

**Criteria for Evaluation of Proposals**

Proposal Evaluation	Maximum Possible Score (Weighted Score)	Score
I. Introductory Letter	5	
II. Personnel and Qualifications (20) Experience (10) References (10) Sub-Consultants (10)	50	
III. Scope of Work	30	
IV. Project Schedule	10	
V. DBE	5	
<b>TOTAL POSSIBLE (100 points)</b>		
<b>TOTAL ACTUAL</b>		



**BUTTE COUNTY ASSOCIATION OF GOVERNMENTS  
CONSULTING SERVICES AGREEMENT**

Consultant  
Consultant

Project  
Project

THIS AGREEMENT made and entered into this           day of MM 2024          , by and between Butte County Association of Governments, hereinafter referred to as "BCAG" and/or AWARDING AGENCY, and Consultant, hereinafter referred to as "CONSULTANT".

**WITNESSETH:**

**SECTION 1 - ORGANIZATION AND CONTENTS**

- SECTION 1 ORGANIZATION AND CONTENTS
- SECTION 2 SCOPE OF CONSULTING SERVICES - BASIC
- SECTION 3 SCOPE OF CONSULTING SERVICES - ADDITIONAL
- SECTION 4 NOTICE TO PROCEED; PROGRESS; COMPLETION
- SECTION 5 TIME OF PERFORMANCE
- SECTION 6 COMPENSATION
- SECTION 7 CHANGES TO SCOPE - BASIC
- SECTION 8 COMPLIANCE WITH LAWS, RULES, REGULATIONS (FEDERAL CHANGES)
- SECTION 9 ENERGY CONSERVATION
- SECTION 10 CLEAN WATER
- SECTION 11 CLEAN AIR
- SECTION 12 RECYCLED PRODUCTS
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- SECTION 14 RESPONSIBILITY OF CONSULTANT
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- SECTION 16 NO OBLIGATION BY THE FEDERAL GOVERNMENT
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- SECTION 18 TERMINATION FOR CONVENIENCE OF BCAG
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- SECTION 20 GOVERNMENT-WIDE DEBAREMENT AND SUSPENSION
- SECTION 21 PRIVACY ACT
- SECTION 22 INTEREST OF OFFICIALS AND CONSULTANT
- SECTION 23 SUBCONTRACTING
- SECTION 24 SUCCESSORS AND ASSIGNS

SECTION 25	INDEPENDENT CONSULTANT
SECTION 26	BREACHES AND DISPUTES
SECTION 27	EQUAL EMPLOYMENT OPPORTUNITY
SECTION 28	DISADVANTAGED BUSINESS ENTERPRISE
SECTION 29	CIVIL RIGHTS- (EEO, TITLE VI, ADA) COMPLIANCE
SECTION 30	PUBLICATIONS
SECTION 31	COPYRIGHTS
SECTION 32	INDEMNIFICATION
SECTION 33	INSURANCE REQUIREMENTS
SECTION 34	OWNERSHIP OF DOCUMENTS
SECTION 35	ACCESS TO RECORDS AND REPORTS
SECTION 36	NOTICES
SECTION 37	JURISDICTION
SECTION 38	INTEGRATION

### EXHIBITS

EXHIBIT A	SCOPE OF WORK
EXHIBIT B	COMPENSATION
EXHIBIT C	CERTIFICATION OF OWNER
EXHIBIT D	CERTIFICATION OF CONSULTANT
EXHIBIT E	SCOPE OF CONSULTING SERVICES – ADDITIONAL
EXHIBIT 10-I, J	STANDARD AGREEMENT FOR SUBCONTRACTOR/DBE PARTICIPATION
ATTACHMENT I	– STANDARD INSURANCE REQUIREMENTS (Professional Services)
Exhibit 10-02	– DBE Utilization
EXHIBIT F	Federal Transit Administration (FTA) Standard Third Party Clauses

**Notes:** *EXHIBIT F - FTA Standard Third Party Clauses are intended to be inclusive, incorporative and supplemental to language contained within this agreement and are noted as such by SECTION as required. Consultant/Contractor/Vendor used interchangeably and mean the same per the context of this agreement.*

## SECTION 2 - SCOPE OF CONSULTING SERVICES - BASIC

CONSULTANT agrees to perform all work necessary to complete in a manner satisfactory to BCAG, those items described in “**Exhibit A, Scope of Work**”, attached hereto and incorporated herein by this reference as if set forth in full.

For the purposes of a general description, the work to accomplish under this AGREEMENT is generally referred to as accomplishing the Unified On-Demand Service Software Project (PROJECT).

CONSULTANT shall submit a detailed progress report to BCAG with each billing invoice describing the progress of the work completed during the billing period. For purpose of the

AGREEMENT, the term CONTRACT and AGREEMENT shall be used interchangeably and mean the same.

### **SECTION 3 - SCOPE OF CONSULTING SERVICES - ADDITIONAL**

It is understood by BCAG and CONSULTANT that it may be necessary, in connection with this project, for CONSULTANT to perform or secure the performance of related services other than those set forth in "**Exhibit A - Scope of Work**". In each such instance, CONSULTANT shall advise BCAG, in advance and in writing, of the need for such additional services, their cost and the estimated time required to perform them (if appropriate). CONSULTANT shall not proceed to perform any such additional service until BCAG has determined that such service is beyond the scope of the basic services to be provided by CONSULTANT, is required, and has given its written authorization to perform or obtain it. Each additional service so authorized shall constitute an amendment to this AGREEMENT, shall be identified and sequentially numbered as "Additional Consulting Service No. 1" and so forth, shall be subject to all of the provisions of this AGREEMENT, and shall be attached as **Exhibit "E"** entitled "**SCOPE OF CONSULTING SERVICES - ADDITIONAL**".

### **SECTION 4 - NOTICE TO PROCEED; PROGRESS; COMPLETION**

Upon execution of this AGREEMENT by the parties, BCAG shall give CONSULTANT notice to proceed with the work by issuance of signed letter or equivalent. Such notice may authorize CONSULTANT to render all of the services contemplated herein, or such portions or phases as may be mutually agreed upon. In the latter event, BCAG shall, in its sole discretion, issue subsequent notices from time to time regarding further portions or phases of the work. Upon receipt of such notices, CONSULTANT shall diligently proceed with the work authorized and complete it within the agreed time period.

### **SECTION 5 - TIME OF PERFORMANCE**

CONSULTANT shall commence work upon receipt of Notice to Proceed. The various items involved in the Project shall be completed as indicated in "**Exhibit A- Scope of Work**". CONSULTANT shall complete the performance of its obligations under this AGREEMENT within the specified time period, unless an extension of time is granted in writing by BCAG, which said extension, if any, shall be granted only for good cause as determined at the sole discretion of BCAG.

### **SECTION 6 - COMPENSATION**

For services performed pursuant to this AGREEMENT, BCAG agrees to pay CONSULTANT in accordance with the work scope shown in "**Exhibit A- Scope of Work**". All payment will be on the basis of the Estimated Budget as shown in "**Exhibit B - Compensation**" for the completion of this project. Total payments shall not exceed **\$XXX,XXX** as shown in the estimated budget in "**Exhibit B – Compensation**", without prior notice by the CONSULTANT and approval in writing by BCAG. Upon clarification of scope, compensation may be adjusted as approved in writing by BCAG. The source of funding for this agreement is the Corona Response and Relief Supplemental Appropriations Act (CRRSA).

