
G0912	GILLIG LLC	84643	8/3/2022		<input checked="" type="checkbox"/>	PARTS
G0912	GILLIG LLC	84644	8/3/2022	\$3,970.88	<input type="checkbox"/>	PARTS
G0912	GILLIG LLC	84681	8/10/2022		<input checked="" type="checkbox"/>	PARTS
G0912	GILLIG LLC	84682	8/10/2022	\$1,979.94	<input type="checkbox"/>	PARTS
G0912	GILLIG LLC	84767	8/24/2022	\$386.22	<input type="checkbox"/>	PARTS
G0912	GILLIG LLC	84790	8/31/2022		<input checked="" type="checkbox"/>	PARTS
G0912	GILLIG LLC	84791	8/31/2022	\$9,942.12	<input type="checkbox"/>	PARTS
G1524	BYRON DWIGHT BENTON	84732	8/17/2022	\$250.52	<input type="checkbox"/>	BUS AIRCONDITION REPAIRS
G1801	GRAINGER	84683	8/10/2022	\$24.67	<input type="checkbox"/>	MISC. PARTS/SUPPLIES
G1801	GRAINGER	84733	8/17/2022	\$133.67	<input type="checkbox"/>	MISC. PARTS/SUPPLIES
G1801	GRAINGER	84792	8/31/2022	\$278.22	<input type="checkbox"/>	MISC. PARTS/SUPPLIES
H1507	HOERBIGER SERVICE INC.	84793	8/31/2022	\$5,644.89	<input type="checkbox"/>	GEMINI COMPRESSOR PRTS
H1520	DCH (OXNARD) INC	84794	8/31/2022	\$733.68	<input type="checkbox"/>	REPAIRS/SUPPLIES
I1414	IRON MOUNTAIN, INC.	84645	8/3/2022	\$124.80	<input type="checkbox"/>	SHREDING SERVICES
I1423	INTERSTATE BATTERIES	84684	8/10/2022	\$1,030.36	<input type="checkbox"/>	BATTERIES
I1423	INTERSTATE BATTERIES	84734	8/17/2022	\$515.18	<input type="checkbox"/>	BATTERIES
I1423	INTERSTATE BATTERIES	84795	8/31/2022	\$515.18	<input type="checkbox"/>	BATTERIES
J0106	J.C. IRON & MFG. CO	84646	8/3/2022	\$4,010.00	<input type="checkbox"/>	GATES/FENCE MESH
K0511	KELLY CLEANING & SUPPLS, INC.	84685	8/10/2022	\$3,306.00	<input type="checkbox"/>	JANITORIAL SERVICES
K0915	KIMBALL MIDWEST	84647	8/3/2022	\$256.25	<input type="checkbox"/>	PARTS
K0915	KIMBALL MIDWEST	84686	8/10/2022	\$291.10	<input type="checkbox"/>	PARTS
K0915	KIMBALL MIDWEST	84735	8/17/2022	\$697.13	<input type="checkbox"/>	PARTS
K0915	KIMBALL MIDWEST	84796	8/31/2022	\$500.03	<input type="checkbox"/>	PARTS
L0523	LEWIS BRISBOIS BISGAARD & SMITH LL	84648	8/3/2022	\$8,783.57	<input type="checkbox"/>	LEGAL SERVICES
L0523	LEWIS BRISBOIS BISGAARD & SMITH LL	84687	8/10/2022	\$90.00	<input type="checkbox"/>	LEGAL SERVICES
L0908	LIGHTGABLER	84688	8/10/2022	\$14,220.00	<input type="checkbox"/>	LEGAL SERVICES
L1513	LORI'S MOBILE NOTARY	84768	8/24/2022	\$922.00	<input type="checkbox"/>	NOTARY SERVICES
L1527	LOWE'S	84689	8/10/2022	\$1,351.05	<input type="checkbox"/>	SUPPLIES
M0104	MACVALLEY OIL COMPANY	84649	8/3/2022	\$4.81	<input type="checkbox"/>	FUEL
M0104	MACVALLEY OIL COMPANY	84690	8/10/2022	\$515.13	<input type="checkbox"/>	FUEL
M0104	MACVALLEY OIL COMPANY	84769	8/24/2022	\$503.37	<input type="checkbox"/>	FUEL
M2116	MUNCIE RECLAMATION AND SUPPLY C	84691	8/10/2022	\$8.30	<input type="checkbox"/>	PARTS
M2116	MUNCIE RECLAMATION AND SUPPLY C	84736	8/17/2022	\$762.78	<input type="checkbox"/>	PARTS
M2116	MUNCIE RECLAMATION AND SUPPLY C	84797	8/31/2022	\$397.10	<input type="checkbox"/>	PARTS



Vendor #	Name	Check #	Date	Amount	Voided	Comments
M2220	MV TRANSPORTATION, INC.	84798	8/31/2022	\$187,920.42	<input type="checkbox"/>	GCT ACCESS SERVICE
N0124	NATIONAL AUTO BODY&PAINT	84799	8/31/2022	\$19,458.05	<input type="checkbox"/>	BODY WORK
N0132	NATURAL GREEN LANDSCAPE INC.	84692	8/10/2022	\$4,266.00	<input type="checkbox"/>	LANDSCAPING SERVICES
N0529	THE AFTERMARKET PARTS COMPANY,	84650	8/3/2022	\$1,331.57	<input type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84693	8/10/2022	\$5,934.71	<input type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84737	8/17/2022	\$934.51	<input type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84800	8/31/2022		<input checked="" type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84801	8/31/2022		<input checked="" type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84802	8/31/2022	\$8,569.28	<input type="checkbox"/>	PARTS/BUSES
N1903	N/S CORPORATION	84738	8/17/2022	\$747.50	<input type="checkbox"/>	BUS WASH
O1118	OK RADIATOR SHOP INC.	84694	8/10/2022	\$246.37	<input type="checkbox"/>	RADIATOR REPAIRS
O1807	ORKIN SERVICES OF CALIFORNIA, INC.	84739	8/17/2022	\$450.00	<input type="checkbox"/>	PEST CONTROL
O2402	VENTURA COUNTY AUTO SUPPLY	84651	8/3/2022	\$136.08	<input type="checkbox"/>	PARTS
O2402	VENTURA COUNTY AUTO SUPPLY	84740	8/17/2022	\$379.96	<input type="checkbox"/>	PARTS
O2402	VENTURA COUNTY AUTO SUPPLY	84803	8/31/2022	\$123.43	<input type="checkbox"/>	PARTS
O2413	CITY OF OXNARD	84741	8/17/2022	\$1,270.80	<input type="checkbox"/>	MONTHLY RENT OTC
O2414	CITY OF OXNARD	84695	8/10/2022	\$114.93	<input type="checkbox"/>	UTILITIES/TRASH
O2414	CITY OF OXNARD	84742	8/17/2022		<input checked="" type="checkbox"/>	UTILITIES/TRASH
O2414	CITY OF OXNARD	84743	8/17/2022	\$3,996.49	<input type="checkbox"/>	UTILITIES/TRASH
P0119	PARKHOUSE TIRE, INC.	84652	8/3/2022	\$224.75	<input type="checkbox"/>	TIRES
P0119	PARKHOUSE TIRE, INC.	84744	8/17/2022	\$7,462.87	<input type="checkbox"/>	TIRES
P0119	PARKHOUSE TIRE, INC.	84770	8/24/2022	\$0.00	<input checked="" type="checkbox"/>	TIRES
P0119	PARKHOUSE TIRE, INC.	84775	8/24/2022	\$2,765.65	<input type="checkbox"/>	TIRES
P0119	PARKHOUSE TIRE, INC.	84804	8/31/2022	\$543.25	<input type="checkbox"/>	TIRES
P0919	PITNEY BOWES GLOBAL	84653	8/3/2022	\$342.14	<input type="checkbox"/>	POSTAGE MACHINE
P0919	PITNEY BOWES GLOBAL	84805	8/31/2022	\$215.25	<input type="checkbox"/>	POSTAGE MACHINE
P1601	PLATINUM TOW AND TRANSPORT INC.	84745	8/17/2022	\$300.00	<input type="checkbox"/>	TOWING SERVICES
P1601	PLATINUM TOW AND TRANSPORT INC.	84806	8/31/2022	\$375.00	<input type="checkbox"/>	TOWING SERVICES
P1602	PLEXUS GLOBAL	84696	8/10/2022	\$31.75	<input type="checkbox"/>	BACKGROUND & DRUG SCREENING
P1603	PLANETERIA MEDIA LLC	84746	8/17/2022	\$3,300.00	<input type="checkbox"/>	WEBSITE SUPPORT SERVICES
P1821	PROFORMA	84654	8/3/2022	\$1,514.21	<input type="checkbox"/>	ADVERTISING SERVICES
P1821	PROFORMA	84747	8/17/2022	\$1,868.72	<input type="checkbox"/>	ADVERTISING SERVICES
P1821	PROFORMA	84807	8/31/2022	\$3,400.21	<input type="checkbox"/>	ADVERTISING SERVICES
P2114	THE PUN GROUP	84697	8/10/2022	\$21,472.50	<input type="checkbox"/>	FINANCIAL AUDIT SERVICES
R0126	RAYNE WATER CONDITIONING	84698	8/10/2022	\$223.80	<input type="checkbox"/>	WATER COOLER BREAK ROOM
R0504	RED WING SHOE STORE	84655	8/3/2022	\$557.65	<input type="checkbox"/>	SAFETY SHOES
R0504	RED WING SHOE STORE	84699	8/10/2022		<input checked="" type="checkbox"/>	SAFETY SHOES

Vendor #	Name	Check #	Date	Amount	Voided	Comments
R0504	RED WING SHOE STORE	84700	8/10/2022	\$1,498.67	<input type="checkbox"/>	SAFETY SHOES
R0913	RINGLEADER, INC	84748	8/17/2022	\$382.70	<input type="checkbox"/>	TELEPHONE/LONG DISTANCE SRVC
R1400	ACCONTEMPS A ROBERT HALF COMP	84701	8/10/2022	\$2,019.18	<input type="checkbox"/>	TEMPORARY HELP
R1400	ACCONTEMPS A ROBERT HALF COMP	84771	8/24/2022	\$2,324.75	<input type="checkbox"/>	TEMPORARY HELP
R1400	ACCONTEMPS A ROBERT HALF COMP	84808	8/31/2022	\$1,019.58	<input type="checkbox"/>	TEMPORARY HELP
R1410	MARTIN RODRIGUEZ	84809	8/31/2022	\$2,943.63	<input type="checkbox"/>	EXPENSE REIMBURSEMENT
R2102	RUBBER NECK SIGNS	84702	8/10/2022	\$179.72	<input type="checkbox"/>	SERVICES
S0522	VICTOR SEPULVEDA	84665	8/4/2022	\$780.00	<input type="checkbox"/>	TRAINING SERVICES
S0522	VICTOR SEPULVEDA	84759	8/19/2022	\$0.00	<input checked="" type="checkbox"/>	TRAINING SERVICES
S0522	VICTOR SEPULVEDA	84772	8/24/2022	\$480.00	<input type="checkbox"/>	TRAINING SERVICES
S0810	SHI INTERNATIONAL CORP.	84749	8/17/2022	\$8,252.11	<input type="checkbox"/>	FIREWALL
S1624	SPX CORPORATION	84750	8/17/2022	\$65.77	<input type="checkbox"/>	PARTS
S1624	SPX CORPORATION	84810	8/31/2022	\$1,074.30	<input type="checkbox"/>	PARTS
S1925	STANTEC CONSULTING SERVICES INC.	84811	8/31/2022	\$22,862.84	<input type="checkbox"/>	CONSULTING SERVICES
S2000	STAPLES ADVANTAGE	84656	8/3/2022	\$1,088.06	<input type="checkbox"/>	OFFICE SUPPLIES
S2000	STAPLES ADVANTAGE	84703	8/10/2022	\$40.41	<input type="checkbox"/>	OFFICE SUPPLIES
S2000	STAPLES ADVANTAGE	84751	8/17/2022	\$78.87	<input type="checkbox"/>	OFFICE SUPPLIES
S2000	STAPLES ADVANTAGE	84773	8/24/2022	\$68.66	<input type="checkbox"/>	OFFICE SUPPLIES
S2000	STAPLES ADVANTAGE	84812	8/31/2022	\$452.83	<input type="checkbox"/>	OFFICE SUPPLIES
S2102	DEPT OF TOXIC SUBSTANCES CONTRO	84712	8/16/2022	\$60.00	<input type="checkbox"/>	FILING FEE
S2119	SUPERIOR SANITARY SUPPLIES	84704	8/10/2022	\$1,808.37	<input type="checkbox"/>	SUPPLIES
S2119	SUPERIOR SANITARY SUPPLIES	84752	8/17/2022	\$523.32	<input type="checkbox"/>	SUPPLIES
S2119	SUPERIOR SANITARY SUPPLIES	84813	8/31/2022	\$1,454.79	<input type="checkbox"/>	SUPPLIES
S2126	SUPERIOR PRINTING & GRAPHICS, INC	84705	8/10/2022	\$1,684.96	<input type="checkbox"/>	PRINTING SERVICES
S2126	SUPERIOR PRINTING & GRAPHICS, INC	84814	8/31/2022	\$60.09	<input type="checkbox"/>	PRINTING SERVICES
T0415	3D OF OXNARD SUPPLY	84753	8/17/2022	\$480.63	<input type="checkbox"/>	SUPPLIES
T0503	TEAMSTERS LOCAL 186	84657	8/3/2022	\$100.00	<input type="checkbox"/>	PAYROLL DEDUCTION
T0503	TEAMSTERS LOCAL 186	84754	8/17/2022	\$1,224.00	<input type="checkbox"/>	PAYROLL DEDUCTION
T0503	TEAMSTERS LOCAL 186	84815	8/31/2022	\$100.00	<input type="checkbox"/>	PAYROLL DEDUCTION
T0514	TELCOM COMMUNICATIONS	84706	8/10/2022	\$1,154.65	<input type="checkbox"/>	PARTS
T0514	TELCOM COMMUNICATIONS	84755	8/17/2022	\$3,040.30	<input type="checkbox"/>	PARTS
T0515	TELENET VOIP, INC.	84774	8/24/2022	\$270.00	<input type="checkbox"/>	MONITORING
T0810	THINK INK	84756	8/17/2022	\$1,081.00	<input type="checkbox"/>	TONER
T1506	GREG'S PETROLEUM SERVICE, INC	84658	8/3/2022	\$2,021.14	<input type="checkbox"/>	OIL SUPPLIER
T1506	GREG'S PETROLEUM SERVICE, INC	84707	8/10/2022	\$4,333.17	<input type="checkbox"/>	OIL SUPPLIER
T1506	GREG'S PETROLEUM SERVICE, INC	84816	8/31/2022	\$6,611.10	<input type="checkbox"/>	OIL SUPPLIER
T1512	TWIW INSURANCE SERVICES,	84817	8/31/2022	\$11,588.00	<input type="checkbox"/>	LIABILITY INSURANCE

Vendor #	Name	Check #	Date	Amount	Voided	Comments
T1704	TRACKIT LLC	84659	8/3/2022	\$13,360.00	<input type="checkbox"/>	SOFTWARE LICENSE
T1910	TST PRIVATE SECURITY	84660	8/3/2022	\$21,687.56	<input type="checkbox"/>	SECURITY SERVICES
U1426	UNITED TRANSMISSION EXCHANGE	84661	8/3/2022	\$4,015.87	<input type="checkbox"/>	TRANSMISSION REBUILDER
U1902	U.S. BANK	84662	8/3/2022	\$16,637.17	<input type="checkbox"/>	CALCARD PAYMENT
U1902	U.S. BANK	84818	8/31/2022	\$8,558.71	<input type="checkbox"/>	CALCARD PAYMENT
V0112	VALLEY POWER SYSTEMS, INC.	84757	8/17/2022	\$208.73	<input type="checkbox"/>	REPAIR PARTS/SERVICE
V0112	VALLEY POWER SYSTEMS, INC.	84819	8/31/2022	\$42.61	<input type="checkbox"/>	REPAIR PARTS/SERVICE
V0117	RED.VECTOR.COM LLC	84713	8/16/2022	\$7,296.00	<input type="checkbox"/>	EMPLOYEE EDUCATIONAL SOLUTIONS
V0501	COUNTY OF VENTURA - IT SVCS. DEPT.	84820	8/31/2022	\$378.00	<input type="checkbox"/>	REPEATER SITE RENTAL
V0537	VENTURA COUNTY TRANSPORTATION	84708	8/10/2022	\$1,805.00	<input type="checkbox"/>	SMARTCARD SLS
V0908	VICTOR RUBIO	84709	8/10/2022	\$590.61	<input type="checkbox"/>	EXPENSE REIMBURSEMENT
V0909	VIEWFINDERS VISUAL COMMUNICATI	84758	8/17/2022	\$6,495.00	<input type="checkbox"/>	AERIAL PHOTOGRAPHY
V1525	VOYAGER	84663	8/3/2022	\$859.21	<input type="checkbox"/>	CNG FUEL FOR ACCESS
V1809	VERIZON	84664	8/3/2022	\$2,652.42	<input type="checkbox"/>	PHONE SRVC - CSC

**Total: \$1,333,554.30**



Item #4

**DATE** November 2, 2022

**TO** GCTD Board of Directors

**FROM** Dawn Perkins, Director of Finance *dp*

**SUBJECT** **Consider the Approval of Expenditures for the Month of September 2022.**

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Attached is a list of expenditures for the month of September 2022 from the various GCTD Accounts.

If any member of the Board wishes to review a particular item, please contact me to have the necessary documentation on hand for the meeting.

Attachments:  
Accounts Payable Disbursement List – September 2022

**GENERAL MANAGER'S CONCURRENCE**

A handwritten signature in black ink, reading 'Vanessa Rauschenberger', is written over a horizontal line.

Vanessa Rauschenberger  
General Manager

**GOLD COAST TRANSIT DISTRICT**

# Accounts Payable Disbursement List

Vendor #	Name	Check #	Date	Amount	Voided	Comments
77086-C0121	CALIFORNIA PUBLIC EMPLOYEES RET.	ACH	9/30/2022	\$228,569.54	<input type="checkbox"/>	HEALTH INSURANCE
77086-C0133	CAL PERS	ACH	9/30/2022	\$176,116.85	<input type="checkbox"/>	PENSION CONTRIBUTIONS
77086-E1320	EMPOWER RETIREMENT	ACH	9/30/2022	\$2,740.00	<input type="checkbox"/>	DEFERRED COMPENSATION CONT.
77086-G0912	GILLIG LLC	ACH	9/30/2022	\$1,784,961.60	<input type="checkbox"/>	PARTS
77086-M0926	MISSIONSQUARE RETIREMENT	ACH	9/30/2022	\$7,597.88	<input type="checkbox"/>	DEFERRED COMPENSATION CONT.
77086-S0518	SERVICE EMPLOYEES INT'L UNION LOC	ACH	9/30/2022	\$9,841.11	<input type="checkbox"/>	P/R DEDUCTION
77086-U2003	USCM/WEST	ACH	9/30/2022	\$15,656.00	<input type="checkbox"/>	P/R DEDUCTION
A0100	A 1 AUDIO VIDEO	84821	9/7/2022	\$2,750.00	<input type="checkbox"/>	AUDIO VIDEO BOARD RM
A0608	AFFORDABLE TABLES AND CHAIRS	84843	9/21/2022	\$388.75	<input type="checkbox"/>	RENTAL FEES
A0918	AIRGAS USA, LLC	84844	9/21/2022	\$116.31	<input type="checkbox"/>	MAINTENANCE SUPPLIES
A1219	ERICH KREIG	84845	9/21/2022	\$495.00	<input type="checkbox"/>	SERVICES
A1302	JONES WALBAUM CORPORATION	84822	9/7/2022	\$141.38	<input type="checkbox"/>	PRINTING SERVICES
A1801	ARAMARK UNIFORM & CAREER APPAR	84906	9/28/2022		<input checked="" type="checkbox"/>	UNIFORMS
A1801	ARAMARK UNIFORM & CAREER APPAR	84907	9/28/2022	\$1,930.59	<input type="checkbox"/>	UNIFORMS
A1900	ASBURY ENVIRONMENTAL SERVICES	84908	9/28/2022	\$65.00	<input type="checkbox"/>	HAZ MAT DISPOSAL SERVICES
A1920	ASSURANT EMPLOYEE BENEFITS	84823	9/7/2022	\$1,342.26	<input type="checkbox"/>	DENTAL PREMIUMS
A2020	AT&T	84846	9/21/2022	\$398.93	<input type="checkbox"/>	TELEPHONE SERVICES
B0211	BEST BEST & KRIEGER LLP	84847	9/21/2022	\$13,106.50	<input type="checkbox"/>	GENERAL COUNSEL SERVICE
B0503	BECNEL UNIFORMS	84824	9/7/2022	\$344.14	<input type="checkbox"/>	UNIFORMS
B0503	BECNEL UNIFORMS	84848	9/21/2022	\$240.36	<input type="checkbox"/>	UNIFORMS
B0902	LOS ANGELES TRUCK CENTERS, LLC	84825	9/7/2022	\$6,301.69	<input type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84849	9/21/2022		<input checked="" type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84850	9/21/2022		<input checked="" type="checkbox"/>	PARTS/SERVICE
B0902	LOS ANGELES TRUCK CENTERS, LLC	84851	9/21/2022	\$10,783.17	<input type="checkbox"/>	PARTS/SERVICE
B1808	BRINK'S, INCORPORATED	84852	9/21/2022	\$949.70	<input type="checkbox"/>	ARMORED CAR SERVICES
B1814	BROWN ARMSTRONG ACCOUNTANCY	84853	9/21/2022	\$1,000.00	<input type="checkbox"/>	FINANCIAL AUDIT SERVICES
C0113	CALTIP	84854	9/21/2022	\$16,023.07	<input type="checkbox"/>	LIABILITY INSURANCE
C0148	CATTLIDGE, WILL	84909	9/28/2022	\$687.53	<input type="checkbox"/>	EMPLOYEE REIMBURSEMENT
C0149	CANON FINANCIAL SERVICES INC	84826	9/7/2022	\$360.52	<input type="checkbox"/>	PRINTING SERVICES
C0149	CANON FINANCIAL SERVICES INC	84910	9/28/2022	\$348.52	<input type="checkbox"/>	PRINTING SERVICES
C0316	CCP INDUSTRIES	84855	9/21/2022	\$4,686.83	<input type="checkbox"/>	SAFETY MATERIALS
C0517	CENTRAL COURIER LLC	84856	9/21/2022	\$182.00	<input type="checkbox"/>	DELIVERY SRVC BUS BOOKS
C1202	CLEAN ENERGY	84827	9/7/2022	\$66,042.12	<input type="checkbox"/>	REPAIRS
C1504	COASTAL OCCUPATIONAL MEDICAL G	84911	9/28/2022	\$3,075.00	<input type="checkbox"/>	PHYSICALS/DRUG SCREENS
C1550	LYNETTE COVERLY	84828	9/7/2022	\$3,335.00	<input type="checkbox"/>	PROFESSIONAL SERVICES

Vendor #	Name	Check #	Date	Amount	Voided	Comments
C1906	BENEFIT COORDINATORS CORP.	84912	9/28/2022		<input checked="" type="checkbox"/>	DENTAL PREMIUMS
C1906	BENEFIT COORDINATORS CORP.	84913	9/28/2022	\$12,285.30	<input type="checkbox"/>	DENTAL PREMIUMS
D0922	DIVERSIFIED LIGHTING SUPPLY	84857	9/21/2022	\$290.93	<input type="checkbox"/>	PARTS
D0928	WEX HEALTH, INC.	84858	9/21/2022	\$280.65	<input type="checkbox"/>	FSA ADMINISTRATION FEE
E2402	EXPRESS SERVICES INC	84914	9/28/2022	\$832.76	<input type="checkbox"/>	TEMPORARY HELP
F0505	FEDERAL EXPRESS CORP.	84829	9/7/2022	\$44.47	<input type="checkbox"/>	MAIL SERVICES
F0505	FEDERAL EXPRESS CORP.	84859	9/21/2022	\$12.84	<input type="checkbox"/>	MAIL SERVICES
F0505	FEDERAL EXPRESS CORP.	84915	9/28/2022	\$57.48	<input type="checkbox"/>	MAIL SERVICES
F0913	4IMPRINT INC.	84830	9/7/2022	\$9,336.63	<input type="checkbox"/>	PROMOTIONAL ITEMS
F1204	AVAIL TECHNOLOGIES, INC.	84916	9/28/2022	\$2,972.50	<input type="checkbox"/>	SOFTWARE/MAINTENANCE
F1221	FLUID NETWORKS	84860	9/21/2022	\$55.80	<input type="checkbox"/>	SERVICES
F1815	FRONTIER COMMUNICATIONS	84861	9/21/2022	\$1,451.94	<input type="checkbox"/>	INTERNET PRVDER - PTSIT CNTOR
G0120	THE GAS COMPANY	84862	9/21/2022	\$38,090.55	<input type="checkbox"/>	NATURAL GAS
G0120	THE GAS COMPANY	84917	9/28/2022	\$831.82	<input type="checkbox"/>	NATURAL GAS
G0514	SOUTHERN COUNTIES FUELS	84863	9/21/2022	\$77.59	<input type="checkbox"/>	OIL/LUBE PRODUCTS
G0912	GILLIG LLC	84864	9/21/2022		<input checked="" type="checkbox"/>	PARTS
G0912	GILLIG LLC	84865	9/21/2022	\$14,404.26	<input type="checkbox"/>	PARTS
G1801	GRAINGER	84866	9/21/2022	\$297.87	<input type="checkbox"/>	MISC. PARTS/SUPPLIES
I1414	IRON MOUNTAIN, INC.	84831	9/7/2022	\$135.49	<input type="checkbox"/>	SHREDING SERVICES
I1417	INSIGHT STRATEGIES, INC.	84832	9/7/2022	\$3,444.00	<input type="checkbox"/>	CONSULTING SERVICES
I1423	INTERSTATE BATTERIES	84867	9/21/2022	\$643.98	<input type="checkbox"/>	BATTERIES
I1445	INTERIOR DEMOLITION, INC.	84833	9/7/2022	\$4,983.57	<input type="checkbox"/>	INTERIOR DEMOLITION
I1445	INTERIOR DEMOLITION, INC.	84868	9/21/2022	\$71,775.00	<input type="checkbox"/>	INTERIOR DEMOLITION
K0511	KELLY CLEANING & SUPPLS, INC.	84869	9/21/2022	\$3,306.00	<input type="checkbox"/>	JANITORIAL SERVICES
K0915	KIMBALL MIDWEST	84870	9/21/2022	\$2,703.93	<input type="checkbox"/>	PARTS
L0127	LAWSON PRODUCTS	84834	9/7/2022	\$0.99	<input type="checkbox"/>	MAINTENANCE SUPPLIES
L0908	LIGHTGABLER	84871	9/21/2022	\$11,272.50	<input type="checkbox"/>	LEGAL SERVICES
L1527	LOWE'S	84872	9/21/2022	\$524.58	<input type="checkbox"/>	SUPPLIES
M0104	MACVALLEY OIL COMPANY	84873	9/21/2022	\$950.45	<input type="checkbox"/>	FUEL
M1520	MOTION INDUSTRIES, INC.	84874	9/21/2022	\$641.82	<input type="checkbox"/>	SUPPLIES
M2116	MUNCIE RECLAMATION AND SUPPLY C	84875	9/21/2022	\$277.56	<input type="checkbox"/>	PARTS
M2116	MUNCIE RECLAMATION AND SUPPLY C	84918	9/28/2022	\$298.36	<input type="checkbox"/>	PARTS
M2220	MV TRANSPORTATION, INC.	84876	9/21/2022	\$24,958.00	<input type="checkbox"/>	GCT ACCESS SERVICE
N0132	NATURAL GREEN LANDSCAPE INC.	84877	9/21/2022	\$4,266.00	<input type="checkbox"/>	LANDSCAPING SERVICES
N0529	THE AFTERMARKET PARTS COMPANY,	84878	9/21/2022		<input checked="" type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84879	9/21/2022		<input checked="" type="checkbox"/>	PARTS/BUSES
N0529	THE AFTERMARKET PARTS COMPANY,	84880	9/21/2022		<input checked="" type="checkbox"/>	PARTS/BUSES

Vendor #	Name	Check #	Date	Amount	Voided	Comments
N0529	THE AFTERMARKET PARTS COMPANY,	84881	9/21/2022	\$17,153.97	<input type="checkbox"/>	PARTS/BUSES
O1520	OpenGov Inc	84882	9/21/2022	\$29,240.00	<input type="checkbox"/>	PROCUREMENT SOFTWARE
O2402	VENTURA COUNTY AUTO SUPPLY	84883	9/21/2022	\$192.37	<input type="checkbox"/>	PARTS
O2413	CITY OF OXNARD	84884	9/21/2022	\$2,587.60	<input type="checkbox"/>	MONTHLY RENT OTC
O2414	CITY OF OXNARD	84885	9/21/2022		<input checked="" type="checkbox"/>	UTILITIES/TRASH
O2414	CITY OF OXNARD	84886	9/21/2022	\$4,245.20	<input type="checkbox"/>	UTILITIES/TRASH
P0119	PARKHOUSE TIRE, INC.	84887	9/21/2022	\$2,025.41	<input type="checkbox"/>	TIRES
P0119	PARKHOUSE TIRE, INC.	84919	9/28/2022	\$118.00	<input type="checkbox"/>	TIRES
P0530	ANA PEREZ	84920	9/28/2022	\$59.41	<input type="checkbox"/>	EXPENSE REIMBURSEMENT
P0912	GILBERT PINON	84835	9/7/2022	\$338.15	<input type="checkbox"/>	EXPENSE REIMBURSEMENT
P1601	PLATINUM TOW AND TRANSPORT INC.	84888	9/21/2022	\$700.00	<input type="checkbox"/>	TOWING SERVICES
P1602	PLEXUS GLOBAL	84889	9/21/2022	\$44.75	<input type="checkbox"/>	BACKGROUND & DRUG SCREENING
P1821	PROFORMA	84890	9/21/2022	\$3,226.22	<input type="checkbox"/>	ADVERTISING SERVICES
P1823	PRODUCTIVE SOLUTIONS	84921	9/28/2022	\$3,015.00	<input type="checkbox"/>	POINT OF SALE MACHINE SUPPLIES
P2114	THE PUN GROUP	84922	9/28/2022	\$14,960.00	<input type="checkbox"/>	FINANCIAL AUDIT SERVICES
R0126	RAYNE WATER CONDITIONING	84891	9/21/2022	\$224.33	<input type="checkbox"/>	WATER COOLER BREAK ROOM
R0510	ROMAINE ELECTRIC CORPORATION	84892	9/21/2022	\$1,224.93	<input type="checkbox"/>	BUS PARTS
R0913	RINGLEADER, INC	84893	9/21/2022	\$382.59	<input type="checkbox"/>	TELEPHONE/LONG DISTANCE SRVC
R1400	ACCONTEMPS A ROBERT HALF COMP	84894	9/21/2022	\$889.53	<input type="checkbox"/>	TEMPORARY HELP
R1400	ACCONTEMPS A ROBERT HALF COMP	84923	9/28/2022	\$943.08	<input type="checkbox"/>	TEMPORARY HELP
R2102	RUBBER NECK SIGNS	84924	9/28/2022	\$1,123.91	<input type="checkbox"/>	SERVICES
S0107	SAFETY-KLEEN SYSTEMS, INC.	84895	9/21/2022	\$724.07	<input type="checkbox"/>	SOLVENT TANK FLUID
S0522	VICTOR SEPULVEDA	84925	9/28/2022	\$300.00	<input type="checkbox"/>	TRAINING SERVICES
S0810	SHI INTERNATIONAL CORP.	84836	9/7/2022	\$2,989.99	<input type="checkbox"/>	FIREWALL
S0908	MIKE REESE	84896	9/21/2022	\$205.50	<input type="checkbox"/>	BUS GRAPHICS
S1624	SPX CORPORATION	84926	9/28/2022	\$1,564.20	<input type="checkbox"/>	PARTS
S2000	STAPLES ADVANTAGE	84897	9/21/2022	\$86.84	<input type="checkbox"/>	OFFICE SUPPLIES
S2000	STAPLES ADVANTAGE	84927	9/28/2022	\$41.06	<input type="checkbox"/>	OFFICE SUPPLIES
S2119	SUPERIOR SANITARY SUPPLIES	84898	9/21/2022	\$2,682.83	<input type="checkbox"/>	SUPPLIES
S2120	SUNRISE PHYSICAL THERAPY	84899	9/21/2022	\$158.16	<input type="checkbox"/>	MOLLER SUPPORTS/CUSHION
S2126	SUPERIOR PRINTING & GRAPHICS, INC	84837	9/7/2022	\$2,717.87	<input type="checkbox"/>	PRINTING SERVICES
S2126	SUPERIOR PRINTING & GRAPHICS, INC	84900	9/21/2022	\$600.88	<input type="checkbox"/>	PRINTING SERVICES
S2126	SUPERIOR PRINTING & GRAPHICS, INC	84928	9/28/2022	\$1,347.71	<input type="checkbox"/>	PRINTING SERVICES
T0415	3D OF OXNARD SUPPLY	84901	9/21/2022	\$287.63	<input type="checkbox"/>	SUPPLIES
T0503	TEAMSTERS LOCAL 186	84902	9/21/2022	\$1,224.00	<input type="checkbox"/>	PAYROLL DEDUCTION
T0504	TEAM NISSAN	84929	9/28/2022	\$385.85	<input type="checkbox"/>	ELECTRIC VEHICLES
T0514	TELCOM COMMUNICATIONS	84903	9/21/2022	\$595.28	<input type="checkbox"/>	PARTS



Vendor #	Name	Check #	Date	Amount	Voided	Comments
T0800	TAFT ELECTRIC COMPANY	84838	9/7/2022	\$12,000.00	<input type="checkbox"/>	ELECTRIC CONT.
T1506	GREG'S PETROLEUM SERVICE, INC	84904	9/21/2022	\$2,529.05	<input type="checkbox"/>	OIL SUPPLIER
T1910	TST PRIVATE SECURITY	84839	9/7/2022	\$6,900.60	<input type="checkbox"/>	SECURITY SERVICES
U1210	UnCOMPLICATE HR INC	84840	9/7/2022	\$3,740.00	<input type="checkbox"/>	HR CONSULTANT
U1426	UNITED TRANSMISSION EXCHANGE	84905	9/21/2022	\$677.83	<input type="checkbox"/>	TRANSMISSION REBUILDER
V0537	VENTURA COUNTY TRANSPORTATION	84930	9/28/2022	\$1,705.00	<input type="checkbox"/>	SMARTCARD SLS
V1525	VOYAGER	84841	9/7/2022	\$1,107.11	<input type="checkbox"/>	CNG FUEL FOR ACCESS
V1809	VERIZON	84842	9/7/2022	\$1,448.87	<input type="checkbox"/>	PHONE SRVC - CSC

**Total:** \$2,700,797.75



**DATE** November 2, 2022 **Item #5**

**TO** GCTD Board of Directors

**FROM** Dawn Perkins, Director of Finance *dp*

**SUBJECT** **Consider Approval of Budget Income Statement for the Month Ending June 30, 2022**

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Attached for the Board's approval is a copy of GCTD's Budget Income Statement covering the period ending June 30, 2022. These are preliminary year end amounts.

Attachment

**GENERAL MANAGER'S CONCURRENCE**

Vanessa Rauschenberger  
General Manager

**GOLD COAST TRANSIT DISTRICT**

**GOLD COAST TRANSIT DISTRICT  
MONTHLY BUDGET INCOME STATEMENT  
For (12) Months Ending June 30, 2022**

**Item # 4**

<b>Operating Budget</b>	<b>Adopted Budget</b>	<b>Year-to-Date</b>	<b>Percent of Budget Used</b>
<b>Revenues:</b>			
Passenger Fares	\$ 2,870,124	\$ 2,674,640	93.2%
Non-Operating Revenues	\$ 788,000	\$ 1,605,130	203.7%
State Assistance	\$ 244,722	\$ 487,748	199.3%
Local Assistance	\$ 16,466,666	13,129,205	79.7%
Federal Demo Projects	\$ 783,154	-	0.0%
Federal Assistance	\$ 7,638,656	17,874,318	234.0%
<b>Total Revenues</b>	<b>\$ 28,791,322</b>	<b>\$ 35,771,041</b>	<b>124.2%</b>
<b>Expenses:</b>			
<b>FUNCTIONAL CATEGORIES</b>			
Employee Support	\$ 20,606,491	\$ 23,684,013	114.9%
Service/Supplies - Operational	5,988,703	5,815,534	97.1%
Service/Supplies - Support	2,196,127	2,438,032	111.0%
<b>Total, Functional Categories</b>	<b>\$ 28,791,321</b>	<b>\$ 31,937,579</b>	<b>110.9%</b>
<b>OPERATIONAL CATEGORIES</b>			
Fixed Route	\$ 14,722,461	\$ 17,527,171	119.1%
Maintenance	3,264,685	4,941,889	151.4%
Administration	4,844,311	5,194,445	107.2%
Planning and Marketing/Paratransit	5,959,864	4,274,074	71.7%
<b>Total, Operational Categories</b>	<b>\$ 28,791,321</b>	<b>\$ 31,937,579</b>	<b>110.9%</b>
<b>Excess or (Deficit)</b>	<b>\$ -</b>	<b>\$ 3,833,462</b>	

Preliminary estimate.



November 2, 2022

Item #6

**TO** GCTD Board of Directors

**FROM** Marlena Kohler, Purchasing Manager *MLK*

**SUBJECT** Report of Contracts Awarded.

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**SUMMARY**

As requested by the Board of Directors on December 2, 2020 and in accordance with the GCTD Purchasing Resolution, staff is to provide a monthly report of all purchases issued by this agency. The attached report lists all purchase orders awarded since the October 2022 Board meeting.

**RECOMMENDATION**

**It is recommended that the Board of Directors receive and file this report.**

**GENERAL MANAGER'S CONCURRENCE**

A handwritten signature in black ink, appearing to read 'Vanessa Rauschenberger', is written over a horizontal line.

Vanessa Rauschenberger  
General Manager

**GOLD COAST TRANSIT DISTRICT**

Contracts/PO Awarded Report  
November 2022

PO#	Vendor Name	Item Description	City	State	Cost
<b>PROCUREMENT</b>					
A0010263	INSIGHT STRATEGIES, INC.	Consulting Services	TORRANCE	CA	\$3,444.00
A0010264	American Business	Copier Service (year 1)	Ventura	CA	\$50,000.00
A0010265	OpenGov Inc	Procurement Software Deployment	DALLAS	TX	\$24,240.00
A0010266	AVAIL TECHNOLOGIES, INC.	29 hours remote training	STATE COLLEGE	PA	\$2,972.50
A0010267	SHI INTERNATIONAL CORP.	Office Professional Plus 2021 SLng LTSC	DALLAS	TX	\$3,593.88
P0030267	INTERIOR DEMOLITION, INC.	301 Demolition	MONTROSE	CA	\$4,983.57
P0030268	SUPERIOR PRINTING & GRAPHICS, INC	Printing Services	OXNARD	CA	\$2,572.84
P0030269	PRODUCTIVE SOLUTIONS	AFM System, Fare Media Productions POS 1-4 License	RENO	NV	\$3,015.00
P0030271	AFFORDABLE TABLES AND CHAIRS	For Clean Air Summit on October 12, 2022	OXNARD	CA	\$2,925.50
P0030272	DYER SHEEHAN GROUP, INC.	On Call Services	VENTURA	CA	\$8,505.00
P0030273	RUBBER NECK SIGNS	Installation of Bus Ads	OXNARD	CA	\$4,264.00

**Procurement Total \$110,516.29**

<b>PARTS</b>					
M0049365	INTERSTATE BATTERIES	BATTERY - INTERSTATE	VENTURA	CA	\$643.98
M0049366	THE AFTERMARKET PARTS COMPANY, LLC	Misc bus parts	MINNEAPOLIS	MN	\$476.50
M0049367	GILLIG LLC	misc bus parts	LOS ANGELES	CA	\$1,340.87
M0049368	SUPERIOR SANITARY SUPPLIES	CLEANING SUPPLIES	OXNARD	CA	\$963.27
M0049369	SAFETY-KLEEN SYSTEMS, INC.	SERVICE DATE 9/7/2022	DALLAS	CA	\$724.07
M0049370	PARKHOUSE TIRE, INC.	305/70R22.5 BDV	BELL GARDENS	CA	\$1,966.41
M0049371	GREG'S PETROLEUM SERVICE, INC	VALVOLINE PREMIUM BLUE 9200 15W-40	DELANO	CA	\$2,529.05
M0049372	LOS ANGELES TRUCK CENTERS, LLC	Tube, Lubricating Oil Drain	PASADENA	CA	\$109.51
M0049373	DCH (OXNARD) INC	FUEL FILTER, 03-15 HONDA CIVIC (SMALL)	DALLAS	TX	\$105.24
M0049374	THE AFTERMARKET PARTS COMPANY, LLC	PIVOT PLATE ASSM. BIKE RACK	MINNEAPOLIS	MN	\$1,892.73
M0049375	GILLIG LLC	FILTER, HYDRAULIC	LOS ANGELES	CA	\$1,064.59
M0049377	UNITED TRANSMISSION EXCHANGE	REPAIR TRANSMISSION	SAN BERNARDINO	CA	\$677.83
M0049382	ROMAINE ELECTRIC CORPORATION	SPARK PLUG	KENT	WA	\$686.96
M0049383	LOS ANGELES TRUCK CENTERS, LLC	HOSE-ELBOW 90 DEG ECR 2.50 ID	PASADENA	CA	\$686.96
M0049385	THE AFTERMARKET PARTS COMPANY, LLC	FUEL MANIFOLD	MINNEAPOLIS	MN	\$8,307.08
M0049386	FRANKLIN TRUCK PARTS	VALVE, QUICK RELEASE	CITY COMMERCE	CA	\$40.13
M0049388	INTERSTATE BATTERIES	BATTERY - INTERSTATE	VENTURA	CA	\$515.18
M0049389	CUMMINS PACIFIC LLC	Spark Plug	LOS ANGELES	CA	\$2,700.24
M0049390	GILLIG LLC	FILTER, SPINNER	LOS ANGELES	CA	\$526.69
M0049393	SOUTHERN COUNTIES FUELS	TRANSMISSION OIL SYNTHETIC	ORANGE	CA	\$2,047.78
M0049395	ARCHROCK SERVICES, L.P.	O RING, VT, 3.887 OD X .139	DALLAS	TX	\$8.76
M0049396	GREG'S PETROLEUM SERVICE, INC	VALVOLINE PREMIUM BLUE 9200 15W-40	DELANO	CA	\$3,991.75
M0049398	SUPERIOR SANITARY SUPPLIES	CLEANING SUPPLIES	OXNARD	CA	\$1,186.17
M0049400	PARKHOUSE TIRE, INC.	305/70R22.5 BDV	BELL GARDENS	CA	\$3,724.58
M0049403	ROMAINE ELECTRIC CORPORATION	Regulator, 24V	KENT	WA	\$445.97

**Parts Total \$37,362.30**

**Grand Total \$147,878.59**

Local (Ventura County) \$70,612.67



Item #7

**DATE** November 2, 2022

**TO** GCTD Board of Directors

**FROM** Vanessa Rauschenberger, General Manager

**SUBJECT** **Consider Reconfirming Resolution 2021-09 Authorizing Virtual Board and Committee Meetings Pursuant to AB 361**

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## **SUMMARY**

Since the start of the pandemic, the Board of Directors has been holding its regular board meetings virtually in accordance with Executive Orders issued by the Governor. The Governor has now rescinded those orders as they relate to the virtual meetings, and the legislature has adopted AB 361, reestablishing and amending the requirements to meet virtually.

On November 3, 2021, the Board adopted resolution 2021-09, which authorized the continuation of virtual meetings for 30 days. In order to continue meeting virtually, the Board of Directors is required to make findings reconfirming the continuation of virtual meetings every 30 days.