A. Other Direct Costs

The CONSULTANT agrees that the Contract Cost Principles and Procedures, CFR 48, Federal Acquisition Regulations System, Chapter 1, Part 31, shall be used to determine the allowability of individual items of cost. The CONSULTANT also agrees to comply with **2 CFR Part 200**, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments. Any costs for which payment has been made to CONSULTANT that are determined by subsequent audit to be unallowable under CFR 48, Federal Acquisition Regulations System, Chapter 1, Part 31, are subject to repayment by CONSULTANT to BCAG.

Other direct costs which may be allowed for compensation are included in **“Exhibit B – Compensation”**

B. Monthly Compensation

CONSULTANT shall be reimbursed monthly no later than thirty (30) days following submission of a written, acceptable billing to BCAG. Said billing shall indicate the number of hours worked by each category of CONSULTANT's personnel, and the other direct and indirect costs incurred to the date of such billing, if any, and the fixed fee determined proportionately based on the percentage of work completed. BCAG will pay, to CONSULTANT 100% of submitted monthly invoices for work completed under **“Exhibit A - Scope of Work”** until 90% of **“Exhibits B - Compensation”**, including any compensation for all agreed upon amendments, has been reached. At this time, the remaining 10% of **“Exhibits B – Compensation”**, including compensation for all agreed upon amendments, will be retained until the completion of all work as defined in **“Exhibit A - Scope of Work”**.

C. Final Payment

CONSULTANT shall, after the completion of all work under the AGREEMENT, submit a final billing for work done thereunder, and BCAG shall pay the entire sum up to the Cost Ceiling stated in **“Exhibit B – Compensation”**, as found due after deducting therefrom all previous payments. All prior payments shall be subject to correction in the final payment. The final payment shall not be due and payable until the expiration of thirty (30) days following submission, by CONSULTANT, of a written acceptable final billing to BCAG or as otherwise determined by BCAG. It is mutually agreed between the parties to this AGREEMENT that no payments made under the AGREEMENT, except the final payment, shall be conclusive evidence of the performance of the AGREEMENT, either wholly or in part, against any claim of the CONSULTANT, and no payment shall be construed to be in acceptance of any defective work or improper materials.

## **SECTION 7 - CHANGES TO SCOPE - BASIC**

BCAG may at any time, and upon a minimum of ten (10) days' written notice, modify the scope of basic services to be provided under this AGREEMENT. CONSULTANT shall, upon receipt of said notice, determine the impact on both time and compensation of such change in scope and notify BCAG in writing. Upon AGREEMENT between BCAG and CONSULTANT as to the extent of said impacts on time and compensation, an amendment to this AGREEMENT shall be prepared describing such changes. Execution of the

amendment by BCAG and CONSULTANT shall constitute the CONSULTANT's notice to proceed with the changed scope, including all adjustments in compensation.

## **SECTION 8 - COMPLIANCE WITH LAWS, RULES, REGULATIONS - FEDERAL CHANGES**

All services performed by CONSULTANT pursuant to this AGREEMENT shall be performed in accordance and full compliance with all applicable Federal, State or City/Local statutes, and any rules or regulations promulgated thereunder.

CONSULTANT shall at all times comply with all applicable regulations, policies, procedures and directives, including without limitation those listed directly or by reference, as they may be amended or promulgated from time to time during the term of this contract to include Intelligent Transportation Systems (ITS) National Architecture and any and all restrictions and criteria set forth on certain Telecom and video surveillance services or equipment. CONSULTANT's failure to so comply shall constitute a material breach of this contract.

### **Federal Changes, Amendments to State, and Local Laws, Regulations, and Directives**

The terms of the most recent amendments to any federal, State, or local laws, regulations, FTA directives, and amendments to the grant or cooperative contract that may be subsequently adopted, are applicable to the PROJECT to the maximum extent feasible, unless the California Department of Transportation provides otherwise in writing. See Exhibit F for supplemental requirements.

## **SECTION 9 – ENERGY CONSERVATION**

The CONTRACTOR agrees to comply with the mandatory energy efficiency standards and policies within the applicable California Department of Transportation energy conservation plans issued in compliance with the Energy Policy and Conservation Act, 42 U.S.C. §§ Section 6321 et seq. See Exhibit F for supplemental requirements.

## **SECTION 10 – CLEAN WATER**

- A. CONSULTANT agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251 et seq. CONSULTANT agrees to report each violation to BCAG and understands and agrees that BCAG will, in turn, report each violation as required to assure notification to the appropriate EPA Regional Office.
- B. CONSULTANT also agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance.

## **SECTION 11 – CLEAN AIR**

CONSULTANT agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. CONSULTANT agrees to report each violation to the Purchaser and understands and agrees that the BCAG will, in turn, report each violation as required to assure notification to the appropriate EPA Regional Office. CONSULTANT also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance. See Exhibit F for supplemental requirements.

## **SECTION 12 – RECYCLED PRODUCTS**

**Recovered Materials** - The CONSULTANT agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. § 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247 as can be accommodated by the agreed upon in **“Exhibit A - Scope of Work”**. See Exhibit F for supplemental requirements.

## **SECTION 13 - EXHIBITS INCORPORATED**

All Exhibits and Incorporation of Federal Transit Administration (FTA) Terms - The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The CONTRACTOR shall not perform any act, fail to perform any act, or refuse to comply with any California Department of Transportation requests which would cause the California Department of Transportation to be in violation of the FTA terms and conditions. The CONTRACTOR shall not perform any act, fail to perform any act, or refuse to comply with any AWARDING AGENCY requests which would cause the AWARDING AGENCY to be in violation of the FTA terms and conditions. See Exhibit F for supplemental requirements.

## **SECTION 14 - RESPONSIBILITY OF CONSULTANT**

By executing this AGREEMENT, CONSULTANT warrants to BCAG that CONSULTANT possesses, or will arrange to secure from others, all of the necessary professional consulting capabilities, experience, resources and facilities to provide to BCAG the services contemplated under this AGREEMENT. CONSULTANT further warrants that CONSULTANT will follow the best current, generally accepted practice of the consulting profession to make findings, render opinions, prepare factual presentations, and provide professional advice and recommendations regarding the project for which services are rendered under this AGREEMENT. See Exhibit F for supplemental requirements.

### **Program Fraud and False or Fraudulent Statements and Related Acts**

A. CONSULTANT acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, CONSULTANT certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract for which this contract work is being performed. In addition to other penalties that may be applicable, CONSULTANT further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on CONSULTANT to the extent the Federal Government deems appropriate.

- B. CONSULTANT also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 29 U.S.C. § 5323(l)(1) on CONSULTANT, to the extent the Federal Government deems appropriate.
- C. CONSULTANT agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA if applicable. It is further agreed that the clauses shall not be modified, except to identify the sub-CONSULTANT who will be subject to the provisions.

Prohibition on certain telecommunications and video surveillance services or equipment.

AWARDING AGENCY is prohibited from obligating or expending loan or grant funds to:

- A. Procure or obtain;
- B. Extend or renew a contract to procure or obtain; or
- C. Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
1. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
  2. Telecommunications or video surveillance services provided by such entities or using such equipment.
  3. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.
- D. In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.
- E. CONTRACTOR represents and warrants that it has performed a due diligence review of



its supply chain and that no such “covered telecommunications equipment or services” shall be provided to the AWARDING AGENCY that would cause the AWARDING AGENCY to be in violation of the prohibition contained in the Act.