## **BACKGROUND**

When the COVID-19 pandemic began, California Governor Gavin Newsom signed an Executive Order that allowed public agencies to meet virtually. The most recent Executive Order, N-33-20, expired on September 30, 2021. On September 16, Governor Newsom signed Assembly Bill (AB) 361. AB 361 gives the option for public agencies to continue meeting virtually until January 1, 2024. This bill allows local agencies to use teleconferencing in compliance with the Ralph M. Brown Act. Pursuant to AB 361, the GCTD Board of Directors must reconsider the continuing need for virtual meetings every thirty (30) days.

Virtual meetings are permitted presently because Governor Newsom has proclaimed a state of emergency. The State of California and many local officials have recommended measures to promote social distancing. If those conditions change, the local agency can still meet virtually if it has determined that physical presence at meetings would present imminent risks to the health and safety of attendees.

## **RECOMMENDATION**

**It is recommended that the Board consider reconfirming GCTD Resolution 2021-09, declaring the need for continuation of virtual Board meetings, pursuant to AB 361.**

## **GOLD COAST TRANSIT DISTRICT**



Date: November 2, 2022

Item #8

To: Board of Directors

From: Vanessa Rauschenberger, General Manager

Subject: General Manager's Monthly Report

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### Corporate Games

Congratulations to all the GCTD employees participating in the Corporate Games this year. After a two-year hiatus, GCTD's teams are competing in various events, and have earned three bronze medals, one silver, and one gold. Win or lose, it's been great to see everyone come out at give it their all! Closing game ceremonies will take place at Ventura beach on Oct 29! Flyers are in the breakrooms around the facility to sign up.



### Quarterly Safety Awards

GCTD is distributing safety awards to staff on **October 31<sup>st</sup>** at the quarterly Safety Awards Day. Safety awards go to bus operators, maintenance staff, and supervisors who have had safe driving records during the review period. This annual event will include a lunch for staff (this year combines with our Halloween Festivities) and reinforces our commitment to safety in all aspects of our work.



### Veterans RIDE FREE on Veterans' Day

For the fifth year, GCTD will provide FREE rides to U.S. military veterans on Thursday, November 11, 2021, Veterans' Day, as part of a countywide effort to honor local veterans. GCTD will join all the Ventura County bus operators, including VCTC, Camarillo Area Transit, the County of Ventura, Moorpark City Transit, Ojai Trolley, Simi Valley Transit, Thousand Oaks Transit, Valley Express, and Westlake Village Transit, which are offering free rides during regular service hours on that holiday.



### Staff Submitting Annual Data to National Transit Database

This past month, GCTD's staff have been busy working on completing the annual required submittal of data to the FTA's National Transit Database (NTD). FTA uses NTD data to apportion funding to urbanized and rural areas in the United States. Transit agencies report data on several key metrics, including Vehicle Revenue Miles (VRM), Vehicle Revenue Hours (VRH), Passenger Miles Traveled (PMT), Unlinked Passenger Trips (UPT), and Operating Expenses (OE). Great job to the staff working together to get this data in.



## Strategic Plan Update

We continue working on the development of an agency Strategic Plan, with assistance from Teri Fisher (Insight Strategies) and her team, we have completed meetings with bus operators, maintenance staff, admin, as well as supervisory staff/labor groups. In addition, an agency-wide Employee Survey will be open through mid-November. Once the data is gathered, the Organizational Assessment will be prepared to help inform us as we develop goals, priorities, and strategies to tackle future challenges and opportunities.



## Staff Participating in Industry Fall Conferences

### Cal Act

The 2022 CALACT Autumn Conference & Bus Show will be held in Santa Rosa, CA, November 1-4, 2022. The focus will be primarily on ZEB technologies and post-pandemic solutions to recruiting and supply chain challenges. Margaret Schoep, Paratransit & Special Projects Manager, and Robert Lucio, Mobility Management Coordinator, will attend this year. Robert will be moderating the "Effective Advisory Committees" session that will explore how community transit advisory boards can be a resource for creating equity-focused quality improvement efforts to provide user-friendly transit services. Margaret will be moderating an HR-focused session on the impacts of burnout, fatigue, ongoing stress, and intellectual exhaustion that impact organizations and what interventions may be appropriate.



Additionally, I am pleased to announce that Margaret Schoep was re-elected to the CALACT Board to serve as a representative of the South region through 2024. (The region covers San Luis Obispo to San Diego to the AZ border.) Congratulations Margaret!

### California Transit Association

The California Transit Association (CTA) 57<sup>th</sup> Annual Fall Conference will be held in Ontario, California, November 16-18, with Omni Trans being the host agency. GCTD staff attending will include Jim Beck, Director of Operations and Maintenance, Chiharu Endo Lee, Operations Manager, as well as our CTA Conference raffle winners, Lee Judie, Maintenance Material Specialist, and Manual Ayala, Bus Operator. Jim will be moderating one of the informational maintenance breakout sessions and attending the CTA maintenance and operations committee's yearly in-person meetings. GCTD staff will be able to examine new technologies and practices within the California transit community.



## Collaborative Meetings & Outreach Activities

GCTD's expert staff from various departments actively coordinate and participate in multiple meetings to support GCTD's mission. Key meetings attended this last month by

GCTD staff included: VCTC's Commission Meeting, VCTC TRANSCOM, CTA Small Operators meeting, and TIES Transit Operators Working Group.

### **General Manager Activities & Meetings Attended**

- Oct 4<sup>th</sup> – Gave Presentation to Oxnard City Council on Public Transit
- Oct 7<sup>th</sup> – Attended Ventura County Transportation Commission (VCTC) Meeting
- Oct 12<sup>th</sup> – Clean Air Summit
- Oct 13<sup>th</sup> – Participated in Moth Join Labor Meeting
- Oct 14<sup>th</sup> - Met with Consultant on Clean Air Summit
- Oct 14<sup>th</sup> – Met and confer with Teamsters
- Oct 18<sup>th</sup> – Held All Staff Meetings (new monthly meeting)
- Oct 18<sup>th</sup> - Held Coffee with the GM (Maintenance)
- Oct 28<sup>th</sup> – Participating in VCLA Leadership Training Event / Situation Room

### **Thanksgiving Holiday**

GCTD wishes all a joyous Thanksgiving holiday. Our sincerest THANKS to all of our staff, Board members, and passengers that allow us to do the work we do, and we are grateful to serve this wonderful community.

In honor of the Thanksgiving holiday on Thursday, November 24, 2022, GCTD will be CLOSED, and there will be no bus service. Service will resume on Friday, November 25<sup>th</sup>, but the administration office will be closed. The Customer Service Center will have reduced hours.



### **Keep up with us on the GO**

"Like Us" and Follow Us on Facebook, Twitter, and Instagram, "Like Us" on Facebook @GCTransit - "Follow Us" on Twitter @GoldCoastBus - or "Follow Us" on Instagram @GoldCoastTransit. Sign up online for GCTD's monthly "News on the GO" Newsletter. We're on Tik Tok! @goldcoasttransitbus

###



**DATE** November 2, 2022 **Item #9**

**TO** GCTD Board of Directors

**FROM** Marlena Kohler, Purchasing Manager *MLK*

**SUBJECT** **Consider Approval of Contract Award to Nigro & Nigro for Audit Services**

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## **I. EXECUTIVE SUMMARY**

A competitive bid process for Audit Services began with the issuance of Request for Quote (RFQ) 23-03 on July 20, 2022. The purpose of this RFQ was to identify and select an independent certified public accounting firm to annually review GCTD's financial records on a fiscal year basis and provide an annual report to the Board. The services are for a three (3) year base period contract with two one-year option years.

The RFQ was publicized on our website and on the Public Purchase website, and those on the Bidder's list for the previous RFP were also notified. Three (3) quotes were received. All quotes were considered responsive. An evaluation team independently evaluated, interviewed and scored each quote. At the conclusion of the evaluation process, Nigro & Nigro received the highest score overall. Their quote is considered fair and reasonable based on adequate competition.

**It is recommended the Board of Directors authorize award of a contract for Audit Services to Nigro & Nigro in an amount of \$59,000 each year not-to-exceed \$295,000 for the initial three-year period and for the two additional one-year option periods.**

## **II. BACKGROUND INFORMATION**

The District requires that an audit of all GCTD funds be conducted annually by an independent Certified Public Accounting firm. GCTD's practice has been to obtain a multi-year contract for auditing services with option renewal provisions. This procurement will provide for a three-year contract with renewal options for two additional years. The first contract year will commence directly after Board Approval and continue for three (3) years, with the audit covering activity during the period from July 1, 2022, to June 30, 2025. All future fiscal year audits will have the same July 1-June 30 time period.

A competitive bid process for Audit Services began with the issuance of Request for Quote (RFQ) 23-03 on July 20, 2022, after being contacted by our current auditor that they would not be able to exercise their last option year due to reorganization within their firm.

### **GOLD COAST TRANSIT DISTRICT**

The RFQ was publicized on our website, on the Public Purchase website and those on the previous RFP's Bidder's list were also notified. Over forty (40) firms accessed our RFQ.

The RFQ required each firm to submit general background, firm experience and technical expertise, audit approach, information of the engagement team to be assigned to GCTD, and references.

Three (3) quotes were received. All quotes were considered responsive. An evaluation committee was then formed to interview all three (3) firms to determine which firm was to be awarded the contract.

An evaluation committee consisting of Dawn Perkins, Director of Finance, Allen Schentrup, Finance Manager, and Veronica Navarro, Accounting Analyst conducted the interviews. Separately, each committee member rated each firm following the interviews.

As a result of the interviews, Nigro & Nigro received the highest overall score.

A price analysis was conducted on Nigro & Nigro's proposed rates. The proposed prices, including a maximum allowed for reimbursable expenses, are summarized as follows:

	Fedak & Brown			Vasquez & Co.			Nigro & Nigro		
	Price	Max. Reim	Max. Annual	Price	Max. Reim	Max. Annual	Price	Max. Reim	Max Annual
FY 22	\$53,350	\$3,000	\$56,350	\$69,500	inc	\$69,500	\$59,000	inc	\$59,000
FY 23	\$53,350	\$3,000	\$56,350	\$72,975	inc	\$72,975	\$59,000	inc	\$59,000
FY 24	\$53,350	\$3,000	\$56,350	\$76,624	inc	\$76,624	\$59,000	inc	\$59,000
TOTAL BASE			\$169,060	\$219,099			\$177,000		
OPTION PERIODS									
FY 25	\$53,350	\$3,000	\$56,350	\$80,455	inc	\$80,455	\$59,000	inc	\$59,000
FY 26	\$53,350	\$3,000	\$56,350	\$84,478	inc	\$84,478	\$59,000	inc	\$59,000
TOTAL (base + options)			\$281,760	\$384,032			\$295,000		

Although Fedak & Brown's quote was slightly less than Nigro & Nigro, the evaluation committee determined that Nigro & Nigro's experience, especially that of the lead auditor at Nigro & Nigro, had extensive prior audit history with GCTD and considerably more transit/special district experience than the other firms.

Based on this analysis, Nigro & Nigro's proposed priced of \$59,000 per year for the three-year base period plus \$59,000 for each of the two option years is considered fair and reasonable and in line with those generally charged in this type of work.

A responsibility determination was conducted on Nigro & Nigro. Staff confirmed that Nigro & Nigro was not listed in the System for Award Management (SAM). This firm has a rating of A+ with the Better Business Bureau and there are no complaints filed. The client references provided by Nigro & Nigro were contacted and provided no negative comments. As a result, Nigro & Nigro was determined to be a responsive, responsible firm capable of meeting GCTD's requirements.

Funds are budgeted each year to perform Audit Services.

### **III. RECOMMENDED ACTION**

A Request for Quote was issued, and submissions were evaluated to determine the most highly qualified firm to provide Audit Services for Gold Coast Transit District. After an extensive evaluation process, Nigro & Nigro received the highest overall score. Nigro & Nigro is considered a responsive, responsible bidder and their quote is considered fair and reasonable.

**It is recommended the Board of Directors authorize award of a contract for Audit Services to Nigro & Nigro in an amount of \$59,000 each year not-to-exceed \$295,000 for the initial three-year period and for the two additional one-year option periods.**

  
\_\_\_\_\_  
General Manager's Concurrence



**DATE:** November 2, 2022

**Item #10**

**TO:** Board of Directors

**FROM:** Tanya Hawk   
Buyer

**SUBJECT:** CONSIDER AWARD OF CONTRACT TO DANIELS TIRES FOR TIRE  
MAINTENANCE AND SERVICES

---

## **I. EXECUTIVE SUMMARY**

As a result of a competitive bid, staff is requesting award of a firm-fixed contract to Daniels Tires for Tires Maintenance and Service. These services are for a one (1) year base period and four (4) one-year option periods for a total contract amount of \$676,425.00.

**IT IS RECOMMENDED** the Board of Directors authorize award of a contract for Tire Maintenance and Service to Daniels Tires in the amount of **\$135,285.00** for the initial one-year period and **\$541,140.00** for all four (4) option periods for a total contract amount of **\$676,425.00** plus an additional 10% (**\$67,645.00**) to cover additional items and/or increases for a total approval amount of **\$744,070.00**

## **II. BACKGROUND**

GCTD requires a contractor to provide tire maintenance and services, on an as-needed basis, for our fleet of transit buses. Services (maintenance) such as dismounting, mounting, balancing, disposal, tire storage, branding, repairs and emergency road services are also required.

In addition, GCTD has spare tires, rims, and accessories pertaining to its buses which shall be maintained and inventoried by the contractor. We require quarterly usage reports from the Contractor so GCTD can keep stock levels of spare tires with an accurate inventory.

GCTD operates 64 buses with two different types of recapped tires for the transit buses. Recapped sizes are, 305 70R22.5 or 315 80R22. 5 and GCTD uses approximately 600 recap tires per year.

GCTD is required to go out to bid to ensure continued fair and reasonable pricing. The current contract expired in May 2022. As GCTD's staff diligently worked on the new scope of work for the new procurement, a month-to-month purchase order was issued with the existing tire company.

### **GOLD COAST TRANSIT DISTRICT**

An Invitation for Bid (IFB) was issued in July 2022. The IFB was publicized on the Public Purchase website, where over 800 registered tire companies were notified. Thirty-eight (33) companies requested copies of our IFB. GCTD received three (3) bids on the bid due date of August 9, 2022.

Staff conducted a price analysis using all three (3) submitted bids and prior contract pricing. The pricing is summarized as follows.

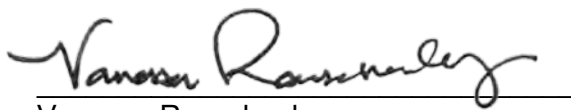
Description	Daniels Tires	Park House Tires	Southern Tires Mart
Base Period	\$135,285.00 tax included	\$158,796.00 tax included	\$184,806.00 tax include
<b>TOTAL BID PRICE (base year +all option year)</b>	<b>\$676,425.00</b>	<b>\$793,980.00</b>	<b>\$924,030.00</b>

Based on the above information, Daniels Tire proposed pricing for the base year was the lowest. The analysis also shows that Daniels Tires proposed pricing is 16% higher than current year pricing. Staff determined this increase as reasonable since the incumbent, Parkhouse increased their pricing as well. The industry, as a whole, have increased their pricing, due to current the state of the inflation. As a result, Daniels Tires proposed pricing is considered fair and reasonable based on adequate price competition.

A responsibility determination was conducted on Daniels Tires. Staff confirmed Daniels Tires was not listed in the System for Award Management (SAM) nor were there any complaints filed with the Better Business Bureau (BBB). Client references provided by Daniels Tires were contacted and no negative responses were provided. As a result, Daniels Tires was determined to be a responsive, responsible bidder overall and their proposed prices are considered fair and reasonable based on adequate price competition.

**IT IS RECOMMENDED the Board of Directors authorize award of a contract for Tire Maintenance and Service to Daniels Tires in the amount of \$135,285.00 for the initial one-year period and \$541,140.00 for all four (4) option periods for a total contract amount of \$676,425.00 plus an additional 10% (\$67,645.00) to cover additional items and/or increases for a total approval amount of \$744,070.00**

**GENERAL MANAGER'S CONCURRENCE**

  
Vanessa Rauschenberger  
General Manager





Item #11

**DATE** November 2, 2022

**TO** GCTD Board of Directors

**FROM** James Beck, Director Operations and Maintenance

**SUBJECT** Presentation from Stantec on GCTD's Final Draft ZEB Transition and Rollout Plan

---

### SUMMARY

This report provides an update and presentation on the final draft Zero-Emission Rollout Plan researched, assembled, and composed by consultant Stantec in partnership with GCTD.

All public transit providers must submit a ZEB Transition Rollout Plan to the California Air Resources Board (CARB) by June 30<sup>th</sup>, 2023. Gold Coast Transit's submission to CARB will incorporate modeling and methodology results, fleet recommendations, facility and infrastructure plans, a financial evaluation, workforce training plans as well as other considerations.

The purpose of this project is to develop a CARB-compliant plan for submission in response to the Innovative Clean Transit (ICT) Regulation which requires GCTD to transition its current bus fleet to 100% Zero-Emissions by the year 2040.

### RECOMMENDATION

It is recommended that the Board of Directors receive and file this presentation and provide any feedback to staff on the material presented. The final rollout plan will be brought back to the Board for approval at a future meeting.

General Manager's Concurrence

Vanessa Rauschenberger

### GOLD COAST TRANSIT DISTRICT





## ZEB Strategy and Rollout Plan

Gold Coast Transit District  
ZEB Rollout and Implementation Plan

Draft Final Report

October 2022

# ZEB STRATEGY AND ROLLOUT PLAN



## ZEB Strategy and Rollout Plan

ZEB Rollout Plan and Implementation  
Strategy

DRAFT Final Report

October 5, 2022

Prepared for:

Gold Coast Transit District

Prepared by:

Stantec Consulting Services Inc.

### **Acknowledgements**

We wish to thank Jim Beck,  
Vanessa Rauschenberger,  
Matthew Miller, Margaret Schoep,  
Juan De La Rosa, and staff at GCTD.

## ZEB STRATEGY AND ROLLOUT PLAN

### Release Version

Rev.	Description	Date
0	Draft Report Issued to GCTD	8/5/2022
	Comments received	8/26/2022
1	Revised Report Issued to GCTD	9/14/2022
2	Final Report Issued to GCTD	10/5/2022

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### Project Team

Stantec Consulting Services Inc.  
801 South Figueroa Street Suite 300  
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## EXECUTIVE SUMMARY

Gold Coast Transit District (GCTD) is the largest public transportation operator in Ventura County, providing a variety of fixed-route and demand response services to the cities of Ojai, Oxnard, Port Hueneme, Ventura and the unincorporated areas of Ventura County.

With a service area population of 367,260<sup>1</sup> and a fleet of 60 active (4 contingency) standard<sup>2</sup> buses for fixed-route services, GCTD is classified as a small transit agency under the Innovative Clean Transit (ICT) regulation<sup>3</sup>. This regulation by the California Air Resources Board (CARB) mandates that all transit agencies have a goal of gradually transitioning to a zero-emission bus (ZEB) fleet by 2040. Small transit agencies are required to submit a plan to CARB by June 30, 2023 and begin ZEB purchases in 2026. While the ICT regulation is directed primarily at larger, heavy-duty transit buses<sup>4</sup>, GCTD has chosen to transition the majority of its fixed route and demand-response service fleet to hydrogen fuel cell electric bus (FCEB) technology. This report provides a strategic transition plan for all revenue and non-revenue vehicles in GCTD's fleet.

This document also serves as the source for GCTD's rollout plan submission to CARB and provides a detailed plan of the technology, needs, and strategies that will help GCTD transition to a ZEB fleet. The previous phases of this project (summarized in this report) laid the foundation for this plan by assessing GCTD's existing conditions and modeling the power and fuel requirements needed to meet GCTD's service through a ZEB fleet. With this information, the initial ZEB fleet was refined through a collaborative optimization process that led to the preferred fleet composition of an entirely FCEB fixed-route fleet, and 90% FCE demand-response van fleet. Because there are no FCE cutaways currently available, portions of the cutaway fleet can be substituted with FCE vans.

With the preferred fleet composition established, the next steps included determining the facility upgrades and modifications—primarily the construction of a hydrogen fueling station and gas leak detection systems—required to support ZEB operations at GCTD's maintenance facility. In addition, a financial ZEB model was developed for comparative purposes against a base case (or business as usual with fossil fuel buses) and developing a phasing or implementation plan. Overall, implementing the ZEB fleet will cost \$135M (cumulative capital and operating costs) compared to \$105M for business-as-usual (fossil fuel technology) within a 17-year timeframe (through 2040). Stated otherwise, the transition to ZEBs adds incremental capital and operating costs of \$30M to GCTD over the 17-year period. The infrastructure requirements are also captured in this plan to accommodate the phased acquisition of FCEBs while still operating and eventually phasing out fossil fuel vehicles.

Based on GCTD's existing fleet replacement schedule and the required ZEB purchase schedule outlined by CARB, this plan recommends that the ZEB procurement begins in 2023 and gradually continues

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<sup>1</sup> NTD 2020 service profile

<sup>2</sup> The active fleet consists of 60 buses (40-ft and 35-ft) for revenue service and 4 buses for contingency purposes.

<sup>3</sup> In this document, standard refers to 35-ft and 40-ft buses.

<sup>4</sup> Specifically, the ICT regulation mandates the transition of vehicles with a gross vehicle weight rating (GVWR) of greater than 14,000 lbs.



through 2040 as fossil fuel vehicles reach the end of their useful lives and are retired. This phased approach allows for GCTD to implement a small number of FCEBs and learn from the process and slowly scaling up to reach a ZE revenue vehicle fleet by 2040 and adhering to ICT guidelines and goals. The full phasing and implementation plan is outlined in Table 1. With a full transition to FCEB, GCTD can reduce its fleet-related greenhouse gas emissions by approximately 49% (~5,414 tons annually) due to the residual carbon footprint of hydrogen fuel production and transportation.

Throughout this document, information is provided that corresponds to the required sections of the ICT ZEB Rollout Plan. Taken together, this plan provides a prudent and feasible approach for GCTD to implement ZEBs that meets the agency's vision of providing safe, responsive, convenient, efficient, and environmentally responsible public transportation to the community.





Table 1: ZEB implementation phasing plan, FY2023-2040

Year	Construction – maintenance facility	Fixed-Route ZEB Fleet Procurements	Demand Response ZE Fleet Procurements	Training: operators, maintenance staff, technicians	Training - other	Capital expenses (2022\$)	O&M expenses (2022\$)	Total expenses (2022\$)
FY2023	Construct and install hydrogen fueling equipment for high and low pressure refueling (H35 and H70). Installation of hydrogen gas detection system in maintenance bays and upgrade of ventilation system.	0 35-ft 5 40-ft	6 vans & cutaways	Tier 1 & tier 3 OEM training	Tier 1 OEM training for all other staff	\$16,646,000	\$5,196,000	\$21,842,000
FY2024		0 35-ft 0 40-ft	7 vans & cutaways	Annual refreshers	No activity	\$3,448,000	\$4,808,000	\$8,256,000
FY2025		0 35-ft 0 40-ft	2 vans & cutaways	Annual refreshers	Local fire and emergency response department introduction to new technology	\$1,899,000	\$4,559,000	\$6,458,000
FY2026		0 35-ft 2 40-ft	8 vans & cutaways	Annual refreshers	No activity	\$4,821,000	\$4,236,000	\$9,057,000
FY2027		2 35-ft 0 40-ft	0 vans & cutaways	Annual refreshers	Local fire and emergency response department introduction to new technology	\$3,989,000	\$3,979,000	\$7,968,000
FY2028		0 35-ft 2 40-ft	5 vans & cutaways	Annual refreshers	No activity	\$4,824,000	\$3,707,000	\$8,531,000
FY2029		0 35-ft 5 40-ft	0 vans & cutaways	Annual refreshers	Local fire and emergency response department introduction to new technology	\$3,401,000	\$3,513,000	\$6,914,000
FY2030		0 35-ft 2 40-ft	10 vans & cutaways	Tier 1 & tier 3 OEM training for new staff	Tier 1 OEM training for all other staff	\$2,503,000	\$3,443,000	\$5,946,000
FY2031		0 35-ft 5 40-ft	7 vans & cutaways	Annual refreshers	No activity	\$3,805,000	\$3,297,000	\$7,102,000

Year	Construction – maintenance facility	Fixed-Route ZEB Fleet Procurements	Demand Response ZE Fleet Procurements	Training: operators, maintenance staff, technicians	Training - other	Capital expenses (2022\$)	O&M expenses (2022\$)	Total expenses (2022\$)
FY2032		0 35 -ft 4 40-ft	2 vans & cutaways	Tier 1 & tier 3 OEM training for new staff	Tier 1 OEM training for all other staff	\$2,517,000	\$3,259,000	\$5,776,000
FY2033		0 35-ft 4 40-ft	8 vans & cutaways	Tier 1 & tier 3 OEM training for new staff	Tier 1 OEM training for all other staff	\$3,008,000	\$3,111,000	\$6,119,000
FY2034		0 35-ft 7 40-ft	0 vans & cutaways	Annual refreshers	Local fire and emergency response department training on new technology	\$3,628,000	\$2,948,000	\$6,576,000
FY2035		0 35-ft 6 40-ft	5 vans & cutaways	Annual refreshers	No activity	\$3,461,000	\$2,787,000	\$6,248,000
FY2036		0 35-ft 6 40-ft	0 vans & cutaways	Annual refreshers	Local fire and emergency response department training on new technology	\$2,794,000	\$2,626,000	\$5,420,000
FY2037		0 35-ft 6 40-ft	10 vans & cutaways	Annual refreshers	No activity	\$3,568,000	\$2,468,000	\$6,036,000
FY2038		0 35-ft 6 40-ft	7 vans & cutaways	Tier 1 & tier 3 OEM training for new staff	Tier 1 OEM training for all other staff	\$3,133,000	\$2,384,000	\$5,517,000
FY2039		8 35-ft 0 40-ft	2 vans & cutaways	Annual refreshers	No activity	\$3,123,000	\$2,252,000	\$5,375,000
FY2040		0 35-ft 8 40-ft	8 vans & cutaways	Annual refreshers	Local fire and emergency response department training on new technology	\$3,694,000	\$2,128,000	\$5,822,000

## Abbreviations

AHJ	Authorities Having Jurisdiction
AHSC	Affordable Housing and Sustainable Communities Program
APCD	Ventura County Air Pollution Control District
APTA	American Public Transportation Association
BEB	Battery electric bus
BESS	Battery electric storage system
BEV	Business Electric Vehicle
BUILD	Better Utilizing Investments to Leverage Development
CAF	Clean Air Fund
CARB	California Air Resources Board
CCS	Carbon Capture and Storage
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CTTC	California Transit Training Consortium
DGE	Diesel Gallon Equivalent
FCEB	Hydrogen fuel cell electric bus
FHWA	Federal Highway Administration
FTA	Federal Transportation Administration
GHG	Greenhouse gas
HVIP	Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program
ICT	Innovative Clean Transit
LCFS	Low Carbon Fuel Standard
LCTOP	Low Carbon Transit Operations Program
LPP	Local Partnership Program
MPO	Metropolitan Planning Organization
NFPA	National Fire Protection Association

## ZEB STRATEGY AND ROLLOUT PLAN

NPV	Net Present Value
NREL	National Renewable Energy Laboratory
NTI	National Transit Institute
OEHHA	Office of Environmental Health Hazard Assessment
PPE	Personal Protective Equipment
PV	Photovoltaic
RAISE	Local and Regional Project Assistance Program
SAC	Stakeholder Advisory Committee
SCAG	Southern California Association of Governments
SCCAB	South Central Coast Air Basin
SCCP	Solutions for Congested Corridors Program
SCE	Southern California Edison
SMR	Steam Methane Reformation
SOC	State of Charge
STEP	Sustainable Transportation Equity Project
STIP	State Transportation Improvement Program
TDA	Transportation Development Act
TIRCP	Transit and Intercity Rail Capital Program
USDOT	United States Department of Transportation
VCTC	Ventura County Transportation Commission
VCREA	Ventura County Regional Energy Alliance
ZE	Zero emission
ZEB	Zero-emission bus

## 1.0 INTRODUCTION AND BACKGROUND

Gold Coast Transit District (GCTD) provides public fixed-route and paratransit services to western Ventura County, including to the communities of Ojai, Oxnard, Port Hueneme, and Ventura. GCTD is the largest public transportation provider in Ventura County, providing over 3.6 million unlinked passenger trips in 2019<sup>5</sup>. GCTD operates under the mission statement “to provide safe, responsive, convenient, efficient, and environmentally responsible public transportation that serves the diverse needs of our community.”

GCTD currently operates a fleet of 64 fixed route and 26 paratransit CNG-powered vehicles fueled by an onsite fueling station in Oxnard. GCTD is part of the Ventura County Air Pollution Control District (APCD), South Central Coast Air Basin (SCCAB), and Southern California Edison (SCE) electric utility territory.

With a service area population of 367,260 and a fleet of 64 fixed route vehicles (60 for revenue service and 4 contingency buses), GCTD is classified as a small transit agency under the Innovative Clean Transit (ICT) mandate and is required to submit a zero-emission bus (ZEB) rollout plan to the California Air Resources Board (CARB) by July 1, 2023<sup>6</sup>.

This document serves as the source for GCTD’s rollout plan submission to CARB and provides a detailed plan of the technology, needs, and strategies that will help GCTD transition to a ZEB fleet. To develop this rollout plan, several steps have been taken to determine the best ZEB strategy for GCTD. These steps included:

A review of existing conditions to understand characteristics and constraints for GCTD’s operations and service area. This included a primer on different ZEB technologies to provide a scan of the market and technologies, including battery-electric buses (BEBs) and hydrogen fuel cell electric buses (FCEBs).

Energy and power modeling to understand performance under different ZE technology options, their viability, and suitability for GCTD’s needs. A quantitative and qualitative assessment of modeling results to determine the preferred ZE fleet composition for GCTD.

This report is intended to act as a roadmap to guide GCTD through the ZEB transition to 100% ZEB deployment and implementation by 2040, as well as to fulfill the CARB guidelines as outlined in the ICT mandate. As CARB has reminded transit agencies, the ICT-regulated rollout plan is intended to be a living document that can and should be regularly revisited and updated over time as ZE technologies continue to evolve.

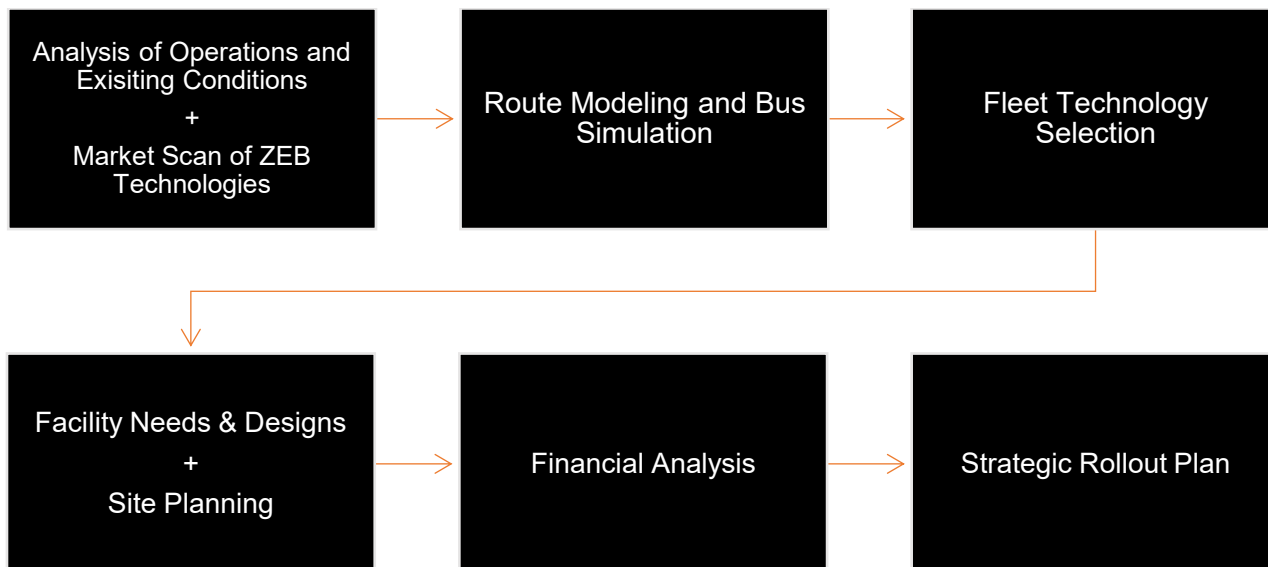
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<sup>5</sup> 2019 NTD agency profile

<sup>6</sup> CARB ICT defined large transit agencies as operating in “an urbanized area with a population of at least 200,000 as last published by the Bureau of Census before December 31, 2017 *and* has at least 100 buses in annual maximum service.” Agencies that do not meet this definition are categorized as small transit agencies.

## 2.0 APPROACH TO ZEB PLANNING

The graphic in Figure 1 provides a high-level schematic of the major steps in this project to derive a recommended fleet mix and implementation plan.



**Figure 1: Schematic representation of the steps in the ZEB planning process**

The first step involved a review of existing conditions of GCTD to provide a foundation and understanding of GCTD's operations, service, and business processes that would be impacted by a transition to a ZEB fleet. A summary of these findings is provided in Section 3.0. A site visit of the operating base and maintenance facility in Oxnard provided insights into the constraints and opportunities for implementing ZEBs, as well as the condition of the facilities, buildings, and existing service cycle. A market scan was also conducted to analyze the current ZEB technologies, their limitations, and in-development technologies that can help shape GCTD's future ZEB fleet.

Next, we modeled block-level and vehicle-level fuel economies to understand the predicted performance of different ZEB technologies under GCTD's operating parameters for both fixed-route and demand response services. Together with a multicriteria trade-off analysis and in consultation with GCTD staff, Stantec and GCTD determined that the best path forward to a ZE future is with a hydrogen fleet (Section 4.0). The fleet procurement schedule and outlook were designed to account for the ICT Regulation's requirement of annual apportionment of ZEB purchases (Section 5.0).

Stantec designed conceptual site plans (and opinion of probable costs) for the maintenance facility that demonstrates the layout of the yard, the service cycle, buses, hydrogen fueling infrastructure, and other ZEB-related equipment (Sections 6.0 and Section 7.0).

## ZEB STRATEGY AND ROLLOUT PLAN

With the site plans and identification of required facility modifications and impacts on capital and operating costs, Stantec developed a financial analysis for the ZEB rollout through 2040 (Section 8.0). Operating and planning considerations (Section 9.0), workforce training (Section 10.0), and potential funding sources (Section 11.0) are also reviewed and discussed.

All steps described here provide GCTD with a ZEB rollout plan and strategy. Throughout this document, reference is made to specific sections that are found in the ICT mandated ZEB Rollout Plan document.

### 3.0 SUMMARY OF KEY EXISTING CONDITIONS

The Existing Conditions report provided a comprehensive review of GCTD's existing conditions, encompassing operations, facilities, and finances to lay the groundwork for the modeling and understand current (pre-COVID-19) operating conditions<sup>7</sup>.

Major findings from the existing conditions report that will affect the ZEB transition include:

- GCTD operates in a relatively compact and flat service area (with the exception of the Ojai area)
- GCTD's current fleet is made up of standard buses (40-ft and 35-ft) for fixed-route services and a combination of cutaways and passenger vans for demand response services (Table 2). Cutaways and vans have fewer ZE alternatives when compared to options available for standard buses. Fixed-route buses are all CNG-powered with an average fleet age of 9.9 years. Cutaways are also CNG-powered and average 4 years old, with passenger vans an average of 4.3 years, fueled by either CNG or unleaded gasoline. All CNG vehicles are fueled onsite at GCTD's operating base and maintenance facility, and unleaded gasoline vans are fueled offsite by the contractor.

**Table 2: Current revenue fleet composition**

In-Service Year	Quantity	Make	Seating capacity	Fuel type	GCTD retirement year	FTA minimum useful life <sup>8</sup>	Current age <sup>9</sup>	Service type	Summary
2019	5	Nor Cal Van	4/4+2wc	Gas	2027	4 years	2	Demand Response	19 vans for demand response services
2015	6	VPG MV-1	3/3+1wc	CNG	2023	4 years	7	Demand Response	
2016	7	VPG MV-1	3/3+1wc	CNG	2024	4 years	7	Demand Response	
2022	1	Nor Cal Van	4/4+2wc	Battery Electric	2030	4 years	1	Demand Response	
2017	8	Starcraft	14/4+3wc	CNG	2025	4 years	4	Demand Response	8 cutaways for demand response services
2007	13	New Flyer	39	CNG	2021-2024	12-17 years	15	Fixed-Route	60 full-size buses for fixed-route revenue service
2009	9	NABI	30	CNG	2022	12 years	13	Fixed-Route	
2010	8	NABI	30	CNG	2023	12 years	12	Fixed-Route	
2015	8	Gillig	38	CNG	2027	12 years	6	Fixed-Route	
2016	5	Gillig	38	CNG	2028	12 years	5	Fixed-Route	

<sup>7</sup> Throughout this report, "current" refers to pre-COVID (2019) conditions unless otherwise stated.

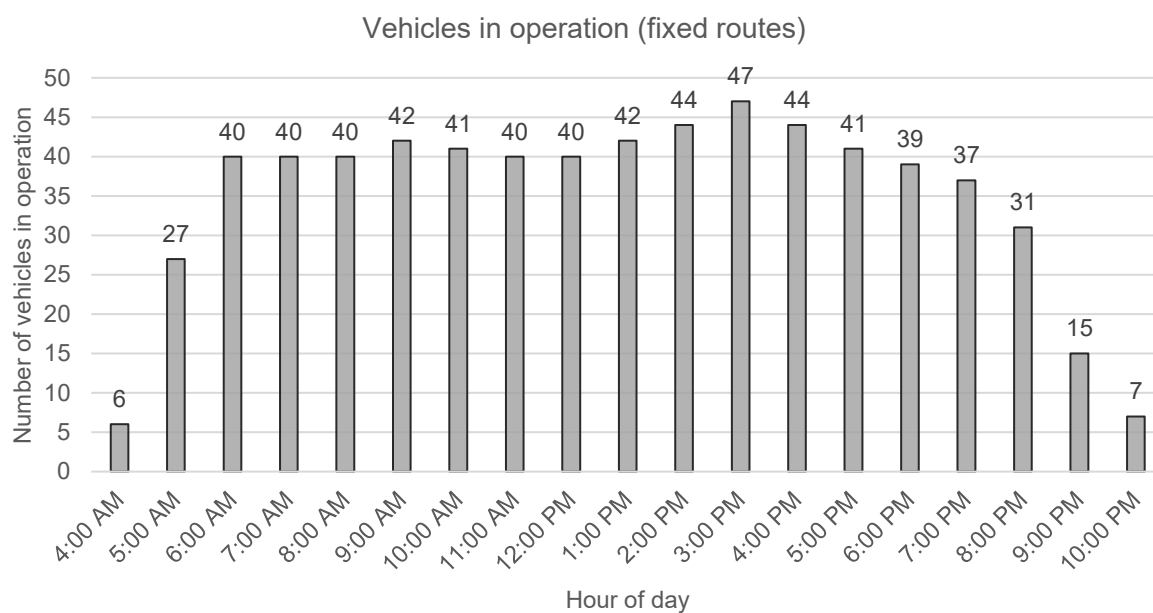
<sup>8</sup> <https://olga.drpt.virginia.gov/Documents/forms/DRPT%20Asset%20Useful%20Life%20Chart.pdf>

<sup>9</sup> Current age determined from model year not in-service year



In-Service Year	Quantity	Make	Seating capacity	Fuel type	GCTD retirement year	FTA minimum useful life <sup>8</sup>	Current age <sup>9</sup>	Service type	Summary
2019	5	Gillig	38	CNG	2031	12 years	2	Fixed-Route	
2021	3	Gillig	38	CNG	2033	12 years	1	Fixed-Route	
2022	9	Gillig	38	CNG	2034	12 years	0	Fixed-Route	

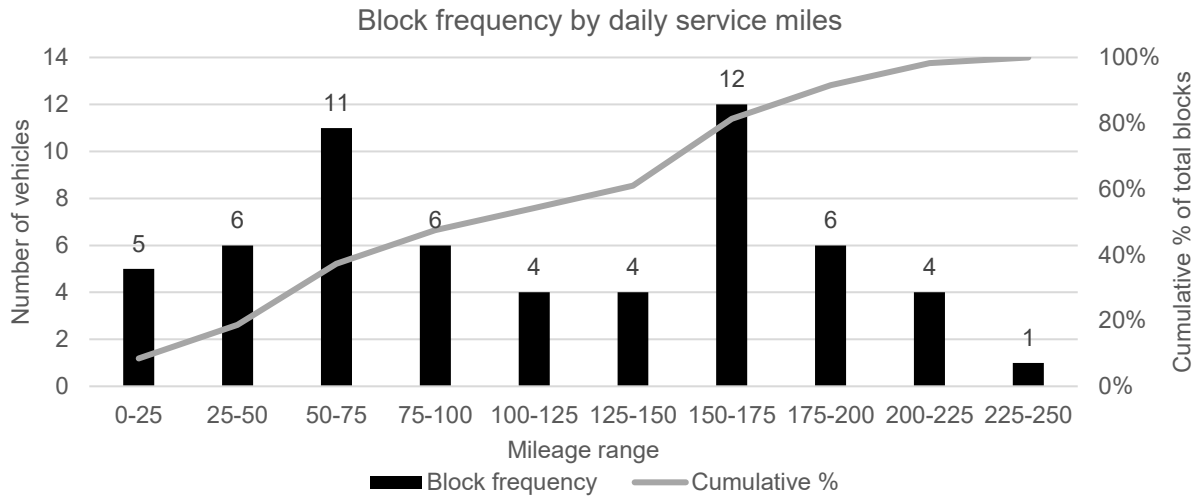
- For fixed-route services, a typical service day sees more vehicles in service during the midday period, but hourly vehicle requirements are fairly consistent throughout the day<sup>10</sup>. Hourly vehicle requirements peak at 3-4 pm with 47 vehicles required for service (Figure 2).



**Figure 2: Hourly vehicles in operation (fixed route)**

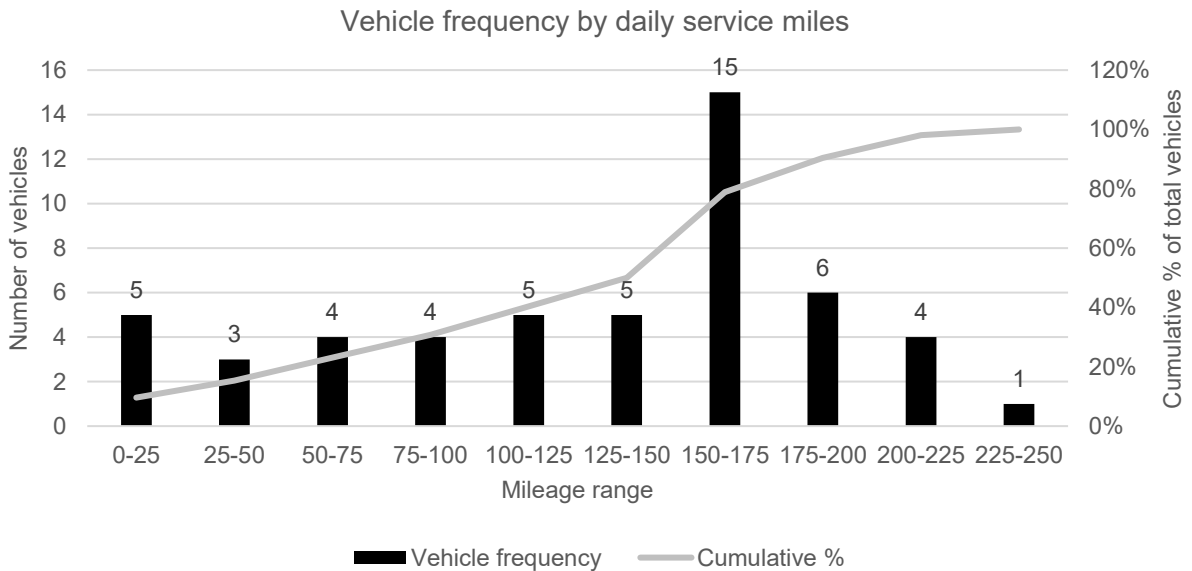
- The ability to analyze GCTD's scheduling and operating practices is crucial for understanding the agency's blocking practices, how long blocks are, and how blocks are assigned to vehicles. This translates to how long vehicles are out in revenue operation and, from a modeling perspective, helps us understand if current blocks can be completed with ZE equivalents. Figure 3 shows that more than half of all blocks have mileages over 100 miles, and the maximum block length is 241 miles.