#### Intelligent Transportation Systems (ITS) National Architecture

To the extent applicable, the CONTRACTOR agrees to conform to the National Intelligent Transportation System (ITS) Architecture and Standards as required by 23 U.S.C. § 517(d), 23 U.S.C. § 512 notes, and 23 CFR Parts 655 and 940, and follow the provisions of the FTA Notice, “FTA National ITS Architecture Policy on Transit projects,” 66 Fed. Reg. 1455 et seq., January 8, 2001, and any other implementing directives the FTA may issue at a later date, except to the extent the FTA determines otherwise in writing.

#### **SECTION 15 - RESPONSIBILITY OF BCAG**

To the extent appropriate to the project contemplated by this AGREEMENT, BCAG shall:

- A. Assist CONSULTANT by placing at CONSULTANT’s disposal all available information pertinent to the project, including previous reports and any other relevant data.
- B. Guarantee access to and make all provisions for CONSULTANT to enter upon public and private property as required for CONSULTANT to perform CONSULTANT’s services.
- C. Examine all studies, reports, proposals and other documents presented by CONSULTANT, and render verbally or in writing as may be appropriate, decisions pertaining thereto within a reasonable time so as not to delay the services of CONSULTANT.
- D. Designate in writing a person to act as BCAG's representative with respect to all work to be performed under this AGREEMENT. Such person shall have complete authority to transmit instructions, receive information, interpret and define BCAG's policies and decisions with respect to materials, equipment, elements and systems pertinent to CONSULTANT's services.
- E. Furnish approvals and permits from all governmental authorities having jurisdiction over the PROJECT and such approvals and consents from others as may be necessary for completion of the PROJECT.

#### **SECTION 16 – NO OBLIGATION BY THE FEDERAL GOVERNMENT**

- A. No Federal Government Obligation to Third Parties. BCAG and CONSULTANT acknowledge and agree that, absent of the Federal Government’s express written consent, the Federal Government shall not be subject to any obligations or liabilities to any CONSULTANT, any third-party CONSULTANT, or any other person not a party to the Grant Agreement in connection with the performance of the PROJECT. Notwithstanding any concurrence provided by the Federal Government in or approval of any solicitation, or third-party agreement, the Federal Government continues to have no

obligation or liabilities to any party, including the CONSULTANT or third-party CONSULTANT.

- B. Third-Party Contracts and Sub-agreements Affected. To the extent applicable, federal requirements extend to third-party CONSULTANTs and their contracts at every tier, and to the sub-agreements of third-party CONSULTANTs and the sub-agreements at every tier. Accordingly, the CONSULTANT agrees to include, and to require its third-party CONSULTANTs to include appropriate clauses in each third-party contract and each sub-agreement financed in whole or in part with financial assistance provided by the FTA.
- C. No Relationship between the California Department of Transportation and Third-Party CONSULTANTs. Nothing contained in this contract or otherwise, shall create any contractual relationship, obligation or liability between the California Department of Transportation and any third-party CONSULTANTs, and no third-party contract shall relieve the CONSULTANT of his responsibilities and obligations hereunder. The CONSULTANT agrees to be fully responsible to the BCAG for the acts and omissions of its third-party CONSULTANTs and of persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the CONSULTANT. The CONSULTANT'S obligation to pay its third-party CONSULTANTs is an independent obligation from the BCAG'S obligation to make payments to the CONSULTANT. As a result, the California Department of Transportation shall have no obligation to pay or to enforce the payment of any moneys to any third-party CONSULTANT.
- D. Obligations on Behalf of the California Department of Transportation. The CONSULTANT shall have no authority to contract for or on behalf of or incur obligations on behalf of the California Department of Transportation.
- E. BCAG Approval of Sub-agreements. The BCAG shall approve in writing all proposed Sub-agreements, Memorandums of Understanding (MOU), or similar documents relating to the performance of the Contract prior to implementation. The CONSULTANT agrees that it will not enter into any Sub-agreements unless the same are approved in writing by the BCAG. Any proposed amendments or modifications to such Sub-agreements must be approved by the BCAG prior to implementation.
- F. See Exhibit F for supplemental requirements.

#### **SECTION 17 - TERM**

The term of this AGREEMENT shall commence upon BCAG's issuance to CONSULTANT of a Notice to Proceed for all or a portion of the work as hereinabove provided and shall end upon BCAG's acceptance and payment for such portion of the work as was authorized by such notice. ***The term of the contract shall be in effect from the date of contract execution through MM/DD/YYYY.***

## **SECTION 18 - TERMINATION FOR CONVENIENCE OF BCAG**

BCAG may terminate this AGREEMENT, in whole or in part, at any time by written notice to the CONSULTANT when it is in BCAG's best interest. The CONSULTANT shall be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The CONSULTANT shall promptly submit its termination claim to BCAG to be paid the CONSULTANT. If the CONSULTANT has any property in its possession belonging to BCAG, the CONSULTANT will account for the same, and dispose of it in the manner BCAG directs. If this contract is terminated, BCAG shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination. See Exhibit F for supplemental requirements.

## **SECTION 19 - TERMINATION OF AGREEMENT FOR CAUSE**

If CONSULTANT fails to perform in the manner called for in the contract, or if the CONSULTANT fails to comply with any other provisions of the contract, BCAG may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which CONSULTANT is in default. CONSULTANT will only be paid the contract price for services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by BCAG that CONSULTANT had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of CONSULTANT, BCAG, after setting up a new delivery of performance schedule, may allow CONSULTANT to continue work, or treat the termination as a termination for convenience.

- A. BCAG may, by written notice to CONSULTANT, terminate the whole or any part of this AGREEMENT in any one of the following circumstances:
1. If CONSULTANT fails to perform the services called for by this AGREEMENT within the time(s) specified herein, or any extension thereof; or
  2. If CONSULTANT fails to perform the services called for by this AGREEMENT or so fails to make progress as to endanger performance of this AGREEMENT in accordance with its terms, and in either of these two circumstances does not correct such failure within a period of ten (10) days (or such longer period as BCAG may authorize in writing) after receipt of notice from BCAG specifying such failure.
- B. In the event BCAG terminates this AGREEMENT in whole or in part as provided in Paragraph "A" above, BCAG may procure, upon such terms and in such manner as it may determine appropriate, services similar to those terminated.
- C. Except with respect to defaults of sub-contractors/sub-CONSULTANTS, CONSULTANT shall not be liable for any excess costs if the failure to perform arises out of causes beyond the control and without the fault or negligence of CONSULTANT. Such causes include, but are not limited to, acts of God or of the public enemy, acts of government, in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine

restrictions, strikes, and unusually severe weather. In the event the failure to perform is caused by the default of a sub-contractor/sub-CONSULTANT, CONSULTANT shall not be liable for failure to perform, unless the services to be furnished by the sub-contractor were obtainable from other sources in sufficient time and within budgeted resources to permit CONSULTANT to meet the required delivery schedule or other performance requirements.

- D. Should the AGREEMENT be terminated as provided in Section 18 or in this Section 19, CONSULTANT shall provide BCAG with all finished and unfinished documents, data, studies, services, drawings, maps, models, photographs, reports, compact disks (CDs), etc., prepared by CONSULTANT pursuant to this AGREEMENT. Upon termination as provided in Paragraph "A" above, CONSULTANT shall be paid the value of the work performed, as determined by BCAG, less payments of compensation previously made. Payments previously made by BCAG to CONSULTANT shall be credited to the amount payable to CONSULTANT for allowable costs as provided herein, except, however, CONSULTANT shall be entitled to a proportionate fixed fee, if any, which in the opinion of BCAG, it has legitimately earned and was not related to the cause for which this AGREEMENT was terminated.
- E. If after notice of termination of this AGREEMENT, as provided for in this Section, it is determined for any reason that CONSULTANT was not in default under the provisions of this Section or that the default was excusable under the provisions of this Section, then the rights and obligations of the parties shall be the same as if the AGREEMENT had been terminated for the convenience of BCAG.
- F. **Opportunity to Cure:** BCAG in its sole discretion may, in the case of a termination for breach or default, allow CONSULTANT ten (10) days in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions.