<sup>10</sup> A representative daily service schedule for a pre-COVID-19 Monday was chosen.



**Figure 3: Block frequency by daily service miles**

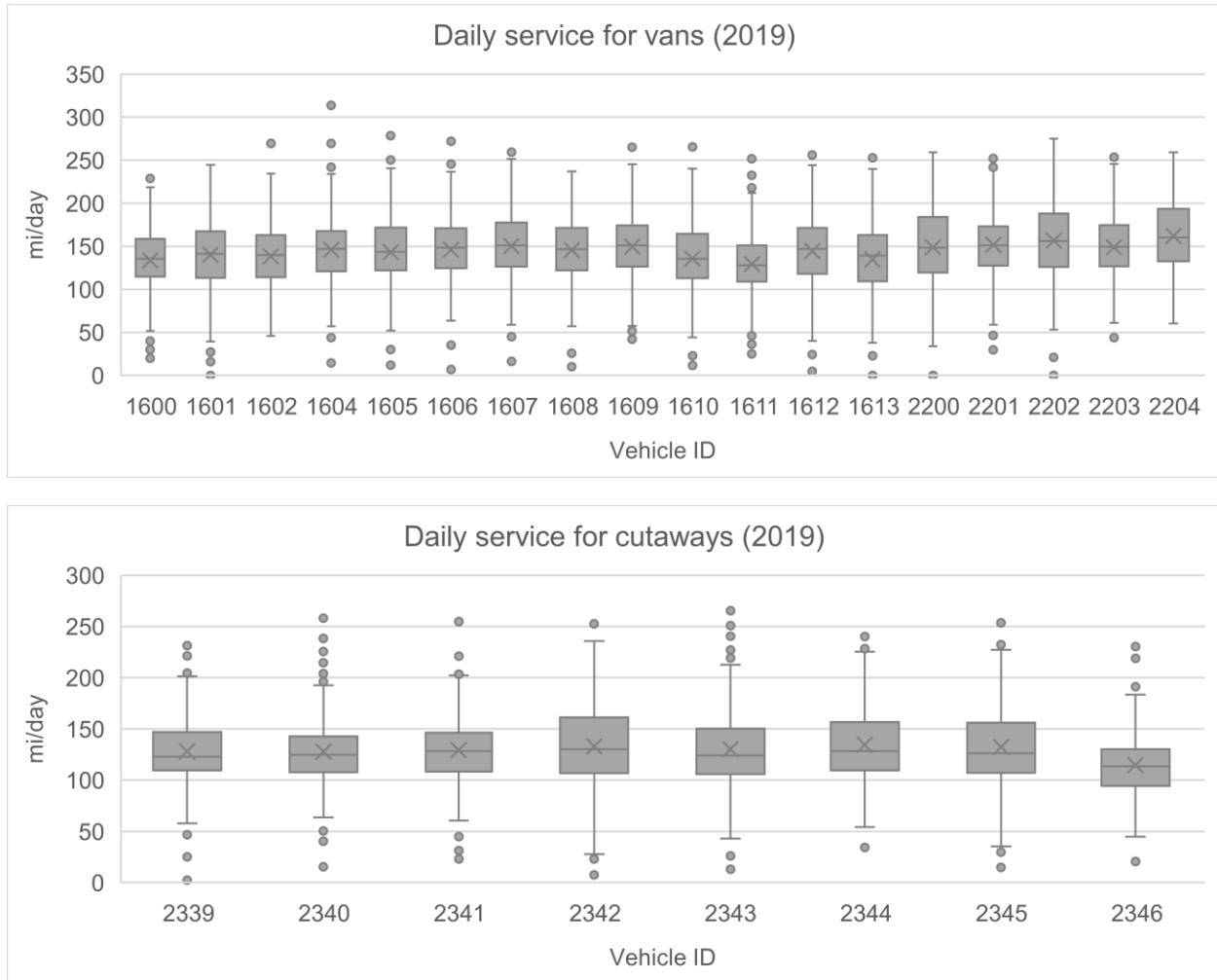
- Seven vehicles (or 13% of vehicles in operation) complete two blocks on an average day. To understand how the daily distance that vehicles are traveling changes, we combine blocks at the vehicle level (Figure 4). This shows that 50% of vehicles travel less than 150 miles in a day, which is a positive sign considering the range limitations of ZEBs.



**Figure 4: Vehicle frequency by daily service miles**

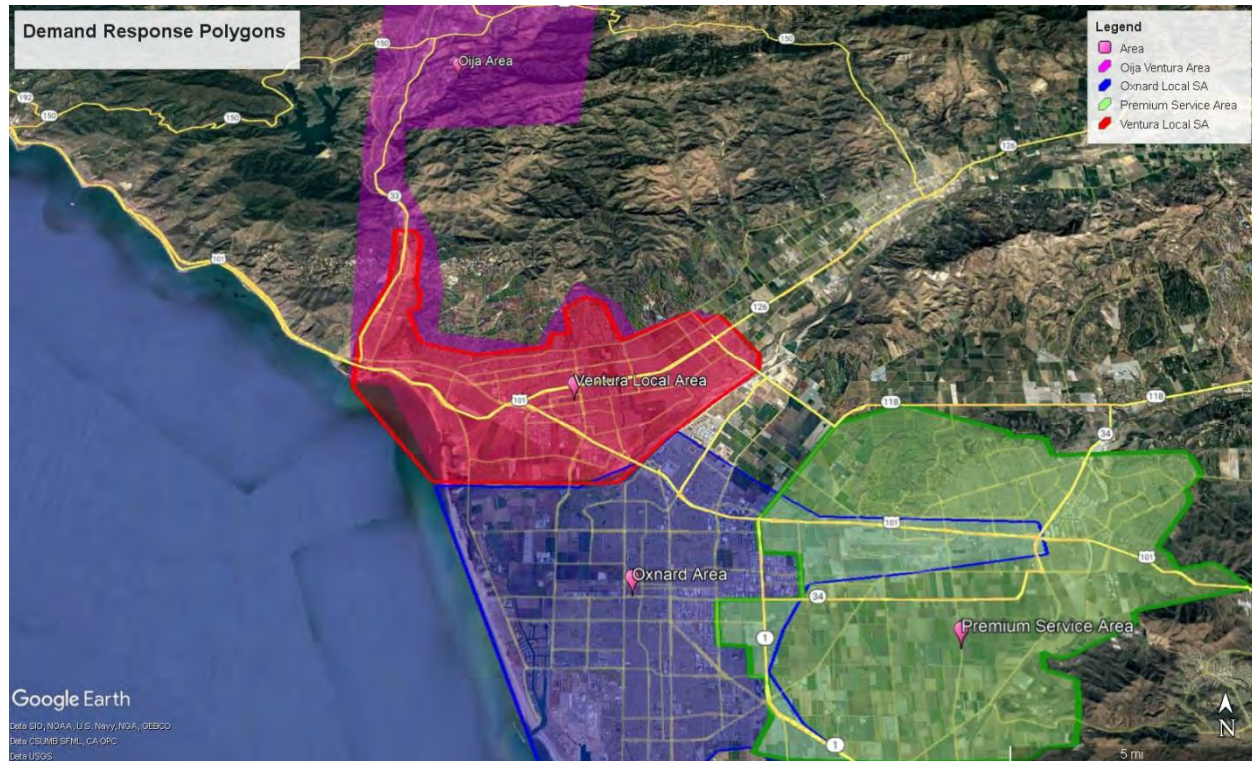
- To understand the variability in daily service for demand response vehicles, an entire year (2019) of data was analyzed. Figure 5 shows that on average, vans (top) travel slightly longer distances

than cutaways (bottom), with an average daily service of 144 miles for vans compared to 130 miles for cutaways. However, both vehicles displayed examples where they traveled long distances in a day that exceed ranges of current ZE options for these vehicle types, with vans traveling a maximum of 300 miles in one day and cutaways a maximum of 250 miles.



**Figure 5: Daily service for demand response vehicles (2019)**

- In the modeling, we also took into consideration the service design structure of demand response services, where vehicles can be assigned to a polygon within GCTD's service area, keeping them within a certain geographic area to improve efficiency (Figure 6). Polygon assignment criteria includes vehicle capacity and the number of ambulatory vs. wheelchair spaces available. Some vehicles are left unassigned to polygons to handle trips that cross multiple areas.



**Figure 6: Demand response polygons**

- GCTD's operating base and maintenance facility is large, new, and well-maintained with onsite CNG fueling and space for growth in fleet and infrastructure. Transition to either BEBs or FCEBs will be accommodated in the space of the facility, however either technology option will require facility modifications:
  - BEBs will require electrical upgrades and chargers, etc.
  - FCEBs will require new hydrogen storage/fueling infrastructure, gas leak detection, and potentially electrical upgrades.

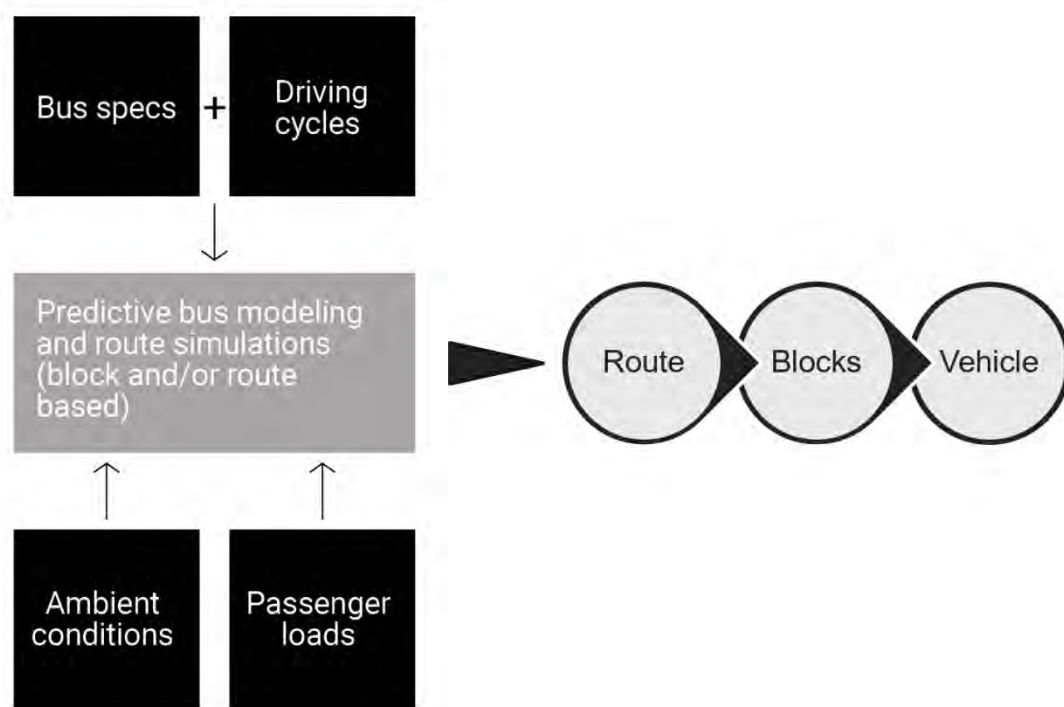
Overall, GCTD's facility, operations, and service area seem well-suited to a fairly straightforward ZE transition, with factors like a relatively flat and compact service area and new facility without space constraints. Some challenges that may arise are related to how vehicles are scheduled, with many fixed-route vehicles out in operations 12+ hours a day (which could exceed range limitations of ZEBs or limit the ability for midday/opportunity charging), and a demand response fleet made up of vehicles with fewer ZE options that travel long daily distances, and the demand response model is inherently difficult to plan for because daily service miles are dictated by demand and not adherent to a fixed schedule.

## 4.0 PREFERRED/RECOMMENDED FLEET COMPOSITION

This section provides an overview of the power and energy modeling methodology and presents the results of the modeling to understand the feasibility of transitioning GCTD's operations to different ZE alternatives. Based on the modeling outcomes, we present a discussion of the different ZE fleet solutions and the pros and cons of different fleet compositions which were used to determine the preferred ZEB fleet composition for GCTD's fixed-route and demand response fleets.

### 4.1 FLEET AND POWER MODELING OVERVIEW

ZEBDecide, Stantec's fleet modeling tool, was used to determine the feasible ZEB composition for GCTD's fleet. The predictive ZEB performance modeling (schematic overview shown in Figure 7) depends on several inputs, such as passenger loads, driving cycles (or duty cycles), topography, vehicle specifications, and ambient conditions subject to the environment in which the agency operates.



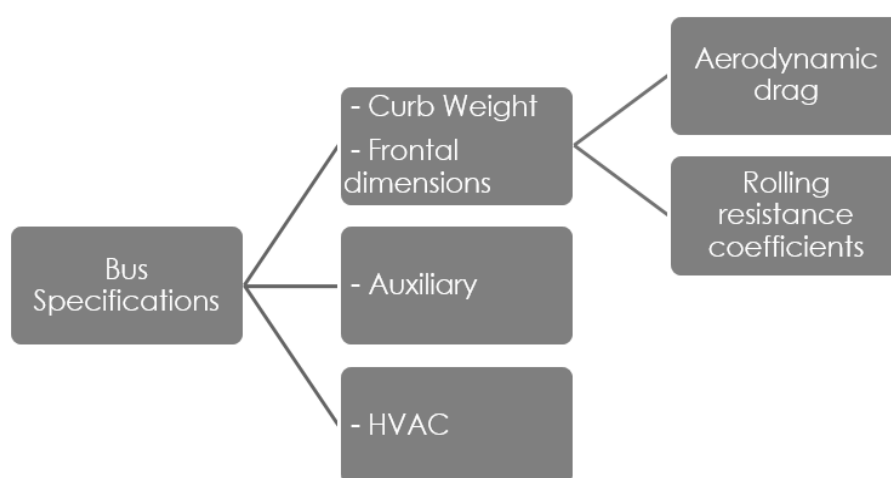
**Figure 7: ZEBDecide modeling overview**

#### 4.1.1 Modeling Inputs

ZEBDecide's modeling process predicts ZEB drivetrain power requirements specific to given acceleration profiles. The following inputs are included in the model to determine feasibility of different ZEB technologies under GCTD's operating conditions:

**Bus/vehicle specifications:** the bus specification inputs used in the modeling are shown in Figure 8. For GCTD, the key bus specifications used in the modeling process for each service type are shown in Table 3. Both BEBs and FCEBs were modeled for fixed-route services. As GCTD operates 35-ft and 40-ft models, we specified the appropriate vehicle size (for each route and block) to reflect GCTD scheduling practices.

For demand response services, which are operated with both cutaways and vans, we modeled BEB options for both vehicle types. FCEB options are more limited, and a hydrogen cutaway was not modeled due to a lack of available options currently on the market and being operated by transit agencies at the time of this writing.



**Figure 8: Schematic of the inputs for bus specifications.**

**Table 3: Vehicle specifications for energy modeling**

GCTD service type	Technology type	Vehicle size	Battery (kWh) or tank (kg)	Curb Weight (lbs.)
Fixed route	BEB	35-ft	450 kWh	29,700
		40-ft	525 kWh <sup>11</sup>	45,000
	FCEB	35-ft	35 kg	29,700
		40-ft	37.5 kg	45,000
Demand response	BEB	Cutaway	120 kWh	16,200
		Van (25-ft)	118 kWh	14,330
	FCEB	Van (25-ft)	13 kg	10,360

<sup>11</sup> If a block modeled with a 40-ft BEB failed with a 525-kWh battery, blocks were subsequently modeled with a 40-ft BEB with a 660-kWh battery.



**Representative driving cycles:** also called acceleration profiles or duty cycles, representative driving cycles are speed versus time profiles that are used to simulate vehicle performance and energy use. Cycles were assigned to all routes based on GCTD's operations and observed driving condition and are derived from the National Renewable Energy Laboratory's (NREL) drive cycle database called DriveCAT<sup>12</sup>. The complete assignment of driving cycles to all routes is presented as an appendix in the energy modeling report. For demand response services, the model used the average driving speeds for each individual run instead of assigning representative driving cycles.

**Passenger loads:** to examine the weight associated impacts of passenger loads experienced by GCTD's fleet, GCTD provided data for each route detailing the passenger load for each route to be modeled. For demand response services, an average of four passengers onboard was assumed for modeling purposes.

**Ambient temperature:** Stantec developed a correlation between ambient temperature and power requirements from the HVAC system. The power requirement for modeling purposes was set based on an annual low temperature average of 46°F<sup>13</sup>.

**Topography and elevation:** given that portions of GCTD's service area are highly impacted by elevation and topography, it is important to account for the impacts of terrain and elevation on the energy efficiency of ZEBs. Each route alignment was imported into Google Earth to create an elevation profile to understand the total elevation gains/losses seen for each route in the system (see example in Figure 9).



Source: Google Earth

**Figure 9: Elevation profile example (Route 6)**

The average and maximum grades for each route were similarly determined using these elevation profiles, which were used as the inputs in the topography analysis (Table 4). Modeling for demand response did not directly account for topography. Instead, the model used information about gain and loss in grade from local fixed route to correct fuel economy.

<sup>12</sup> NREL DriveCAT - Chassis Dynamometer Drive Cycles. (2019). National Renewable Energy Laboratory. [www.nrel.gov/transportation/drive-cycle-tool](http://www.nrel.gov/transportation/drive-cycle-tool)

<sup>13</sup> US Climate Data <https://www.usclimatedata.com/climate/oxnard/california/united-states/usca0819>

**Table 4: Elevation analysis for fixed routes<sup>14</sup>**

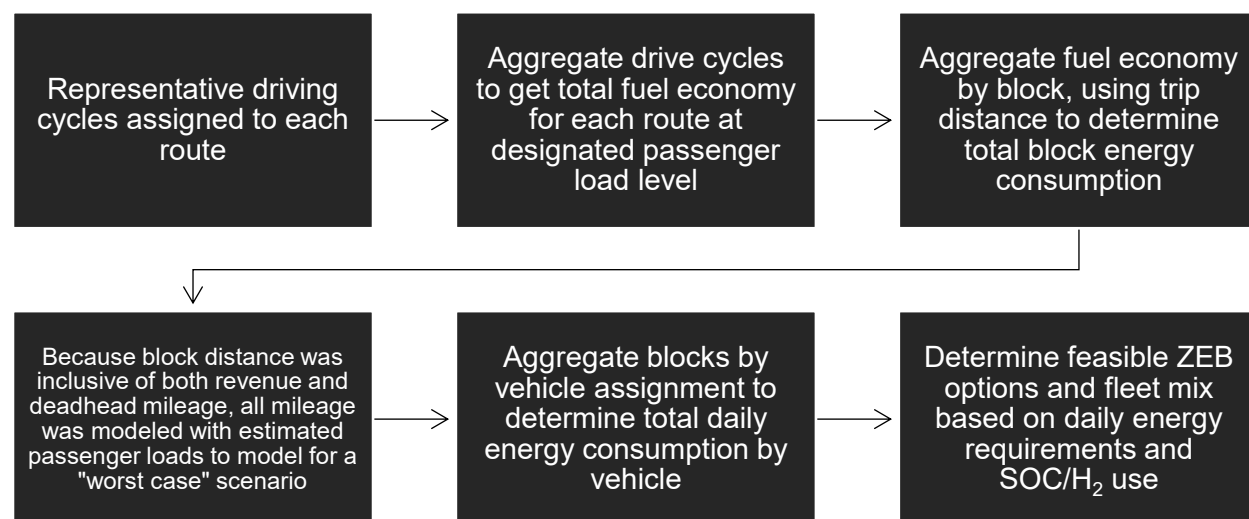
Route	Average slope	Max slope	Weighted average slope
1A/B	0.6%	3.5%	1.1%
3	0.8%	3.5%	0.9%
4A	1.2%	5.4%	2.0%
4B	0.8%	3.9%	1.7%
5	0.9%	4.3%	1.9%
6	1.3%	6.8%	2.6%
8	0.8%	7.5%	2.6%
11	1.4%	11.5%	4.0%
16	1.7%	7.4%	4.4%
17	1.2%	11.1%	1.8%
18A	0.8%	3.4%	1.2%
18C	0.7%	3.6%	0.8%
18E	1.1%	11.7%	1.8%
18F	1.7%	7.5%	2.5%
18G	1.3%	11.9%	2.1%
19	0.5%	2.6%	0.6%
21	1.2%	9.0%	2.7%

### 4.1.2 Modeling Process

Using the inputs above, predictive power and energy modeling was completed for fixed-route and demand response services. The energy modeling process for fixed-routes first aggregates results at the route level, then at the block level, and is then aggregated at the vehicle assignment level to determine total daily energy consumption per vehicle. This process is described in Figure 10 for fixed routes and Figure 11 for demand response service.

<sup>14</sup> Elevation analysis was not completed for routes missing in GTFS data and was approximated based on data from similar routes.





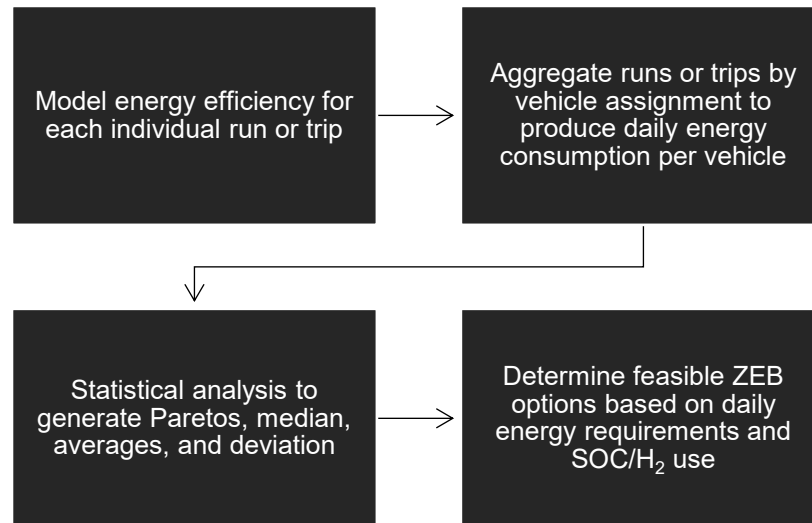
**Figure 10: ZEBDecide energy modeling process, fixed routes**

The results of the modeling provide insight into:

- Fuel economy and energy requirements
- Operating range

The feasibility of a BEB to complete its assigned service by estimating the state of charge (SOC); the vehicle assignment can be successfully completed with a BEB if it can complete its scheduled service with at least 20% battery SOC remaining.

As mentioned above, modeling for demand response services included all individual runs and vehicle assignments for 2019 and 2020 (1,230 minivan and 900 cutaway vehicle assignments accounting for over 4,800 runs). The energy requirement for each individual trip was aggregated at the vehicle level to calculate the total energy consumed by each vehicle per weekday. A statistical analysis was conducted on the entire dataset to determine the average fuel efficiency and daily energy use per vehicle to evaluate success levels. This process is shown in Figure 11.



**Figure 11: ZEBDecide energy modeling process, demand response**

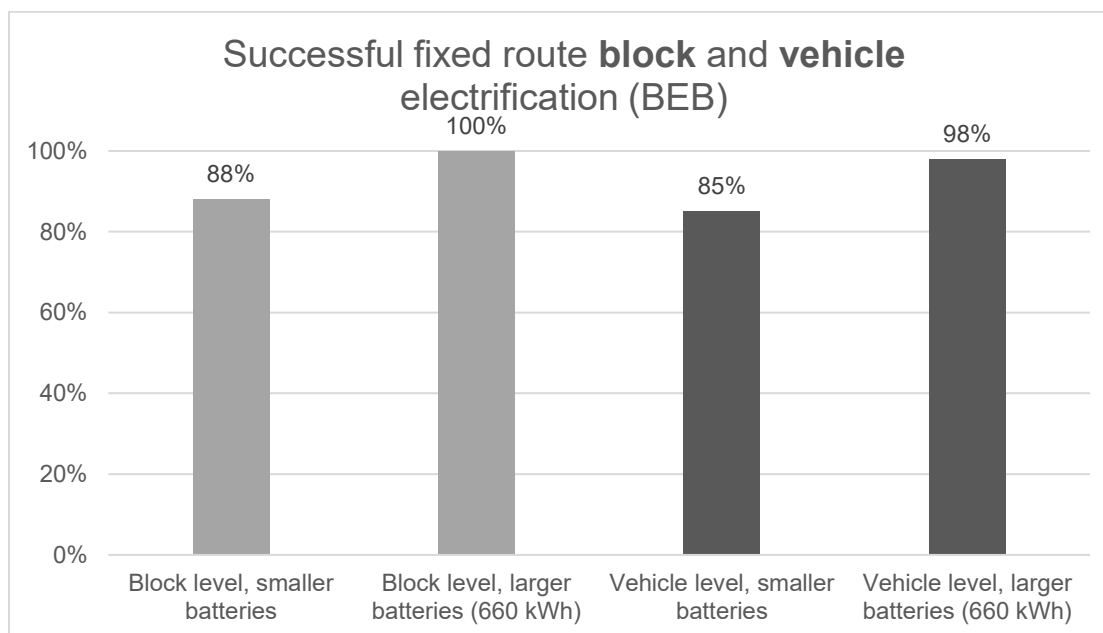
Similar to the fixed-route modeling, the results of the modeling for demand response service provide insights into:

- Average fuel economy
- Probability of energy requirements
- Probability of operating range

The feasibility of different ZEB technologies. For BE cutaways and vans, success is determined through SOC; the vehicle assignment can be successfully completed when BE vehicle can complete its scheduled service with at least 20% battery SOC. For hydrogen vans, if a vehicle consumes less than 95% of its tank capacity, the vehicle assignment is counted as successful.

### 4.1.3 Modeling Results

BEB Block-level and vehicle-level modeling results for fixed-route services are shown in Figure 12.



**Figure 12: Successful block and vehicle electrification (fixed routes)**

The criterion to deem if a block can be successfully served by a BEB is if the SOC of the battery is above 20% after completing all the trips in a block. A block is deemed unsuccessful if the battery SOC drops below 20% after completing the block. These results show that without increasing to a larger battery size, 88% of blocks can be successfully electrified. When unsuccessful blocks were increased to a larger battery size, 100% of blocks can be successfully electrified.

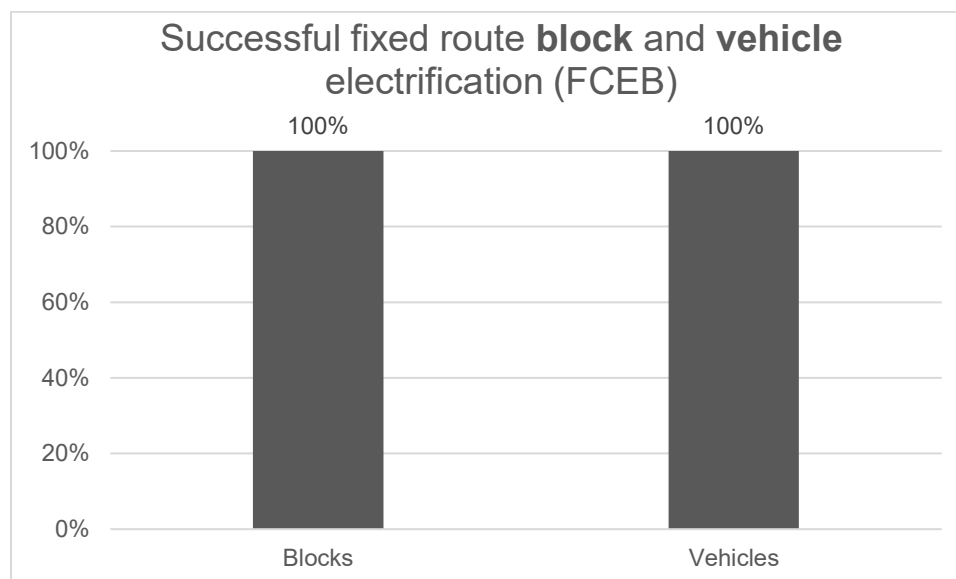
Next, blocks were aggregated at the vehicle-level. These results show that with smaller battery sizes, 85% of daily vehicle assignments can be successfully electrified. When 40-ft vehicles that failed were modeled with a larger battery size, 98% of vehicles can be successfully electrified. This is not 100% because one vehicle assignment that failed is a 35-ft vehicle which does not have an option for a larger battery size.

Table 5 summarizes the average fuel efficiency for each vehicle type.

**Table 5: Average fuel efficiency for fixed route BEB modeling results**

Vehicle type	Average fuel efficiency (kWh/mi)
40-ft bus (both 525 and 660 kWh, as appropriate)	2.23 kWh/mi
35-ft bus (450 kWh)	2.15 kWh/mi
Overall	2.21 kWh/mi

Next, fixed route service was modeled with FCEBs. These results are shown in Figure 13.



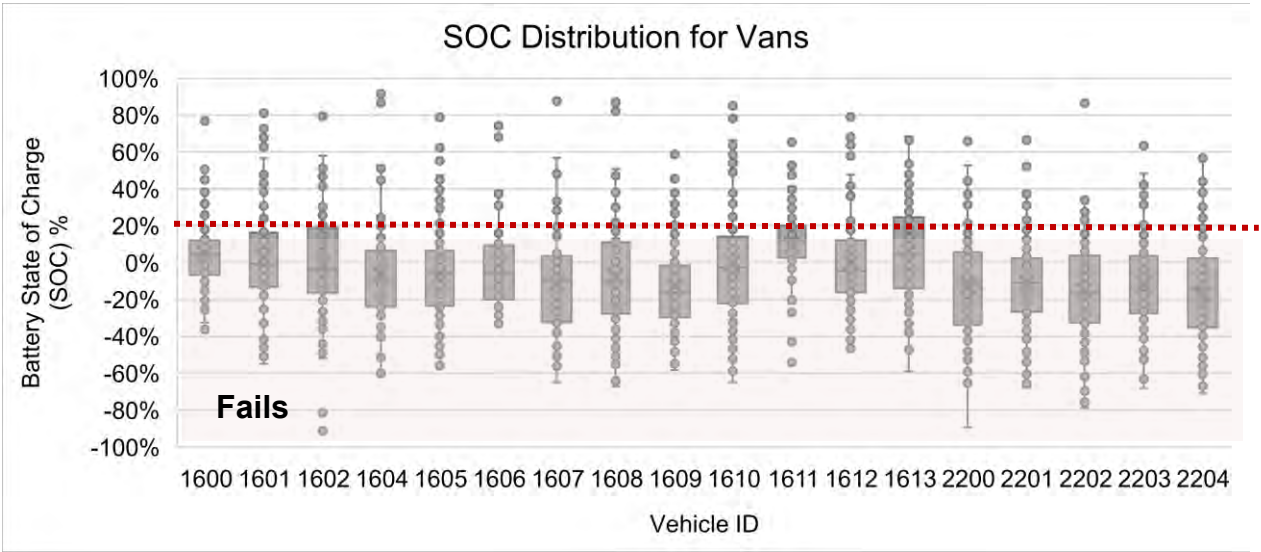
**Figure 13: Successful blocks and vehicles that can be served by FCEB equivalents (fixed route)**

Figure 13 shows that 100% of GCTD's fixed route service can be successfully completed with FCEBs. Table 6 provides the average fuel efficiency for each vehicle type modeled.

**Table 6: Average fuel efficiency for fixed route FCEB modeling results**

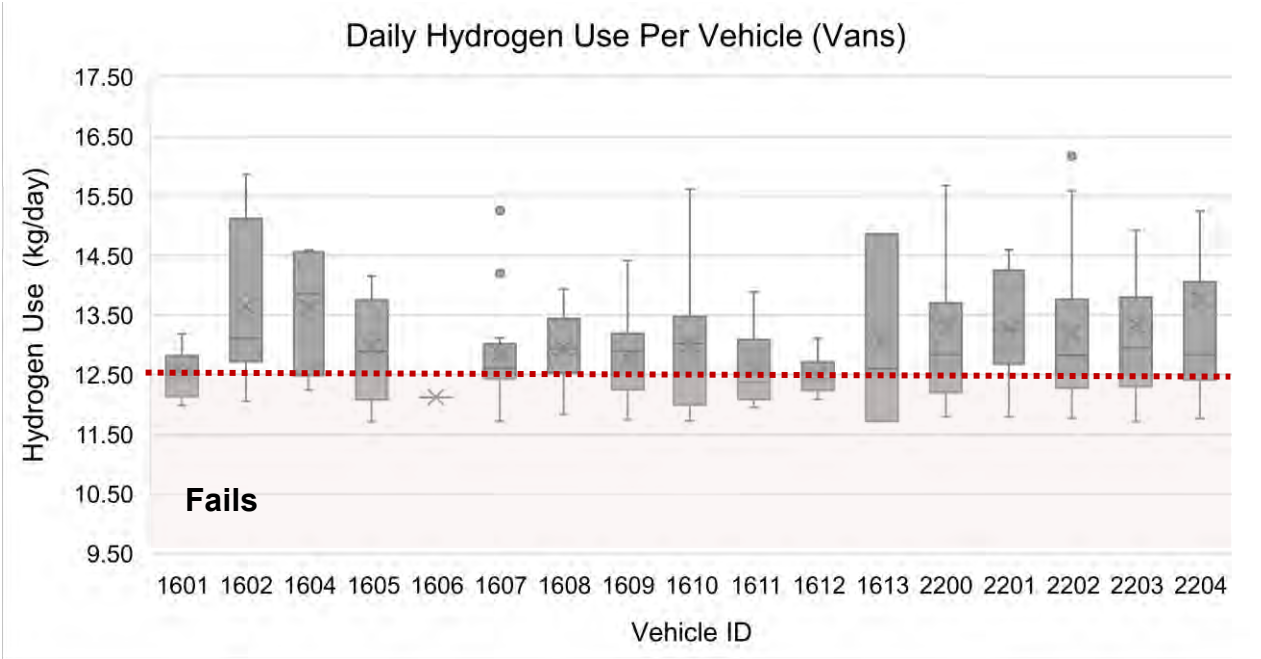
Vehicle type	Average fuel efficiency (mi/kg)
40-ft bus	7.20 mi/kg
35-ft bus	7.29 mi/kg
Overall	7.22 mi/kg

The same procedure was completed for demand response services. Modeling was based on a sample size of 3,200 total runs, aggregated into 2,060 van assignments and 1,100 cutaway assignments. BE and hydrogen results are first presented for vans in Figure 14 and Figure 15, and BE cutaway results are shown in Figure 16.



**Figure 14: SOC distribution for BE van assignments**

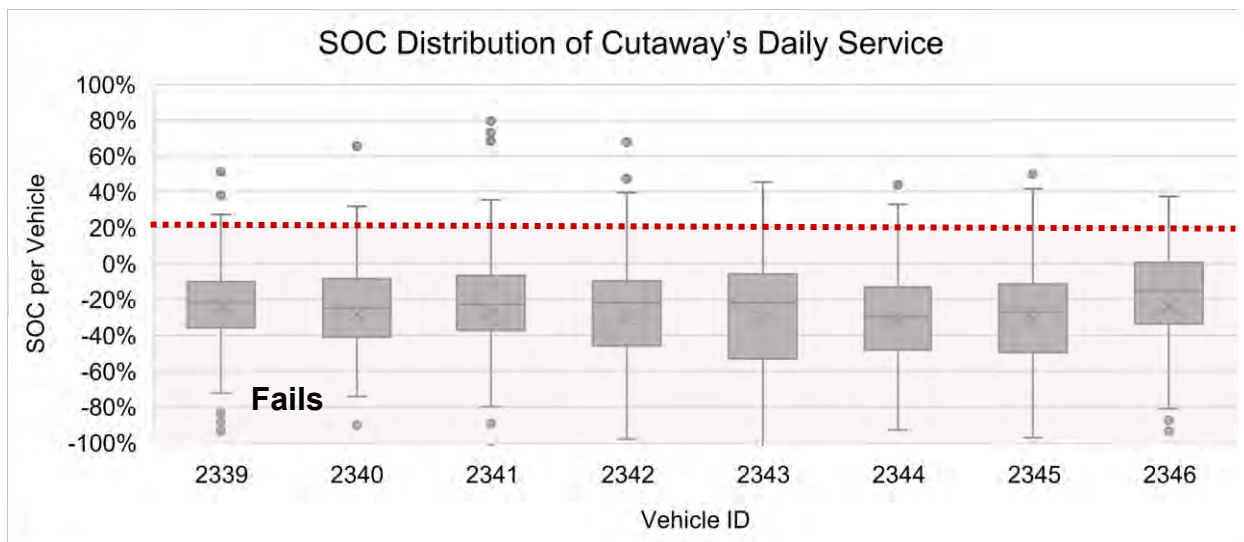
Figure 14 shows that when considering a full day of service for each van, 25% of daily vehicle assignments can be completed with BE vans. A sensitivity analysis suggests that with ideal weather and topography, about 60% of vehicle assignments may be successful. The daily mileage for electric vans can range between 135 and 170 mileages with an average fuel efficiency of 0.87 kWh/mi.



**Figure 15: Daily hydrogen use per van**

Figure 15 shows that with hydrogen vans, around 90% of daily vehicle assignments can be completed successfully. The daily mileage for hydrogen vans ranges between 210 and 250 miles with an average fuel efficiency of 17 mi/kg<sup>15</sup>.

Finally, demand response services completed by cutaways was modeled with BE cutaways. No hydrogen FCE option was modeled due to lack of hydrogen FCE cutaway options.



**Figure 16: SOC distribution for BE cutaways**

Figure 16 shows that only 10% of daily service schedules completed by cutaways can be successfully completed with BE equivalents. A sensitivity analysis suggests that with the ideal weather and topography, 50% of vehicle assignments may be successful. The daily mileage for an electric cutaway ranges between 105 and 135 miles, with an average fuel efficiency of 1.13 kWh/mi. Table 7 summarizes that daily mileage ranges and average fuel efficiency for all demand response modeling results.

**Table 7: Average fuel efficiency and daily mileage ranges for demand response vehicles**

Vehicle type	Average fuel efficiency	Daily mileage range
BE van	0.87 kWh/mi	135-170
FCE van	17 mi/kg	210-250
BE cutaway	1.13 kWh/mi	105-135

<sup>15</sup> Note that Altoona testing has not been completed for hydrogen vans and not enough public data is available to validate the expected hydrogen efficiency.

## 4.2 SUMMARY AND FLEET RECOMMENDATIONS

In summary, the fixed-route service modeling results show that both BEB and FCEB options could be feasible for GCTD's operations. One hundred percent of service can be successfully transitioned to FCEBs without changing anything about GCTD's current scheduling, blocking, or operations. The majority of GCTD's fixed-route service can be successfully transitioned to BEBs, but 7 40-ft vehicles would require a larger battery (660 kWh), and one 35-ft vehicle is unsuccessful and would either require midday/opportunity charging between blocks or reblocking to be successful with BEBs.

Demand response services are less successful as ZE operations, with only 25% of daily service assignments for vans able to be successfully converted to BE vans. This jumps to about 90% for hydrogen vans, but it is important to note that no hydrogen vans have undergone Altoona testing yet.

Vehicle options are more limited for cutaways, with only BE options available. Modeling suggests that 10% of daily assigned cutaway service can be successfully completed with BE cutaways.

Following the modeling results, a variety of potential solutions were developed for each service type to weigh the pros and cons of different solutions across different areas of interest, including financial, facility, and operational considerations. Following the development of the preliminary solutions, Stantec met with GCTD staff to workshop the feasibility of the different solutions and come to a preferred fleet concept that best fits the needs of GCTD. The recommended ZE approach is summarized in Table 8.

**Table 8: Recommended fleet summary**

Vehicle type	Tank size	Quantity	Notes
<b>35-ft. buses</b>	35 kg	17	All blocks and vehicle assignments successful under the modeling conditions.
<b>40-ft buses</b>	37.5 kg	44	All blocks and vehicle assignments were successful under the modeling conditions.
<b>Cutaways</b>	N/A; CARB exemption	N/A; CARB exemption	N/A; CARB exemption. No hydrogen cutaway currently available. Depending on passenger capacity needs, GCTD could explore substituting a portion of the cutaway fleet with FCE vans. For the purposes of the ZEB Plan, cutaways are assumed to be replaced with passenger vans.
<b>Vans</b>	13 kg	18	Around 90% of the daily service assigned to vans can be converted to FCE. Vehicles need to refuel at the main facility with the fixed-route vehicles.

## 5.0 FLEET PROCUREMENT SCHEDULE/OUTLOOK

GCTD has specified a fleet replacement schedule for their current fleet (fixed-route and paratransit services) as summarized in Table 9. This proposed replacement schedule developed in June 2022 provides the basis for the ZEB phasing strategy<sup>16</sup>.

**Table 9: GCTD fleet replacement schedule, March 2021 Fleet Management Plan**

Year	Vehicle Make	Service	Useful Life	Size	No. Vehicles
2021	New Flyer 2006	Fixed route	12-yrs	40'	3
2022	New Flyer 2006	Fixed route	12-yrs	40'	9
2023	New Flyer NZ 2006	Fixed route	17-yrs	40'	13
	MV-1	Demand Response	7-yrs	Van	6
2024	MV-1	Demand Response	7-yrs	Van	7
2026	NABI 2008	Fixed route	12-yrs	35'	9
	Star Craft 2017	Demand Response	7-yrs	Cutaway	8
2027	NABI 2009	Fixed route	12-yrs	35'	8
2028	Gillig 2015	Fixed route	12-yrs	40'	8
	Ford Vans 2019	Demand Response	7-yrs	Van	5
2029	Gillig 2016	Fixed route	12-yrs	40'	5
2031	Gillig 2019	Fixed route	12-yrs	40'	5
2033	Planned Gillig 2021	Fixed route	12-yrs	40'	3

Based on the bus modeling, route simulations, and further analysis by the Stantec team, it was determined that a FCEB fleet is preferred to maintain the current fixed route service levels and a combination of zero-emission vehicles (both battery-electric [at least for a short time until hydrogen vehicles are more widely available] and hydrogen) will be used to replace the current CNG/gasoline paratransit vehicles. The phasing plan for GCTD to ZE vehicles considers the following:

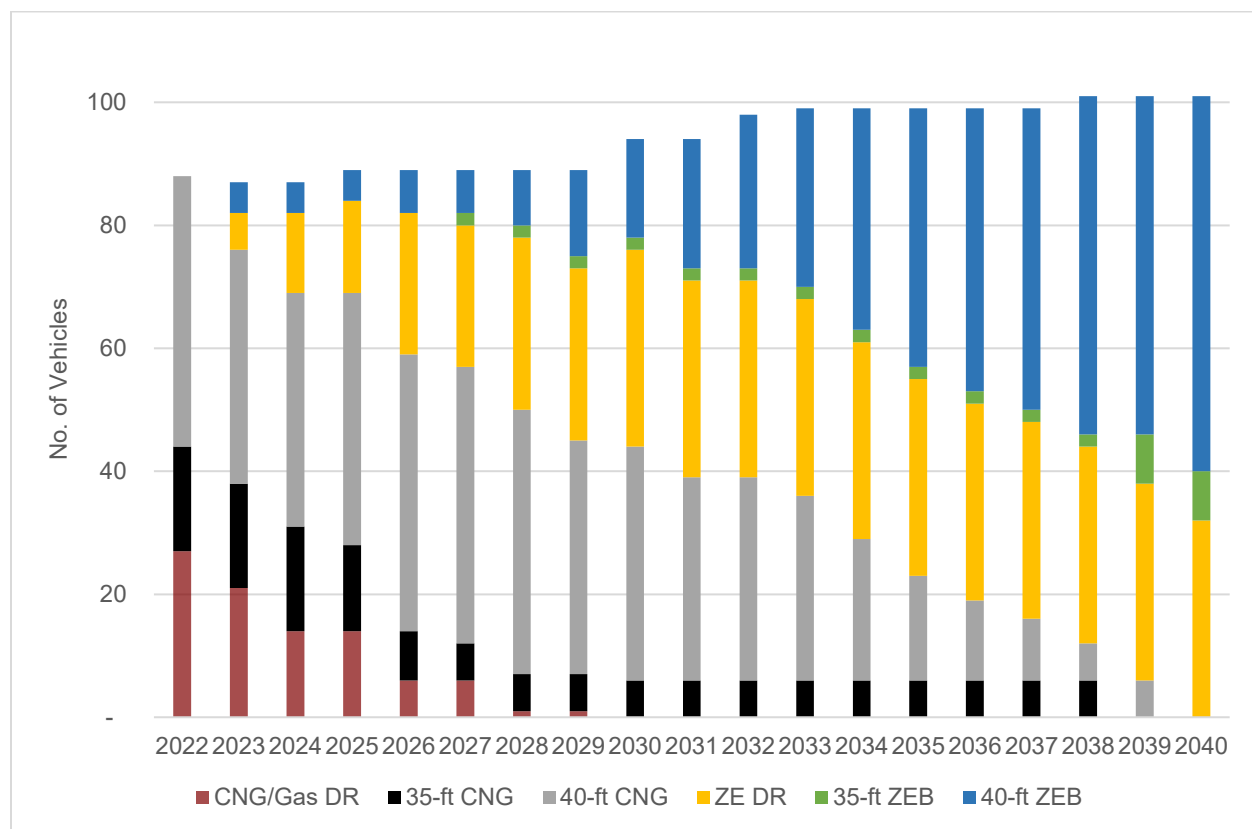
- The same level of fixed-route service will be provided as pre-pandemic conditions by using hydrogen 35-ft and 40-ft buses; as the fleet expands, service levels will be increased as well.
- Seven 35-ft buses will be replaced by 7 40-ft buses, as specified by GCTD.
- The fixed-route fleet size will be expanded from 61 to a total of 69 buses in 2040, by gradually expanding the fleet starting in 2030

<sup>16</sup> Funding availability and changes to revenue service may require updates or changes to this proposed plan.