If CONSULTANT fails to remedy to BCAG's satisfaction the breach or default of any of the terms, covenants, or conditions of this AGREEMENT within ten (10) days after receipt by CONSULTANT of written notice from BCAG setting forth the nature of said breach or default, BCAG shall have the right to terminate the AGREEMENT without any further obligation to CONSULTANT. Any such termination for default shall not in any way operate to preclude BCAG from also pursuing all available remedies against CONSULTANT and its sureties for said breach or default.

- G. **Waiver of Remedies for any Breach:** In the event that BCAG elects to waive its remedies for any breach by CONSULTANT of any covenant, term or condition of this AGREEMENT, such waiver by BCAG shall not limit BCAG's remedies for any succeeding breach of that or of any other term, covenant, or condition of this AGREEMENT.
- H. **Mutual Termination:** The PROJECT may also be terminated if the BCAG and the CONSULTANT agree that its continuation would not produce beneficial results

commensurate with the further expenditure of funds or if there are inadequate funds to operate the PROJECT equipment or otherwise complete the PROJECT.

- I. See Exhibit F for supplemental requirements.

## **SECTION 20 – GOVERNMENT-WIDE DEBARMENT AND SUSPENSION**

### Debarment and Suspension

- A. The CONSULTANT agrees to comply with the requirements of Executive Order Nos. 12549 and 12689, “Debarment and Suspension,” 31 U.S.C. Section 6101 note; and U.S. DEPARTMENT OF TRANSPORTATION regulations on Debarment and Suspension and 48 CFR subpart 9.4.
- B. Unless otherwise permitted by the California Department of Transportation, the CONSULTANT agrees to refrain from awarding any third-party contract of any amount to or entering into any sub-contract of any amount with a party included in the “U.S. General Services Administration’s (U.S. GSA) List of Parties Excluded from Federal procurement and Non-procurement Program,” implementing Executive Order Nos. 12549 and 12689, “Debarment and Suspension” and 48 CFR subpart 9.4. The list also include the names of parties debarred, suspended, or otherwise excluded by agencies, and CONSULTANTs declared ineligible for contract award under statutory or regulatory authority other than Executive Order Nos. 12546 and 12689.
- C. Before entering into any sub-agreements with any sub-CONSULTANT, the CONSULTANT agrees to obtain a debarment and suspension certification from each prospective recipient containing information about the debarment and suspension status and other specific information of that BCAG and its “principals,” as defined at 48 CFR subpart 9.4.
- D. Before entering into any third-party contract exceeding \$25,000.00, the CONSULTANT agrees to obtain a debarment and suspension certification from each third-party CONSULTANT containing information about the debarment and suspension status of that third-party CONSULTANT and its “principals,” as defined at 2 CFR § 180.995. The CONSULTANT also agrees to require each third-party CONSULTANT to refrain from awarding any sub-agreements of any amount, at any tier, to a debarred or suspended sub-CONSULTANT, and to obtain a similar certification for any third-party sub-CONSULTANT, at any tier, seeking a contract exceeding \$25,000.00.

### Legal Matters Concerning a Covered Transaction

- A. If a current or prospective legal matter that may affect the Federal Government or STATE emerges, the BCAG must promptly notify the STATE. The BCAG must include a similar notification requirement in its Third-Party Agreements and must require each CONSULTANT to include an equivalent provision in its sub-agreements at every tier, for any agreement that is a “covered transaction” according to 2 C.F.R. §§ 180.220 and 1200.220.

1. The types of legal matters that require notification include, but are not limited to, a major dispute, breach, default, litigation, or naming the Federal Government or STATE as a party to litigation or a legal disagreement in any forum for any reason.
2. Matters that may affect the Federal Government or STATE include, but are not limited to, the Federal or STATE Government's interests in the Award, the accompanying Underlying Agreement, and any Amendments thereto, or the Federal or STATE Government's administration or enforcement of federal laws, regulations, and requirements.
3. The BCAG must promptly notify the STATE, if the BCAG has knowledge of potential fraud, waste, or abuse occurring on a Project receiving assistance from FTA. The notification provision applies if a person has or may have submitted a false claim under the False Claims Act, 31 U.S.C. § 3729 et seq., or has or may have committed a criminal or civil violation of law pertaining to such matters as fraud, conflict of interest, bribery, gratuity, or similar misconduct involving FY2020 CONSULTANTS Manual – Procurement 9-49 federal assistance. This responsibility occurs whether the Project is subject to this Agreement or another agreement between the BCAG and STATE, or an agreement involving a principal, officer, employee, agent, or CONSULTANT of the BCAG. It also applies to sub-CONSULTANTS at any tier. Knowledge, as used in this paragraph, includes, but is not limited to, knowledge of a criminal or civil investigation by a Federal, state, or local law enforcement or other investigative agency, a criminal indictment or civil complaint, or probable cause that could support a criminal indictment, or any other credible information in the possession of the Recipient. In this paragraph, "promptly" means to refer information without delay and without change. This notification provision applies to all divisions of the BCAG, including divisions tasked with law enforcement or investigatory functions.

See Exhibit F for supplemental requirements.

## **SECTION 21 – PRIVACY ACT**

**Contracts Involving Federal Privacy Act Requirements (if applicable)** - The following requirements apply to CONSULTANT and its employees that administer any system of records on behalf of the Federal Government under any AGREEMENT:

- A. CONSULTANT agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, CONSULTANT agrees to obtain the express consent of the Federal Government before CONSULTANT or its employees operate a system of records on behalf of the Federal Government. CONSULTANT understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying AGREEMENT.
- B. CONSULTANT also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by FTA.

See Exhibit F for supplemental requirements.

**SECTION 22 - INTEREST OF OFFICIALS AND CONSULTANT**

- A. No member of or delegate to the Congress of the United States of America or any Resident Commissioner shall be admitted to any share or part hereof or to any benefits to arise here from.
  
- B. CONSULTANT hereby covenants that CONSULTANT has, at the time of the execution of this AGREEMENT, no interest, and that he or she shall not acquire any interest in the future, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed pursuant to this AGREEMENT. CONSULTANT further covenants that in the performance of this work, no person having any such interest shall be employed.

Lobbying

- 1. The CONTRACTOR agrees that it will not use federal assistance funds to support lobbying. In accordance with 31 U.S.C. § 1352 and U.S. Department of Transportation Regulations, "New Restrictions on Lobbying" (49 CFR Part 20), if the bid is for an award for \$100,000.00 or more, the AWARDDING AGENCY will not make any federal assistance available to the CONTRACTOR until the AWARDDING AGENCY has received the CONTRACTOR'S certification that the CONTRACTOR has not and will not use federal appropriated funds to pay any person or organization to influence or attempt to influence an officer or employee of any federal agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any federal grant, cooperative agreement, or any other federal award from which funding for the PROJECT is originally derived, consistent with 31 U.S.C. § 1352.
  
- 2. If applicable, if any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an office or employee of any federal agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress, in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with the form instructions.
  