- The demand response fleet size will be expanded from 27 to a total of 32 vehicles in 2040, by expanding the fleet starting in 2025
- All demand response vehicle purchases starting in 2023 will prioritize available zero-emission vehicle options. Battery-electric, hydrogen fuel cell or hybrid vehicles will be acquired depending on the refueling infrastructure abilities and market availability to achieve reliable ADA / demand response service to the communities GCTD serves.
- The same spare ratio will be maintained.

Figure 17 displays a graph with the proportion of the fleet by vehicle type over time as the transition from carbon-emitting vehicles to ZEVs proceeds.



**Figure 17: GCTD fleet composition through 2040 by vehicle type and technology**

Table 10 displays the recommended fleet acquisition schedule for 35-ft and 40-ft vehicles. This plan was developed by accounting for fossil fuel vehicle retirement and the ICT purchase requirement. While the acquisition schedule assumes the first purchase for hydrogen vehicles in 2023, the purchase of these ZE vehicles can be postponed if funding for the hydrogen refueling infrastructure is not available. Table 11 provides an annual fleet plan for the demand response fleet.

**Table 10: 2023 – 2040 Fleet Forecast for 35-ft and 40-ft Vehicles**

			2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
35-ft	CNG	Replace			-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
	CNG	Expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	CNG	Retire		-	(3)	(6)	(8)			-		-	-		-	-	-	-	(6)	-
	<b>Total 35-ft CNG</b>		<b>17</b>	<b>17</b>	<b>14</b>	<b>8</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>-</b>	<b>-</b>
	ZEB	Replace		-	-	-	2	-	-	-	-	-	-		-	-	-	-	8	-
	ZEB	Expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ZEB	Retire	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2)	-
<b>Total 35-ft ZEB</b>			<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>8</b>	<b>8</b>
40-ft	CNG	Replace	4	4	3	4	-	6	-	-	-	-	-	-	-	-	-	-	-	-
	CNG	Expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	CNG	Retire	(10)	(4)	-	-		(8)	(5)		(5)		(3)	(7)	(6)	(4)	(3)	(4)	-	(6)
	<b>Total 35-ft CNG</b>		<b>38</b>	<b>38</b>	<b>41</b>	<b>45</b>	<b>45</b>	<b>43</b>	<b>38</b>	<b>38</b>	<b>33</b>	<b>33</b>	<b>30</b>	<b>23</b>	<b>17</b>	<b>13</b>	<b>10</b>	<b>6</b>	<b>6</b>	<b>-</b>
	ZEB	Replace	5	-	-	2	-	2	5	-	5	-	3	7	6	6	6	4	-	8
	ZEB	Expansion	-	-	-	-	-	-	-	2	-	4	1	-	-	-	-	2	-	-
	ZEB	Retire	-	-	-	-	-	-	-	-	-	-	-	-	-	(2)	(3)	-	-	(2)
<b>Total 40-ft ZEB</b>			<b>5</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>7</b>	<b>9</b>	<b>14</b>	<b>16</b>	<b>21</b>	<b>25</b>	<b>29</b>	<b>36</b>	<b>42</b>	<b>46</b>	<b>49</b>	<b>55</b>	<b>55</b>	<b>61</b>
<b>Total Fleet Size</b>			<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>62</b>	<b>62</b>	<b>66</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>69</b>	<b>69</b>	<b>69</b>

**Table 11: 2023 – 2040 Fleet Forecast for Demand Response Vehicles**

		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
CNG/Gas	Replace	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNG/Gas	Expansion	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNG/Gas	Retire	(6)	(7)		(8)	-	(5)		(1)					-	-	-	-	-	-
<b>Total CNG/Gas Demand-Response</b>		<b>21</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
ZE	Replace	6	7	-	8	-	5	-	7	7	2	8	-	5	-	10	7	2	8
ZE	Expansion	-	-	2		-	-	-	3	-	-	-	-	-	-	-	-	-	-
ZE	Retire	-	-	-	-	-	-	-	(6)	(7)	(2)	(8)	-	(5)	-	(10)	(7)	(2)	(8)
<b>Total ZE Demand-Response</b>		<b>6</b>	<b>13</b>	<b>15</b>	<b>23</b>	<b>23</b>	<b>28</b>	<b>28</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>
<b>Total Fleet Size</b>		<b>27</b>	<b>27</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>

## 6.0 HYDROGEN FUEL DEMAND AND SUPPLY

### 6.1 HYDROGEN DEMAND

After determining a hydrogen-fueled fleet as the best fit for GCTD, the next step was to determine the estimated daily hydrogen demand to fuel the future fleet as well as the best method of supplying hydrogen to the facility. Table 12 summarizes estimated hydrogen demand needed at the facility. This includes demand from GCTD's fleet as well as the demand for the Ventura County Transportation Commission (VCTC). VCTC is a partner transit agency providing commuter services in Ventura County that could, at a future time, refuel FCEBs of its own at GCTD's shared facility.

**Table 12: Daily hydrogen demand**

Agency	Item Description	40-ft and 35-ft Buses	Cutaways and Vans
<b>GCTD</b>	Total vehicles in fleet	64	27
	No. of active vehicles	60 (4 contingency)	26
	Average H2 demand per vehicles (kg/day/vehicle)	15.5	8.5
	H2 demand for all active vehicles (kg/day/fleet)	885	180
	Total GCTD Fleet Hydrogen Demand (kg/day)	1,065	
<b>VCTC</b>	Total VCTC Fleet Hydrogen Demand (kg/day)	1,335	
<b>Total Estimated Fleet Hydrogen Demand (kg/day)</b>		<b>2,400</b>	
<b>Monthly Estimated Hydrogen Demand (kg/month)</b>		<b>72,000</b>	

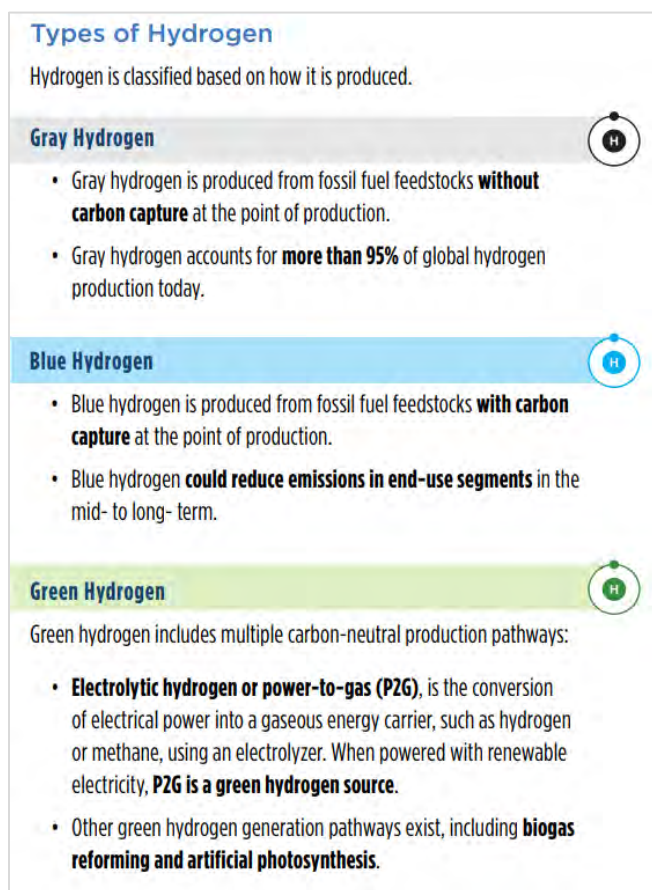
Two possible methods for providing hydrogen to the new hydrogen facility were assessed Option 1: Trucked-in liquified hydrogen and Option 2: On-site production of gaseous hydrogen derived from water electrolysis using onsite solar PV power generation, supplemented by electricity from the grid. Option 1 is the most feasible and least costly of the two options and for the near-term implementation of FCEBs, GCTD should deploy Option 1, similar to most other transit agencies in California<sup>17</sup>. At a later time when GCTD's fleet is entirely hydrogen vehicles, GCTD could explore deploying the hydrolysis concept in Option 2 as a way to generate on-site hydrogen, increasing its resiliency. A deeper discussion on the two options can be found in Appendix A: Memo—Infrastructure Options for Different Hydrogen Fueling Arrangements. Note that the values in Table 12 do not include projected consumption by public-access users, which is estimated at about 60 kg per day.

<sup>17</sup> OCTA has recently commissioned hydrogen fueling facility based on trucked-in liquid, and other agencies including Foothill Transit, Santa Clarita Transit and Victor Valley Transit Authority are planning similar systems.

For the purposes of the rollout plan, the remainder of the analysis, recommendations, and strategies are based on the assumption that GCTD will deploy equipment necessary for on-site storage of liquid hydrogen, conversion to gaseous hydrogen, and dispensation of gaseous hydrogen. More information about the equipment required can be found in Section 7.1.

## 6.2 HYDROGEN SUPPLY

Not all hydrogen is created equal, in fact, hydrogen has several pathways to be generated and this includes different carbon intensity levels. Figure 18 provides an overview of the different hydrogen classifications based on the generation source. Gray, blue, and green hydrogen have different levels of carbon emissions, with green being the ultimate goal because it is carbon neutral.



**Figure 18: Types of hydrogen based on generation source<sup>18</sup>**

Today, 37%-44% of hydrogen used in transportation is renewable, but 95% of all hydrogen produced in the United States is made by industrial-scale natural gas reformation (gray hydrogen). This process is called fossil fuel reforming or steam methane reforming (SMR). The process takes natural gas (NG) and

<sup>18</sup> [https://www.energy.ca.gov/sites/default/files/2021-06/CEC\\_Hydrogen\\_Fact\\_Sheet\\_June\\_2021\\_ADA.pdf](https://www.energy.ca.gov/sites/default/files/2021-06/CEC_Hydrogen_Fact_Sheet_June_2021_ADA.pdf)

steam to generate a product stream of carbon dioxide (CO<sub>2</sub>) and hydrogen (H<sub>2</sub>). Greenhouse gas emissions can be avoided completely if the CO<sub>2</sub> produced in SMR is captured and stored (blue hydrogen) in a process known as carbon capture and storage (CCS).

In the short-term, GCTD will likely receive its hydrogen from the Sacramento area that is currently produced via SMR with a mixed of biogas to account for 33% renewable green hydrogen. But as sustainable renewable energy generation advances in the United States, it is anticipated low to zero carbon hydrogen production will become more commonplace. For example, the City of Lancaster will host and co-own a green hydrogen production facility with SGH2, which will be able to produce up to 11,000 kilograms of green hydrogen per day. SGH2 anticipates breaking ground in Q1 2021, start-up and commissioning in Q4 2022, and full operations in Q1 2023<sup>19</sup>. Additionally, Plug Power recently announced it will build the largest green hydrogen production plant on the West Coast. The state-of-the-art production facility in Fresno County in the Central Valley of California will be powered by renewable energy. Once completed, it will produce 30 metric tons of green hydrogen daily and serve customers up and down the West Coast. The facility will use a new 300 MW zero-carbon solar farm to power 120 MW of Plug Power's state-of-the-art PEM electrolyzers, and the project includes construction of a new tertiary wastewater treatment plant in the city of Mendota that will provide recycled water for the people of Mendota and supply the full needs of the plant. The plant will break ground in early 2023 and complete commissioning in early 2024<sup>20</sup>.

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<sup>19</sup> <https://www.sgh2energy.com/worlds-largest-green-hydrogen-project-to-launch-in-california>

<sup>20</sup> <https://www.globenewswire.com/news-release/2021/09/20/2299650/9619/en/Plug-Power-to-Build-Largest-Green-Hydrogen-Production-Facility-on-the-West-Coast.html>

## 7.0 MAINTENANCE FACILITY INFRASTRUCTURE MODIFICATIONS

This section outlines the proposed facility modifications for FCEB implementation to GCTD's bus operations and maintenance facility. The final master plan has been developed proposing the addition of hydrogen fueling dispensers at the existing Fuel Building with a new hydrogen equipment yard to the northeast of the Fuel Building. Fortunately, the facility has sufficient space opportunity for the new fueling infrastructure and equipment, avoiding the reduction in parking stalls while maximizing yard flexibility by taking space from the existing storm water retention swale for the new equipment yard.

The existing service cycle can be maintained and is not required to be changed for FCEB implementation since the facility currently uses CNG fueling which is nearly identical in operation to hydrogen fueling.

The ample and spacious nature of the property will allow for simple phasing of construction with little to no impact on current operations. GCTD will need to work closely with a contractor to implement the proposed modifications to the facility but the impacts to operations will be temporary in nature and should be limited to the north of the bus parking area and the north end of the Fuel Building. Considering the facility has multiple fuel/service lanes, it should be assumed that sufficient opportunity exists to temporarily remove certain portions of the facility from GCTD's use for limited periods of time. In summary, there does not appear to be any significant constraints to the physical property that would create noteworthy cost increases to the implementation of the proposed hydrogen fueling improvements.

### 7.1 PROPOSED FUELING FACILITY MODIFICATIONS

The following summarizes the proposed improvements for the hydrogen fueling system (Figure 19):

- A new hydrogen fueling system designed to dispense 2,463 kg of hydrogen per day (90-bus capacity). This about 26.7 kg per FCEB per day and captures usage by both the GCTD and VCTC fleets (as described in Table 12). Quantities of each component are one unless noted otherwise (see Figure 20 for details).
  - 18,000 gallon liquified hydrogen tank
  - Reciprocating LH2 pump for H35 fueling (qty: 3)
  - High pressure GH2 compressor for H70 fueling
  - Hydrogen vaporizer (qty: 2)
  - Superheater vaporizer
  - GH2 priority valve panel
  - High-pressure GH2 storage vessel for H35 fuel (qty: 6)
  - High-pressure GH2 storage vessel for H70 fuel (qty: 2)
  - Pre-dispensing chiller (qty: 2)
  - GH2 H35 dispenser (qty: 2)

- GH2 H70 dispenser with chiller
  - Air compressor system
  - Main electrical service panelboard
  - Motor starter panelboard for pumps (qty: 2)
  - System control panel
  - Electrical transformer (as required)
- New hydrogen equipment yard site improvements:
  - Perimeter security fencing to separate from other areas. Fencing to include lockable vehicle and pedestrian access gates.
  - Bollards along the vehicle traffic facing sides of the yard.
  - Equipment pads/foundations as required and pavement between all portions of the equipment yard to allow for access and maintenance activities.
  - Site retaining walls and associated foundations for equipment yard – required because of significant grading/slopes into the adjacent stormwater swale (similar to existing CNG equipment yard).
  - New site lighting and security cameras in equipment yard as required.
  - Modifications to existing storm water swale to account for capacity lost by the new equipment yard displacement. Modifications will include regrading of portions of swale and modified or new planting in those areas impacted.
- Modifications to the Fuel Building's service lanes includes the extension of service lane striping, new equipment pads for GH2 dispensers, and new bollards.
- Electrical system improvements and modifications:
  - A new transformer and panelboard to provide adequate power to the new hydrogen equipment.
  - Connection of new panelboard to existing electrical room at Fuel Building to the southwest. Power supply for hydrogen fueling equipment assumed to be backed-up by existing generator via electrical connection to the existing switchgear in the Fuel Building.
  - Associated equipment pads, fencing and bollards.
  - CMU fire barrier wall perimeter around new electrical equipment and panels.
- Pavement replacement/repair for trenching associated with electrical distribution for Area A where new electrical service and switchboard will be allocated.
- Demolition of existing north trash enclosure and replacement with a new trash enclosure to the west, outside of vehicle circulation areas and access to CNG equipment yard.
- Gas detection system modifications at Fuel Building and Maintenance Building, see narrative below.

Full site plan details can be found in Appendix B: Site Plans.



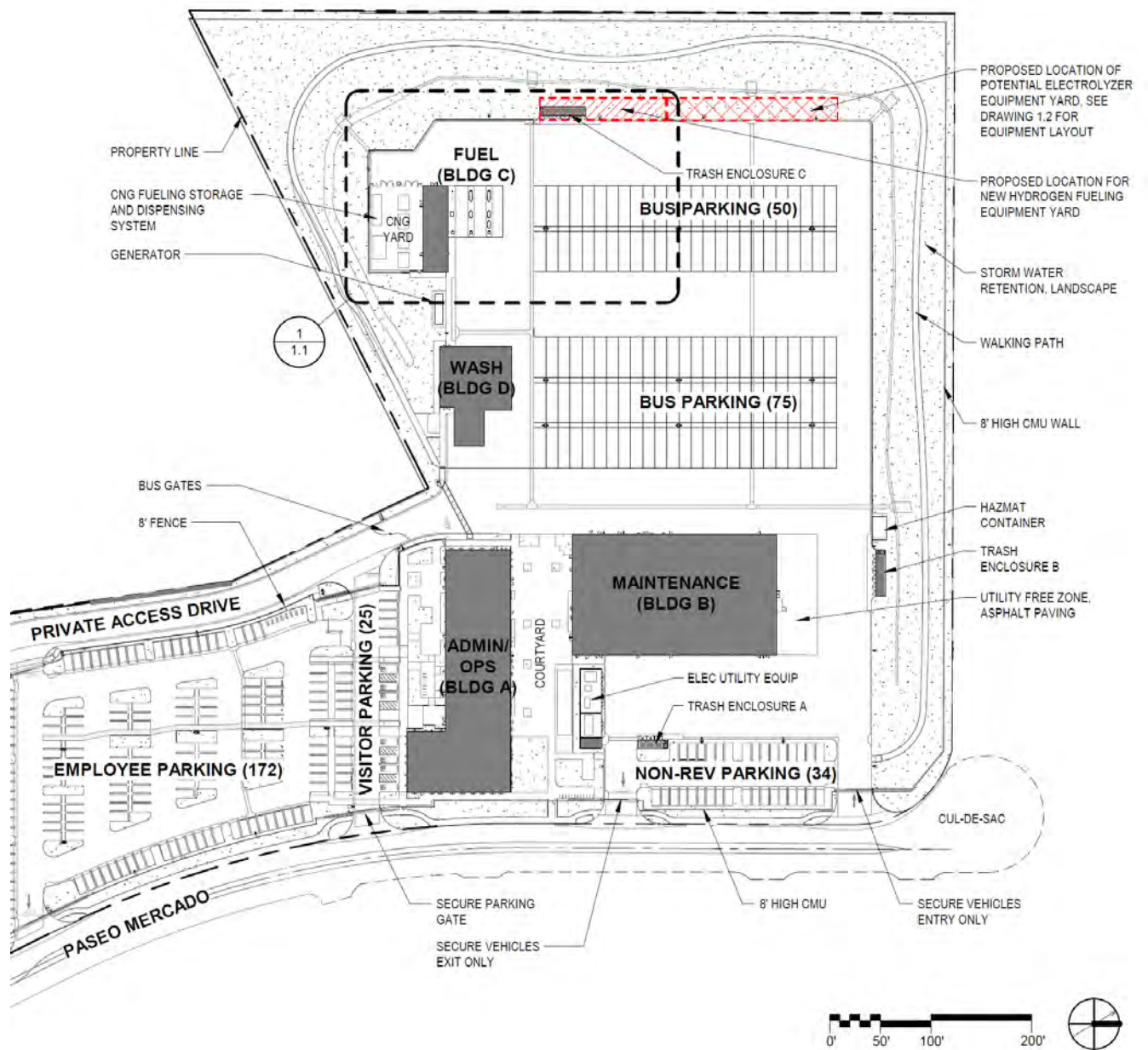
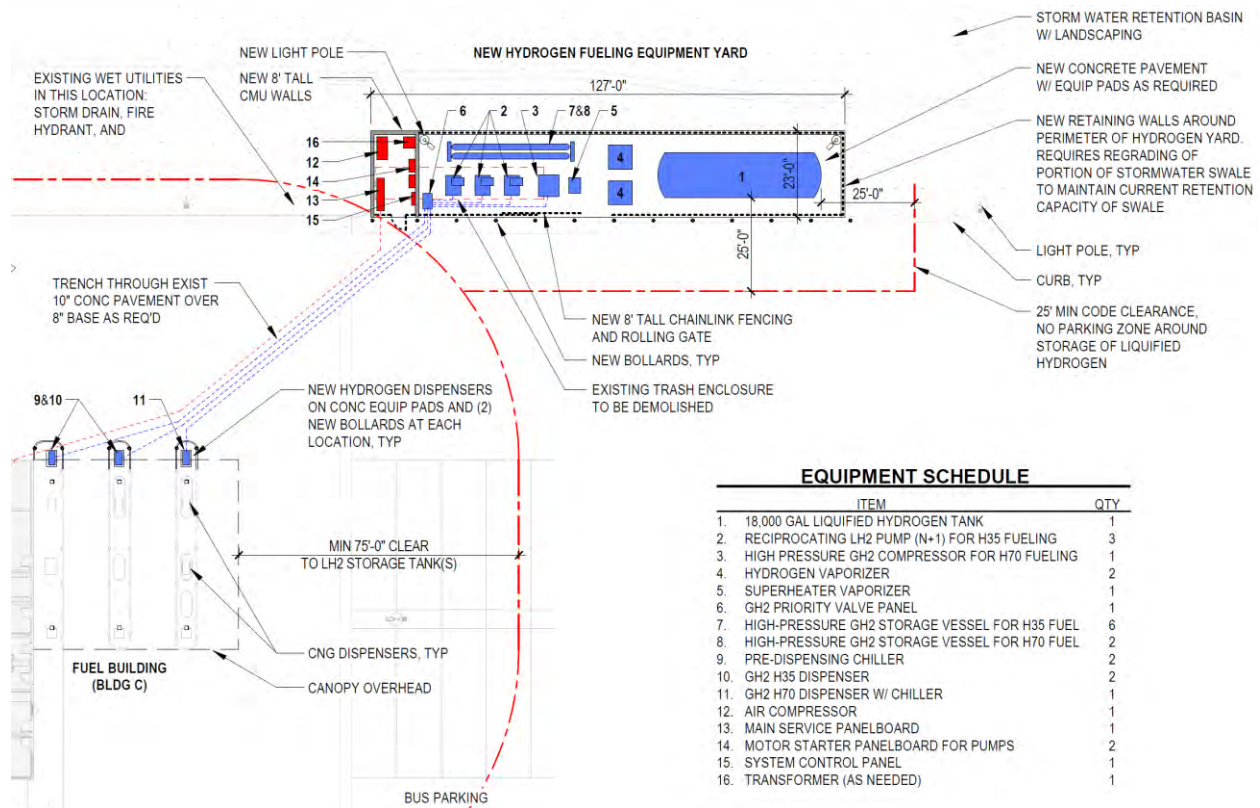


Figure 19: GCTD Site Plan



**Figure 20: GCTD ZEB Site Conceptual Master Plan**

## 7.2 FIRE PROTECTION CONSIDERATIONS

With the implementation of FCEBs, fire protection and life-safety concerns can be significant. The primary code dictating the implementation of hydrogen fueling systems in National Fire Protection Association (NFPA) 2 – Hydrogen Technologies Code. However, since the GCTD facility is relatively new and was also designed to serve CNG vehicles, many of the requirements for hydrogen fueling can already be met with little to no changes to the existing facilities.

The need for enhanced fire protection systems has not been specifically assessed as a part of this study and should be discussed with the local fire marshal and the local building officials to ensure all stakeholders in the approval process understand the proposed systems. Fire truck access to the site and hydrant access is already well defined but will need to be reviewed and approved by the pertinent AHJs prior to implementation of any facility improvements.

In summary, it is assumed that no fire protection system modifications are required for FCEB implementation, but further analysis may be required.

### 7.3 GAS DETECTION SYSTEM MODIFICATIONS

The Maintenance Building is equipped with a modern methane leak-detection system that uses infrared sensors mounted along the ceiling above the bays (methane is lighter than air), and also has carbon monoxide sensors located at personnel height (carbon monoxide is neutrally buoyant in air).

If FCEBs are deployed, new catalytic-bead sensors to detect hydrogen-gas leaks would be required, since infrared sensors cannot detect hydrogen gas. This system will need separate alarm lights that are distinct from the methane-leak alarms, as required by NFPA 72 (fire-alarm code). However, the modern site controller at the existing system can accept the new catalytic-bead sensors and can also drive the new and distinct alarms. This will allow a common control interface for all gas-leak sensing and will also reduce overall clutter and cost.

The existing ventilation system that makes the maintenance garage safe for CNG vehicles is assumed to provide at least five air-changes per hour and equipped with explosion- proof and spark-resistance fans. Accordingly, the ventilation system is adequate and compatible for hydrogen vehicles as well.

### 7.4 BACKUP PLANNING AND RESILIENCY

Planning for resiliency and redundancy is necessary not only to support operations or evacuations during emergencies or other disruptions, but also to ensure if the bus facility loses power, FCEBs can still be operated. This is particularly important given the propensity of black outs in California, especially as the adoption of EVs increases along with the demand on the electrical grid throughout the state.

Currently, GCTD's facility is equipped with a backup diesel generator for the CNG fueling infrastructure to ensure CNG compression and fueling can continue in case of a power outage. Stantec estimates that the current generator for the CNG fueling infrastructure is sufficient to support the operation of the hydrogen fueling infrastructure. As such, no additional backup generator is required, and the generator should be connected to serve the hydrogen fueling compound when it is built.

While the above is most pragmatic and direct solution for redundancy and backup, GCTD has also previously explored solar photovoltaic (PV) equipment to generate off-the-grid electricity to power the CNG equipment to reduce reliance on SCE derived electricity. The analysis by ENGIE demonstrated that by installing solar PV panels<sup>21</sup> above the employee and guest parking and using a stationary battery<sup>22</sup> (Figure 21) the project cost would be approximately \$2.8 million but could result in a total net savings of \$6 million over 25 years. Given the similar electrical loads for the proposed hydrogen fueling infrastructure and the CNG fueling infrastructure (Figure 22), GCTD could explore using this ENGIE solar and storage model to reduce electricity costs related to the hydrogen fueling facility, while also storing energy in case of a power outage.

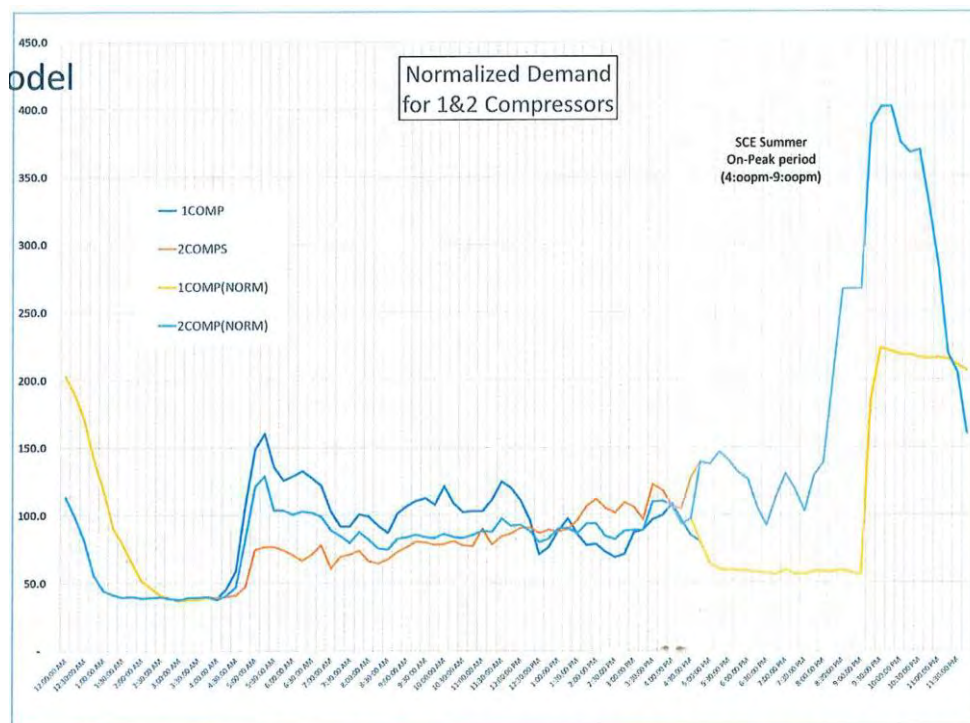
<sup>21</sup> ENGIE analysis, estimated 514 kWdc / 890,000 kWh-yr generation.

<sup>22</sup> ENGIE analysis, storage system of 232 kW / 928 kWh.



**Figure 21: Proposed Solar PV system analyzed by ENGIE over employee and guest parking (Source: ENGIE)**





**Figure 22: Normalized Demand model to offset CNG compressors with Solar PV and a battery storage system performed by ENGIE (Source: ENGIE)**

While the power demand for compressors and other equipment to store trucked-in liquid hydrogen and dispense gaseous hydrogen is on the order of ~129 kW, Stantec’s analysis of on-site production using hydrolysis revealed potentially 1.25 MW of power required just to offset 22% of the total hydrogen demand—the rest of the hydrogen would need to be delivered via a tube truck. For this scenario, it would be prudent for GCTD to further investigate the opportunities to curb grid demand by deploying solar PV assets; more information can be found in Appendix A: Memo—Infrastructure Options for Different Hydrogen Fueling Arrangements.

While the onsite generators and potential solar and battery system would be ideal solutions for on-site resiliency, GCTD also needs to consider the resiliency of its hydrogen supply. Different hydrogen suppliers will incorporate into their contract contingency plans if there is a disruption to 1) the generation site or 2) the distribution paths (e.g., the truck cannot make it to its destination). Each disruption would have different mitigation measures such as deploying a new truck to make the delivery on the same day or allow GCTD to purchase hydrogen from a different supplier at the contracted cost. Each situation would be unique and GCTD would need to incorporate mitigation strategies into their supply contract.

## 7.5 FACILITY AND INFRASTRUCTURE MODIFICATIONS CONCLUSION

Table 13 summarizes the minimum facility and infrastructure requirements for FCEB implementation at the agency’s operations and maintenance facility.

**Table 13: Infrastructure modification summary**

Division Name	Address	Main Function(s)	Type(s) of Infrastructure	Service Capacity	Needs Upgrade (Yes/No)
GCTD Operations and Maintenance Facility	1901 Auto Center Dr, Oxnard, CA 93036	Operations, Maintenance, Training, Fueling	New FCEB fueling equipment, additional electrical improvements,	40-60 – 40-ft buses 8-17 – 35 ft-buses 25-30 – demand response vehicles (note, these vehicles will be fueled at the 1901 Auto Center Dr, but stored at the paratransit operations center)	Yes

Table 14 provides a breakdown by cost category for the proposed site modifications as discussed throughout Section 7.0 to transition to hydrogen as an alternative fuel. Nearly 90% of the cost—\$5.42 million—is related to the hydrogen equipment, including the storage tank and related equipment, leak detection for safety, and construction hard costs to build the hydrogen fuel yard. In addition to the construction and equipment costs, soft costs related to market factors, design contingency, insurance and contractor fees bring the total estimated cost of the project to \$8.97 million. The full cost estimate is found in Appendix C: Cost Estimates.

**Table 14: Cost estimate for hydrogen fueling infrastructure**

Cost Category	Total Estimated Cost (\$)	Percent of Estimated Cost
Existing conditions (demolition, protection work etc.)	\$20,143	0.35%
Hydrogen fueling equipment (tank, vaporizers, dispensers, etc.)	\$4,771,010	81.83%
Electrical (power hook ups, disconnect switch, etc.)	\$74,815	1.28%
Communications upgrades	\$30,600	0.52%
Hydrogen leak detection system	\$335,759	5.76%
Earthwork (grading)	\$17,000	0.29%
Exterior improvements (CMU retaining wall, bollards, fence, etc.)	\$315,703	5.41%
Utilities (yard lighting, fuel piping, ductbank, etc.)	\$265,393	4.55%
Subtotal	\$5,830,423	100%
General conditions/ general requirements	\$728,803	
Estimate/ design contingency	\$1,311,845	
Market factor	\$393,554	

## ZEB STRATEGY AND ROLLOUT PLAN

<b>Cost Category</b>	<b>Total Estimated Cost (\$)</b>	<b>Percent of Estimated Cost</b>
Subtotal	\$8,264,625	
Bonds & Insurance	\$165,292	
Contractor's fee	\$537,201	
<b>Grand total</b>	<b>\$8,967,118</b>	

## 8.0 FINANCIAL EVALUATION AND IMPACTS

The financial evaluation for GCTD's ZEB rollout plan consisted of the modeling of a Base Case (assuming continued use of CNG and gasoline vehicles or 'business-as-usual') and a ZEB Rollout scenario (assuming a transition to 100% ZEB operations and the phasing out of diesel/gasoline vehicles), and a comparison between the two scenarios to quantify the financial impacts of the transition and of ZEB operations. Stantec's cost estimator, Jacobus & Yuang, Inc., provided a detailed cost estimate of materials, soft costs, constructions, and other line items related to facility modifications for the ZEB case (more information in Section 7.5).

The main assumptions for the cost modeling are:

- Financial modeling was completed in real 2022 dollars (2022\$).
- A 7% discount rate was applied for all calculations, as per USDOT guidance.
- The chief source of information regarding fleet planning is the GCTD Fleet Management Plan, dated March 2021. This document contains a fleet plan through 2031. Stantec worked with GCTD staff to revise the fleet management plan for the purposes of the ZEB rollout plan to account for fleet expansion for potential service improvements and other operational growth, as well as to extend the plan through 2040, as required by the ICT regulation; the proposed fleet plan is shown in Table 9. Furthermore, for the paratransit and demand-response fleet, the fleet management plan provides an indication of replacement and fleet size, but not of vehicle type, as more study is needed to determine the appropriate vehicle size dependent upon passenger demand. For simplicity, we assumed for the ZEB Case that paratransit and demand-response vehicles would be FCE passenger vans; future revisions to the fleet plan may be required as determined by GCTD staff and will impact the cost assumptions here.
- Annual average vehicle mileage is as follows for each vehicle type<sup>23</sup>:
  - 43,115 miles for 40-ft vehicles
  - 41,297 miles for 35-ft vehicles
  - 39,093 miles for CNG cutaways and ZE paratransit vehicles
  - 10,606 miles for gas vans
- Average fuel economy as follows (based on GCTD information for existing fleet and Stantec vehicle modeling for the ZE vehicles):
  - 2.82 miles per diesel gallon equivalent (DGE) for 40-ft and 35-ft vehicles

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<sup>23</sup> Based on 2019 NTD reported statistics.



- 6.45 miles per DGE for CNG cutaways
  - 11.95 miles per gasoline gallon for gas vans
  - 7.20 miles per kg of hydrogen for 40-ft FCEBs
  - 7.29 miles per kg of hydrogen for 35-ft FCEBs
  - 17.00 miles per kg of hydrogen for FCE paratransit vehicles
- The ZEB case included the operation of CNG and gasoline vehicles (as well as ZE vehicles) during the transition period until fossil fuel vehicles are phased out.
- The model was completed using a consistent format for both the Base Case and the ZEB Rollout to facilitate clear comparison between the two. The modeling was developed on an annual basis from 2023 through to 2040.

More details about the assumptions and inputs for both base case and ZEB case can be found in Appendix D: Financial Modeling Inputs and Assumptions.

### 8.1 BASE CASE APPROACH

Stantec developed the forecast for the Base Case (business-as-usual) scenario, assuming that the existing fleet of CNG and gasoline vehicles is maintained and renewed through to 2040. This model is inclusive of all scheduled fleet replacements required during the 2040 project horizon. It should be noted that this Base Case would be non-compliant with the ICT regulatory requirements as it deploys fossil fuel vehicles and is thus used only for illustrative purposes to determine the financial impacts of a ZEB rollout.

The Base Case fleet sees a gradual reduction in the total number of 35-ft buses and a gradual increase in 40-ft buses, thus resulting in larger vehicles for the fixed-route bus fleet over the 2040 project horizon. Moreover, for the demand response fleet, the total fleet size in the Base Case will grow but no new cutaways are assumed in this model; new demand-response vehicles are assumed to be passenger vans using gasoline. GCTD will need to conduct further analysis to right-size the paratransit fleet, as mentioned in the Fleet Management Plan.

Capital expenses modeled consist of fleet acquisition based on GCTD's Fleet Management Plan, the FY2020-22 Capital Project Plan – Funded Projects, and the FY2021-22 Budget Book for inputs related to replacement quantities and estimated purchase costs.

Vehicle maintenance costs were derived from NTD 2019 data based largely on salaries, tires and other materials; costs were developed as a cost per mile for fixed-route services and demand responses services.

Fuel costs are based on invoicing from Clean Energy from June 2022 for CNG fuel and GCTD information for gasoline fuel.

## 8.2 ZEB CASE APPROACH

The ZEB Case foresees a gradual transition to 100% ZE revenue vehicle operations by 2040 in alignment with ICT regulations. The transition follows the fleet replacement schedule presented previously in Table 9, based on GCTD's Fleet Replacement Plan but modified to account for gradual fleet growth (similar to the total fleet size as in the Base Case).

The last purchase of a CNG bus for fixed-route service would be in 2028, and the last purchase of a non-ZEB demand-response vehicle would in 2022. The assumed life cycle for the ZEB vehicles were the same as the current life cycles for non-ZEB vehicles—12 years for full size buses, and 8 years for demand-response vehicles. For demand-response vehicles, given the immaturity of the small vehicle market particularly for FCE vehicles, the modeling captured a generic 'demand response ZE' based on quotes and specifications from an OEM that has developed a FCE passenger van based on a Ford Transit Van chassis.<sup>24</sup> As GCTD transitions its non-fixed-route fleet to ZEBs, GCTD will likely need to revisit and refresh the assumptions in this cost model to better account for updated vehicle specifications.

Capital expenses modeled consist of fleet acquisition, extended vehicle warranties, and fuel cell replacements at a vehicle's mid-life but only for large, fixed-route vehicles (based on OEM information).

Vehicle maintenance costs for FCE vehicles were generated based on GCTD's current costs for its fossil fuel fleet based on literature from comparative FCEB and CNG operations for two California transit agencies. The findings in these reports demonstrated that on a per mile basis, vehicle maintenance costs were comparable between CNG buses and FCEBs.<sup>25</sup> The lack of data on maintenance costs, particularly for costs outside of any OEM warranty, makes maintenance costs difficult to forecast.

Fuel costs were based on industry reports that indicate that the price per kg of hydrogen will decrease in the future as the supply chain matures along with investments from private and public actors. The cost assumed here is the cost of the commodity as delivered liquid hydrogen.

Infrastructure costs for the ZEB case are related to facility modifications to accommodate FCEBs and hydrogen fueling infrastructure. The related infrastructure is detailed in Section 7.0.

## 8.3 COMPARISON AND OUTCOMES

The cost comparison of net present value (NPV) between the CNG/gasoline Base Case and the ZEB Case transition scenario is presented in Table 15 incorporating both capital (orange) and operating (blue) expenses. The ZEB Case has a total NPV of \$134,963,000 versus \$105,294,000 for the Base Case, a difference of \$29,669,000 or 28% increase in NPV over the base case. The financial assessment below does not consider any rebates, grants, credits, or other alternative funding mechanisms. Therefore, there may be several opportunities to offset the difference in the price between the two scenarios.

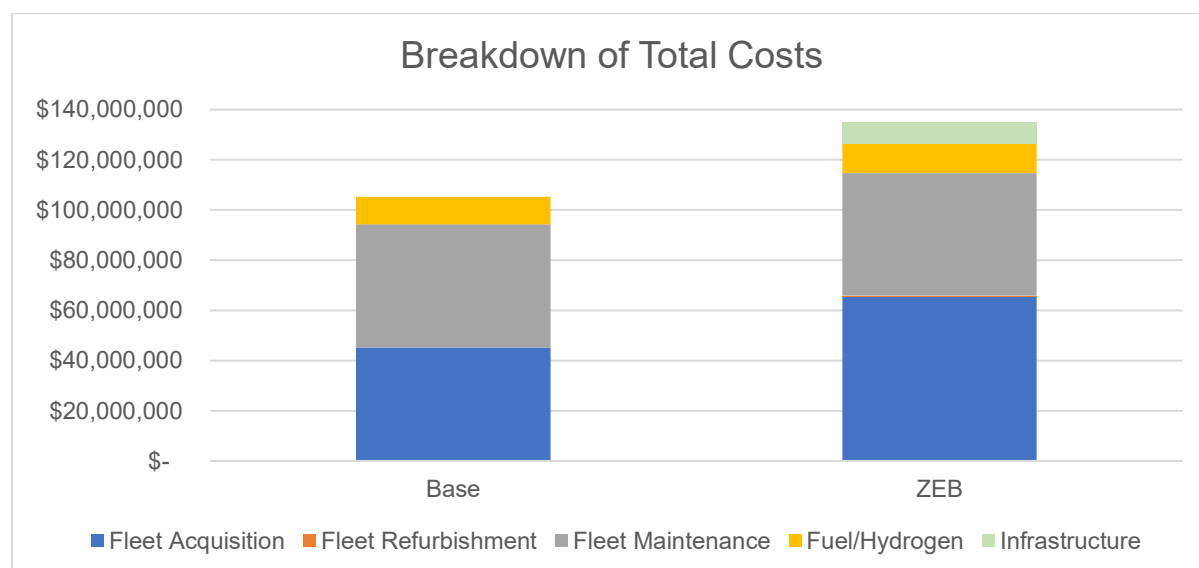
<sup>24</sup> GCTD is currently exploring procuring battery-electric vans for paratransit/on-demand service as a short-term strategy to provide ZE operations in the interim while the FCE market matures for paratransit/on-demand. The modeling in this report does not consider this potential short-term fleet strategy.

<sup>25</sup> <https://www.nrel.gov/docs/fy21osti/78078.pdf>, <https://www.nrel.gov/docs/fy21osti/78250.pdf>

**Table 15: Cost Comparison 2023-2040**

	Base Case	ZEB Case	Cost difference (ZEB – Base)
Fleet Acquisition	\$45,200,000	\$65,425,000	\$20,225,000
Fleet Refurbishment	\$—	\$457,000	\$457,000
Infrastructure	\$—	\$8,380,000	\$8,380,000
Fleet Maintenance	\$49,098,000	\$48,829,000	\$(269,000)
Fuel/Hydrogen	\$10,996,000	\$11,872,000	\$876,000
<b>Total</b>	<b>\$105,294,000</b>	<b>\$134,963,000</b>	<b>\$29,669,000</b>

Figure 23 displays the breakdown of total costs by category—the largest difference between the two scenarios is the capital expenses related to fleet procurement and hydrogen infrastructure deployment.

**Figure 23: Breakdown of Cost Categories for the Base Case and ZEB Case**

The procurement of ZEBs represents \$20.2 million more in expenses due to the higher purchase price of FCEBs compared to fossil fuel vehicles. The conversion and upgrades to the facility to install the hydrogen fueling infrastructure and related equipment represents another added cost of over \$8 million.

Capital costs associated with vehicle overhauls are related to fuel cell stack replacements or refurbishments at the midlife of a vehicle; for the Base Case, no heavy midlife refurbishments are conducted by GCTD. Notably, we assumed comparable useful life spans for both fossil fuel and ZE vehicles. Given that no agency has operated a modern FCEB in the United States continuously for over 10 years, it is unclear if an FCEB can operate longer than 12 years, but a recent report looking at the price parity of fossil fuel buses and FCEBs assumed a 14-year life span.<sup>26</sup> Operating the FCEBs for a

<sup>26</sup> <https://www2.deloitte.com/content/dam/Deloitte/fr/Documents/fusions-acquisitions/fueling-the-future-of-mobility-fuel-cell.pdf>

longer timespan can help spread out the steep capital costs over a longer timeframe and represents an opportunity for lower overall costs, although the impacts to fuel economy are currently unknown.

Related to operating costs, given the operating range parity of CNG vehicles and FCEBs, minimal changes to planning and scheduling is envisaged, and the servicing cycle will be similar too. Maintenance costs on a per mile basis of recent FCEBs at Sun Line and OCTA in Southern California have demonstrated relative cost parity with CNG buses. Initially, as maintenance technicians get trained to work on FCEBs, the learning curve will likely result in a greater maintenance cost for FCEBs over CNG vehicles; work under warranty can also help mitigate costs. Over time, as GCTD staff become more proficient with the FCEB technology, it is likely that maintenance costs will come down, particularly as FCEBs having fewer moving components than fossil fuel vehicles reducing the number of parts that can malfunction and that need to be periodically maintained.

Lastly, the use of hydrogen as an alternative fuel is a large cost driver compared to CNG. At the moment, even with rising fossil fuel prices due to inflation and volatility worldwide, the unit price of CNG procured by GCTD is very favorable especially compared to hydrogen fuel. The model assumed an eventual decrease of hydrogen fuel to \$4 per kg based on market and industry forecasts. Even with adjustments for future fuel prices from the US Energy Information Administration, the cost of CNG fuel in the Base Case is less than for hydrogen fuel in the ZEB Case. GCTD should explore other avenues to lower the cost of hydrogen fuel, including fuel credits and potentially generating hydrogen on-site (which is described as a possible long-term strategy and detailed in Appendix A: Memo—Infrastructure Options for Different Hydrogen Fueling Arrangements).

Figure 24 shows the year-to-year comparison between the Base Case and the ZEB Case. The higher costs for the FCEB scenario occur each year, with the largest single year being the first year due to the procurement of not only FCEBs, but the large investment required for the hydrogen fueling infrastructure as well.

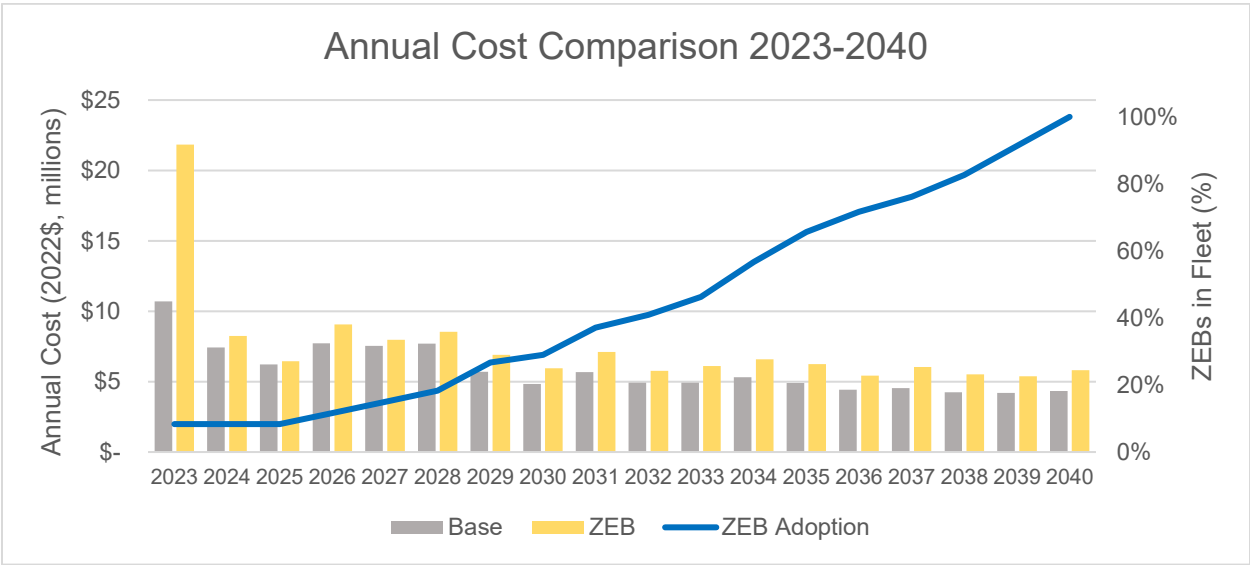


Figure 24: Annual Total Cost Comparison

## 8.4 SENSITIVITY ANALYSES

Notably, this financial analysis includes judgments and assumptions about future prices and assets costs. To ensure the results are robust, we conducted several sensitivity analyses to understand the potential impacts of inflation and price swings of different cost drivers for fleet and operations.

### 8.4.1 Inflation Testing

First, the impacts of three levels of inflation were considered on the cost of ownership analysis. For this analysis, year-over-year inflation was considered as follows:

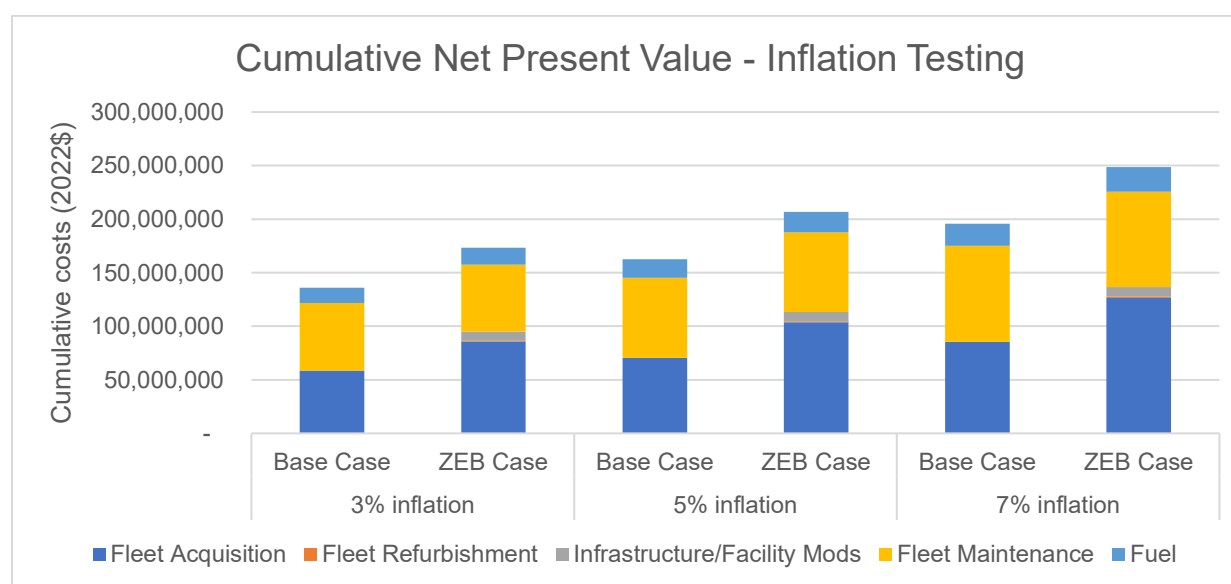
- 3% for low inflation
- 5% for moderate inflation
- 7% for aggressive inflation

The summary results for the different levels of inflation tested are shown in Table 16.

**Table 16: Inflation Sensitivity analysis and impact on NPV**

	3% inflation		5% inflation		7% inflation	
	Base Case	ZEB Case	Base Case	ZEB Case	Base Case	ZEB Case
Fleet Acquisition	\$58,688,000	\$85,765,000	\$70,546,000	\$103,730,000	\$85,429,000	\$126,338,000
Fleet Refurbishment	\$--	\$677,000	\$--	\$879,000	\$-	\$1,140,000
Infrastructure/ Facility Mods	\$--	\$8,632,000	\$--	\$8,800,000	\$--	\$8,967,000
Fleet Maintenance	\$62,902,000	\$62,543,000	\$74,825,000	\$74,386,000	\$89,576,000	\$89,040,000
Fuel	\$14,335,000	\$15,654,000	\$17,238,000	\$18,985,000	\$20,852,000	\$23,165,000
<b>Total</b>	<b>\$135,925,000</b>	<b>\$173,271,000</b>	<b>\$162,609,000</b>	<b>\$206,780,000</b>	<b>\$195,857,000</b>	<b>\$248,650,000</b>

The graph in Figure 25 compares the NPV of both the Base Case and ZEB Case under the different inflation scenarios tested. The analysis demonstrates that the NPV of the ZEB Case can range from \$173 million to \$249 million depending on the rate of inflation.

**Figure 25: Cumulative NPV at different inflation rates**

### 8.4.2 Item Sensitivity

Beyond the impacts of inflation on capital and operating expenses, we wanted to test the impacts that swings in specific cost assumptions could have on the cost of ownership for the Base Case compared to the ZEB Case. Note that the calculations below include the 7% discount rate to derive NPV, but do not include inflation for simplicity of comparison with the results in Section 8.3.

As discussed in Section 8.3, there are a range of different predictions and forecasts for ZEB capital and operating costs. The largest cost driver, other than the hydrogen fueling station, is the purchase price of an FCEB, which is currently about double the cost of a CNG equivalent. As such, we tested the impact of a much lower FCEB purchase price—ramping down from 90% of the purchase price of a CNG bus in 2026, to 50% of the purchase prices of a CNG bus in 2030 through 2040.<sup>27</sup> With this assumption, the total NPV of the ZEB Case is \$114 million compared to \$105 million for the Base Case, or about 9% more compared to the Base Case, demonstrating the significant impact that bus purchase prices will have on the total ZEB rollout budget.

Next, we tested a potential increase in the price of CNG fuel of 50%. The volatility of CNG could be a significant expense into the future and thus no longer be such a deeply discounted commodity. A 50% swing in CNG could result in a cost increase in the Base Case of \$3 million; however, because CNG is a fuel in both the Base Case and the ZEB Case (while fossil fuel buses are phased out), the cost difference between the two scenarios is still about 26%, similar to the baseline analysis in Section 8.3. Thus, CNG cost swings have a minor impact in the total potential cost savings of a transition to FCEBs. Fuel-related cost savings as such would need to come from reductions in the cost of hydrogen fuel.

Another potential way to translate FCEB operations into cost savings is through maintenance cost savings due to reduced labor for maintenance work. To account for potential cost savings through reduced maintenance labor, we tested a 40% decrease in FCEBs maintenance cost per mile. A 40% decrease in maintenance labor for FCEBs decreases the NPV of the ZEB Case by \$8.6 million, resulting in the ZEB Case being 20% greater than the Base Case. So, while cost savings can arise from maintenance savings, it is not as significant as the impact of cheaper FCEB purchase prices.

Table 17 summarizes the results of the sensitivity testing on the NPV of the Base Case and ZEB Case.

**Table 17: Sensitivity analysis and impact on NPV**

	Base Case	Base Case Diff	ZEB Case	ZEB Case Diff	ZEB vs. Base
Baseline	\$105,294,000	NA	\$134,963,000	NA	28%
FCEB purchase price <b>-50%</b> swing	\$105,294,000	\$--	\$114,323,000	\$(20,640,000)	9%
CNG fuel <b>+50%</b> swing	\$108,348,000	\$3,054,000	\$136,863,000	\$1,900,000	26%
FCEB maintenance <b>-40%</b> swing	\$105,294,000	\$--	\$126,347,000	\$(8,616,000)	20%

Overall, the sensitivity analysis demonstrates that changes in capital expenses for bus purchase price has the biggest impact on NPV. If FCEB prices come down in the future, the total budget required for the transition will be significantly closer to the business-as-usual scenario. Further, GCTD will continue to use competitive and formula funding sources to reduce the expenses of capital acquisitions, such as the recent application to the federal Low-No funding program for a hydrogen fueling station.

<sup>27</sup> <https://www2.deloitte.com/content/dam/Deloitte/fr/Documents/fusions-acquisitions/fueling-the-future-of-mobility-fuel-cell.pdf>

## 9.0 OPERATIONAL AND PLANNING CONSIDERATIONS

This section provides guidance and strategies for various operational and planning requirements when implementing FCEBs.

### 9.1 OPERATOR NEEDS

As FCEBs have different components and controls than conventional buses, FCEB bus performance also differs. Operations staff should also be briefed on expected range and limitations of FCEBs (such as variability in energy consumption from HVAC under different weather conditions) as well as expected refueling times and procedures. Interaction at the depot should be similar to what is done with the CNG fleet, which is fueled as part of the service line process.

The presence of hydrogen gas and the safety issues that relate to this must be addressed as well as any differences to gauges and instrumentation. An overview of the technology should be included. An additional increment of time beyond just the vehicle layout and driving characteristics needs to be added to training sessions to address the technology and unique safety considerations. Additional training time for different start-up and shut-down procedures and proper procedures regarding what to do if there is a failure on route should be accounted for as well.

Finally, ZEBs are much quieter than conventional fuel buses. Operators should be aware of this and that pedestrians or people around the bus may not be aware of its presence or that it is approaching. CARB has also stated that due to the vehicle's lack of noise, some operators forget to turn off the bus after parking. Operator training should include a process for ensuring that this happens as well.

### 9.2 PLANNING, SCHEDULING, AND RUNCUTTING

FCEBs come closest to matching the current diesel bus range and APTA White Book Guidelines for heavy duty bus ranges (280-360 miles). GCTD can launch FCEBs first on routes/blocks with shorter daily distances to get a feel for them in terms of range and handling—placing them on routes that remain relatively close to the facility would be a pragmatic strategy at first. Non-revenue tests should be conducted to understand actual driving range and fuel economy, particularly as a function of route operating conditions, ambient temperature, passenger loads, and driver behavior.

### 9.3 MAINTENANCE NEEDS

The elimination of the internal combustion engine and powertrain will reduce operating maintenance costs in labor, material, and outsourcing. However, maintenance staff will still need to be trained on safety, scheduled maintenance, diagnostics, and repair of multiple systems that may be new to them. While a smaller high voltage battery installation is present and will require inspection and eventual changeout, the inspection and possible replacement of hydrogen fuel cell apparatus may be necessary. Tanks will have the same ruggedness as CNG products and should fulfill in excess of the heavy-duty bus 12-year service design life cycle.



According to FCEB OEMs, FCEB technicians should receive training on:

- Hydrogen systems, including fuel cell engine
- Hydrogen fuel system
- Hydrogen detection and fire suppression systems
- Hydrogen cooling system package

### 9.4 REFUELING CYCLE

Fueling a FCEB is very similar to fueling a traditional CNG bus. Attaching a dispenser nozzle to the vehicle and fueling for ~8-12 minutes will yield a full tank. The hydrogen nozzle is completely sealed to the bus while refueling due to the high-pressure delivery method (above 350 bars). The operation of the nozzle and the pump are virtually the same but specific training needs to be provided to staff for safety reasons.



**Figure 26: Hydrogen fueling dispenser at OCTA for heavy-duty transit buses**

Overall, the concept design for the hydrogen fueling station is for two low-pressure dispensers (H35) in the current fueling lanes for 35-ft and 40-ft FCEBs to create a seamless transition to ZEBs by maintaining the current practices around servicing and fueling procedures for GCTD. Additionally, the design considers one high-pressure dispenser (H70) to refuel vans and cutaways. The pressure difference

between H35 and H70 dictates how much hydrogen can be stored in the tanks and is limited by the design specifications of each vehicle. While a van or cutaway could refuel at H35, they would only get half the tank fill capacity. However, a 35-ft or 40-ft bus is unable to fill using a H70 dispenser. Based on the design of the hydrogen infrastructure and the forecasted demand for hydrogen, we estimate that a delivery of hydrogen fuel would be required every 2-3 days to replenish the storage tank.

## 10.0 WORKFORCE TRAINING

Transitioning to zero-emission vehicles presents complexities for all areas of transit operations including scheduling, maintenance, and yard operations. GCTD has specified a fleet replacement schedule for their current fleet (fixed route and paratransit services) and aims to transition to a 100% ZEB fleet by 2040. To ensure a qualified workforce is ready to support ZEB deployment it will be essential to provide effective training and align workforce development with the fleet transition timeline. This is summarized in Figure 27 below.



Figure 27: GCTD training timeline

### 10.1 CURRENT PLANS

GCTD is committed to training existing employees to retain staff and develop a qualified ZEB staff and has already implemented training opportunities. For example, GCTD worked with the SEIU Mechanical

Unit to create a mentorship program that allows less experienced mechanics to learn from experienced mechanics. In addition, bus repair and electrical training is provided via the California Transit Training Consortium (CTTC), which includes high-level ZEB bus safety and operations. Mechanics also receive training on GCTD's non-revenue electric vehicles<sup>28</sup>.

To facilitate a successful transition to a 100% ZE fleet, GCTD identified their primary training needs, which include<sup>29</sup>:

- Operational and safety training
- Technical training on fuel cell operations
- Technical training on battery-electric drive systems
- Tools, PPE, and equipment training
- Operational safety training on hydrogen fueling stations

Acquiring the following tools and safety materials was also identified as a top priority to ensure successful in-house ZEB maintenance and management<sup>30</sup>:

- Operational training module
- High voltage interface box
- Portable leak tester
- Virtual training module
- High voltage insulated tools
- Insulated PPE
- Electrical safety hooks
- Arc flash clothing

Taking these needs into consideration, GCTD developed a plan for initial training. Within one month of receiving the first vehicles, all GCTD mechanics, workers, specialists, bus operators, and office staff will attend the one-day OEM Tier 1 training. Within six weeks, facility and maintenance mechanics will receive Tier 3 training. Tier 1 and Tier 3 courses are summarized in Table 18.

**Table 18: OEM tier 1 & tier 3 training**

<b>Tier</b>	<b>Course</b>
Tier 1	Fuel cell 101
	Fuel cell system basics
	Hydrogen safety
	Servicing basics and schedule
	Preventative maintenance
Tier 3	Introduction to system schematics
	Corrective maintenance
	Diagnostics
	Basic and advanced troubleshooting

<sup>28</sup> GCTD FTA ZE Fleet Transition Plan, pg. 13

<sup>29</sup> GCTD FTA ZE Fleet Transition Plan, pg. 14-15

<sup>30</sup> GCTD FTA ZE Fleet Transition Plan, pg. 15

Tier	Course
	Integration basics
	Remote data analysis

GCTD also created a framework of potential training methods and strategies to bolster their workforce development and successfully transition to a 100% ZEB fleet, summarized in Table 19 below.

**Table 19: Potential training methods**

Plan	Description
Train-the-trainer	Small numbers of staff are trained, and subsequently train colleagues. This maintains institutional knowledge while reducing the need for external training.
Vendor training from New Flyer and fueling vendor	OEM training provides critical, equipment-specific operations and maintenance information. Prior to implementing ZEB technology, GCTD staff will work with the OEMs to ensure all employees complete necessary training.
Retraining & refresher training	Entry level, intermediate, and advanced continuous learning opportunities will be offered to all GCTD staff.
ZEB training from other transit agencies	GCTD plans to leverage the experience of agencies who were early ZEB adopters, such as the ZEB University program offered by AC Transit.
National Transit Institute (NTI) training	NTI offers zero-emissions courses such as ZEB management and benchmarking and performance.
Local partnerships and collaborations	GCTD works with local schools to showcase potential careers in bus and facilities management to students.
Professional associations	Associations such as the Zero Emission Bus Resource Alliance offer opportunities for sharing and lessons learned across transit agencies.

## 10.2 FUNDING

GCTD plans to use \$764,990 of FY2022 Low-No Grant funding (if awarded) to fund the initial steps of workforce development.<sup>31</sup> Training and budget details are summarized in Table 20.

**Table 20: FY2022 Low-No training funding**

Training Resource/Strategy	FY2022 Low-No Budget
Bus OEM operator, maintenance, first responder training	\$84,490
Operational and safety training for operators, service workers, and other staff	\$50,000
Technical training for mechanics on hydrogen fuel cell operations and battery systems	\$100,000
Regional Consortium (specific OEM training, specialized training modules for continuing education, hosting training seminars for regional providers, specialized training on hydrogen fuel station maintenance)	\$480,500

<sup>31</sup> GCTD FTA ZE Fleet Transition Plan, pg. 16

<b>Training Resource/Strategy</b>	<b>FY2022 Low-No Budget</b>
Operational and safety training for facility mechanics, building maintenance workers, and building mechanics	\$50,000
<b>Total</b>	<b>\$764,990</b>

### 10.3 ADDITIONAL CONSIDERATIONS

In addition to the plan outlined above, OEM recommendations from the California statewide contract procurement for ZEBs can provide general guidance for training and workforce development (Table 21).

With a focus on safety, it is highly recommended that all local fire and emergency response departments be given training as the layout, componentry, safety devices, and other features on the new technology. This should reoccur every few years. The specific frequency can be dependent on agency discretion.

First-responder training is also recommended due to the nature of the new technology, particularly fire and emergency personnel. Additionally, training for staff involved in related functions like facility maintenance, tow truck providers, and utility service works might be necessary.

Although not specifically training, dry runs on each route should be done with the ZEBs to validate range and identify opportunities for coasting and adjustment to the vehicle's acceleration profile. In turn, changes in timing points may be necessary or beneficial for all parties. This should be done with planning staff on board and schedules should be adjusted as appropriate. In tandem, based on having several vehicle types particularly during transition, dispatching training and instructions to staff on parking routines will be necessary.

**Table 21: OEM recommendations from the California ZEB contract procurement**

<b>Training Type</b>	<b>Course</b>	<b>Sessions</b>	<b>Session Hours</b>
Operator	Drive training	4	4
	Overall vehicle/system orientation	20	2
Maintenance/Technician	Preventative maintenance	4	8
	Electrical/electronic	6	8
	Multiplex	4	3x8 days
	HVAC	4	4
	Brakes	4	4
	Energy storage system, lithium-ion battery and energy management hardware and software training	6	8
	Electric drive/transmission	6	8
	H2 system – fuel cell engine	6	8

Training Type	Course	Sessions	Session Hours
	H2 fuel system	4	8
	H2 detection and fire suppression systems	4	8
	H2 cooling system package	6	4

## 11.0 POTENTIAL FUNDING SOURCES

As a cost driver for transit agencies, funding the ZE transition will require external financial aid. Due to the long timeframe over which buses will be procured and infrastructure will be constructed, it is imperative that GCTD constantly monitors existing funding and financing opportunities and is aware of when new sources are created. Below are major current programs available for ZEB transition (Table 22).



**Table 22: Grants and potential funding options for ZEB transition**

Type	Agency	Fund/Grant/Program	Description	Applicability & Details
Federal	Federal Transportation Administration (FTA)	Low or No Emission Program (Low-No Program) (5339(c))	Low-No provides competitive funding for the procurement of low or no emission vehicles, including the leasing or purchasing of vehicles and related supporting infrastructure. This has been an annual program under the FAST Act since FY2016 and is a subprogram of the Section 5339 Grants for Bus and Bus Facilities.  There is a stipulation for a 20% local match.	In FY2021 the FTA awarded \$180 million to 49 projects for the Low-No program. <sup>32</sup> In FY2021, Golden Empire Transit District received \$3 million to construct a permanent hydrogen fueling station to support its electric bus operations. <sup>33</sup> \$1.1 billion has been announced for FY2022 projects. <sup>34</sup> GCTD applied for a Low-No grant in FY2022.
		Buses and Bus Facilities Program (5339(a) formula, 5339(b) competitive)	Grants applicable to rehab buses, purchase new buses, and invest and renovate related equipment and facilities for low or no emission vehicles or facilities. A 20% local match is required.	FY2021 5339 funding totaled \$409 million in grants to 70 projects in 39 states. \$372 million has been announced for FY2022 grants. <sup>35</sup>
		Urbanized Area Formula Grants (5307)	5307 grant funding makes federal resources available to urbanized areas for transit capital and operating assistance. Eligible activities include capital investments in bus and bus-related activities such as replacement, overhaul and rebuilding of buses. The federal share is not to exceed 80% of the net project cost for capital expenditures. The federal share may be 90% of the cost of vehicle-related equipment attributable to compliance with the Clean Air Act.	Typically, the MPO or another lead public agency is the direct recipient of these funds and distributes these to local transit agencies based on TIP allocation. Agencies can allocate these funds for the purchase of ZEBs.

<sup>32</sup> <https://www.transit.dot.gov/funding/grants/fiscal-year-2021-low-or-no-emission-low-no-bus-program-projects>

<sup>33</sup> <https://www.transit.dot.gov/funding/grants/fiscal-year-2021-low-or-no-emission-low-no-bus-program-projects>

<sup>34</sup> <https://www.transit.dot.gov/lowno#:~:text=On%20March%207%2C%202022%2C%20FTA,improve%20air%20quality%20and%20combat>

<sup>35</sup> <https://www.transit.dot.gov/bus-program>

## ZEB STRATEGY AND ROLLOUT PLAN

Type	Agency	Fund/Grant/Program	Description	Applicability & Details
	Federal Highway Administration (FHWA)	Congestion Mitigation and Air Quality Improvement Program (CMAQ)	The Congestion Mitigation and Air Quality Improvement (CMAQ) Program provides funds to states for transportation projects designed to reduce traffic congestion and improve air quality, particularly in areas of the country that do not attain national air quality standards.	Projects that reduce criteria air pollutants regulated from transportation-related sources, including ZEBs.
	United States Department of Transportation (USDOT)	Local and Regional Project Assistance Program (RAISE)	Previously known as BUILD and TIGER, RAISE is a discretionary grant program aimed to support investment in infrastructure. RAISE funding supports planning and capital investments in roads, bridges, transit, rail, ports, and intermodal transportation. A local match is required. <sup>36</sup>	FY2020 provided \$1 billion in BUILD grants to 70 projects with a stipulation requiring 50% of funding for projects in rural areas. In FY2022, \$2.28 billion in funding was announced for the RAISE Grant Program. <sup>37</sup>
State	California Air Resources Board (CARB)	Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program (HVIP)	Voucher program created in 2009 aimed at reducing the purchase cost of zero-emission vehicles. A transit agency would decide on a vehicle, contact the vendor directly, and then the vendor would apply for the voucher.	\$430 million in funding for the FY21-22 year was announced in March 2022. <sup>38</sup> Hydrogen fuel cell vehicles are eligible for HVIP but must not have plug-in capacity. <sup>39</sup>
		Carl Moyer Memorial Air Quality Standards Attainment Program	The Carl Moyer Program provides funding to help procure low-emission vehicles and equipment. It is implemented as a partnership between CARB and local air districts.	Transit buses are eligible for up to \$80,000 funding.

<sup>36</sup> <https://www.transportation.gov/RAISEgrants/about>

<sup>37</sup> [https://www.transportation.gov/sites/dot.gov/files/2022-04/RAISE\\_2022\\_NOFO\\_AMENDMENT\\_1.pdf](https://www.transportation.gov/sites/dot.gov/files/2022-04/RAISE_2022_NOFO_AMENDMENT_1.pdf)

<sup>38</sup> <https://californiahvip.org/funding/>

<sup>39</sup> <https://californiahvip.org/wp-content/uploads/2022/03/HVIP-FY21-22-Implementation-Manual-03.15.22.pdf>

## ZEB STRATEGY AND ROLLOUT PLAN

Type	Agency	Fund/Grant/Program	Description	Applicability & Details
		Volkswagen Environmental Mitigation Trust Funding	VW's settlement provides nearly \$130 million for zero-emission transit, school, and shuttle bus replacements.	Transit may be eligible for up to \$65 million. Applications are open for transit agencies and are processed on a first come, first serve basis. Maximum: \$400,000 per FCEB and maximum of \$3,250,000 total funding per agency. <sup>40</sup>
		Sustainable Transportation Equity Project (STEP)	STEP was a pilot that took a community-based approach to overcoming barriers to clean transportation. The future of STEP is currently being determined by CARB and stakeholder groups through the FY22-23 Funding Plan and Three-Year Plan for Clean Transportation Incentives. <sup>41</sup>	There are two different grant types: Planning and Capacity Building Grants (up to \$1.75 million for multiple grantees) and Implementation Grants (up to \$17.75 million for between one and three grantees). Lead applicants must be a CBO, federally-recognized tribe, or local government representing a public transit agency. Award amounts ranged from \$184,000 to a maximum of over \$7 million. <sup>42</sup>
	California Transportation Commission (CTC)	SB1 Local Partnership Program (LPP)	The Local Partnership Program provides funding to counties, cities, districts and regional transportation agencies to improve aging infrastructure, road conditions, active transportation, transit and rail, and health and safety benefits. Funds are distributed through competitive and formulaic components. <sup>43</sup>	To be eligible, counties, cities, districts, and regional transportation agencies must have approved fees or taxes dedicated solely to transportation improvements. \$200 million is available annually. In Ventura County, a transportation sales tax measure may be placed on voter ballots for the November 2022 election. If passed, the LPP will be a potential future funding option. <sup>44</sup>
		Solutions for Congested Corridors Program (SCCP)	The SCCP includes programs with both formula and competitive funds. Funding is available to projects that make specific performance improvements and are a part of a multimodal comprehensive corridor plan designed to reduce congestion in highly traveled corridors by providing more transportation choices for residents, commuters, and visitors.	Improvements to transit facilities are eligible projects. Cycle 2 funding of \$500 million covers two years (FY2022 and FY2023). To submit a SCCP application, the applicant needs to know exactly what sources will be funding the project and when the funds will be used, as well as which project phase they will be used for. Total estimated funding: \$500,000,000 for FY22-23 <sup>45</sup>

<sup>40</sup> <http://vwbusmoney.valleyair.org/documents/FAQ.pdf>

<sup>41</sup> <https://ww2.arb.ca.gov/icti-step>

<sup>42</sup> <https://ww2.arb.ca.gov/news/grant-awards-announced-new-195-million-pilot-funding-equitable-clean-transportation-options>

<sup>43</sup> <https://catc.ca.gov/programs/sb1/local-partnership-program>

<sup>44</sup> <https://www.vcstar.com/story/news/local/2021/10/22/group-proposing-transit-sales-tax-measure-countys-2022-ballot/5988391001/>

<sup>45</sup> <https://www.grants.ca.gov/grants/solutions-for-congested-corridors-program/>

## ZEB STRATEGY AND ROLLOUT PLAN

Type	Agency	Fund/Grant/Program	Description	Applicability & Details
	California Department of Transportation (Caltrans)	SB1 State of Good Repair	SGR funds are formula funds eligible for transit maintenance, rehabs, and capital programs. Agencies receive yearly SB1 SGR funding through their MPO, based on population and farebox revenues.	Agencies can decide to devote its portion of SB 1 funds to ZEB transition.
		Low Carbon Transit Operations Program (LCTOP)	The LCTOP provides capital assistance to transit agencies in order to reduce greenhouse gas emissions and improve mobility. 5% and 10% of the annual Cap and Trade auction proceeds fund this program.	Many agencies are already recipients of these funds and can use these funds to purchase ZEBs and related equipment.
		Transit and Intercity Rail Capital Program (TIRCP)	The TIRCP was created to fund capital improvements that reduce emissions of greenhouse gases, vehicle miles traveled, and congestion through modernization of California's intercity, commuter, and rail, bus, and ferry transit systems. <sup>46</sup>	The five cycles of TIRCP funding have awarded \$6.6 billion in funding to nearly 100 projects throughout California. In 2022, the Humboldt Transit Authority (HTA) received \$38,743,000 to procure 11 hydrogen fuel cell buses, design a hydrogen fueling station, and design and construct an intermodal transit and housing center. <sup>47</sup>
		State Transportation Improvement Program (STIP)	The STIP is a five-year plan for future allocations of certain state transportation funds including state highway, active transportation, intercity rail, and transit improvements. The STIP is updated biennially in even-numbered years. <sup>48</sup>	ZEB procurement could compete for STIP funding. The 2022 STIP was adopted in March 2022 and included \$796 million in available funding. <sup>49</sup> Funding is distributed via a formula for a variety of projects.

<sup>46</sup> <https://calsta.ca.gov/subject-areas/transit-intercity-rail-capital-prog>

<sup>47</sup> <https://calsta.ca.gov/-/media/calsta-media/documents/tircp---program-of-projects-as-of-july-2022---cycle-5-only-a11y.pdf>

<sup>48</sup> <https://catc.ca.gov/programs/state-transportation-improvement-program>

<sup>49</sup> <https://catc.ca.gov/-/media/ctc-media/documents/programs/stip/2022-stip/2022-adopted-stip-32522.pdf>

## ZEB STRATEGY AND ROLLOUT PLAN

Type	Agency	Fund/Grant/Program	Description	Applicability & Details
		Transportation Development Act (Mills-Alquist-Deddeh Act (SB 325))	The TDA law provides funding to improve existing public transportation services and encourage regional transportation coordination. There are two funding sources: the Local Transportation Fund (LTF) and the State Transit Assistance (STA) fund. <sup>50</sup>	Funding opportunities include transportation program activities, pedestrian and bike facilities, community transit services, public transportation, and bus and rail projects.
	California Energy Commission	Clean Transportation Program (Alternative and Renewable Fuel and Vehicle Technology Program)	The California Energy Commission's Clean Transportation Program provides funding to support innovation and acceleration of development and deployment of zero-emission fuel technologies. A local match is often required.	The Clean Transportation Program provides up to \$100 million annually for a variety of renewable and alternative fuel transportation projects throughout the state, including specific projects for heavy-duty public transit buses.  In 2021, between \$4 million and \$6 million were awarded to the following transit agencies to assist with zero-emission transit fleet infrastructure deployment: Anaheim Transportation Network (\$5 million), LADOT (\$6 million), Sunline Transit (\$5 million), and North County Transit District (\$4 million)
	Department of Housing and Community Development	Affordable Housing and Sustainable Communities Program	The AHSC Program funds land use, housing, and transportation projects to support development that reduces GHG emissions. The program provides both grants and loans that reduce GHG emissions and benefit disadvantaged communities through increasing accessibility via low-carbon transportation. \$405 million in available funds was announced in 2021. <sup>51</sup> The maximum award amount is not to exceed \$30 million per project, with a minimum award of at least \$1 million. <sup>52</sup>	Sustainable transportation infrastructure projects, transportation-related amenities, and program costs (including transit ridership) are eligible activities. Agencies can use program funds for assistance in construction or modification of infrastructure for ZEB conversion as well as new vehicle purchases.
Local	Ventura County Air Pollution Control District	Clean Air Fund (CAF)	The CAF provides financial support for projects that reduce emissions of greenhouse gases and the global warming impact of carbon emissions via mitigation. <sup>53</sup>	Approximately \$25,000 is available for project funding each year on January 1 <sup>st</sup> . Projects are reviewed and recommended based on their ability to reduce air pollution in Ventura County. <sup>54</sup>

<sup>50</sup> <https://dot.ca.gov/programs/rail-and-mass-transportation/transportation-development-act>

<sup>51</sup> [https://www.hcd.ca.gov/grants-funding/active-funding/ahsc/docs/final\\_ahsc\\_nofa\\_round\\_6.pdf](https://www.hcd.ca.gov/grants-funding/active-funding/ahsc/docs/final_ahsc_nofa_round_6.pdf)

<sup>52</sup> [https://www.hcd.ca.gov/affordable-housing-and-sustainable-communities#:~:text=Communities%20Program%20\(AHSC\)-,Affordable%20Housing%20and%20Sustainable%20Communities%20Program%20\(AHSC\),\(%22GHG%22\)%20emissions.](https://www.hcd.ca.gov/affordable-housing-and-sustainable-communities#:~:text=Communities%20Program%20(AHSC)-,Affordable%20Housing%20and%20Sustainable%20Communities%20Program%20(AHSC),(%22GHG%22)%20emissions.)

<sup>53</sup> <http://www.vcapcd.org/pubs/Incentive-Programs/What-is-the-Clean-Air-Fund-Program.pdf>

<sup>54</sup> <http://www.vcapcd.org/pubs/Incentive-Programs/What-is-the-Clean-Air-Fund-Program.pdf>

## ZEB STRATEGY AND ROLLOUT PLAN

Type	Agency	Fund/Grant/Program	Description	Applicability & Details
	Ventura County Regional Energy Alliance (VCREA)	EV Ready Communities Challenge Grant: Ventura County EV Blueprint	VCREA and Community Environmental Council (CEC) are creating a plan for electrifying transportation in Ventura County. The second phase of funding that will go towards EV charging installations in Ventura County if approved. <sup>55</sup>	
Other		Low Carbon Fuel Standard (LCFS credits)	LCFS credits are not necessary funding to be applied for; rather, they are offset credits that are traded (through a broker) to reduce operating costs.	Once ZEBs are acquired and operating, agencies can collect LCFS and 'sell' them to reduce operating costs of ZEBs. Both hydrogen and electricity used as fuels are eligible for LCFS credits. Credit prices range, but average credit price between 2016 and 2019 was between \$65 and \$200 per credit, with an average of \$10,000 per vehicle.
		Transportation Development Credits	Although they are not funds for projects, Transportation Development Credits, also called "Toll Credits", satisfy the federal government requirement to match federal funds. <sup>56</sup>	Toll credits provide a credit toward a project's local share for certain expenditures with toll revenues. FHWA oversees the toll credits within each state. <sup>57</sup>

<sup>55</sup> <https://www.vcenergy.org/electric-vehicle-blueprint/>

<sup>56</sup> <https://dot.ca.gov/-/media/dot-media/programs/rail-mass-transportation/documents/f0010121-toll-credit-fact-sheet.pdf>

<sup>57</sup> <https://dot.ca.gov/-/media/dot-media/programs/rail-mass-transportation/documents/f0009899-2-toll-credits-fact-sheet-a11y.pdf>

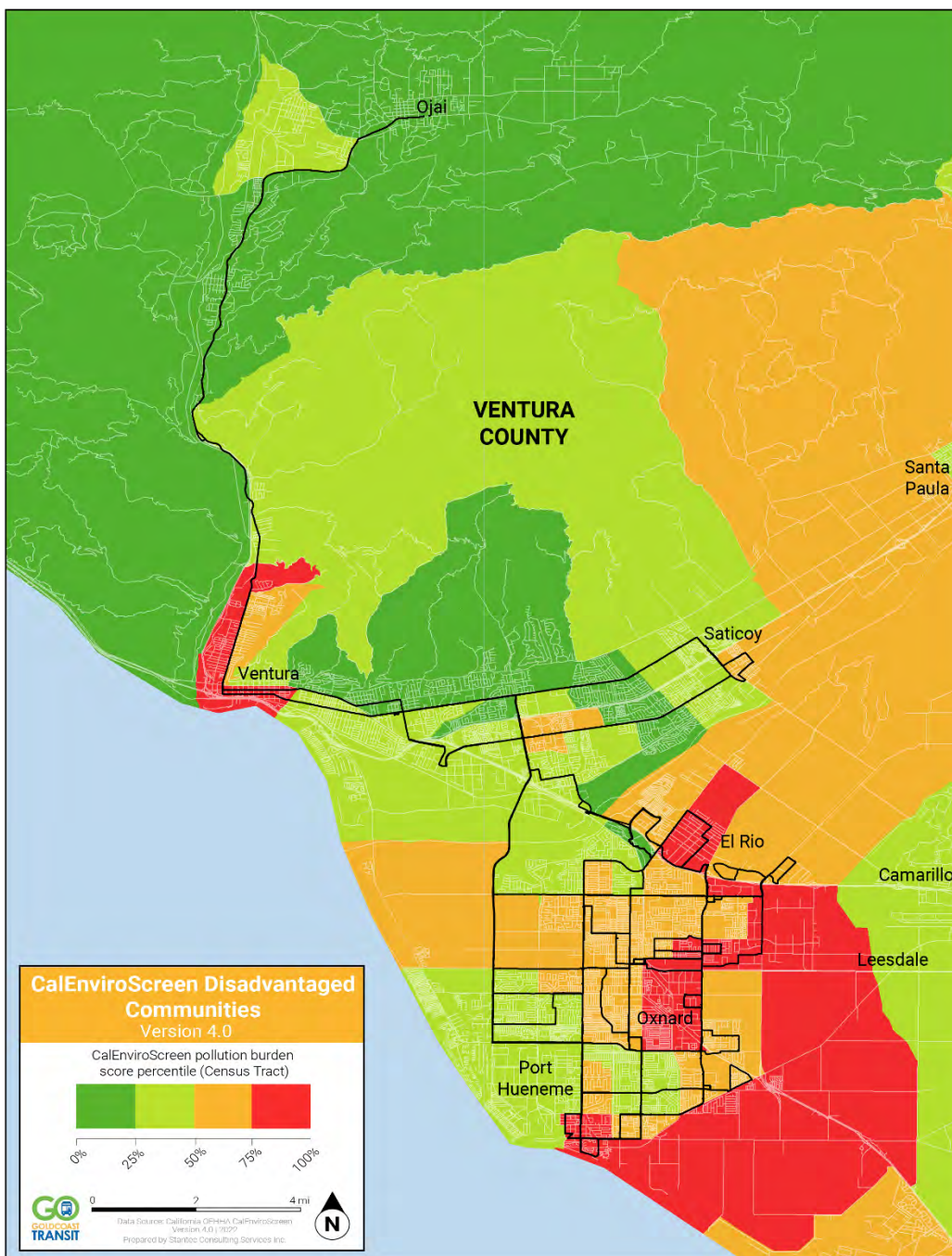
## 12.0 SERVICE IN DISADVANTAGED COMMUNITIES

CARB defines Section F of the rollout plan as “Providing Service in Disadvantaged Communities” based on disadvantaged communities as identified by CalEnviroScreen, an online mapping tool developed by the Office of Environmental Health Hazard Assessment (OEHHA). The tool identifies (at the census tract level) the state’s most pollution-burdened and vulnerable communities based on geographic, socioeconomic, public health, and environmental hazard criteria.

ICT provisions require that transit agencies describe how they are planning to deploy ZEBs in disadvantaged communities by outlining the location of the disadvantaged community (census tract) where the ZEB will be deployed, how many ZEBs, and in what year the ZEBs will be deployed.

Figure 28 shows that there are eight census tracts that are classified as ‘disadvantaged communities’ according to CalEnviroScreen 4.0, and Table 23 details the routes that operate within or touch these census tracts.





**Figure 28: CalEnviroScreen disadvantaged communities in GCTD service area**



**Table 23: Disadvantaged communities - census tracts and routes**

Census Tract ID	Community	Route(s)
6111004902	Oxnard	2, 4A, 4B, 15, 17, 19
6111009100	Oxnard	2, 4A, 4B, 8, 17, 19
6111004400	Port Hueneme	1A, 1B, 23
6111003900	Oxnard	3, 7, 8
6111002300	Ventura	6, 16
6111002400	Ventura	6, 16
6111005003	El Rio	15, 17
6111004715	Oxnard	7

While census tracts that are considered disadvantaged are dispersed throughout the service area, there is a concentration in Oxnard (affecting routes 2, 3, 4A, 4B, 7, 8, 17, and 19). Disadvantaged communities are also seen in Ventura (affecting routes 6 and 16) and Port Hueneme (affecting routes 1A, 1B, and 23), and El Rio (affecting routes 15 and 17).