- 3. The CONTRACTOR shall require that the language of the above two clauses be included in the award documents for all sub-awards at all tiers (including sub-agreements, sub-grants, and contracts under grants, loans, and cooperative agreements) which exceed \$100,000.00 and that all awarding agencies shall certify and disclose accordingly.

This Contract is a material representation of facts upon which reliance was placed when the Contract was made or entered into. These provisions are a prerequisite for making or entering into a Contract imposed by Section 1352, Title 31, U.S. Code. Any person who fails to comply with these provisions shall be subject to a

civil penalty of not less than \$10,000.00 and not more than \$100,000.00 for each failure.

See Exhibit F for supplemental requirements.

### **SECTION 23 - SUBCONTRACTING**

- A. CONSULTANT shall not sub-contract or otherwise assign any portion of the work to be performed under this AGREEMENT without the prior written approval of BCAG.
- B. Nothing contained in this AGREEMENT or otherwise shall create any contractual relation between BCAG and any sub-CONSULTANTS, and no sub-contract shall relieve the CONSULTANT of CONSULTANT's responsibilities and obligations hereunder. The CONSULTANT agrees to be fully responsible to BCAG for the acts and omissions of its sub-CONSULTANTS and of the persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the CONSULTANT. The CONSULTANT's obligation to pay its sub-CONSULTANTS is an independent obligation for BCAG's obligation to make payments to the CONSULTANT.
- C. CONSULTANT shall pay its sub-CONSULTANTS within thirty (30) calendar days from receipt of each payment made to the CONSULTANT by BCAG.
- D. Any substitution of sub-CONSULTANTS must be approved in writing by BCAG's Contract Manager in advance of assigning work to a substitute sub-CONSULTANT.

### **SECTION 24 - SUCCESSORS AND ASSIGNS**

This AGREEMENT shall be binding upon and shall insure to the benefit of any successors to or assigns of the parties. CONSULTANT shall not assign, delegate or transfer the rights and duties under this AGREEMENT or any part thereof without the prior written consent of BCAG.

### **SECTION 25 - INDEPENDENT CONTRACTOR**

BCAG and CONSULTANT agree that CONSULTANT is an independent Contractor. CONSULTANT shall be solely responsible for the conduct and control of the work performed under this AGREEMENT. CONSULTANT shall be free to render consulting services to others during the term of this AGREEMENT, so long as such activities do not interfere with or diminish CONSULTANT's ability to fulfill the obligations established herein to BCAG.

### **SECTION 26 – BREACHES AND DISPUTES**

**Disputes** - Disputes arising in the performance of this AGREEMENT which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of BCAG's Executive Director. This decision shall be final and conclusive unless within ten (10) days from the date of receipt of its copy, CONSULTANT mails or otherwise furnishes a written appeal to the Executive Director. In connection with any such appeal, CONSULTANT shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the Executive Director shall be binding upon



CONSULTANT and CONSULTANT shall abide by the decision.

**Performance During Dispute** - Unless otherwise directed by BCAG, CONSULTANT shall continue performance under this AGREEMENT while matters in dispute are being resolved.

**Claims for Damages** - Should either party to the AGREEMENT suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

**Remedies** - Unless this AGREEMENT provides otherwise, all claims, counterclaims, disputes and other matters in question between the BCAG and CONSULTANT arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which BCAG is located.

**Rights and Remedies** - The duties and obligations imposed by the AGREEMENT Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by BCAG or CONSULTANT shall constitute a waiver of any right or duty afforded any of them under the AGREEMENT, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

#### **SECTION 27 - EQUAL EMPLOYMENT OPPORTUNITY**

In connection with the execution of this AGREEMENT, CONSULTANT shall not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin. CONSULTANT shall take affirmative action to ensure that applicants are employed, and the employees are treated during their employment, without regard to their race, religion, color, sex or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. CONSULTANT shall comply with Executive Order 11246, entitled "Equal Employment Opportunity" as amended by Executive Order 11375, and as supplemented in Department of Labor Regulations (41 CFR Part 60-1), the California Fair Employment and Housing Act, and any other applicable Federal and State laws and regulations relating to equal employment opportunity. See Exhibit F for supplemental requirements.

#### **SECTION 28 - DISADVANTAGED BUSINESS ENTERPRISE**

CONSULTANT may, at its discretion, take the following measures to facilitate participation by disadvantaged business enterprises (DBE) in the Project:

- A. This AGREEMENT is subject to the requirements of Title 49, Part 26 of the Code of Federal Regulations entitled, "Participation by Disadvantaged Business Enterprises in

the Department of Transportation Financial Assistance Programs". The national goal for participation of DBE is 10%. DBE participation on this AGREEMENT is stated at 1.35%

- B. DBE and other small businesses (SB), as defined in Title 49 CFR, Part 26 are encouraged to participate in the performance of agreements financed in whole or in part with federal funds. The CONSULTANT, sub-recipient or sub-CONSULTANT shall not discriminate on the basis of race, color, religion, national origin, or sex in the performance of this AGREEMENT. The CONSULTANT shall carry out applicable requirements of 49 CFR, Part 26 in the award and administration of US DOT-assisted agreements. Failure by the CONSULTANT to carry out these requirements is a material breach of this AGREEMENT, which may result in the termination of this AGREEMENT or such other remedy as the recipient deems appropriate.
- C. Any subcontract entered into as a result of this AGREEMENT shall contain all of the provisions of this section.
- D. A DBE performs a commercially useful function when it is responsible for execution of the work of the AGREEMENT and is carrying out its responsibilities by actually performing, managing and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible with respect to materials and supplies used on the AGREEMENT, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether the DBE is performing a commercially useful function, evaluate the amount of work subcontracted, industry practices; whether the amount the firm is paid under the AGREEMENT is commensurate with the work it is actually performing, and other relevant factors.
- E. A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, AGREEMENT, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, examine similar transactions, particularly those in which DBEs do not participate.
- F. If a DBE does not perform or exercise responsibility for at least thirty percent (30%) of the total cost of its AGREEMENT with its own work force, or the DBE subcontracts a greater portion of the work of the AGREEMENT than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that it is not performing a commercially useful function.
- G. The successful bidder/offeror will be required to report its DBE participation obtained through race-neutral means throughout the period of performance.
- J. CONSULTANT must promptly notify BCAG, whenever a DBE subcontractor performing work related to this AGREEMENT is terminated or fails to complete its work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. CONSULTANT may not terminate any DBE subcontractor and

perform that work through its own forces or those of an affiliate without prior written consent of BCAG.

Exhibit 10-01 submitted with proposal shows a commitment of \$~~XXX~~ in subconsultant work to be counted as DBE utilization. Modification to actual utilization will be as approved in writing by BCAG and included as Exhibit 10-02. See Exhibit F for supplemental requirements.

## **SECTION 29 - CIVIL RIGHTS- (EEO, TITLE VI, ADA) COMPLIANCE**

During the performance of this AGREEMENT, the CONTRACTOR its assignees and successors in interest, agree to comply with all federal statutes and regulations applicable to grantee subrecipients under the Federal Transit Act, including, but not limited to the following requirements;

Equal Employment Opportunity - The following equal employment opportunity requirements apply to the underlying AGREEMENT:

- A. **Race, Color, Religion, National Origin, Sex.** In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000e *et seq.*, and federal transit law at 49 U.S.C. § 5332, the CONSULTANT Agrees to comply with all applicable equal employment opportunity (EEO) requirements of the U.S. Department of Labor (U.S. DOL) regulations, "Office of Labor," 41 CFR Parts 60 *et seq.*, (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. Section 2000e note), and with any applicable federal statutes, executive orders, regulations, and federal policies that may in the future affect construction activities undertaken in the course of the PROJECT. The CONSULTANT agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation; and selection from training, including apprenticeship. In addition, the CONSULTANT agrees to comply with any implementing requirements FTA or the California Department of Transportation any issue.
- B. **Nondiscrimination.** The CONSULTANT, with regard to the work performed by it during the contract term shall act in accordance with Title VI. Specifically, the CONSULTANT shall not discriminate on the basis of race, color, national origin, religion, sex, age, or disability in the selection and retention of sub-CONSULTANTS, including procurement of materials and leases of equipment. The CONSULTANT shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the U.S. Department of Transportation's Regulations, including employment practices when the Contract covers a program whose goal is employment. Further, in accordance with Section 102 of the Americans with Disabilities Act (ADA), as amended, 42 U.S.C. Section 12112, the CONSULTANT agrees that it will comply with the requirements of

U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 CFR Part 1630, pertaining to employment of persons with disabilities. In addition, the CONSULTANT agrees to comply with any implementing requirements FTA or the California Department of Transportation may issue.

- C. **Age.** In accordance with the Age Discrimination in Employment Act, 29 U.S.C. §§ 621-634, U.S. Equal Employment Opportunity Commission (U.S. EEOC) regulations, "Age Discrimination in Employment Act," 29 C.F.R. part 1625, the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6101 et seq., U.S. Health and Human Services regulations, "Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance," 45 C.F.R. part 90, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
- D. **Disabilities.** In accordance with section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12101 et seq., the Architectural Barriers Act of 1968, as amended, 42 U.S.C. § A-27 4151 et seq., and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against individuals on the basis of disability. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
- E. **Solicitations for Subconsultants Including Procurements of Materials and Equipment.** In all solicitations, either by competitive bidding or negotiation by the CONSULTANT for work performed under a sub-agreement, including procurements of materials or leases of equipment, each potential subconsultant or supplier shall be notified by the CONSULTANT of the subconsultant's obligations under this Contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
- F. **Information and Reports.** The CONSULTANT shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the BCAG or the California Department of Transportation to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a CONSULTANT is in the exclusive possession of another who fails or refuses to furnish the information, the CONSULTANT shall certify to the BCAG of the California Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.
- G. **Sanctions for Noncompliance.** In the event of the CONSULTANT'S noncompliance with the nondiscrimination provisions of the Contract, the BCAG shall:
1. Withholding of payment to the CONSULTANT under the Contract until the CONSULTANT complies, and/or

2. Cancellation, termination, or suspension of the Contract, in whole or in part.

H. **Incorporation of Provisions.** The CONSULTANT shall include the provisions of these paragraphs A through F in every sub-agreement, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The CONSULTANT will take such action with respect to any sub-CONSULTANT or procurement as the BCAG or the California Department of Transportation may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event a CONSULTANT becomes involved in, or is threatened with, litigation with a sub-CONSULTANT or supplier as a result of such directions, the CONSULTANT may request the BCAG to enter into such litigation to protect the interest of the BCAG, and, in addition, the CONSULTANT may request the California Department of Transportation to enter into such litigation to protect the interests of the California Department of Transportation.

I. **Section 504 and Americans with Disabilities Act Program Requirements.**

The CONSULTANT will comply with 49 CFR Parts 27, 37, and 38, implementing and Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. Section 794, as amended.

J. CONSULTANT also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

### **SECTION 30 - PUBLICATION**

A. Any and all reports published by CONSULTANT shall acknowledge that it was prepared in cooperation with BCAG.

B. Articles, reports, or works reporting on the work provided for herein or on portions thereof which are published by CONSULTANT shall contain in the foreword, preface, or footnote the following statement:

"The contents of this report reflect the view of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views of BCAG. This report does not constitute a standard, specification, or regulation."

### **SECTION 31 - COPYRIGHTS**

CONSULTANT shall be free to copyright material developed under this AGREEMENT with the provision that BCAG reserve a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use the material for government or public purposes.

### **SECTION 32 - INDEMNIFICATION**

CONSULTANT agrees to indemnify and hold BCAG, its officers, boards and commissions, and members thereof, its employees and agents harmless of and free from any and all

liabilities, including all claims, losses, expenses, fees, including attorney fees, costs of defense, and judgments, that may be asserted against BCAG that result from the negligent or intentional acts, errors or omissions of CONSULTANT, CONSULTANT's employees, and CONSULTANT's agents. BCAG agrees to indemnify and hold the CONSULTANT harmless from any damage, liability or costs ,including reasonable attorneys' fees, costs of defense and judgments, caused by BCAG's negligent or intentional acts, errors or omissions.

### **SECTION 33 - INSURANCE REQUIREMENTS**

CONSULTANT shall procure and maintain for the duration of the AGREEMENT insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of work hereunder by the CONSULTANT, CONSULTANT's agents, representatives, or employees. At the very least, CONSULTANT shall maintain the insurance coverage, limits of coverage and other requirements as described in *Attachment I (Professional Services)* attached to and made a part of this AGREEMENT.

### **SECTION 34 - OWNERSHIP OF DOCUMENTS**

All documents in any format, including any electronic and/or digital format, methodological explanations, computer programs, drawings, designs and reports generated by this AGREEMENT shall belong to and become the property of BCAG in accordance with accepted standards relating to public work contracts.

### **SECTION 35 - ACCESS TO RECORDS AND REPORTS**

#### Access to Records

The BCAG, the California Department of Transportation, the State Auditor General, and any duly authorized representative of the Federal government shall have access to any books, records, and documents of the CONSULTANT and its sub-CONSULTANTS that are pertinent to this AGREEMENT of audits, examinations, excerpts, and transactions, and copies thereof shall be furnished if requested. The CONSULTANT shall include a clause to this effect in every sub-agreement entered into relative to the PROJECT.

#### Record Keeping

The CONSULTANT and all sub-CONSULTANTS shall maintain all books, documents, papers, accounting records, and other evidence pertaining to the performance of this Contract. All parties shall make such materials available at their respective offices at all reasonable times during the performance and for three (3) years from the date of final payment under this Contract and all sub-agreements.

#### Accounting Records

The CONSULTANT shall establish and maintain separate accounting records and reporting procedures specified for the fiscal activities of the PROJECT. The CONSULTANT's accounting system shall conform to generally accepted accounting principles (GAAP) and uniform standards that may be established by California Department of Transportation. All records shall provide a breakdown of total costs charged to the PROJECT including properly executed payrolls, time records, invoices, and vouchers.

See Exhibit F for supplemental requirements.

### **SECTION 36 - NOTICES**

Any notices required to be given pursuant to this AGREEMENT shall be deemed to have been given by their deposit, postage prepaid, in the United States Postal Service, addressed to the parties as follows:

- A. To BCAG:                   BCAG Contact  
                                      Butte County Association of Governments  
                                      326 Huss Drive, Suite 150  
                                      Chico, CA 95928
- B. To CONSULTANT: Name, Title  
                                      Address  
                                      Address  
                                      City, State, Zip

Nothing hereinabove shall prevent either BCAG or CONSULTANT from personally delivering any such notices to the other.

### **SECTION 37 – JURISDICTION**

Except as otherwise specifically provided, this AGREEMENT shall be administered and interpreted under the laws of the State of California. Jurisdiction of litigation arising from this AGREEMENT shall be in that State, with venue in Butte County, California. If any part of this AGREEMENT is found to be in conflict with applicable laws, such part shall be inoperative, null and void insofar as it is in conflict with said laws, but the remainder of the AGREEMENT shall be in full force and effect.