To make the biggest positive impact on disadvantaged communities in the service area, GCTD can prioritize ZEB deployment along route 17, as this route touches three different disadvantaged communities. However, GCTD can achieve this goal by deploying ZEBs first on any routes except routes 5, 10, 11, and 21, as these routes do not touch or run through any CalEnviroScreen-defined disadvantaged communities.

## 13.0 GHG IMPACTS

Based on the ZEBDecide modeling of greenhouse gas (GHG) emissions, GCTD's CNG/gasoline fleet emits ~6,300 tons of GHGs per year. Upstream GHGs related to CNG and gasoline production add another ~4,800 tons of GHGs per year for a total carbon footprint of over 11,100 tons per year (Table 24).<sup>58</sup>

By operating ZEBs, GCTD will be able to completely eliminate tailpipe GHGs and other harmful emissions, providing a clean, quiet ride for operators and passengers, while also eliminating emissions linked to respiratory diseases from the neighborhoods GCTD serves. Nonetheless, the current production of hydrogen does result in GHG emissions and is not a completely 'carbon-free' process. Residual GHGs resulting from the carbon-intensity of generating hydrogen through a process that is 33% green (carbon neutral) and the remainder via SMR, based on GCTD's projected hydrogen demand, can emit about 5,700 tons of GHGs per year (Table 25). Overall, however, this reduces GCTD's fleet-related GHG footprint by nearly 50% (Table 25).

**Table 24: Annual Emission in Tons of CO<sub>2</sub> per year for the GCTD fleet by service type**

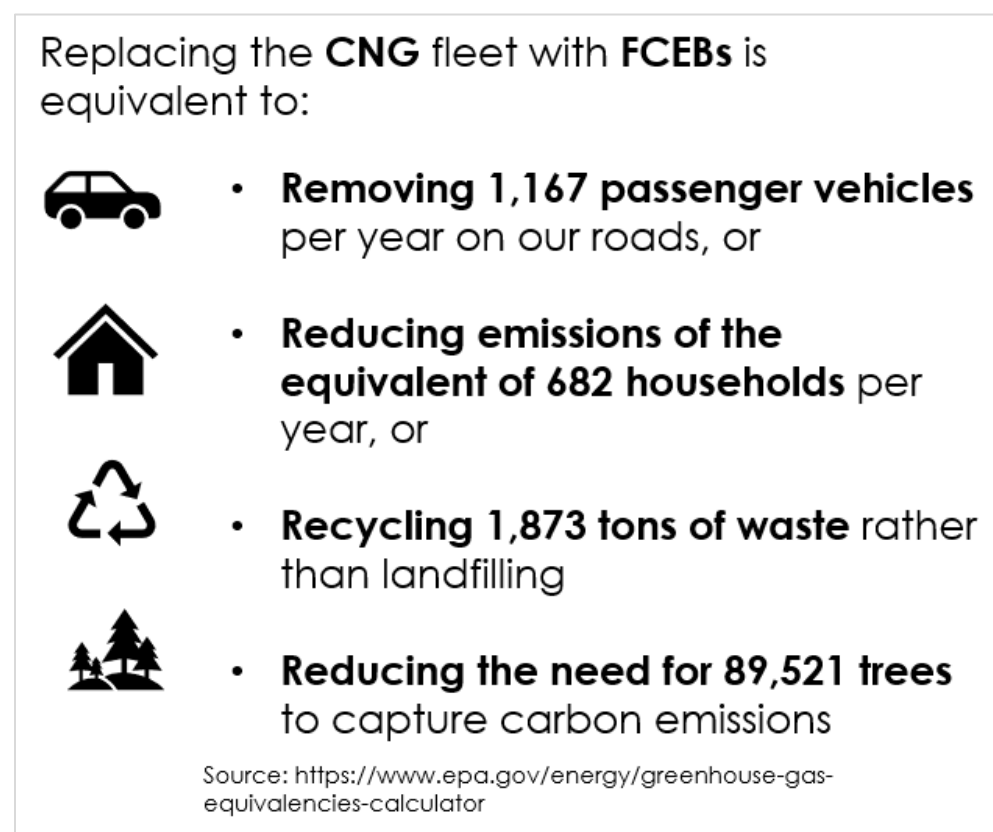
	Zero Emissions		CNG/Gasoline		
	Fixed Route Fleet	Demand Response Fleet	Fixed Route Fleet	CNG Demand Response Fleet	Gasoline Demand Response Fleet
Fleet tailpipe emissions (ton CO <sub>2</sub> /year)	-	-	5,627	394	284
Upstream emissions (ton CO <sub>2</sub> /year)	4,960	732	3,510	246	1,044
<b>Total Ton CO<sub>2</sub>/year</b>	<b>4,960</b>	<b>732</b>	<b>9,137</b>	<b>640</b>	<b>1,329</b>
Total Ton CO <sub>2</sub> /year	<b>5,692</b>		<b>11,105</b>		

<sup>58</sup> All GHG calculations are presented in tons (not metric tons) of CO<sub>2</sub> equivalent, which is calculated using the short-term 20-year global warming potential of CO<sub>2</sub>, methane, black carbon, and particulate matter.

**Table 25: Summary of Annual Emissions for the GCTD fleet**

	<b>Fleet Emissions (Ton CO<sub>2</sub>/year)</b>
FCEBs fleet	5,692
CNG/Gasoline Fleet	11,105
<b>Difference</b>	<b>5,414</b>
	<b>49%</b>

As presented in Figure 29, implementing a ZEB fleet will eliminate emissions equivalent to removing 1,167 passenger vehicles per year or reducing emissions from 682 households in a year<sup>59</sup>.

**Figure 29: Equivalent benefits of implementing a FCEB fleet at GCTD.**

<sup>59</sup> <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

## 14.0 OTHER TRANSITION ITEMS

### 14.1 JOINT ZEB GROUP AND ASSESSMENT OF MULTI-OPERATOR VEHICLE PROCUREMENT

According to ICT regulation, transit agencies can pool resources when acquiring ZEB infrastructure if they:

- Share infrastructure
- Share the same MPO, transportation planning agency, or Air District
- Are located within the same Air Basin

The Southern California Association of Governments (SCAG) is the MPO for Ventura County and provides regional transportation funding and planning for Ventura County, Los Angeles County, Orange County, Imperial County, Riverside County, and San Bernardino County. GCTD's service area is located within the Ventura County APCD and South-Central Coast Air Basin. Table 26 lists the agencies that operate fixed route transit services within Ventura County. These agencies also are within the same air basin and air district. While GCTD could theoretically partner with any transit agency in the SCAG region, the list was limited to Ventura County due to geographic proximity and service area overlaps that could make a joint group feasible and beneficial.

**Table 26: Other bus transit agencies in Ventura County**

Agency	Total revenue vehicles <sup>60</sup>	ZEB Choice	Notes
<b>Gold Coast Transit District</b>	<b>87</b>	<b>Hydrogen</b>	
Ventura County Transportation Commission <sup>61</sup>	51	TBD	ZEB plan currently underway.
Simi Valley Transit	21	BEB	2019 SRTP notes BEBs are the likely technology option, but a full ZEB study is recommended.
Camarillo Area Transit	19	TBD	
Thousand Oaks Transit <sup>62</sup>	38	TBD	No ZEB plan yet, but SCAG's 2021 FTIP noted the purchase of electric vehicles by Thousand Oaks transit to replace existing buses.
Moorpark City Transit	5	TBD	

<sup>60</sup> Based on NTD 2020 data.

<sup>61</sup> Includes both Valley Express Bus and VCTC Intercity.

<sup>62</sup> Also includes Kanan Shuttle and ECTA InterCity Dial-A-Ride.

Agency	Total revenue vehicles <sup>60</sup>	ZEB Choice	Notes
Ojai Trolley	6	BEB	ZEB plan currently underway.

While GCTD could potentially partner with any of these transit agencies to form a joint ZEB group, it would make the most sense to partner with other agencies moving forward with hydrogen as their ZEB technology choice to potentially share in the costs associated with hydrogen fueling infrastructure. As the majority of the other agencies operating in the county are small municipal agencies utilizing vehicle types with fewer hydrogen options, such as cutaways and trolleys, it might not be realistic to partner with other agencies for this reason. Nonetheless, GCTD and Ojai Trolley Service have formed a strategic partnership to collaborate with the ZEB transition in that they

Regardless of whether it makes sense to explore formation of a joint ZEB group or not, GCTD should remain in constant communication with other Ventura County agencies to understand how the agencies can work together to leverage resources and coordinate efforts on a regional level.

Another recommended strategy is developing a multi-operator vehicle procurement group. That is, GCTD could join with any of the agencies outlined above to produce common specifications for ZEBs, thus potentially driving down the purchase costs of ZEBs. Leveraging joint procurement through the CalACT/MBTA purchasing cooperative is a prudent approach, as the Cooperative offers a variety of ADA compliant vehicles like vans and cutaways; currently, ZE options are limited, however. Most judiciously, GCTD and other operators may wish to encourage OEMs to develop vehicles with longer ranges and more hydrogen options, especially vehicle types like cutaways and vans.

## 14.2 CONSIDERATIONS FOR PARTNERSHIPS

As other transit partners in the region are developing their own ZEB plans and rollout strategies, there are opportunities for partnership that can benefit all parties and help to facilitate seamless regional ZEB infrastructure. With this in mind, GCTD's hydrogen fueling station was designed to serve regional partners. For example, VCTC Intercity vehicles that travel through western Ventura County would be able to refuel at GCTD's hydrogen fueling station. VCTC is currently in the process of developing its own ZEB plan, and this opportunity will be explored in greater detail as that plan progresses. GCTD can also explore more ways to collaborate with its regional transit partners, such as exploring joint grant opportunities for ZEB vehicles and infrastructure.

## 14.3 CHANGE MANAGEMENT

Because the ZEB transition and implementation is an agencywide endeavor that also includes the need to actively consider utilities as a stakeholder and partner, an agencywide approach to the rollout is required. Additionally, the union representing the bus operators and maintenance technicians should also be included due to the large role they will play in the success of the ZEB transition and implementation. Thus, it is prudent for GCTD to form a steering committee or task force composed of staff from each major functional department and union representation to help ensure the impact of ZEBs

are considered for each. Using the rollout plan as a guide, the task force can develop action items, performance indicators, and risk assessments. The task force should also name a leader who acts as a champion for the ZEB conversion within the agency and to external stakeholders. Communication will be critical during the transition to ensure customers are made aware of potential disruptions and changes to bus operations. ZEB conversion also offers an excellent marketing opportunity for GCTD to promote its climate commitments.

15.0 PHASING AND IMPLEMENTATION

Table 27 provides an overview of the phasing plan for GCTD’s ZEB rollout strategy. Note that expenses are in the year of cost incurred. See Table 9 for more details regarding the fleet replacement schedule.

Table 27: ZEB implementation phasing plan, FY2023-2040

Year	Construction – maintenance facility	Fixed-Route ZEB Fleet Procurements	Demand Response ZE Fleet Procurements	Training: operators, maintenance staff, technicians	Training - other	Capital expenses (2022\$)	O&M expenses (2022\$)	Total expenses (2022\$)
FY2023	Construct and install hydrogen fueling equipment for high and low pressure refueling (H35 and H70).  Installation of hydrogen gas detection system in maintenance bays and upgrade of ventilation system.	0 35-ft 5 40-ft	6 vans & cutaways	Tier 1 & tier 3 OEM training	Tier 1 OEM training for all other staff	\$16,646,000	\$5,196,000	\$21,842,000
FY2024		0 35-ft 0 40-ft	7 vans & cutaways	Annual refreshers	No activity	\$3,448,000	\$4,808,000	\$8,256,000
FY2025		0 35-ft 0 40-ft	2 vans & cutaways	Annual refreshers	Local fire and emergency response department introduction to new technology	\$1,899,000	\$4,559,000	\$6,458,000
FY2026		0 35-ft 2 40-ft	8 vans & cutaways	Annual refreshers	No activity	\$4,821,000	\$4,236,000	\$9,057,000
FY2027		2 35-ft 0 40-ft	0 vans & cutaways	Annual refreshers	Local fire and emergency response department introduction to new technology	\$3,989,000	\$3,979,000	\$7,968,000
FY2028		0 35-ft 2 40-ft	5 vans & cutaways	Annual refreshers	No activity	\$4,824,000	\$3,707,000	\$8,531,000
FY2029		0 35-ft 5 40-ft	0 vans & cutaways	Annual refreshers	Local fire and emergency response department introduction to new technology	\$3,401,000	\$3,513,000	\$6,914,000

Year	Construction – maintenance facility	Fixed-Route ZEB Fleet Procurements	Demand Response ZE Fleet Procurements	Training: operators, maintenance staff, technicians	Training - other	Capital expenses (2022\$)	O&M expenses (2022\$)	Total expenses (2022\$)
FY2030		0 35-ft 2 40-ft	10 vans & cutaways	Tier 1 & tier 3 OEM training for new staff	Tier 1 OEM training for all other staff	\$2,503,000	\$3,443,000	\$5,946,000
FY2031		0 35-ft 5 40-ft	7 vans & cutaways	Annual refreshers	No activity	\$3,805,000	\$3,297,000	\$7,102,000
FY2032		0 35 -ft 4 40-ft	2 vans & cutaways	Tier 1 & tier 3 OEM training for new staff	Tier 1 OEM training for all other staff	\$2,517,000	\$3,259,000	\$5,776,000
FY2033		0 35-ft 4 40-ft	8 vans & cutaways	Tier 1 & tier 3 OEM training for new staff	Tier 1 OEM training for all other staff	\$3,008,000	\$3,111,000	\$6,119,000
FY2034		0 35-ft 7 40-ft	0 vans & cutaways	Annual refreshers	Local fire and emergency response department training on new technology	\$3,628,000	\$2,948,000	\$6,576,000
FY2035		0 35-ft 6 40-ft	5 vans & cutaways	Annual refreshers	No activity	\$3,461,000	\$2,787,000	\$6,248,000
FY2036		0 35-ft 6 40-ft	0 vans & cutaways	Annual refreshers	Local fire and emergency response department training on new technology	\$2,794,000	\$2,626,000	\$5,420,000
FY2037		0 35-ft 6 40-ft	10 vans & cutaways	Annual refreshers	No activity	\$3,568,000	\$2,468,000	\$6,036,000
FY2038		0 35-ft 6 40-ft	7 vans & cutaways	Tier 1 & tier 3 OEM training for new staff	Tier 1 OEM training for all other staff	\$3,133,000	\$2,384,000	\$5,517,000
FY2039		8 35-ft 0 40-ft	2 vans & cutaways	Annual refreshers	No activity	\$3,123,000	\$2,252,000	\$5,375,000
FY2040		0 35-ft 8 40-ft	8 vans & cutaways	Annual refreshers	Local fire and emergency response department training on new technology	\$3,694,000	\$2,128,000	\$5,822,000



## APPENDIX A: MEMO—INFRASTRUCTURE OPTIONS FOR DIFFERENT HYDROGEN FUELING ARRANGEMENTS

To: James Beck  
Gold Coast Transit District

From: Reb Guthrie  
Faye Farahmand  
Analy Castillo  
David Verbich  
  
Los Angeles

Project/File: GCTD ZEB Rollout Plan  
2073016250

Date: May 26, 2022

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**Reference: Infrastructure options for supplying and generating hydrogen fuel to a new hydrogen bus-fueling facility at the GCTD Facility**

## 1 Background

As Gold Coast Transit District (GCTD) plans a transition from a compressed natural gas (CNG) bus fleet to a fleet of hydrogen fuel cell-electric buses (FCEBs), the appropriate mode of providing the hydrogen fuel to the GCTD facility and its full FCEB fleet needs to be established.

The approach deployed at peer agencies with similar fleet sizes is to use liquid hydrogen (LH2) that is trucked to the site and stored in an aboveground cryogenic tank, and is the approach recommended and assumed to be baseline for the purpose of this memorandum. Another possible approach to supply hydrogen for use by the FCEBs is by producing the needed hydrogen on-site using water electrolysis. However, given the greater level of complexity, space requirements, maintenance requirements, extensive utility interconnects and concerns about system reliability that are associated with on-site hydrogen production via electrolysis, a hybrid approach is considered here (i.e., trucked LH2 supplemented by a portion of onsite electrolysis) as a comparison to the baseline.

Therefore, this report will analyze two possible scenarios for providing hydrogen to GCTD's new hydrogen facility, which are summarized as follows:

1. Trucked-in liquified hydrogen (LH2 Only)
2. Trucked-in liquified hydrogen at same capacity as in scenario 1 with supplemental (25%-35%) onsite hydrogen generation via electrolysis (LH2 + Electrolysis)

The assessment of both models will be sized to accommodate GCTD's eventual full FCEB fleet of 87 FCEBs, potential fueling from buses operated by the Ventura County Transportation Commission (VCTC), as well as a small portion for future public fueling of light-duty hydrogen vehicles, since it would be in the County's interest to maximize the use of its investment in infrastructure.

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

The LH2 + Electrolysis scenario has the benefits of improving resiliency of hydrogen-commodity supply and partially protecting against supply interruptions, as well as possibly reducing hydrogen-commodity costs. However, since the underlying LH2-based system would be sized and configured to meet 100% of the GCTD's and VCTC's hydrogen needs, any issues related to reliability of the supplemental electrolysis system would not weaken the underlying capacity or overall ability of the core hydrogen-fueling system to meet both agencies' needs. Further, the limited nature of the onsite production capacity in relation to the total daily demand would proportionally reduce the concerns for space and utility (electrical power) that would be needed if the full (100%) facility demand were otherwise to be provided by the onsite generation system. Additionally, the high electrical power requirements for a '100%' on-site electrolysis could only be fractionally met by photovoltaic power and associated PV battery-storage system planned for the GCTD facility. Conversely, the more modest power needs of an electrolysis system that is only supplemental in nature will allow the capacity of the PV system be more proportionally matched to the electrolysis-generated power load.

Stantec conducted bus predictive modeling for the fleet of 86 vehicles and estimates the hydrogen demand for the GCTD's fleet. The hydrogen demand for the VCTC vehicles, if this fleet were transition to hydrogen vehicles, was calculated at 1,338 kg per day for VCTC commuter fleet<sup>1</sup>. Furthermore, a capacity of 60 kg/day was assumed for public fueling if GCTD decides to open its station to the public. A summary of the total hydrogen demand for the site is presented in the Table 1 below; the total estimated hydrogen fuel demand at GCTD's facility will be about 2,463 kg/day.

Table 1: GCTD's Hydrogen demand

Agency	Item Description	40-ft and 35-ft Buses	Cutaways and Vans
GCTD	Total vehicles in fleet	64 (4 contingency)	27
	No. of active vehicles	60	26
	Avg. H2 demand per vehicle (kg/day/vehicle)	15.5	8.5
	Total H2 demand for active vehicles (kg/day/fleet)	885	180
	Total GCTD Fleet Hydrogen Demand (kg/day/fleet)	1,065	
VCTC	Total VCTC Fleet Hydrogen Demand (kg/day/fleet)	1,338	
Public	Public Fueling (6 kg / fill x 10 fills / day)	60	
Total Facility Hydrogen Demand (kg/day/fleet)		<b>2,463</b>	

<sup>1</sup> Based on high level assumptions using VCTC mileage data.

## 2 Option 1 – Trucked-In Liquified Hydrogen

### 2.1 Summary Description

LH2 will be delivered to the facility in loads of roughly 8,000-12,000 gallons, pending sizes of delivery tankers and then will be stored in a horizontal 18,000-gallon (4,822 kg<sup>2</sup>) cryogenic storage tank. Assuming 90% usable tank capacity (16,200 gallons or 4,340 kg) and a facility demand of 2,463 kg per day, the tank capacity will last 1.8 days, which equates to about four hydrogen fuel deliveries per week. Note that if two 12,000-gallon tank is used instead, the usable capacity would be 21,600 gallons or 5,787 kg, which would last up to 2.5 days, which would increase the reserve days until empty to 2.5 days.

The liquid will be fed from the tank to the high-pressure reciprocating cryogenic pumps at high pressure (450+ bar). The system will have four total reciprocating pumps with any two running and one acting as a rotating spare for large vehicle refueling at lower pressure—350 bar (also known as H35)—plus the fourth pump dedicated to refueling at higher pressure—700 bar (also known as H70)—that will be used for smaller vehicles like vans, cutaways or other light-duty vehicles. The buses and dispenser nozzles will both be equipped with high-flow nozzles that will allow fill rates of up to 7.2 kg/minute (when available from buffer contribution), but the nominal or rated flow will be 3.9 kg/minute, based on LH2-pump discharge.

The pump discharge would then be routed to ambient-air vaporizers or heat exchangers, where the high-pressure liquid will be warmed to atmospheric temperature. The high-pressure gaseous hydrogen (GH2) is then routed to a priority-valve panel that will automatically direct the GH2 to either the hydrogen dispensers or to an array of high-pressure GH2 buffer-storage vessels that will accumulate pump discharge during the brief period between bus fills at the dispensers. Once there is no demand at the dispensers and the buffer vessels are full, the pumps will automatically turn off.

Two dispensers will provide 'H35' (350 bar or 5,076 PSI<sup>3</sup>) GH2 to the buses and one dispenser will provide 'H70' (700 bar or 10,000 PSI) to cutaways and vans. The dispensers will be located in the existing service lanes and will be connected to the existing terminals in their respective lanes.

Lastly, prior to dispensing, the hydrogen gas is chilled to compensate for the heat of compression that occurs in the onboard storage cylinders during filling. Some dispensers include a chiller function, while other configurations rely on an external pre-chiller.

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<sup>2</sup> One gallon of liquid hydrogen equals 0.2679 kg.

<sup>3</sup> 1 bar is equal to 1 atmosphere of pressure at mean sea level or 14.504 PSI.

## 2.2 Equipment Requirements

An equipment compound for liquified hydrogen-based system includes the following main components:

- 18,000-gal (4,822 kg) LH2 storage tank configured horizontally (Note: Vertical tanks are available and are more space efficient, but they are more costly due to added structural bracing required. Additionally, the footers supporting the tank would need to be substantially deeper and larger, further increasing costs. Vertical tanks may be considered at a future point). Approximate dimensions: 43-ft. long x 11-ft. diameter
- (3) reciprocating LH2 pumps for H35 (any two operating with the other configured as a rotating spare)
- (1) reciprocating LH2 pump for H70
- (3) ambient-air heat-exchanger towers (also called dispensing vaporizers) for warming LH2 from pump discharge
- Warming vaporizer for generating transfer pressure at delivery truck
- (6) cylindrical high-pressure storage vessels for H35 (two stacks of three vessels)
- (2) cylindrical high-pressure storage vessels for H70 (two stacks' vessels)
- Priority valve panel
- 480V electrical power-distribution panelboard and programmable logic control (PLC) panel sized for approximately 400A (each of the running pump motors will draw about 90A, with the remaining loads being modest)
- Air compressor system
- Main service panelboard
- Motor-starter panelboard for powering four pumps
- System control panel

## 2.3 Space Requirements

The area needed to accommodate the main equipment—including the equipment listed above and accounting for a demising wall around the electrical equipment—is about 3,200-3,600 square feet. Depending on nature of other demising walls around the perimeter of the compound, setbacks of up to 40

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

ft. from the equipment to property lines and buildings may be required. Also, no vehicle parking is allowed within 25 ft. of the compound.

## 2.4 Utility Requirements

Given the low amount of electrical energy needed to operate the baseline LH2-only facility, it is likely that all of the power needs for the system could be met by the existing power system. Assuming a total running load of 175 HP (about 129 kW) with a nightly operating window of 8 hours, the station would have a demand of about 129 kW and a daily energy usage of about 132 kWh.

Aside from Internet connectivity—either via cellular modem or via GCTD’s IP data network—no other utility connections are required.

## 2.5 Key Considerations

- Possible requirement to enter into long-term LH2-supply agreements (as preferred or required by some industrial-gas vendors). However, this may be less of a limitation in the future with an expanding network of liquid hydrogen producers and distributors including Plug Power and the emergence of Chart Industries as a new hydrogen liquefier/supplier.
- Supply resiliency, as supply disruptions as have been experienced at some light-duty hydrogen-fueling stations in California. Simply put, if the delivery truck fails to arrive on time, the supply chain and facility operation are interrupted. This is expected to improve in the near- and medium-term future as hydrogen production (including ‘green’ hydrogen with low carbon intensity) is expected to improve.
- The cost of LH2 commodity delivered to the site (currently estimated at \$7.50-\$8.50/kg) will likely be higher than if produced onsite, though LH2-commodity prices are expected to gradually fall over time (some industry projections suggest the cost could fall below \$5/kg). However, this price uncertainty can be complex since an increased production is generally expected to reduce cost, demand will also rise some, so the ultimate relationship between the two forces is unclear.
- Product boiloff<sup>4</sup> occurs at about 0.5% to 1% of consumption. While is technically possible to capture and compress this gas, it would require a dedicated compressor that would likely cost as much to amortize and maintain as the boiloff hydrogen, and thus is not recommended.

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<sup>4</sup> Hydrogen boiloff gas (BOG) is produced when a small percentage of the cryogenic liquid unavoidably heats up and reach its boiling point (above -420°F) after a prolonged period of time in the storage tanks, or when transported over long distances.

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

## 2.6 Key Benefits

- The energy required to pump and dispense is relatively low (less than 0.5 kWh/kg).
- The area required for a given flow capacity is considerably less than that of comparable systems using on-site GH<sub>2</sub> production.
- Regional production of LH<sub>2</sub> in California will greatly improve resiliency and should result in lower commodity costs, though the actual degree of cost reduction will be determined per market conditions.
- A reciprocating LH<sub>2</sub> pump system requires minimal need for on-site high-pressure storage vessels. Only six total vessels configured as three banks of storage are needed, roughly similar to that of a comparable CNG-fueling system.
- The 'warm end' (connected to the drive motor and belt) of the reciprocating cryogenic pump has a long-life expectancy and the 'cold end' (cylinder and piston) part of pump is easily replaceable in about two hours. Cold-end spares can be maintained on-site or elsewhere locally.
- The ambient-heat exchangers needed to warm the cryogenic hydrogen up to above -20°F for storage are simple, solid-state devices with no moving parts. The periodic nature of bus fueling allows for the heat exchanges to defrost daily (they often accumulate a thick frost layer due to contact with ambient humidity), so redundancy is not required.
- Relatively speaking, the entire system is simple, compact and easy to maintain.
- The system is expandable with the addition of more pumps, heat exchangers and dispensers if the FCEB fleet grows and demand grows.

## 2.7 Equipment Costs

The preliminary cost estimate (in 2022\$) in *Table 2* for Option 1 is based on the direct costs for primary equipment required for the system. However, the bottom line of this estimate does include additional capex costs for construction, site materials, piping, wiring, and foundations, as well as escalations and contractor markups. This amount should also include costs for dispensing equipment, which are assumed to be uniform across the two options considered in this memo and therefore are not otherwise listed in the below table.

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

Table 2: Equipment costs for system using trucked-in liquified hydrogen

Item	Qty.	\$ Unit ROM	\$ Extended
Liquified 18,000-gal hydrogen tank	1	\$1,100,000.00	\$1,100,000.00
Reciprocating LH2 pumps for H35	3	\$180,000.00	\$540,000.00
Reciprocating LH2 pump for H70	1	\$198,000.00	\$198,000.00
Hydrogen vaporizers for H35	2	\$110,000.00	\$220,000.00
Hydrogen vaporizers for H70	1	\$125,000.00	\$125,000.00
Hydrogen vaporizer for pressure building	1	\$90,000.00	\$90,000.00
Priority valve panel	1	\$100,000.00	\$100,000.00
High pressure GH2 storage vessels	8	\$40,000.00	\$320,000.00
Air compressor system	1	\$9,000.00	\$9,000.00
Main service AC Power panelboard	1	\$50,000.00	\$50,000.00
Duplex motor starter panelboard (pumps)	2	\$50,000.00	\$100,000.00
System control panel	1	\$60,000.00	\$60,000.00
<b>Total (equipment only without markups)</b>			<b>\$2,912,000.00</b>
<b>Total CAPEX (with markups and site construction; see appendix for backup)</b>			<b>\$7,429,309.00</b>

### 3 Option 2 – LH2 Plus Augmentation with On-site Hydrogen Production via Electrolysis

#### 3.1 Summary Description

The addition of an on-site augmentation system for hydrogen production via electrolysis will have four principal elements to be added to the baseline system as follows: one electrolyzer package (with integrated DC-power inverter), one high-pressure GH2 compressor to compress the GH2 produced by the electrolyzer, a high-pressure GH2 storage array, and a large power-feeder upgrade needed to power the electrolyzer. Two secondary components will be a water supply with deionizer and a suction-buffer vessel between the discharge of the electrolyzer and the compressor inlet, as needed to even out variations of output and suction rates of the electrolyzer and compressor respectively.

The GH2-storage array and compressors are to be sized as needed to sequester GH2 output from electrolyzer during the approximately 16 hours that it will be producing GH2 but when no FCEB will be fueled. The storage array should be somewhat oversized so that it can be sure to accommodate and absorb all of the hydrogen produced by the electrolyzer, such as if the start of FCEB fueling is delayed during a given evening.



Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

The priority-valve panel specified in the baseline system would need inlets for contribution of pre-compressed GH<sub>2</sub> that is stored in the '16-hour' array referenced above, as well as the direct-compressor discharge coming from the electrolyzer output during the 8-hour fueling window.

## 3.2 Equipment & Area Requirements

A summary description of the added equipment needed for electrolysis-augmentation subsystem is provided below:

- a. Electrolyzer package
  - Reference Nel model MC250
  - GH<sub>2</sub> output: 531 kg / 24 hrs (hourly: 246 m<sup>3</sup>, 9,353 SCF or 22.1 kg; = 156 SCFM)
  - Output pressure: 435 PSIG
  - Input electrical power: 1.25 MW
  - Input electrical energy: 50.4 kWh / kg (26,762 kWh / 24 hrs)
  - Input water: 4.25 gal / kg (2,257 gal / 24 hrs)
- b. Hydrogen gas compressor skid
  - Reference PDC model 500b or similar
  - 6,000 PSI discharge pressure, sized to match electrolyzer output of ~ 156 SCFM (note that one unit is adequate to meet the functional requirement for flow; a second unit may be considered as a rotating backup)
  - Hybrid trunk-piston compressor driving multi-stage diaphragm compression units
  - Approx. 75 HP electric-motor drive
- c. Storage-vessel array
  - 32 total vessels, arranged in 8 sets of 4 (stacked) vessels
  - 14,600 SCF capacity per vessel
  - Gross capacity of 467,200 SCF (assumes usable or working volume of about 33%)
- d. AC power upgrade feeder for 1,600 A at 480 V circuit needed to power 1.25 MW electrolyzer and 75 HP GH<sub>2</sub> compressor skid
- e. Secondary equipment:
  - Intermediate buffer vessel—approximately 1,000-gal (water) capacity, 750 PSI MAWP
  - Water deionizer / purification system
- f. Solar PV array
  - Module DC Nameplate 1,740 kW (approximately 3,222 modules assumed to be ground mounted)
  - Inverter AC Nameplate 1,460 kW
  - Annual Production of 2.612 GWh (average)
  - 1,501 kWh/kWp

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

### 3.3 Space Requirements

The additional area needed to accommodate the equipment listed above is about 35' x 100' (an additional 3,500 square feet to the 3,600 square feet for the LH2 equipment). The code offsets referenced in the description of the baseline system apply similarly to the electrolysis-augmentation subsystem as well.

The full solar PV array was assumed to be allocated in the vacant land adjacent to the GCTD facility and will approximately take a footprint of 96,000 square feet (2 acres of land).

### 3.4 Utility Requirements

As described above, the added utility requirements are about 1,600A of 480V 3-phase electrical service. While the intent is to use PV power for this system as much as possible, the station should have 100% utility power available to ensure maximum operational capability and reliability. Additionally, a domestic water-supply line of 1" will be needed and a commercial-grade water deionizer will also be required. Since electrolysis system requires deionized water, it will generate industrial waste that may require coordination with the County for disposal.

Additionally, the system requires network connection for transfer of data and communication for control and monitoring.

### 3.5 Key Considerations

- Added capital cost.
- Larger area requirement, requiring about 3,500 square feet more area vs. LH2 only.
- Expenses for the added electrical power capacity to the site to produce hydrogen via electrolysis
- Low GH<sub>2</sub>-discharge pressure (for compressor inlet) at ~ 0 PSIG for alkali systems, though PEM systems (as assumed in this analysis) have a skid-discharge pressure of just over 400 PSIG.
- Dependence on purified water and need for deionizing (or reverse osmosis) systems. The actual demand for water may be 1.5 to 2x the process water demand. The local water impurities and the local ground water (EPA) requirements will dictate the actual water cost.
- High maintenance labor and cost for compressors and electrolyzer system (due to the complex electrolyzer, GH<sub>2</sub> compressor skid and storage vessels with many relief valves etc.).

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

### 3.6 Key Benefits

- The most attractive benefit of an electrolysis-based hydrogen system is the potential ability to power the system with a portion of renewably sourced electrical energy, such as from solar. However, in practice, owner-operated renewable electrical power generation currently has limitations, including space and cost effectiveness.
- Added resiliency of hydrogen-commodity supply. The 531 kg provided per day from the electrolyzer is about 22% of the 2,463 kg of total daily hydrogen demand. While far short of the full daily demand, it is a meaningful contribution and can allow deployment of at least some high-priority dispatches and otherwise provide a bridge for any delayed LH2 deliveries to the baseline station.
- The commodity cost for the hydrogen produced by the electrolyzer-based subsystem is expected to be lower than the cost of delivered LH2 (pending detailed analysis of electric power costs and determination of operating costs associated with the PV and battery-storage system).
- GCTD would likely enjoy some benefit through positive marketing and messaging from being able to advertise on-site and 'green' GH2 production (to the extent that on-site PV or green-purchased electricity are used).

### 3.7 Equipment Costs

The preliminary cost estimate (in 2022 dollars) in Table 3 for Option 2 is based on the direct costs for primary equipment required for the system. However, the bottom line of this estimate does include additional capex costs for construction, site materials, piping, wiring, and foundations, as well as escalations and contractor markups. This amount should also include costs for dispensing equipment, which are assumed to be uniform across the two options and therefore are not otherwise listed in the below table.

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

Table 3: Equipment costs LH2+ onsite electrolysis

Item	Qty.	\$ Unit ROM	\$ Extended
Liquified 18,000-gal hydrogen tank	1	\$1,100,000.00	\$1,100,000.00
Reciprocating LH2 pumps for H35	3	\$180,000.00	\$540,000.00
Reciprocating LH2 pump for H70	1	\$198,000.00	\$198,000.00
Hydrogen vaporizers for H35	2	\$110,000.00	\$220,000.00
Hydrogen vaporizers for H70	1	\$125,000.00	\$125,000.00
Hydrogen vaporizer for pressure building	1	\$90,000.00	\$90,000.00
Priority valve panel	1	\$100,000.00	\$100,000.00
High pressure GH2 storage vessels	8	\$40,000.00	\$320,000.00
Air compressor system	1	\$9,000.00	\$9,000.00
Duplex motor starter panelboard (pumps)	2	\$50,000.00	\$100,000.00
System control panel	1	\$60,000.00	\$60,000.00
Electrolyzer Package	1	\$975,000.00	\$975,000.00
Hydrogen gas compressor Skid	1	\$375,000.00	\$375,000.00
Storage-vessel array (32 vessels)	32	\$40,000.00	\$1,280,000.00
AC Power upgrade feeder for 1,600A	1	\$100,000.00	\$100,000.00
Intermediate buffer vessel	1	\$60,000.00	\$60,000.00
Water service & deionizer/purification	1	\$10,000.00	\$10,000.00
PV system (KW)	1	\$4,000,000.00	\$4,000,000.00
<b>Total (equipment only without markups)</b>			<b>\$9,662,000.00</b>
<b>Total CAPEX (with markups and site construction; see appendix for backup)</b>			<b>\$24,650,406.02</b>

## 4 Life Cycle Cost Analysis and Comparison

Data and calculations indicating the quantity of hydrogen fuel needed per day and per month are provided in Table 4 below. Notes and assumptions are: 1) Spare FCEB have no hydrogen demand. 2) The average demand may be greater if a significant number of coach buses are implemented. 3) Usage assumes no reduced consumption for weekend days.

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

Table 4: Fleet data and hydrogen demand

Agency	Item Description	40-ft and 35-ft Buses	Cutaways and Vans
GCTD	Total vehicles in fleet	64	27
	No. of active vehicles	60	26
	Avg. H2 demand per vehicle (kg/day/vehicle)	15.5	8.5
	Total H2 demand for active vehicles (kg/day/fleet)	885	180
	Total GCTD Fleet Hydrogen Demand (kg/day/fleet)	1,065	
VCTC	Total VCTC Fleet Hydrogen Demand (kg/day/fleet)	1,338	
Public	Public Fueling (6 kg / fill x 10 fills / day)	60	
Total Facility Hydrogen Demand (kg/day/fleet)		<b>2,463</b>	

Data and calculations for the quantities of input utilities and commodities on a unit basis are provided in Table 5. Notes and assumptions are: 1) SCE (Southern California Edison) tariff has multiple demand and energy rates and are approximated here as a single rate. 2) Costs are good faith estimates and may vary. 3) Costs include maintenance of associated hydrogen-gas compressors required for these systems. 4) This does not include 50¢ per gallon Federal tax credit for liquid hydrogen, which has expired but may be reinstated (<https://afdc.energy.gov/laws/319>).

It was assumed that all energy needed to run the electrolyzer will be provided by an on-site solar PV energy. Any surplus generation of solar PV energy was assumed to be wasted since future opportunities to sell back to the grid are becoming less and less encouraged by the utilities. Furthermore, for the basis of this analysis, the cost of PV electricity to power the electrolyzer was assumed to be only accounted by the capital investment of the PV panels.

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

Table 5: Input costs for utilities, commodities, and maintenance<sup>5</sup>

Description	Cost
Water (\$/Gal)	\$0.005
Power Demand chargers (\$/kW)	\$14.50
Electric Energy from Grid (\$/kWh)	\$0.12
Electric Energy from Solar PV (\$/kWh)	\$0.00
Liquid Hydrogen Commodity (\$/kg)	\$7.50
Liquid Hydrogen-Facility Maintenance (\$/kg)	\$0.50
Electrolysis-Facility Maintenance (\$/kg)	\$2.32

Data and calculations indicating the quantities of input utilities and commodities as required to produce hydrogen fuel on a per-kg basis for each of the two options are provided in Table 6.

Table 6: Utility consumption per unit of hydrogen<sup>6</sup>

Utility	Consumption per kg Hydrogen (x/kg)		
	Unit	Option 1 LH2	Option 2 LH2 + Electrolysis
Water	Gal/kg	0	5.24
Energy from Grid (kWh)	kWh/kg	0.32	0.32
Energy from Solar PV (kWh)	kWh/kg	N/A	50.4
LH2 Commodity by truck	kg	1	0.78
Maintenance Allowance	\$/kg	0.50	2.32

Data and calculations indicating the quantities of utility commodities consumed for each of the two options on a monthly basis are provided in Table 7.

<sup>5</sup> Based on current hydrogen prices for transit agencies in Southern California.

<sup>6</sup> The energy generation of solar PV onsite would only allow for approx. 22% of onsite hydrogen generation, the rest would be procured via tub trucks of liquid hydrogen delivery (LH2).

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

Table 7: Utility consumption per month

Utility	Monthly Utility Consumption		
	Unit	Option 1 LH2	Option 2 LH2 + Electrolysis
Water	Gal/Month	0	85,213
Energy from Grid (kWh)	kWh/Month	23,911	18,650
Energy from Solar PV (kWh)	kWh/Month	0	819,292
Power Demand	kW	91	1,250

Data and calculations indicating the quantities of utility commodities consumed for each of the three options on an annual basis are provided in Table 8.

Table 8: Utility consumption per year

Utility	Yearly Utility Consumption		
	Unit	Option 1 LH2	Option 2 LH2 + Electrolysis
Water	Gal/Year	0	2,556,387
Energy from Grid (kWh)	MWh/Year	717,324	560
Energy from Solar PV (kWh)	MWh/Year	0	24,579
Power Demand	kW	91	1,250

Data and calculations indicating the operating expenses (Opex) for each of the two options are provided in Table 9. Notes and assumptions are: 1) The operating costs are assumed to extend for 12 years, as needed to match the minimum asset life of bus rolling stock per FTA requirements. 2) the 12-year costs are straight extrapolation of current-year maintenance costs and are not discounted per time value of money.

Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

Table 9: Operating costs

<b>Opex Estimates</b>			
<b>Utility or Commodity</b>	<b>Unit</b>	<b>Option 1 LH2</b>	<b>Option 2 LH2 + Electrolysis</b>
Water	\$/month	\$0	\$426
Power Chargers (kW)	\$/month	\$1,320	\$18,125
Energy from Grid (kWh)	\$/month	\$2,869	\$2,238
Energy from Solar PV (kWh)	\$/month	\$0	\$0
LH2 Commodity	\$/month	\$554,175	\$432,257
Maintenance Allowance	\$/month	\$36,945	\$66,531
Solar PV Maintenance Cost	\$/month	\$0	\$3,333
<b>Total Unit Operating Cost</b>	<b>\$/kg</b>	<b>\$8</b>	<b>\$7</b>
<b>Monthly Operating Cost</b>	<b>\$/month</b>	<b>\$595,309</b>	<b>\$522,910</b>
<b>Lifetime Operating Cost</b>	<b>\$/12 Yrs.</b>	<b>\$85,724,467</b>	<b>\$75,298,969</b>

Data and calculations indicating the combined costs for equipment costs (Capex), Opex and combined life cycle cost analysis (LCA) for each of the two options are provided in Table 10. Notes and assumptions are: 1) These costs are per the totals in the body of the report respectively, 2) as indicated in Table 9, the operating costs do not reflect any discounting for the time value of money, 3) 12 years reflects the minimum operating duration for a bus purchased with FTA funding.

Table 10: Summary costs for Capex, Opex, and Lifecycle Cost Estimates

<b>Summary Capex, Opex and Life Cycle Cost Estimates</b>			
<b>Item</b>	<b>Unit</b>	<b>Option 1 LH2</b>	<b>Option 2 LH2 + Electrolysis</b>
Equipment Capex	\$	\$7,429,309	\$24,650,406
Lifetime Operating Cost (simple)	\$/12 Yrs.	\$85,724,467	\$75,298,969
<b>Lifecycle Cost</b>	<b>\$</b>	<b>\$93,153,776</b>	<b>\$99,949,375</b>



Reference: Infrastructure Options for Supplying and Generating Hydrogen Fuel

## 5 Summary and discussion

In summary, Option 2 (LH2 + on-site electrolysis) has a higher cost of \$6.8 million over a 12-year lifetime when compared to using trucked-in LH2, a 7% increase. Furthermore, an additional 36,000 square foot of area is required to accommodate the electrolysis equipment that may be a challenge to implement at the current GCTD facility. Lastly, a sensitivity analysis was conducted and determined that a unit price greater than **\$10.50 per kg<sup>7</sup>** for the hydrogen commodity to be paid at delivery would be the breaking point to make Option 2 with on-site electrolysis economically viable and preferable over a purely trucked-in LH2 solution.

Additionally, GCTD must consider the feasibility of increasing the current power capacity at their facility in coordination with SCE since an upgrade to at least 1.5 MW would be required for electrolysis. For the purposes of this analysis, it was assumed that no cost would be passed on to GCTD for the utility upgrade to a 1.5-MW capacity. However, up to half a million dollars could be the price increase if SCE passes on the capital upgrade costs to GCTD. Additionally, the lead time for installation could be on the order to 10 to 18 months. Moreover, the large quantities of water needed (as well as the need to deionize the water) may be a significant expense and limiting factor given the trends of increasing draughts throughout Southern California.