### **SECTION 38 – INTEGRATION**

This AGREEMENT represents the entire understanding of BCAG and CONSULTANT as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This AGREEMENT may not be modified or altered except in writing signed by BCAG and CONSULTANT. The preceding provisions include, in part, certain Standard Terms and Conditions contained within incorporated attachments and required by THE FEDERAL HIGHWAY AND/OR TRANSIT ADMINISTRATION AND/OR THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS), whether or not expressly set forth in the preceding AGREEMENT provisions. All contractual provisions required by THE FEDERAL HIGHWAY AND/OR TRANSIT ADMINISTRATION AND/OR THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) are hereby incorporated by reference. Anything to the contrary herein notwithstanding THE FEDERAL HIGHWAY AND/OR TRANSIT ADMINISTRATION AND/OR THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. CONSULTANT shall not perform any act, fail to perform any act, or refuse to comply with any BCAG requests causing BCAG to be in violation of THE FEDERAL

HIGHWAY AND/OR TRANSIT ADMINISTRATION AND/OR THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) terms and conditions. In the case of conflicting clauses within the agreement and any incorporated attachments, BCAG shall make the final determination regarding applicability prior to final execution of this agreement.

**IN WITNESS WHEREOF**, the parties hereto have made and executed this AGREEMENT the day and year first above written.

**BCAG:**

**CONSULTANT:**

By \_\_\_\_\_  
**Andy Newsum, Executive Director**

By \_\_\_\_\_  
**Name, Title**

Date: \_\_\_\_\_

Date: \_\_\_\_\_

DRAFT



**Exhibit “A” – Scope of Work**  
**To Be Inserted**

DRAFT

**Exhibit “B” – Compensation**  
**To Be Inserted**

DRAFT

**Exhibit “C”  
CERTIFICATION OF OWNER**

I HEREBY CERTIFY that I am the **Executive Director of the Butte County Association of Governments** and the Chairperson of the Butte Regional Transportation Corporation, and that the consulting firm of \_\_\_\_\_ or its representatives have not been required, directly or indirectly, as an express or implied condition in connection with obtaining or carrying out the AGREEMENT to:

- a. Employ, retain, agree to employ or retain, any firm or person; or
- b. Pay or agree to pay, to any firm, person or organization, any fee, contribution, donation, or consideration of any kind.

I acknowledge that this Certificate is to be made available to the California Department of Transportation (Caltrans) and the Federal Transit Administration in connection with this AGREEMENT involving participation of Federal Transit Administration funds, and is subject to applicable State and Federal laws, both criminal and civil.

\_\_\_\_\_  
Andy Newsum, Executive Director/Chair

\_\_\_\_\_  
Date

## Exhibit "D"

### CERTIFICATION OF CONSULTANT

I HEREBY CERTIFY that I am Name, and the duly authorized representative of Consultant, whose address is Address, and that, except as hereby expressly stated, neither I nor the above firm that I represent have:

- employed or retained for a commissions, percentage, brokerage, contingent fee, or other consideration, any firm or person, (other than a bona fide employee working solely for me or the above consultant) to solicit or secure this AGREEMENT;
- nor agreed, as an express or implied condition, for obtaining this AGREEMENT, to employ or retain the services of any firm or person in connection with carrying out the AGREEMENT;
- nor paid, or agreed to pay, to any firm, organization or person (other than a bona fide employees working solely for me or the above consultant) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out this AGREEMENT.

I acknowledge that this Certificate is to be made available to the California Department of Transportation (Caltrans) and the Federal Transit Administration in connection with this AGREEMENT involving participation of Federal Transit Administration funds, and is subject to applicable State and Federal laws, both criminal and civil.

\_\_\_\_\_  
Signature: Name  
Company  
Title

\_\_\_\_\_  
Date

December 2023

EXHIBIT 10-I

Notice to Bidders/Proposers Disadvantaged Business Enterprise Information

NOTICE TO PROPOSERS/BIDDERS  
DISADVANTAGED BUSINESS ENTERPRISE INFORMATION

(Note: Portions of Exhibit 10-I may not apply for all agreements dependent upon scope of services required)

**1. TERMS AS USED IN THIS DOCUMENT**

- The term “Disadvantaged Business Enterprise” or “DBE” means a for-profit small business concern as defined in Title 49, Part 26.5, Code of Federal Regulations (CFR).
- The term “bidder” also means “proposer” or “offeror.”
- The term “Agreement” also means “Contract.”
- Agency also means the local entity entering into this contract with the Contractor or Consultant.
- The term “Small Business” or “SB” is as defined in 49 CFR 26.65.

**2. AUTHORITY AND RESPONSIBILITY**

- A. DBEs and other small businesses are strongly encouraged to participate in the performance of Agreements financed in whole or in part with federal funds (See 49 CFR 26, “Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs”). The Contractor should ensure that DBEs and other small businesses have the opportunity to participate in the performance of the work that is the subject of this solicitation and should take all necessary and reasonable steps for this assurance. The bidder/proposer shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts.
- B. Bidders/Proposers are encouraged to use services offered by financial institutions owned and controlled by DBEs.

**3. SUBMISSION OF DBE INFORMATION**

A “Local Agency Proposer/Bidder-DBE (Consultant Contracts)-Information” form will be included in the Agreement documents to be executed by the successful bidder. The purpose of the form is to collect data required under 49 CFR 26. Even if no DBE participation will be reported, the successful bidder must execute and return the form.

**4. DBE PARTICIPATION GENERAL INFORMATION**

It is the bidder’s responsibility to be fully informed regarding the requirements of 49 CFR, Part 26, and the Department’s DBE program developed pursuant to the regulations. Particular attention is directed to the following:

- A. A DBE must be a small business firm defined pursuant to 13 CFR 121 and be certified through the California Unified Certification Program (CUCP).

- B. A certified DBE may participate as a prime contractor, subcontractor, joint venture partner, as a vendor of material or supplies, or as a trucking company.
- C. A DBE joint venture partner must be responsible for specific contract items of work or clearly defined portions thereof. Responsibility means actually performing, managing and supervising the work with its own forces. The DBE joint venture partner must share in the capital contribution, control, management, risks and profits of the joint venture commensurate with its ownership interest.
- D. A DBE must perform a commercially useful function pursuant to 49 CFR 26.55; that is, a DBE firm must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work.
- E. The bidder (prime contractor) shall list only one subcontractor for each portion of work as defined in their bid/proposal and all DBE subcontractors should be listed in the bid/cost proposal list of subcontractors.
- F. A prime contractor who is a certified DBE is eligible to claim all of the work in the Agreement toward the DBE participation except that portion of the work to be performed by non-DBE subcontractors.