Lastly, for the purposes of this analysis, the allocation of the solar PV system was assumed to be located in the empty lots in the vicinity of GCTD's facilities, but the cost of land or leasing fees were not considered here. The feasibility of having approximately 2 acres of land to install solar panels can prove to be a heavy constraint in the implementation of Option 2.

Yours sincerely,

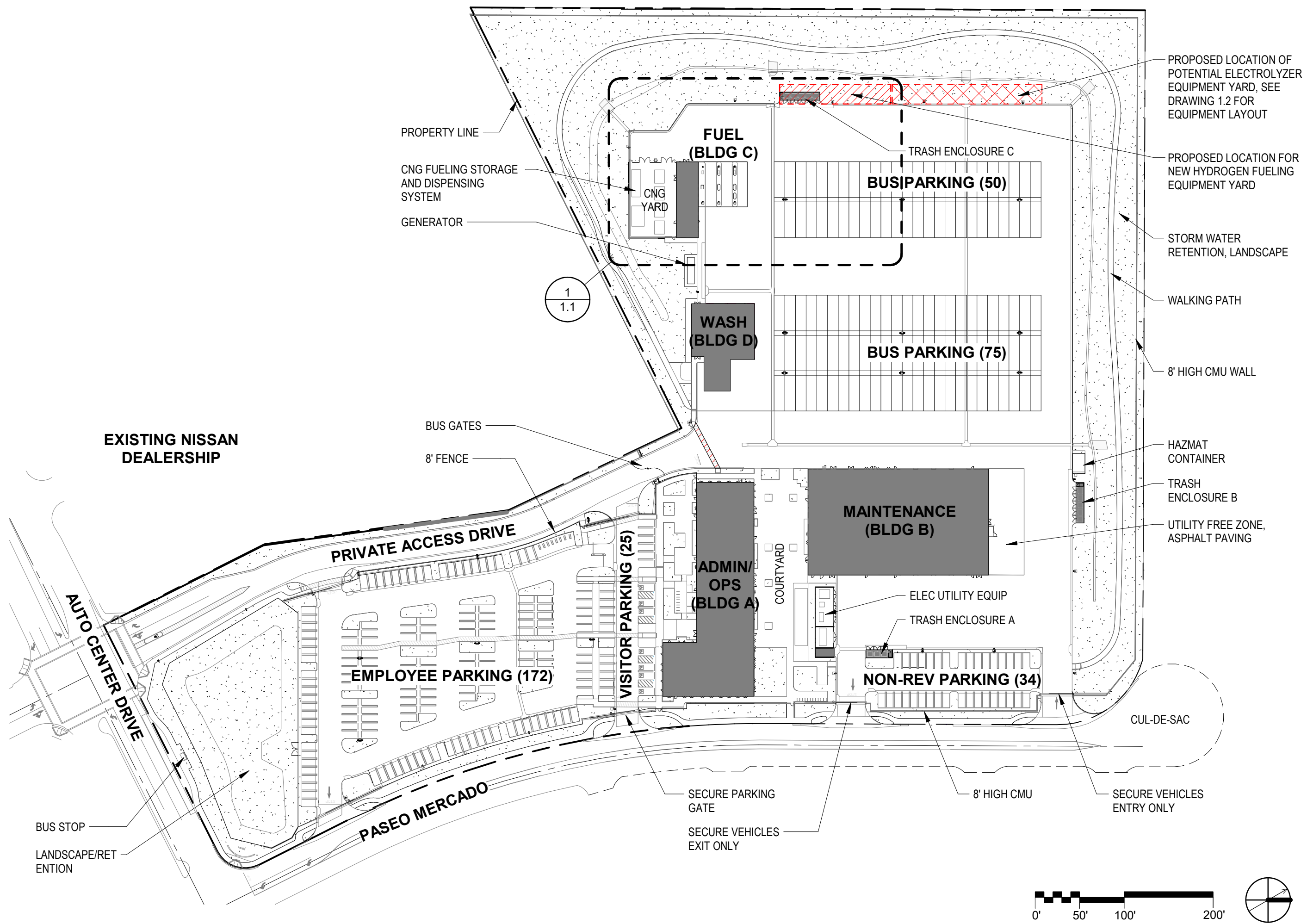
**STANTEC CONSULTING SERVICES INC.**

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<sup>7</sup> Assumption used for current assessment was \$7.50 per kg of hydrogen based on current prices for transit agencies in Southern California.

## APPENDIX B: SITE PLANS

See attached documents for site plans, including hydrogen fueling equipment yard (drawing 1.1) and conceptual design for hydrogen electrolysis equipment (drawing 1.2).



GOLD COAST TRANSIT DISTRICT  
OPERATIONS & MAINTENANCE FACILITY  
ZERO-EMISSIONS BUS MASTER PLAN  
EXISTING SITE PLAN

DATE:  
07/21/22

DWG:  
**1.0**



DATE:  
07/21/22

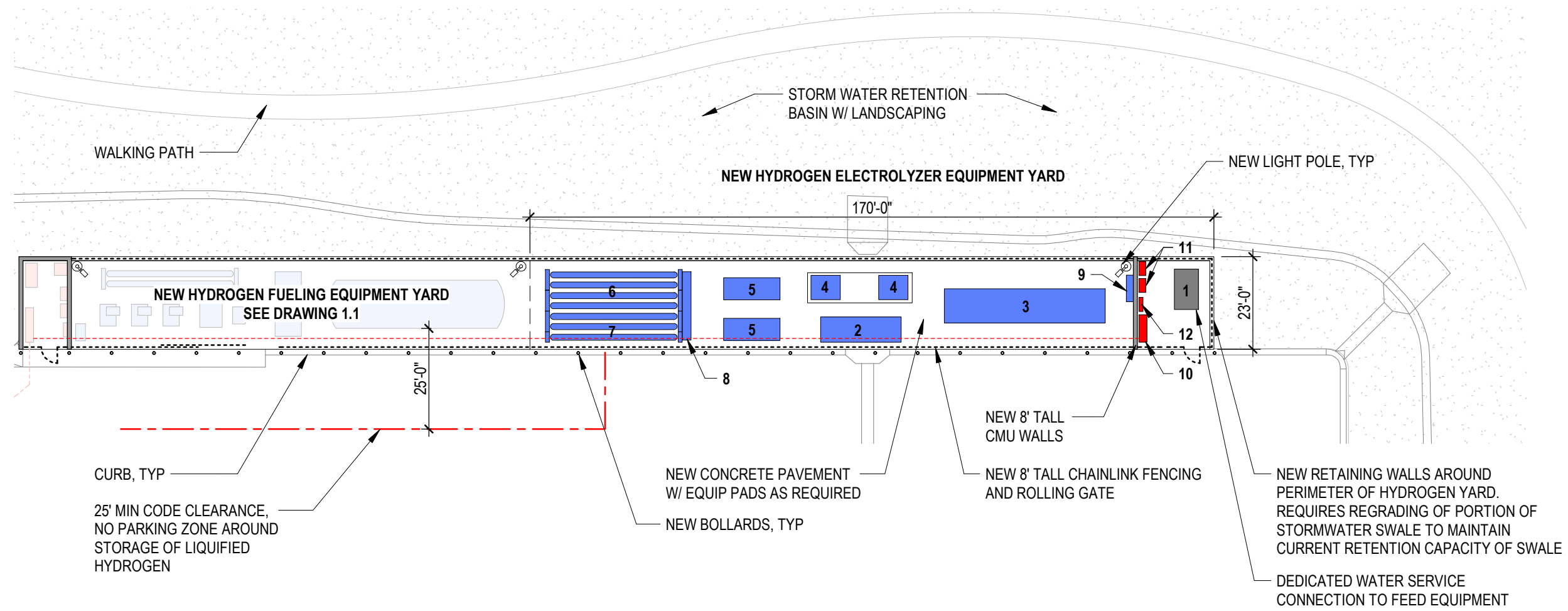
DWG:

EQUIPMENT SCHEDULE		
	ITEM	QTY
1.	18,000 GAL LIQUIFIED HYDROGEN TANK	1
2.	RECIPROCATING LH2 PUMP (N+1) FOR H35 FUELING	3
3.	HIGH PRESSURE GH2 COMPRESSOR FOR H70 FUELING	1
4.	HYDROGEN VAPORIZER	2
5.	SUPERHEATER VAPORIZER	1
6.	GH2 PRIORITY VALVE PANEL	1
7.	HIGH-PRESSURE GH2 STORAGE VESSEL FOR H35 FUEL	6
8.	HIGH-PRESSURE GH2 STORAGE VESSEL FOR H70 FUEL	2
9.	PRE-DISPENSING CHILLER	2
10.	GH2 H35 DISPENSER	2
11.	GH2 H70 DISPENSER W/ CHILLER	1
12.	AIR COMPRESSOR	1
13.	MAIN SERVICE PANELBOARD	1
14.	MOTOR STARTER PANELBOARD FOR PUMPS	2
15.	SYSTEM CONTROL PANEL	1
16.	TRANSFORMER (AS NEEDED)	1

## GENERAL NOTES

- A. HYDROGEN FUELING EQUIPMENT LAYOUT AND SITE PLAN ARE CONCEPTUAL AND FOR PLANNING PURPOSES ONLY.
- B. FOR IMPLEMENTATION OF FCEB'S AN UPDATED GAS DETECTION SYSTEM WILL BE REQUIRED THROUGHOUT THE MAINTENANCE AND VEHICLE SERVICE AREAS.





**EQUIPMENT SCHEDULE**

ITEM	QTY
1. WATER DE-IONIZER	1
2. ELECTRICAL POWER SUPPLY	1
3. ELECTROLYZER SKID	1
4. HYDROGEN COMPRESSOR FOR H35 FUELING	2
5. HYDROGEN COMPRESSOR FOR H70 FUELING	2
6. BUFFER VESSEL FOR H35 FUEL (STACK OF 6)	36
7. BUFFER VESSEL FOR H70 FUEL (STACK OF 6)	6
8. PRIORITY VALVE PANEL	1
9. NITROGEN CYLINDERS	1
10. MAIN SERVICE PANELBOARD	1
11. MOTOR STARTER PANELBOARD FOR PUMPS	2
12. SYSTEM CONTROL PANEL	1

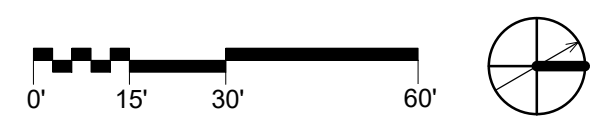
**GENERAL NOTES**

- A. HYDROGEN FUELING EQUIPMENT LAYOUT AND SITE PLAN ARE CONCEPTUAL AND FOR PLANNING PURPOSES ONLY.
- B. FOR IMPLEMENTATION OF FCEB'S AN UPDATED GAS DETECTION SYSTEM WILL BE REQUIRED THROUGHOUT THE MAINTENANCE AND VEHICLE SERVICE AREAS.

GOLD COAST TRANSIT DISTRICT  
OPERATIONS & MAINTENANCE FACILITY  
ZERO-EMISSIONS BUS MASTER PLAN  
POTENTIAL ELECTROLYZER EQUIPMENT LAYOUT

DATE:  
07/21/22

DWG:



## APPENDIX C: COST ESTIMATES

Please see attached cost estimates.

**GOLD COAST TRANSIT DISTRICT  
MAINTENANCE & OPERATIONS  
FACILITY  
ZERO EMISSIONS BUS MASTER PLAN  
ROUGH-ORDER-OF-MAGNITUDE  
OPINION OF PROBABLE COST**

JYI #: C2616A-R2

June 16, 2022  
Revised: June 24, 2022

PREPARED FOR:

**STANTEC**

BY:

**JACOBUS & YUANG, INC.**

355 North Lantana Street, #220  
Camarillo, CA 93010  
Tel (213) 688-1341 or (805) 339-9434

<b>PROJECT: GOLD COAST TRANSIT DISTRICT MAINTENANCE &amp; OPERATIONS</b>			<b>JYI #:</b>	<b>C2616A-R2</b>
<b>FACILITY - ZERO EMISSIONS BUS MASTER PLAN</b>				
<b>LOCATION: OXNARD, CA</b>			<b>DATE:</b>	<b>16-Jun-22</b>
<b>CLIENT: STANTEC</b>			<b>REVISED:</b>	<b>24-Jun-22</b>
<b>DESCRIPTION: R.O.M. OPINION OF PROBABLE COST - SUMMARY</b>				

ITEM NO.	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL COST
<b>SUMMARY OF ESTIMATE</b>					<b>\$</b>
	HYDROGEN FUELING	3,000	SF	2,989.04	8,967,118
	ADD INFLATIONARY ESCALATION	10.7%			957,567
<b>R.O.M. TOTAL OF OPINION OF PROBABLE CONSTRUCTION COST W/ PRORATES + ESCALATION</b>		<b>3,000</b>	<b>SF</b>	<b>3,308.23</b>	<b>9,924,684</b>

**ESCALATION CALCULATION**

BASE MONTH	Jun-22
CONSTRUCTION START MONTH	Jun-23
CONSTRUCTION DURATION (MONTHS)	6
MID POINT OF CONSTRUCTION	Sep-23
% ANNUAL ESCALATION	8.50%
ALLOWANCE FOR ESCALATION (TO MIDPOINT OF CONSTRUCTION)	10.7%

**NOTES:****SPECIFIC INCLUSIONS**

- 1 PREVAILING WAGE RATES IN THE AREA OF THE PROJECT
- 2 EQUIPMENT PADS
- 3 EQUIPMENT YARD
- 4 ALLOWANCE FOR EQUIPMENT POWER
- 5 ALLOWANCE FOR COMMUNICATIONS INTERPHASE WITH HYDROGEN
- 6 PAVEMENT REPAIR PER TRENCHWORK

**SPECIFIC EXCLUSIONS**

- 1 ASBESTOS OR HAZARDOUS MATERIAL ABATEMENT
- 2 PROJECT SOFT COSTS & CONSTRUCTION CONTINGENCY
- 3 NEW PRIMARY POWER SERVICE AND ELECTRICAL UTILITY SERVICE FEES
- 4 CABLINGS AND CONNECTIONS FOR PRIMARY POWER SERVICE CONDUIT
- 5 EMERGENCY GENERATOR UPGRADES
- 6 GASEOUS CLEAN AGENT EXTINGUISHING SYSTEM TO ELECTRICAL ROOM

**GENERAL NOTES**

- 1 ESTIMATE ASSUMES THAT ALL COMPONENTS WILL BE BID AS A SINGLE BID PACKAGE
- 2 ESTIMATE ASSUMES WORK TO BE DURING NORMAL WORKING HOURS
- 3 ESTIMATE ASSUMES BID COVERAGE FROM AT LEAST 4-5 RESPONSIVE BIDDERS
- 4 ESTIMATE IS BASED ON CONCEPTUAL DESIGN DRAWINGS PREPARED BY STANTEC, DATED 06/02/2022, RECEIVED 06/02/2022.



<b>PROJECT: GOLD COAST TRANSIT DISTRICT MAINTENANCE &amp; OPERATIONS</b>		<b>JYI #:</b>	<b>C2616A-R2</b>
<b>FACILITY - ZERO EMISSIONS BUS MASTER PLAN</b>			
<b>LOCATION: OXNARD, CA</b>		<b>DATE:</b>	<b>16-Jun-22</b>
<b>CLIENT: STANTEC</b>		<b>REVISED:</b>	<b>24-Jun-22</b>
<b>DESCRIPTION: R.O.M. OPINION OF PROBABLE COST - SUMMARY</b>			

## DEFINITIONS

### OPINION OF COST

An Opinion of Cost is prepared from a survey of the quantities of work-items prepared from written or drawn information provided at the Conceptual stage of design.

Historical costs, information provided by contractors and suppliers, plus judgmental evaluation by the Estimator are used as appropriate as the basis for pricing.

Allowances as appropriate will be included for items of work which are not indicated on the design documents, provided that the Estimator is made aware of them, or which in the judgement of the Estimator are required for completion of the work.

JYI cannot, however, be responsible for inclusion of items or work of which we have not been informed.

### BID

An offer to enter a contract to perform work for a fixed sum, to be completed within a limited period of time.

### SPECIAL NOTE - MARKET CONDITIONS

In the current market conditions for construction, our experience shows the following results on competitive bids, as a differential from JYI final es

Number of bids

1.....

2-3.....

4-5.....

6-7.....

8 or more....

Accordingly, it is extremely important to ensure that a minimum of 4-5 valid bids are received

<b>PROJECT: GOLD COAST TRANSIT DISTRICT MAINTENANCE &amp; OPERATIONS</b>		<b>JYI #:</b>	<b>C2616A-R2</b>
<b>FACILITY - ZERO EMISSIONS BUS MASTER PLAN</b>		<b>DATE:</b>	<b>16-Jun-22</b>
<b>LOCATION: OXNARD, CA</b>		<b>REVISED:</b>	<b>24-Jun-22</b>
<b>CLIENT: STANTEC</b>		<b>HYDROGEN YARD AREA:</b>	<b>3,000</b>
<b>DESCRIPTION: R.O.M. OPINION OF PROBABLE COST</b>			

ITEM NO.	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL COST
<b>SUMMARY OF ESTIMATE</b>					<b>\$</b>
1	GENERAL REQUIREMENTS				See Prorates
2	EXISTING CONDITIONS	0.35%		6.71	20,143
11	EQUIPMENT	81.83%		1,590.34	4,771,010
26	ELECTRICAL	1.28%		24.94	74,815
27	COMMUNICATIONS	0.52%		10.20	30,600
28	ELECTRONIC SAFETY & SECURITY	5.76%		111.92	335,759
31	EARTHWORK	0.29%		5.67	17,000
32	EXTERIOR IMPROVEMENTS	5.41%		105.23	315,703
33	UTILITIES	4.55%		88.46	265,393
<b>SUBTOTAL</b>		<b>100.00%</b>		<b>1,943.47</b>	<b>5,830,423</b>
GENERAL CONDITIONS/ GENERAL REQUIREMENTS		12.50%		242.93	728,803
ESTIMATE/ DESIGN CONTINGENCY		20.00%		437.28	1,311,845
MARKET FACTOR		5.00%		131.18	393,554
<b>SUBTOTAL</b>				<b>2,754.87</b>	<b>8,264,625</b>
BONDS & INSURANCE		2.00%		55.10	165,292
CONTRACTOR'S FEE		6.50%		179.07	537,201
<b>R.O.M. OPINION OF PROBABLE COST W/OUT ESCALATION</b>				<b>2,989.04</b>	<b>8,967,118</b>

<b>PROJECT: GOLD COAST TRANSIT DISTRICT MAINTENANCE &amp; OPERATIONS</b>		<b>JYI #:</b>	<b>C2616A-R2</b>
<b>FACILITY - ZERO EMISSIONS BUS MASTER PLAN</b>			
<b>LOCATION: OXNARD, CA</b>		<b>DATE:</b>	<b>16-Jun-22</b>
<b>CLIENT: STANTEC</b>		<b>REVISED:</b>	<b>24-Jun-22</b>
<b>DESCRIPTION: R.O.M. OPINION OF PROBABLE COST</b>		<b>HYDROGEN YARD AREA:</b>	<b>3,000</b>

ITEM NO.	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL COST
<b>1 GENERAL REQUIREMENTS</b>					<b>\$</b>
	SEE PERCENTAGE ALLOWANCE				
	<b>SUBTOTAL</b>				
<b>2 EXISTING CONDITIONS</b>					<b>\$</b>
	SITE DEMOLITION (HAULING INCLUDED)				
	DEMOLISH EX. TRASH ENCLOSURE & BUILD NEW, W/ CMU WALLS, METAL GATE - OVERALL 10'X20'	200	SF	17.25	3,450
	DEMOLISH CURB & PATCH ALONG EDGE OF EX. PAVING & NEW HYDROGEN YARD - SAY 3' WIDE	126	LF	100.50	12,663
	MISC. SITE DEMO & PROTECTION WORK	1	LS	4,030.00	4,030
	<b>SUBTOTAL</b>				<b>20,143</b>
<b>11 EQUIPMENT</b>					<b>\$</b>
	HYDROGEN FUEL EQUIPMENT & RELATED				
	18,000 GALLON LH2 TANK	1	EA	840,000	840,000
	RECIPROCATING LIQUID-HYDROGEN PUMP (N+1)	3	EA	190,000	570,000
	HIGH PRESSURE GASEOUS-HYDROGEN COMPRESSOR	2	EA	220,000	440,000
	DISPENSER VAPORIZER	2	EA	70,000	140,000
	OFFLOAD VAPORIZER	1	EA	40,000	40,000
	PRIORITY VALVE PANEL	1	EA	90,000	90,000
	HIGH-PRESSURE GH2 STORAGE VESSEL FOR H35 FUEL	6	EA	39,000	234,000
	HIGH-PRESSURE GH2 STORAGE VESSEL FOR H70 FUEL	2	EA	42,000	84,000
	PRE-DISPENSING CHILLER	2	EA	20,000	40,000
	GH2 H35 DISPENSER	2	EA	60,000	120,000
	GH2 H70 DISPENSER W/ CHILLER1 EA	1	EA	85,000	85,000
	AIR COMPRESSOR SYSTEM	1	EA	9,000	9,000
	FLAME-DETECTION SYSTEM	1	EA	60,000	60,000
	MAIN SERVICE PANELBOARD	1	EA	25,000	25,000
	TRIPLEX MOTOR STARTER PANELBOARD	1	EA	65,000	65,000
	SYSTEM CONTROL PANEL/PLC W/ PROGRAMMING	1	EA	60,000	60,000
	TRANSFORMER (ALLOWANCE)	1	EA	25,000	25,000
	ALLOWANCE FOR FREIGHT, TAXES & INSTALLATION OF HYDROGEN FUELING EQUIPMENT	50%		2,927,000	1,463,500
	ELEC PANELS AND CONTROLS, ALLOWANCE	1	LS	146,350.00	146,350
	INTRA HYDROGEN EQUIPMENT PIPING, VALVES & SPECIALTIES - ALLOWANCE	1	LS	234,160.00	234,160
	FUEL PIPING FROM HYDROGEN YARD TO FUEL CANOPY HYDROGEN DISPENSERS - ALLOWANCE (SAME TRENCH AS ELECTRICAL FEEDERS)				SEE DIV 32
	CUT & PATCH EX PAVING/FLOORING FOR PIPE TRENCH				SEE DIV 33
	<b>SUBTOTAL</b>				<b>4,771,010</b>
<b>26 ELECTRICAL</b>					<b>\$</b>
	PRIMARY POWER SERVICE				
	ASSUME NOT REQUIRED				
	MAIN POWER SYSTEM - NORMAL				
	RSG POWER FEEDER FROM U/G DUCTBANK TO INTERIOR ELECTRICAL ROOM + C & P	75	LF	269.00	20,175

<b>PROJECT: GOLD COAST TRANSIT DISTRICT MAINTENANCE &amp; OPERATIONS</b>		<b>JYI #:</b>	<b>C2616A-R2</b>
<b>FACILITY - ZERO EMISSIONS BUS MASTER PLAN</b>			
<b>LOCATION: OXNARD, CA</b>		<b>DATE:</b>	<b>16-Jun-22</b>
<b>CLIENT: STANTEC</b>		<b>REVISED:</b>	<b>24-Jun-22</b>
<b>DESCRIPTION: R.O.M. OPINION OF PROBABLE COST</b>		<b>HYDROGEN YARD AREA:</b>	<b>3,000</b>

ITEM NO.	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL COST
	POWER CONNECTION TO EXISTING ELECTRICAL SERVICE IN ELECTRICAL ROOM	1	LS	10,000.00	10,000
	HYDROGEN EQUIPMENT NORMAL POWER HOOKUP, INCLUDING DISCONNECT SWITCHING				
	RECIPROCATING LH2 PUMP (N+1)	3	EA	1,115.00	3,345
	HIGH PRESSURE GH2 COMPRESSOR	1	EA	1,275.00	1,275
	HYDROGEN VAPORIZER	2	EA	1,015.00	2,030
	SUPERHEATER VAPORIZER	1	EA	1,275.00	1,275
	GH2 PRIORITY VALVE PANEL	1	EA	450.00	450
	GH2 H35 DISPENSER	2	EA	1,015.00	2,030
	GH2 H70 DISPENSER W/ CHILLER	1	EA	1,275.00	1,275
	AIR COMPRESSOR SYSTEM	1	EA	1,275.00	1,275
	MAIN SERVICE PANELBOARD	1	EA	625.00	625
	MOTOR STARTER PANELBOARD FOR PUMPS	2	EA	500.00	1,000
	SYSTEM CONTROL PANEL	1	EA	500.00	500
	TRANSFORMER (AS NEEDED)	1	EA	1,000.00	1,000
	EMERGENCY POWER				
	ALLOW FOR EMERGENCY GENERATOR CIRCUITRY REWORK FOR HYDROGEN EQUIPMENT	1	LS	25,000.00	25,000
	MISCELLANEOUS				
	MISC./ TESTING/COMMISSIONING	1	LS	3,560.00	3,560
	<b>SUBTOTAL</b>				<b>74,815</b>
<b>27</b>	<b>COMMUNICATIONS</b>				<b>\$</b>
	ALLOWANCE FOR COMMUNICATIONS UPGRADE FOR HYDROGEN INSTALLATION	3,000	SF	10.20	30,600
	<b>SUBTOTAL</b>				<b>30,600</b>
<b>28</b>	<b>ELECTRONIC SAFETY &amp; SECURITY</b>				<b>\$</b>
	GAS/HYDROGEN DETECTION SYSTEM INCLUDING AUDIBLE & VISIBLE ALARMS - MAINTENANCE & BUS WASH BUILDINGS	29,925	SF	11.22	335,759
	<b>SUBTOTAL</b>				<b>335,759</b>
<b>31</b>	<b>EARTHWORK</b>				<b>\$</b>
	GRADE, LEVEL & COMPACT FOR EQ. YARD, SAY AV .3' D, 128' X 24'	340	CY	50.00	17,000
	<b>SUBTOTAL</b>				<b>17,000</b>
<b>32</b>	<b>EXTERIOR IMPROVEMENTS</b>				<b>\$</b>
	EQUIPMENT PADS & THE LIKE				
	FUEL ISLAND EXPANSION & CURB / EQUIPMENT PADS	162	SF	50.00	8,100
	FUEL EQUIPMENT YARD PAVING + 60% EQUIPMENT PAD THICKENING	3,000	SF	22.20	66,600
	MISC. HYDROGEN YARD PADS	1	LS	3,735.00	3,735
	EQUIPMENT ANCHORAGE				
	EQUIPMENT ANCHORAGE - HYDROGEN COMPONENTS	12	EA	750.00	9,000
	SITE MISCELLANEOUS				
	PIPE BOLLARDS, PAINTED, AT FUEL ISLAND EXTENSION	6	EA	1,250.00	7,500
	PIPE BOLLARDS, PAINTED, AT HYDROGEN YARD	15	EA	1,250.00	18,750
	ROLLING GATE, 20' L X 8' H, MANUAL	1	EA	4,800.00	4,800
	PEDESTRIAN GATE, 3' X 8'	1	EA	840.00	840

<b>PROJECT: GOLD COAST TRANSIT DISTRICT MAINTENANCE &amp; OPERATIONS</b>		<b>JYI #:</b>	<b>C2616A-R2</b>
<b>FACILITY - ZERO EMISSIONS BUS MASTER PLAN</b>		<b>DATE:</b>	<b>16-Jun-22</b>
<b>LOCATION: OXNARD, CA</b>		<b>REVISED:</b>	<b>24-Jun-22</b>
<b>CLIENT: STANTEC</b>		<b>HYDROGEN YARD AREA:</b>	<b>3,000</b>
<b>DESCRIPTION: R.O.M. OPINION OF PROBABLE COST</b>			

ITEM NO.	DESCRIPTION	EST QTY	UNIT	UNIT COST	TOTAL COST
	CHAIN LINK FENCE, 8' H	126	LF	68.00	8,568
	8" CMU RETAINING WALL, 8' H PLUS FOUNDATION	171	LF	846.67	144,780
	ALLOWANCE FOR ADDITIONAL SECURITY CAMERAS TIED TO EX. CONTROL ROOM	4	EA	7,000.00	28,000
	MISC. SITE IMPROVEMENTS ALLOWANCE	1	LS	15,030.00	15,030
	<b>SUBTOTAL</b>				<b>315,703</b>
<b>33</b>	<b>UTILITIES</b>				<b>\$</b>
	YARD LIGHTING				
	NEW LIGHT POLE AND FEEDERS TO EQ. YARD	2	EA	4,200.00	8,400
	CUTTING & PATCHING FOR TRENCHING				
	1-PIPE TRENCH, 1'-6"W INCLUDING C & P 10" CONC. SLAB	113	LF	179.67	20,302
	3-4 PIPE TRENCH, 4'-6"W INCLUDING C & P 10" CONC. SLAB	88	LF	245.67	21,619
	FUEL PIPING				
	FUEL PIPING FROM HYDROGEN YARD TO FUEL CANOPY HYDROGEN DISPENSERS - ALLOWANCE (SAME TRENCH AS ELECTRICAL FEEDERS)	352	LF	196.875	69,300
	POWER FEEDERS AND DUCTBANK				
	DUCTBANK ENCASED NORMAL POWER FEEDER FROM HYDROGEN YARD TO ELECTRICAL ROOM	176	LF	320.81	56,463
	DUCTBANK ENCASED POWER FEEDER TO HYDROGEN DISPENSERS	332	LF	269.00	89,309
	<b>SUBTOTAL</b>				<b>265,393</b>

## APPENDIX D: FINANCIAL MODELING INPUTS AND ASSUMPTIONS

Table 28 presents a description as well as the sources for the cost inputs (in 2022\$) of the Base Case and the ZEB Case.

**Table 28: Summary of cost inputs**

Main Category	Item	Description	Inputs for Base Case	Inputs for ZEB Case	Sources and comments
<b>Capital</b>					
Fleet acquisition	Bus purchase price	Purchase price of a bus/vehicle inclusive of options and taxes and extended warranty	CNG 40-ft: \$600,000 CNG 35-ft: \$552,000 CNG Cutaway: \$130,000 Gas passenger van: \$77,000	FCEB 40-ft: \$1,100,000 FCEB 35-ft: \$1,012,000 FCE Passenger van: \$220,000	Base Case: industry values and GCTD FY2021-22 Budget Book ZEB Case: industry values CalDGS, and MBTA/CalACT Values are in 2022\$ and adjusted over time based on price trendlines from CARB
Fleet refurbishment	Mid-life rehabs	Any heavy mid-life work needed to achieve the useful life minimum benchmark	N/A; GCTD does not perform any heavy mid-life work on its CNG fleet	\$30,000 per 40-ft and 35-ft FCEB at 6 years for fuel cell stack replacement	Base Case: GCTD ZEB Case: OEM information; smaller vehicles with shorter lifespan are not assumed to require a fuel cell stack replacement
Infrastructure and Facility Modifications	Infrastructure Modification Costs	Includes equipment, installation, testing, civil and electrical work, as well as contractor's fees and escalation factors. Includes backup	N/A	\$8,967,000	Engineer's cost estimate

## ZEB STRATEGY AND ROLLOUT PLAN

Main Category	Item	Description	Inputs for Base Case	Inputs for ZEB Case	Sources and comments
		generator for hydrogen fueling equipment.			
<b>Operating and Maintenance</b>					
Operating	Vehicle fuel	Cost of fuel commodity for revenue vehicles	CNG: \$0.64 per diesel gallon equivalent Gasoline: \$6.00 per gallon	Hydrogen: \$6.00 per kg	Base Case: GCTD ZEB Case: Industry reports Trendlines for projected CNG and gasoline costs were obtained from the US Energy Information Agency for the Pacific region and applied to CNG and gasoline costs through 2040. <sup>63</sup> For hydrogen fuel costs, industry research indicates that overtime, the cost will decrease from \$6.00 per kg to \$4.00; the model accounted for decreases in price over time.
Maintenance	Vehicle maintenance costs	Maintenance costs (per mile) inclusive of labor and parts for scheduled and unscheduled maintenance	Fixed-route buses: \$1.48 per mile Demand response vehicles: \$0.89 per mile	Fixed-route buses: \$1.48 per mile Demand response vehicles: \$0.89 per mile	Base Case: NTD 2019 Operating Expenses Detailed sheet, adjusted to 2022\$ ZEB Case: Based on industry research demonstrating comparative

<sup>63</sup> <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=3-AEO2022&region=1-9&cases=ref2022&start=2020&end=2050&f=A&linechart=ref2022-d011222a.3-3-AEO2022.1-9&map=ref2022-d011222a.26-3-AEO2022.1-9&ctype=map&sid=ref2022-d011222a.26-3-AEO2022.1-9&sourcekey=0>

## ZEB STRATEGY AND ROLLOUT PLAN

Main Category	Item	Description	Inputs for Base Case	Inputs for ZEB Case	Sources and comments
					maintenance costs per mile for two Southern California agencies operating CNGs and FCEBs <sup>64</sup>

<sup>64</sup> <https://www.nrel.gov/docs/fy21osti/78078.pdf>, <https://www.nrel.gov/docs/fy21osti/78250.pdf>









**DATE** November 2, 2022 **Item #12**

**TO** Gold Coast Transit Board of Directors

**FROM** Alex Zaretsky, Director of Human Resources

**SUBJECT** Human Resources Quarterly Update - 1<sup>st</sup> Quarter FY2022-23

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## **I. SUMMARY**

This report covers the 1st Quarter (July 1 through September 30) of Fiscal Year 2022-23. The report describes the main activities the Human Resources Department focused on this Quarter: Benefits and Wellness, Learning and Development, Recruitment and Rewards and Recognition.

### **Benefits and Wellness**

This year GCTD continued the process for employees to confirm their benefit plan selections using the Paycom Employee Self Service (ESS) system. GCTD's 2023 open enrollment took place September 19, 2022, through October 14, 2022. In addition to HR staff tabling in the Operator's lounge, GCTD launched its new Benefit Guide Handbook. The handbook was developed to help educate employees on the benefits offered through GCTD. Providing a tool for employees to learn about their options for open enrollment benefits.

GCTD welcomed back its Health and Wellness Fair on September 21<sup>st</sup> after a three-year hiatus. It included vendors from Health Plan carriers, information about GCTD benefits, flu shots, healthy snacks and smoothies. The Wellness Fair was well attended, and employees were able to enter their names for an opportunity to win one of the 19 raffle prizes available. The Wellness Room's grand opening was held on this day. Employees can have space they can use for their mental and physical well-being.

### **Learning and Development**

Maylee Murillo, HR Intern, has taken the lead on the implementation and training of our new Vector Learning Management System (LMS). LMS is a modern learning system that molds to specific industry needs and function by assigning, tracking, and reporting on course including the individualized training completions. The LMS will allow us to improve our training programs and ensure employees obtain and retain critical job knowledge. The initial plan is to implement the system with the administration staff then it will be extended it to the entirety of GCTD.

## **GOLD COAST TRANSIT DISTRICT**

### **Recruitment and Employee Retention**

GCTD continues to recruit for Bus Operators. HR staff attended the 2022 Military and Veteran Job Fair and Expo on Saturday, August 20 held in Camarillo. Four new bus operators went through the hiring process and will start training soon. Two GCTD employees were promoted, congratulations to Cynthia Duque on her promotion to Director of Planning and Marketing and Lee Judie as the new Maintenance Material Specialist. GCTD continues to be a great place to work for in Ventura County, with a turnover rate of 6.12% for the fiscal year 2021-2022. The national turnover rate for 2021 was 47.2% and for local and state section jobs was 18%. GCTD's rate demonstrates why we were awarded the "Best Place to Work" award during the 72<sup>nd</sup> Annual Oxnard Community and Business Awards Celebration.

### **Rewards and Recognition**

The Employee of the Quarter Program recognizes the outstanding qualities and contributions of GCTD employees. The recipients are selected by their peers. For the 3<sup>rd</sup> quarter of 2022, Mr. Ruben Herrera was selected for the Bus Operator category, Robert Magana for the Admin/Supervisors, and Jenee Chandler for the Maintenance department. GCTD is proud to have employees who strive to serve their community and co-workers. In addition, HR continues to assist and promote employee recognition events such as the 4<sup>th</sup> of July Celebration and Safety Awards.

## **II. RECOMMENDATION**

It is recommended that that the GCTD Board of Directors receive and file this report.

General Manager's Concurrence

  
\_\_\_\_\_  
Vanessa Rauschenberger



**DATE** November 2, 2022

**TO** GCTD Board of Directors

**FROM** Cynthia Duque, Director of Planning and Marketing *CTD*  
Margaret Schoep, Paratransit & Special Projects Manager

**SUBJECT** Fixed-Route & ACCESS Flexible Services Quarterly Update

**Item #13**

## I. EXECUTIVE SUMMARY

This quarterly report covers the 1<sup>st</sup> Quarter (July 1 through September 30) of Fiscal Year 2022-23. This report includes a summary of performance and operating statistics for both fixed-route and GO ACCESS services.

## II. FIXED-ROUTE DATA

The table below shows that ridership for the 1<sup>st</sup> quarter of FY 2022-23, has increased just over 28% over the 1<sup>st</sup> quarter of last year, the largest increase recorded since service has been incrementally restored. The increase is a positive sign that GCTD continues the road to ridership recovery, which is also reflective of a recovering economy and community. For comparison purposes, ridership is at about 76% of pre-pandemic levels.

While ridership has increased across the system in general, the spike in ridership is largely due to the launch of the Youth Ride Free Program, which began on GCTD buses on August 15<sup>th</sup>. Students now account for 25% of GCTD's ridership, with weekly boarding continuing to increase.

### 1<sup>st</sup> Quarter FY 22-23 Systemwide Ridership & Performance

	1 <sup>st</sup> Qtr FY 2022-23	1 <sup>st</sup> Qtr FY 2021-22	Difference	% Change
<b>Fixed-Route Ridership</b>				
Total System Boardings	688,042	536,682	151,359	28.2%
Average Daily Passengers Weekdays	8,736	5,247	2,110	31.8%
Average Daily Passengers Saturdays	5,516	4,699	816	17.4%
Average Daily Passengers Sundays	5,098	4,044	1,054	26.6%
Wheelchair Boardings	6,969	6,778	191	2.8%
Bicycle Boardings	21,186	15,393	5,769	37.7%
<b>Performance Measures</b>				
Passengers Per Revenue Hour	15	12	3	27.4%
Fare Revenue Per Service Hour	\$7.42	\$9.66	-\$2.24	
Total Fare Revenue	\$343,322	\$444,259	-\$100,936	
On-Time Performance	89%	84%	Goal > 90%	

**GOLD COAST TRANSIT DISTRICT**

CITY OF OJAI | CITY OF OXNARD | CITY OF PORT HUENEME | CITY OF VENTURA | COUNTY OF VENTURA  
1901 AUTO CENTER DRIVE, OXNARD, CA 93036-7966 | P 805.483.3959 | F 805.487.0925 | GCTD.ORG

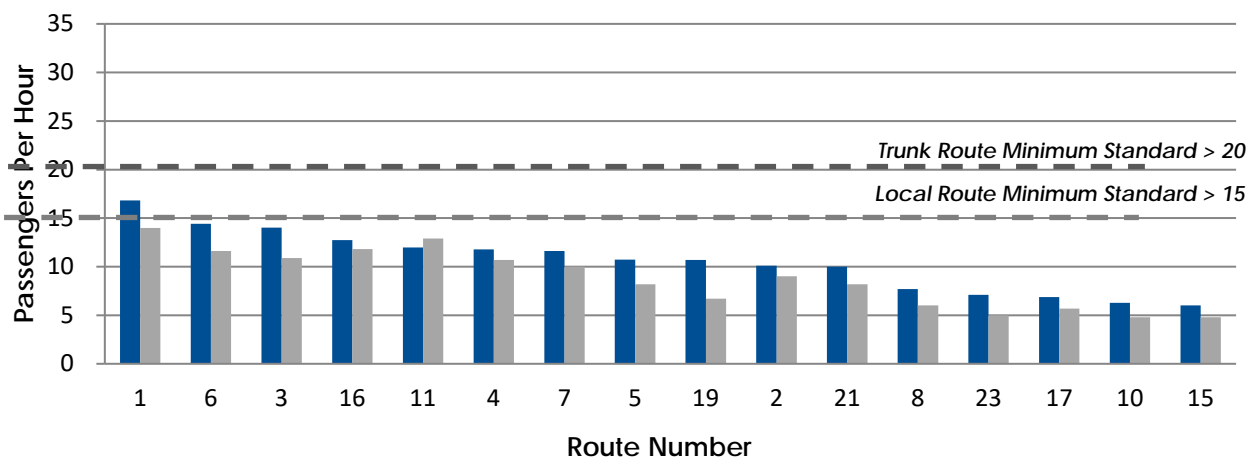
% Systemwide Boarding as Free Transfers	19%	22%	Goal < 20%
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### 1st Quarter FY 22-23 Ridership by Route

Route	Route Name	1st Quarter FY 2022-23 Unlinked Passengers	1st Quarter FY 2021-22 Unlinked Passengers	Change	% Change
1	Port Hueneme - Oxnard Transit Center	102,166	89,169	12,997	15%
2	Colonia - Downtown Oxnard	13,754	12,020	1,734	14%
3	J St - Centerpoint Mall - Lemonwood	27,488	22,984	4,504	20%
4	North Oxnard - Ventura Rd - St. John's	61,275	47,332	13,943	29%
5	Hemlock - Seabridge - Wooley	15,788	13,221	2,568	19%
6	Oxnard - Ventura - Main St	171,738	138,410	33,328	24%
7	Oxnard College - Centerpoint Mall	13,445	13,303	142	1%
8	OTC- Oxnard College - Centerpoint Mall	17,047	15,117	1,930	13%
10	Pacific View Mall - Telegraph -Saticoy	17,301	10,843	6,458	60%
11	Pacific View Mall - Telephone - Wells	45,925	34,143	11,782	35%
15	Esplanade - El Rio - St. John's	13,210	10,357	2,853	28%
16	Downtown Ojai - Pacific View Mall	55,001	43,312	11,688	27%
17	Esplanade - Oxnard College	25,355	16,372	8,982	55%
18	Trippers	7,974	3,751	4,223	113%
19	OTC- 5th St - Airport - Gonzales Rd	13,787	9,791	3,997	41%
21	Port Hueneme - Ventura - Victoria Ave	57,013	38,567	18,446	48%
23	Oxnard College - Naval Base - Esplanade	29,775	17,991	11,784	65%
<b>Total GCTD System (no combined routes)</b>		<b>688,042</b>	<b>536,682</b>	<b>151,359</b>	<b>28%</b>

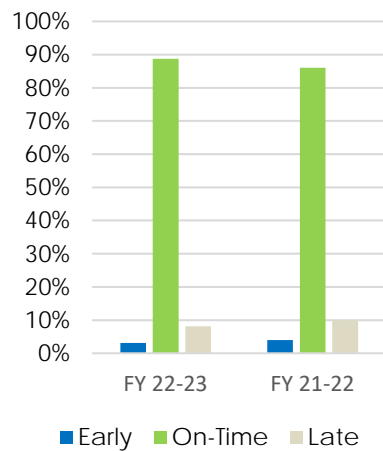
\* Route 23 is a new service implemented on July 26, 2020.

### 1st Quarter FY 22-23 Passengers Per Revenue Hour (All Periods)

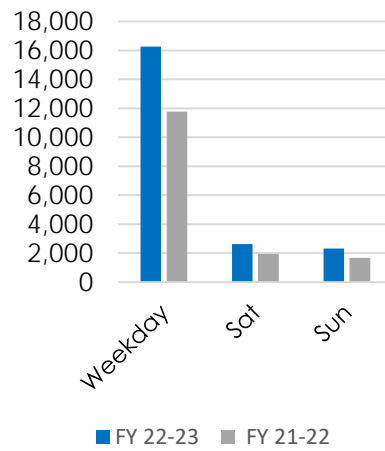


Notes: Route 18 (school trippers) not shown in graph.

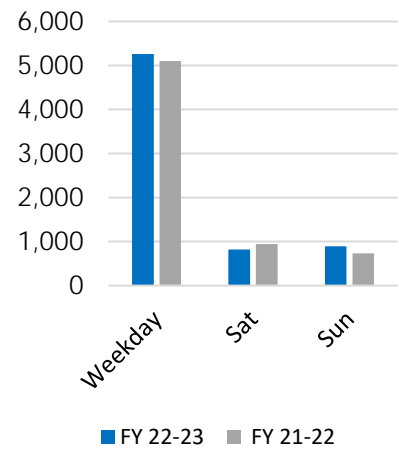
**On-Time Performance  
1st Quarter**



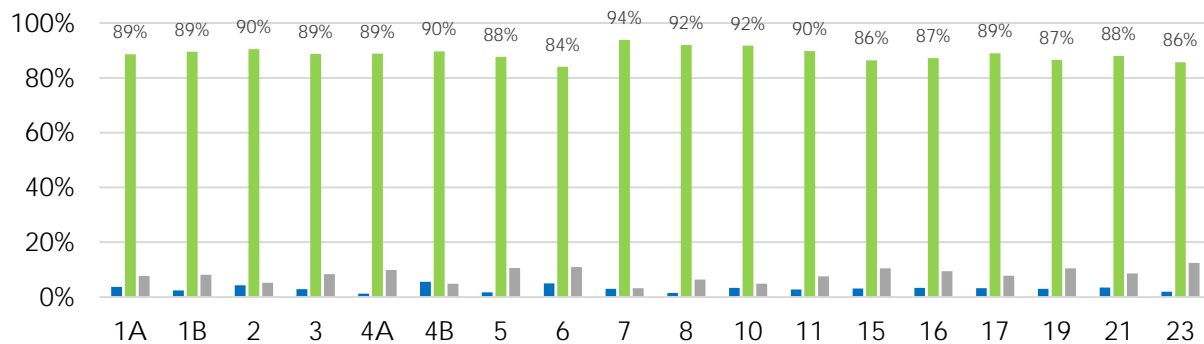
**Bicycle Boardings  
1st Quarter**



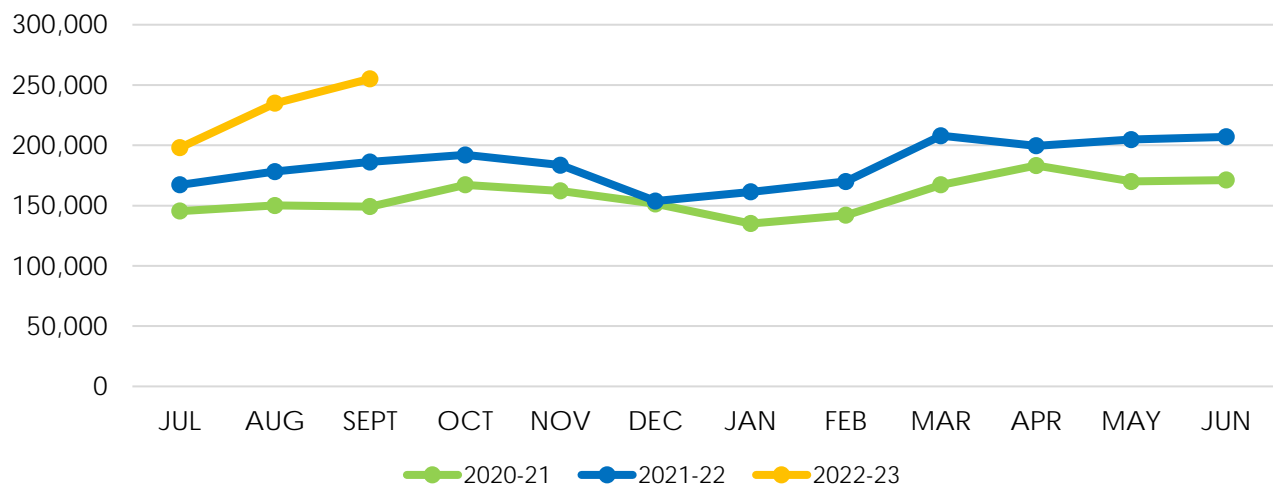
**Wheelchair Boardings  
1st Quarter**



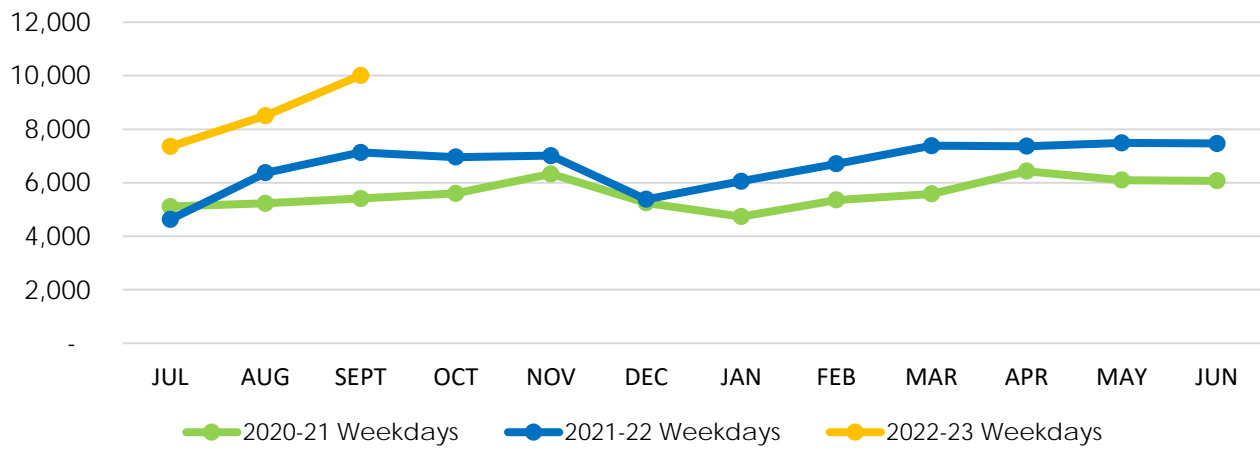
**1st Quarter - On Time Performance by Route**



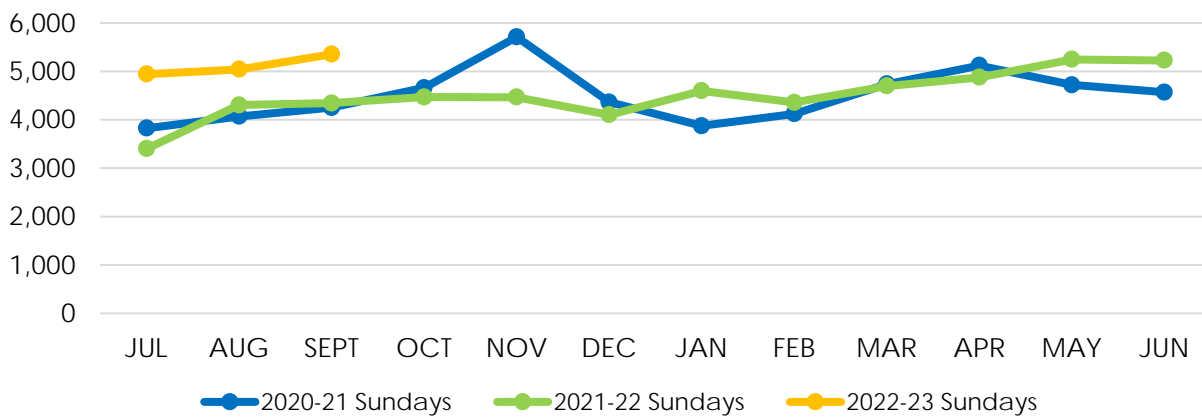
**Monthly Fixed Route Ridership**



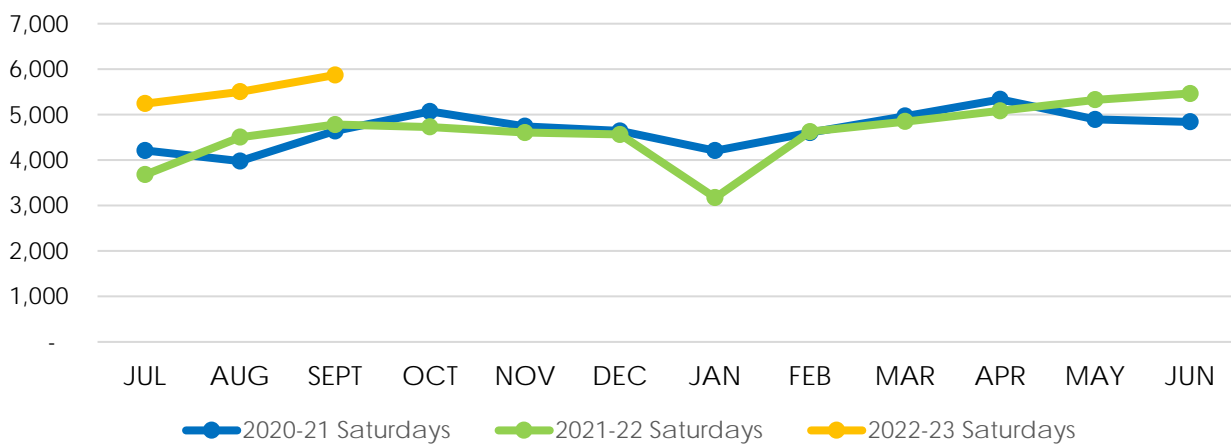
### Average Weekday Boardings



### Average Sunday Boardings

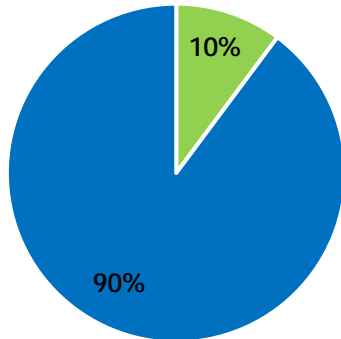


### Average Saturday Boardings



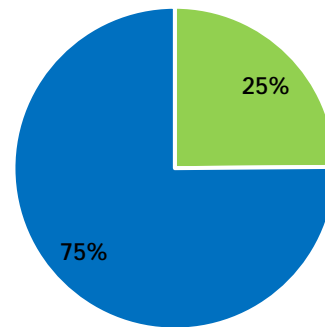


**August 2022 Ridership**



■ Youth Ride Free

**September 2022 Ridership**



■ Youth Ride Free

**1<sup>st</sup> Quarter  
Complaints/Commendations by Type**

Type	Issue	FY22-23 1 <sup>st</sup> Quarter	FY21-22 1 <sup>st</sup> Quarter	FY22-23 YTD
Scheduling	On-Time Performance	2	14	2
Operations	Operator Conduct	20	19	20
	Driving Complaints	6	8	6
	Passed by	8	8	8
	Commendations	5	12	5
	Bus Stop Issues	2	2	2
Other	Other*	5	18	5
Totals		<b>48</b>	<b>81</b>	<b>48</b>

\*Service suggestions, fare disputes, disturbances, bus did not show, or other system issues

### III. FIXED-ROUTE SERVICE SUMMARY

In the first quarter of FY 22-23 ridership was up 28% over the first quarter of FY 21-22. The quarter included the month of August, which marked the return to school for most students in the GCTD service area, and they were welcomed with a new free fare program. This has translated to a significant boost in ridership. Week after week, weekly ridership has continued to trend upward. Most importantly, for families with multiple school aged children in one household, this has provided much needed economic relief in a post-pandemic environment.

While GCTD plans to continue to restore service within the confines of the ongoing labor shortage, we will also continue to search for new and innovative ways to meet this growing demand for service.

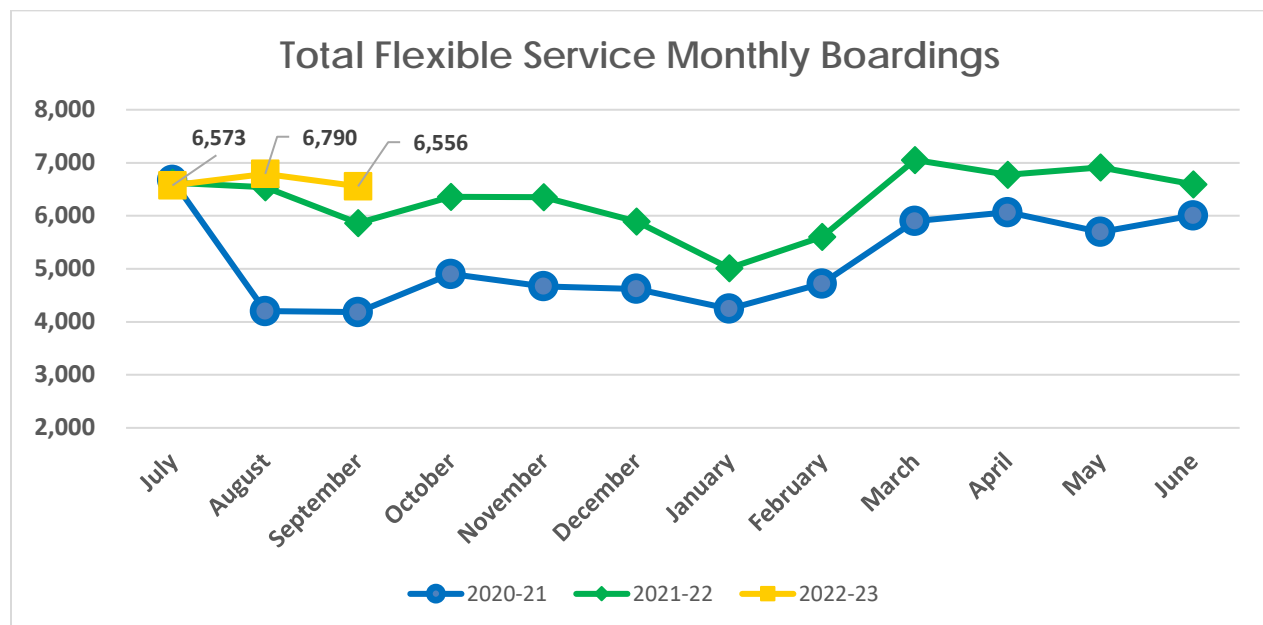
## V. GO ACCESS FLEXIBLE SERVICES OPERATIONS

GO ACCESS's flexible services include the federally mandated ADA paratransit service to complement Gold Coast Transit District's fixed route services. In addition, the flexible services provide service to seniors, 65 years of age and older, congregate transportation to Senior Nutrition meal sites, Health Zones, and other transportation options to assist with mobility in the community. The program helps passengers preserve their independence through this advance-reservation demand response transportation essential to protecting their quality of life. These efforts are intended to improve the overall customer experience by presenting GCTD's transportation network as an integrated system that helps our customers connect with people, places, and opportunities.

## VI. FLEXIBLE SERVICES DATA

### 1<sup>st</sup> Quarter FY 2022-23 GO ACCESS Ridership & Performance

Paratransit Ridership	1 <sup>st</sup> Qtr FY 2022-23	1 <sup>st</sup> Qtr FY 2021-22	Difference	% Change
Total System Boardings	19,888	19,028	+860	+4.5%
Average Daily Passengers Weekdays	256	250	+6	+2.4%
Average Daily Passengers Saturdays	147	123	+24	+19.5%
Average Daily Passengers Sundays	121	96	+25	+26.0%
Performance Measures	1 <sup>st</sup> Qtr FY 2022-23	1 <sup>st</sup> Qtr FY 2021-22	Difference	% Change
Passengers Per Revenue Hour	2.31	2.26	+0.1	+2.2%
On Time Performance (Arrive within the window)	82.0%	82.0%	+/-0.0	%
Early (Before start of pick up window)	3.6%	2.7%	+0.9	+33.3%
Late (After end of pick up window)	14.4%	15.5%	-1.1	-7.1%

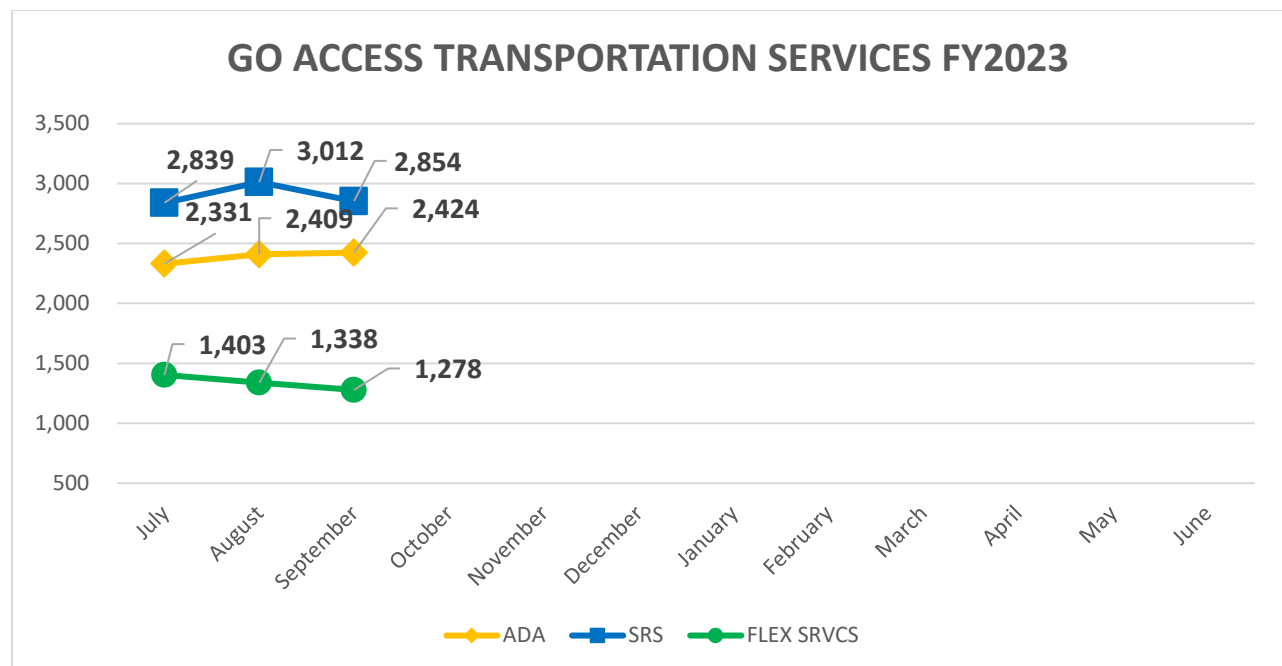


### 1<sup>st</sup> Quarter – Feedback

Type	Issue	1 <sup>st</sup> Quarter Comments	1 <sup>st</sup> Quarter Verified Comments	YTD 2022-23 Verified Comments
Scheduling	Travel Time	0	0	0
	Schedules	0	0	0
Operations	Operator	5	2	2
	Dispatch	1	1	1
Other	Reservations	0	0	0
	Policies	3	0	0
	Commendations	0	N/A	N/A
<b>Totals</b>		<b>9</b>	<b>3</b>	<b>3</b>

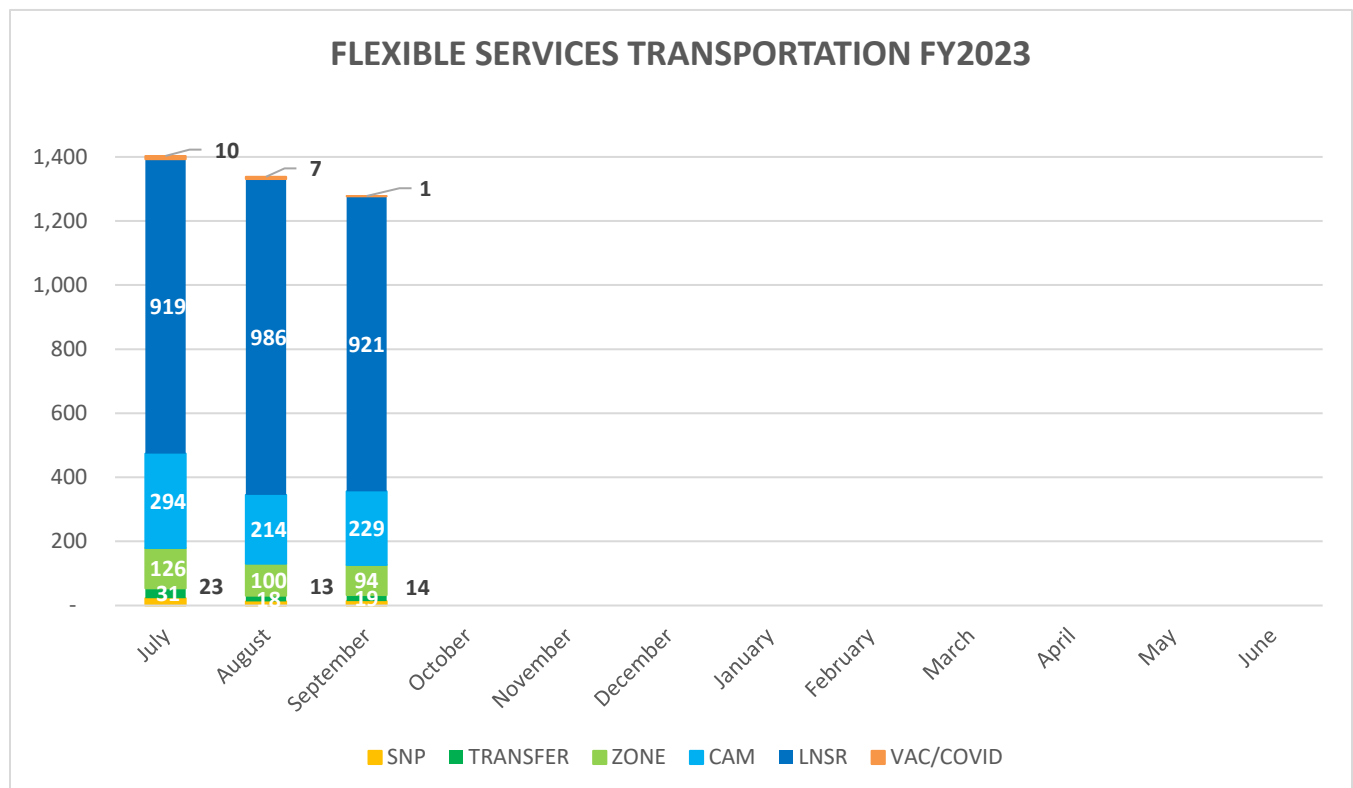
## VII. FLEXIBLE SERVICES TRANSPORTATION

Since the October 1999 expansion of the ADA curb-to-curb demand response services to include seniors, 65 years of age and older, GCTD has led the way in offering mobility services. As described in the following graphs and paragraphs, the transportation services provided via its GO ACCESS program help to close gaps in the provision of equitable public transportation within and for the community. The services can be broken down into three main categories: ADA, Senior & Flexible Services. All services provided by the GO ACCESS program require a reservation. Fares are paid via electronic purse, Token Transit, or cash.



Nationally, telehealth services used by traditional paratransit/demand response customers during the pandemic for essential healthcare services are rapidly declining, resulting in significant layoff activity. All of this may be pointing to a need for increasing robust support of flexible service options to our customers

in anticipation of continued demand growth. Meanwhile, the protracted national labor shortage continues to negatively impact the current delivery of paratransit services. While no passenger was denied transportation, On-Time Performance was impacted. 14% of trips arrived to pick up passengers after the end of the pick-up window, however, fewer than 7% were more than ten minutes past the end of the window with most of these late pick-ups being for the return trip home from appointments. Therefore, passengers were not missing critical appointments caused by this challenge. When late pick-ups for transportation to an appointment do occur, time can usually be made up in the passenger's actual travel time with the passenger actually arriving on time for scheduled appointments. GCTD continues to guide and support the Contractor in their recruitment and training of new drivers each month. On average, it takes approximately four weeks to successfully complete all classroom and behind-the-wheel training before a new driver is deemed ready to provide safe and friendly revenue service to customers.



## SUMMARY OF FLEXIBLE SERVICE OPTIONS

**ADA TRIPS:** Since 1994, GCTD has provided federally mandated and FTA ADA-compliant advance reservation, origin to destination services that essentially bring the bus stop to the customer's curb. All vehicles are wheelchair accessible and provide service during the same hours that GCTD's fixed services operate throughout the GCTD service area of Ojai, Oxnard, Port Hueneme, Ventura, and unincorporated areas between the member cities. For background, Federal regulations require that ADA complementary paratransit service meet five criteria:

- Operate within a  $\frac{3}{4}$  mile band surrounding existing the fixed route service line.
- Operate service during the same hours that the actual route operates within that  $\frac{3}{4}$  band.
- One-way fares may not exceed twice the fixed route Adult cash fare (of \$1.50). Therefore, GO ACCESS ADA fare is \$3.00.

- All ADA trip requests must be provided if requested during the reservations window (8 AM to 5 PM) the previous day.
- Passenger travel time on a paratransit vehicle may not exceed what the travel time would be if the passenger used fixed-route service for the same trip. Travel time is measured from the passenger's door, the pedestrian travel time to/from the respective bus stops, and the final destination.

The federal regulations are clear; complimentary paratransit was designed to provide access to local public transit services, not to replace the convenience of a personally owned vehicle. GCTD is proud of the fact that since 1999, ADA paratransit service is provided to our customers throughout the service area, regardless of whether a particular fixed route line is in service or not.

We do this because we support the spirit of the ADA, which is one of inclusion, of non-discrimination, of providing individuals with disabilities the same opportunities to participate in and benefit from goods and services offered within the community.

**SENIOR TRIPS:** In recognition that many seniors have similar mobility needs, GCTD expanded its ACCESS services in October 1999 to provide the same level of mobility support and services to seniors, 65 years of age and older. This service is available to seniors without having to navigate an additional application. Seniors pay a \$3 fare for a one-way trip.

**SENIOR NUTRITION TRIPS:** Recognizing the importance of senior nutrition and safe transportation to aggregate meal sites, in 1999, GCTD collaborated with the Ventura County Area Agency on Aging (VCAAA) to waive Older American Act transportation subsidies that would have gone towards financially supporting group transportation to VCAAA-sponsored meal sites. More than 3,000 SNP trips were provided in FY2019, the last full fiscal year before the onset of the COVID pandemic. Passengers do not pay a fare to travel to/from congregate meal sites for nutrition programming.

**INTERAGENCY TRANSFERS:** GCTD has been providing paratransit transfer services to help our ADA/senior passengers connect with neighboring agencies such as the Heritage Valley and Camarillo since 1996. Transfers with Thousand Oaks Transit began in 2000. In FY2019, the last full fiscal year before the introduction of Premium Direct Connect service to Camarillo, GO ACCESS annually provided approximately 54 transfers with Heritage Valley Express, 188 transfers with East County Transit Alliance (ECTA), and 3,727 transfers with Camarillo Area Transit. Fares are collected by the transit agencies providing the services.

**HEALTH ZONES (known as ZONES service):** This General Public Dial-A-Ride (GPDAR) service was created in 2008 to fill the gap for mobility support in extremely short-term situations. The premise of the program was that by the time an application was completed, the need for mobility assistance had passed and with it the opportunity for a constituent to realize the value good community public transit services add to the overall local quality of life. Fares are based on the number of zones the passenger travels and range from \$3-\$12 each way. GO ACCESS averaged 150 ZONE trips monthly prior to the onset of COVID-19 in March 2020. (Flyer Attached)

**PREMIUM DIRECT CONNECT (SERVICE TO CAMARILLO):** This service was introduced in January 2020 to streamline transportation service to Camarillo by converting expensive and unproductive dwell time at transfers to productive revenue service time. Customers have reacted very favorably to this service. The potential for pedestrian accidents while changing vehicles along with the anxiety of missing a transfer (and possibly an appointment) is virtually eliminated. These factors likely contribute to the willingness to pay \$6 each way to avoid the challenges inherent in transferring to another agency and vehicle. This pilot showed GCTD that customers will pay for the service they value. The Direct Connect

service averaged 298 trips in early 2020 for a 79% increase in demand when compared with an average 167 transfers with Camarillo during the six months prior to the implementation of this pilot service. GCTD received \$3.00 per round trip under the transfer policy, and now receives \$12.00 per round trip. An added bonus is that GCTD's elimination of idling vehicles at transfer locations contributes to local Clean Air efforts.

**GO HOP (JUVENILE JUSTICE CENTER CONNECTION WITH FIXED ROUTE SERVICES):** Introduced in January 2020 to provide a direct connection to the JJC from the Esplanade bus stops served by both GCTD and VCTC bus services. The service was used a few times before the Center's implementation of COVID precautions and protocols including the suspension of visiting services until Fall 2022. To date, no requests for service to the JJC have been received this fiscal year. Fare to/from Esplanade/JJC is \$2.00. In support of the County's access to transportation goals and requirements, GCTD tried without success to incorporate a productive bus stop at the Juvenile Justice Center (JJC) over many years in various route configurations. The most recent effort was a multiple-year demonstration route to connect Ventura's East End to north Oxnard including this stop. Minimum ridership never materialized to support the continuation of a fixed route. Very little traffic and no boardings or alightings were recorded at the JJC stop during the many years fixed-route service was provided. Fixed-route services were eliminated in January 2020 due to well-documented non-use and quickly replaced with an on-demand service option to provide a connection to the center during visiting hours as needed. (Flyer attached)

**LATE-NIGHT SAFE RIDES:** This demonstration service was introduced in May 2021 to encourage fixed route use by providing customers with reliable and safe public transit service from 8 PM to 11 PM nightly. Initially designed to assist late-shift employees, especially those within the food, hospitality, and service sectors return to work helping re-ignite the local economy post-COVID. The GPDAR service provides transportation throughout the entire GCTD service area. Service hours have expanded hours (to coincide with when the first fixed route goes out of service) from 7 PM to midnight (to address restaurant and second shift needs.) The concept has been very well received. In the first month of service, 90 trips were provided. Currently, the Late-Night Safe Rides program averages 950 trips monthly, for an increase of 1000%+ (over 15 months) as word continues to spread about this service. Fare is \$2.

**VACCINE/COVID-19 SUPPORT RIDES:** Approximately 2,800 rides were provided in FY2021 to customers seeking COVID-19 testing and/or vaccination at various locations around Western Ventura County. This public health transportation is provided at no charge to the customer.

**GO MEALS COVID-19 SUPPORT SERVICE:** Currently dormant with no demand for service, this program was developed as a collaboration with the VCAAA to provide nutrition to home-bound individuals during the early days of the COVID-19 pandemic. GO ACCESS delivered over 165K meals to impacted constituents throughout Western Ventura County. Although dormant, this program can be re-activated very quickly as little lead time would be required. No delivery fees were charged to the VCAAA or beneficiaries for this service.

## **GO ACCESS FLEXIBLE SERVICES SUMMARY**

Overall demand for the GO ACCESS flexible transportation services is slowly returning to pre-pandemic levels, registering a 5% increase when compared to the same period of FY2022. For example, Late-Night Safe Rides continues to grow, averaging 950 trips each month in the first quarter of the current year, a 114% increase over the 445 average monthly boardings during the first quarter of FY2022. Demand for medically related transportation for folks who don't fit "traditional" profiles continues to grow and staff is in the process of developing services for Board approval to implement in 2023 to help close this gap. Passengers continue to voice their appreciation for the conveniences afforded and increase

their use of online reservations, electronic fares, automated voice notification of vehicle arrival, and similar technology enhancements.

## **VIII. RECOMMENDATION**

**IT IS RECOMMENDED that the GCTD Board of Directors receive and file this report.**

This report is for information only.

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General Manager's Concurrence

<i>Attachment 1:</i>	<i>1<sup>st</sup> Quarter FY 2022-23 Fixed-Route Service Evaluation</i>
<i>Attachment 2:</i>	<i>JJC Flyer, Zones Flyer</i>
<i>Attachment 3:</i>	<i>Health Zones Brochures</i>
<i>Attachment 4:</i>	<i>Late Night Safe Rides Flyer</i>

## 1st Quarter FY 22-23: Service Evaluation Report

### RIDERSHIP MEASURE: Passengers Per Revenue Hour

Route #	Route Name	Service Type	Justification	Total Revenue Hours	Total Passengers	Passengers per Revenue Hour	Quartile
1	Port Hueneme - OTC	Trunk		5,277	102,166	19.4	1
6	Oxnard - Ventura/Main St.	Trunk		9,384	171,738	18.3	1
5	Parkwest	Local		941	15,788	16.8	1
16	Ojai	Trunk		3,429	55,001	16.0	2
19	Gonzales - OTC - Fifth	Local		891	13,787	15.5	2
4	North Oxnard	Local		4,077	61,275	15.0	2
3	Southside	Local		1,835	27,488	15.0	2
11	Telephone Road - Saticoy	Trunk		3,111	45,925	14.8	2
21	Port Hueneme - Ventura - Victoria Ave	Trunk		4,138	57,013	13.8	3
2	Colonia	Local		1,149	13,754	12.0	3
7	South Oxnard	Local		1,133	13,445	11.9	3
23	Oxnard College - Naval Base - Esplanade	Trunk		2,823	29,775	10.5	3
10	Telegraph Road - Saticoy	Trunk		1,697	17,301	10.2	4
17	Esplanade - Oxnard College	Trunk		2,588	25,355	9.8	4
8	Oxnard College	Local		1,967	17,047	8.7	4
15	El Rio - Northeast	Local		1,710	13,210	7.7	4

\*Route 23 is a CMAQ funded demonstration route that started in July 2020.

#### Excluded Routes

18	High School Trippers	134	7,974	59.7	Reason Excluded: booster service
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#### Systemwide Performance Target

		Passengers per Revenue Hour Target
Trunk	Routes that link 2 or more major or regional commercial and employment centers and travel on arterial roads or highways.	20
Local	Routes that connect residential areas to major commercial and employment centers and travel on both arterial and residential streets.	15

### ECONOMIC MEASURE: Subsidy Per Passenger

Route #	Total Passengers	Total Revenue Hours	Service Type	Systemwide Operating Cost Per Hour	Total Cost	Cost Per Passenger	Average Fare Per Passenger	Subsidy Per Passenger	Route Ranking	Quartile
1	102,166	5,277	Trunk	\$ 100.67	\$ 531,195	\$ 5.20	\$0.51	\$ 4.69	1	1
6	171,738	9,384	Trunk	\$ 100.67	\$ 944,714	\$ 5.50	\$0.51	\$ 4.99	3	1
5	15,788	941	Local	\$ 100.67	\$ 94,714	\$ 6.00	\$0.48	\$ 5.52	4	1
16	55,001	3,429	Trunk	\$ 101.67	\$ 348,667	\$ 6.34	\$0.69	\$ 5.65	6	1
19	13,787	891	Local	\$ 100.67	\$ 89,663	\$ 6.50	\$0.44	\$ 6.06	2	2
3	27,488	1,835	Local	\$ 100.67	\$ 184,679	\$ 6.72	\$0.52	\$ 6.20	7	2
4	61,275	4,077	Local	\$ 100.67	\$ 410,435	\$ 6.70	\$0.44	\$ 6.26	8	2
11	45,925	3,111	Trunk	\$ 100.67	\$ 313,194	\$ 6.82	\$0.42	\$ 6.40	14	2
21	57,013	4,138	Trunk	\$ 100.67	\$ 416,593	\$ 7.31	\$0.49	\$ 6.82	10	3
2	13,754	1,149	Local	\$ 100.67	\$ 115,670	\$ 8.41	\$0.47	\$ 7.94	9	3
7	13,445	1,133	Local	\$ 100.67	\$ 114,009	\$ 8.48	\$0.53	\$ 7.95	5	3
23	29,775	2,823	Trunk	\$ 100.67	\$ 284,235	\$ 9.55	\$0.51	\$ 9.03	13	3
10	17,301	1,697	Trunk	\$ 100.67	\$ 170,787	\$ 9.87	\$0.38	\$ 9.49	11	4
17	25,355	2,588	Trunk	\$ 100.67	\$ 260,497	\$ 10.27	\$0.50	\$ 9.77	12	4
8	17,047	1,967	Local	\$ 100.67	\$ 197,968	\$ 11.61	\$0.52	\$ 11.10	16	4
15	13,210	1,710	Local	\$ 100.67	\$ 172,146	\$ 13.03	\$0.51	\$ 12.53	15	4

\*Route 23 is a CMAQ funded demonstration route that started in July 2020.

#### Excluded Routes

18	7,974	134	Tripper	\$ 100.67	\$ 13,439	\$ 1.69	\$ 0.026	\$ 1.66	Reason Excluded: booster service
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**Serving the Juvenile Justice Center (JJC)**

**GO ACCESS: (805) 485-2319**

**(Ask for GO HOP service)**

**Reservations accepted day before travel**

**Limited Same Day service is available; 1 HR minimum lead time required**

**Fare: \$2.00 (CASH or TOKEN TRANSIT)**

**Exact fare required (no change will be given)**

**No transfers are accepted/offered**

**Hours of Service**

**Sunday through Friday: 7:00 AM to 7:00 PM**

**Saturday: No Service (JJC and Courts closed to the public)**

**Service To/From**

**Oxnard Esplanade/JJC Hop Stops**



**GOLDCOAST  
TRANSIT**



## GCTD's GO HOP (Serving the JJC) FAQ

### What is GO HOP?

GO HOP provides transportation to the Juvenile Justice Center (JJC) from the GCTD/VCTC bus stops at the Esplanade.

Transportation is available during JJC hours of operation, six days a week.

### Who can use GO HOP?

This general public dial-a-ride transportation available to anyone over the age of 16. (Passengers under the age of 16 need to be accompanied by a passenger at least 16 years of age).

### Who do I call to make a reservation for the GO HOP daily service?

Call GO ACCESS (805) 485-2319, between the hours of 8:00 AM to 5:00 PM. Limited reservations accepted one-day in advance. Same day service is available; (one-hour advanced notice required).

### Can I travel to a different location from the JJC on GO HOP?

Yes, you can travel to any destination within the corridor from the JJC Hop Stop. This includes El Rio and the Collection. GO HOP service does not operate outside of this corridor.

### What if I need to go to a different location after 7 PM?

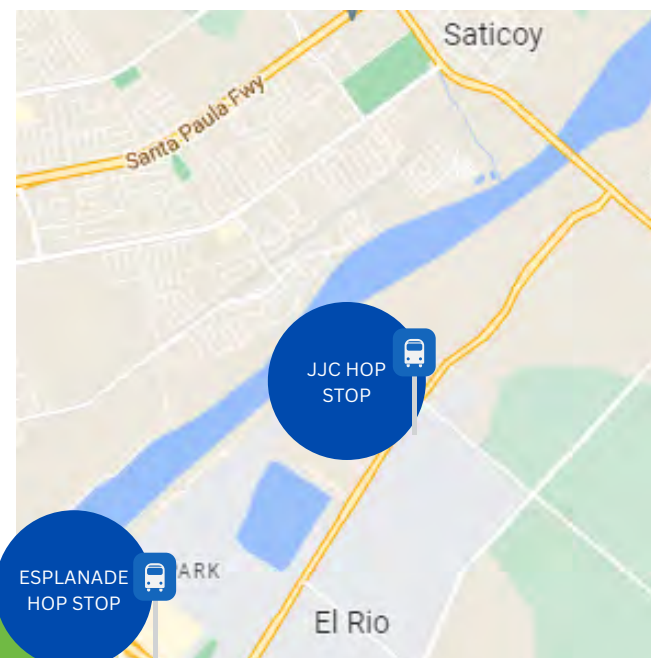
If you request a ride from the JJC after 7:00 PM, "Late Night Safe Rides" (LNSR) is available.

Fare is \$2.00 per passenger.

Ask GO ACCESS staff for more information.

### Can I use credit from a bus transfer?

**No.** As a premium direct point to point service, GO HOP operates separately from the GCTD's fixed route buses.







Do You Have A  
Temporary Mobility  
Impairment?

Zones provides flexible transportation for people with a temporary short-term disability which makes using fixed-route bus service impractical. No ADA certification is required to use Zones.

Zones is available to anyone age 16+ within GCTD's service area, which includes **Ojai, Oxnard, Port Hueneme, Ventura and the unincorporated areas between the cities.** (See Map inside)

**ACCESS Zones can help you:**

- **Get to Medical Appointments**
- **Get to and from School/ Work**
- **Run Errands, and more...**

- Service available **7am to 7pm**
- Zone-based fare structure.
- Reservations accepted 8am to 5 pm daily
- Advanced reservations are strongly encouraged. (One Day Before)

**805-485-2319**  
(TDD 711 - CA Relay Service)

**Book Your Reservation Today!**

It's Easy to Book  
Your Ride!

**Call 805-485-2319**  
(TDD 711 CA Relay Service)

**TRIP TIPS**

- Schedule the day before service is needed.
- Schedule permitting, limited same day service may be available.
- Zones is curb-to-curb shared ride transportation.
- Zone trips and fares do not transfer to other services.
- Please pay the appropriate zone fare (see reverse) to the driver upon boarding. **Exact fare is required.**
- Fares may be paid with cash, Token Transit or ACCESS e-fares.
- Passengers are encouraged to request lift when necessary.
- Must be at least 16 years of age.

GCTD Customer Service Center  
805-487-4222 (TDD) 711 CA Relay Service

**www.GCTD.org**

Attachment 3

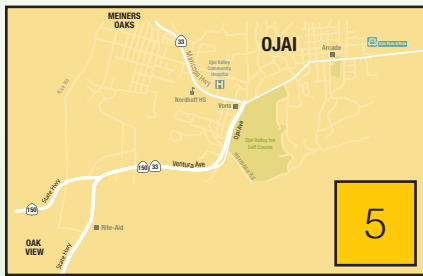
**GO ACCESS  
ZONES**

Open to  
everyone  
age 16+ with  
Temporary  
Mobility  
Needs!



**GO GOLDCOAST  
TRANSIT**  
Flexible Services

# Zoned-Based Fare Structure for Your Convenience!



## ZONES SERVICE MAP



Locate your **origin** and **destination** on the map. Look for the corresponding color pairings in the chart below to identify your one-way fare. Fares required each way.

Origin Zone	Destination Zone	Fare One-Way
1	1	\$3.00
1	2	\$6.00
1	3	\$9.00
1	4	\$9.00
1	5	\$12.00
2	2	\$3.00
2	3	\$6.00
2	4	\$6.00
2	5	\$9.00
3	3	\$3.00
3	4	\$6.00
3	5	\$9.00
4	4	\$3.00
4	5	\$6.00
5	5	\$3.00





# LATE NIGHT SAFE RIDES

Advance Reservations Recommended.  
Minimum 1 Hour Notice Required.

RESERVATIONS

**805-485-2319**

## Need a ride home late at night?

GCTD is now offering  
a new Late Night Safe  
Rides program.



**FARE IS \$2 | TRANSPORTATION DAILY 7PM - 12AM | OPEN TO ALL**

**If you need a ride after  
work, this is the service  
for you!**

Reserve a ride to travel between  
the hours of 7 PM to 12 AM and  
a Late Night Safe Rides van will  
meet you. The van will take you  
anywhere a GCTD bus goes.



**QUICK. SAFE. AFFORDABLE.**

**805.485.2319 Call for Reservations | Accepted Daily 8am-10pm**

This pilot program is offered for a limited time, made possible by Federal 5310/CARES Funding.



**Item #14**

**DATE** November 2, 2022  
**TO** GCTD Board of Directors  
**FROM** Vanessa Rauschenberger, General Manager  
**SUBJECT** Discuss Future Agenda Items

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### **SUMMARY**

It is recommended that the Board of Directors provide input to staff on future agenda items that they would like staff to review and/or report on in a future meeting.

### **FUTURE AGENDA ITEMS**

Below are some of the future agenda items planned. To help staff prioritize timing of reports, staff seeks input on these items or other items that the Board is interested in discussing.

#### **Future Agenda Items**

- Zero Emissions Transition Planning
- Review of Bylaws, Goals & Objectives
- Budget for FY 2022-2023
- Discuss VCTC Transit Integration and Efficiency Study (TIES)
- Redevelopment of 301 Property
- *Other Items?*

#### **Future Routine Items**

- Monthly Financial Statements & Procurement Reports
- Monthly Operations & Maintenance Update
- Quarterly Fixed-Route & Paratransit Performance Reports
- Bi-Annual Service Plan & Outreach Updates
- Quarterly Human Resources & Staffing Updates

### **CONCLUSION**

It is recommended that the Board of Directors provide input to staff on future agenda items that they would like staff to review and/or report on in a future meeting.

#### **GOLD COAST TRANSIT DISTRICT**