## **5. RESOURCES**

- A. The CUCP database includes the certified DBEs from all certifying agencies participating in the CUCP. If you believe a firm is certified that cannot be located on the database, please contact the Caltrans Office of Certification toll free number 1-866-810-6346 for assistance. Bidder/Proposer may call (916) 440-0539 for web or download assistance.
- B. Access the CUCP database from the Department of Transportation, Civil Rights, Business Enterprise Program website at: [http://www.the Federal Highway and/or Transit Administration and/or the California Department of Transportation \(Caltrans\).ca.gov/hq/bep/](http://www.the Federal Highway and/or Transit Administration and/or the California Department of Transportation (Caltrans).ca.gov/hq/bep/).
  - Click on the link in the left menu titled Find a Certified Firm
  - Click on Query Form link, located in the first sentence
  - Click on Certified DBE's (UCP) located on the first line in the center of the page
  - Click on Click To Access DBE Query Form
  - Searches can be performed by one or more criteria
  - Follow instructions on the screen
  - "Start Search," "Requery," "Civil Rights Home," and "Caltrans Home" links are located at the bottom of the query form
- C. How to Obtain a List of Certified DBEs without Internet Access

**DBE Directory:** If you do not have Internet access, Caltrans also publishes a directory of certified DBE firms extracted from the on-line database. A copy of the directory of certified DBEs may be ordered from the Caltrans Division of Procurement and Contracts/Material and Distribution Branch/Publication Unit, 1900 Royal Oaks Drive, Sacramento, CA 95815, Telephone: (916) 445-3520.

## **6. WHEN REPORTING DBE PARTICIPATION, MATERIAL OR SUPPLIES PURCHASED FROM DBES MAY COUNT AS FOLLOWS:**

- A. If the materials or supplies are obtained from a DBE manufacturer, one hundred percent of the cost of the materials or supplies will count toward the DBE participation. A DBE manufacturer

is a firm that operates or maintains a factory, or establishment that produces on the premises, the materials, supplies, articles, or equipment required under the Agreement and of the general character described by the specifications.

- B. If the materials or supplies purchased from a DBE regular dealer, count sixty percent of the cost of the materials or supplies toward DBE participation. A DBE regular dealer is a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Agreement are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a DBE regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A person may be a DBE regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business provided in this section.
- C. If the person both owns and operates distribution equipment for the products, any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not an ad hoc or Agreement-by-Agreement basis. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not DBE regular dealers within the meaning of this section.
- D. Materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, will be limited to the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on the job site, provided the fees are reasonable and not excessive as compared with fees charged for similar services.

**7. WHEN REPORTING DBE PARTICIPATION, PARTICIPATION OF DBE TRUCKING COMPANIES MAY COUNT AS FOLLOWS:**

- A. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible.
- B. The DBE must itself own and operate at least one fully licensed, insured and operational truck used on the Agreement.
- C. The DBE receives credit for the total value of the transportation services it provides on the Agreement using trucks it owns, insures, and operates using drivers it employs.
- D. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Agreement.
- E. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by the DBE.
- F. For the purposes of this Section D, a lease must indicate that the DBE has exclusive use and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, as long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

December 2023

**EXHIBIT 10-J STANDARD AGREEMENT FOR SUBCONTRACTOR/DBE PARTICIPATION**

**STANDARD AGREEMENT FOR SUBCONTRACTOR/DBE PARTICIPATION**

**(Note: Portions of Exhibit 10-J may not apply for all agreements dependent upon scope of services required)**

**1. Subcontractors**

- A. Nothing contained in this Agreement or otherwise, shall create any contractual relation between the Agency and any subcontractors, and no subcontract shall relieve the Contractor of Contract's responsibilities and obligations hereunder. The Contractor agrees to be as fully responsible to the Agency for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the Contractor. The Contractor's obligation to pay its subcontractors is an independent obligation from the Agency's obligation to make payments to the Contractor.
- B. Any subcontract in excess of \$25,000, entered into as a result of this Agreement, shall contain all the provisions stipulated in this Agreement to be applicable to subcontractors.
- C. Contractor shall pay its subcontractors within ten (10) calendar days from receipt of each payment made to the Contractor by the Agency.
- D. Any substitution of subcontractors must be approved in writing by the Agency's Contract Manager in advance of assigning work to a substitute subcontractor.

**2. Disadvantaged Business Enterprise (DBE) Participation**

- A. This Agreement is subject to 49 CFR, Part 26 entitled "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs." Bidders who obtain DBE participation on this contract will assist Caltrans in meeting its federally mandated statewide overall DBE goal.
- B. DBE and other small businesses, as defined in 49 CFR, Part 26 are encouraged to participate in the performance of agreements financed in whole or in part with federal funds. The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The Contractor shall carry out applicable requirements of 49 CFR, Part 26 in the award and administration of US THE FEDERAL HIGHWAY AND/OR TRANSIT ADMINISTRATION AND/OR THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)- assisted agreements. Failure by the Contractor to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as the recipient deems appropriate.
- C. Any subcontract entered into as a result of this Agreement shall contain all of the provisions of this section.

**3. Performance of DBE Contractors and other DBE Subcontractors/Suppliers**

A DBE performs a commercially useful function when it is responsible for execution of the work of the Agreement and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible with respect to materials and supplies used on the Agreement, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful



function, evaluate the amount of work subcontracted, industry practices; whether the amount the firm is to be paid under the Agreement is commensurate with the work it is actually performing, and other relevant factors.

A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, Agreement, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, examine similar transactions, particularly those in which DBEs do not participate.

If a DBE does not perform or exercise responsibility for at least thirty percent of the total cost of its Agreement with its own work force, or the DBE subcontracts a greater portion of the work of the Agreement than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that it is not performing a commercially useful function.

#### **4. Prompt Payment of Funds Withheld to Subcontractors**

The Agency shall hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the agency, of the contract work, and pay retainage to the prime contractor based on these acceptances. The prime contractor, or subcontractor, shall return all monies withheld in retention from a subcontractor within 30 days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by the agency. Federal law (49CFR26.29) requires that any delay or postponement of payment over 30-days may take place only for good cause and with the agency's prior written approval. Any violation of this provision shall subject the violating prime contractor or subcontractor to the penalties, sanctions and other remedies specified in Section 7108.5 of the Business and Professions Code. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the prime contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor. This provision applies to both DBE and non-DBE prime contractors and subcontractors. Any subcontract entered into as a result of this Agreement shall contain all of the provisions of this section.

#### **5. DBE Records**

- A. The Contractor shall maintain records of materials purchased and/or supplied from all subcontracts entered into with certified DBEs. The records shall show the name and business address of each DBE or vendor and the total dollar amount actually paid each DBE or vendor, regardless of tier. The records shall show the date of payment and the total dollar figure paid to all firms. DBE prime Contractors shall also show the date of work performed by their own forces along with the corresponding dollar value of the work.
- B. Upon completion of the Agreement, a summary of these records shall be prepared and submitted on the form entitled, "Final Report-Utilization of Disadvantaged Business Enterprises (DBE)," CEM-2402F (Exhibit 17-F in Chapter 17 of the LAP), certified correct by the Contractor or the Contractor's authorized representative and shall be furnished to the Contract Manager with the final invoice. Failure to provide the summary of DBE payments with the final invoice will result in twenty-five percent (25%) of the dollar value of the invoice being withheld from payment until the form is submitted. The amount will be returned to the Contractor when a satisfactory "Final Report Utilization of Disadvantaged Business Enterprises (DBE)" is submitted to the Contract Manager.

- 1) Prior to the fifteenth of each month (or as determined by the Agency), the Contractor shall submit documentation to the Agency's Contract Manager showing the amount paid to DBE trucking companies. The Contractor shall also obtain and submit documentation to the Agency's Contract Manager showing the amount paid by DBE trucking companies to all firms, including owner-operators, for the leasing of trucks. If the DBE leases trucks from a non-DBE, the Contractor may count only the fee or commission the DBE receives as a result of the lease arrangement.
- (2) The Contractor shall also submit to the Agency's Contract Manager documentation showing the truck number, name of owner, California Highway Patrol CA number, and if applicable, the DBE certification number of the truck owner for all trucks used during that month. This documentation shall be submitted on the Caltrans' Monthly DBE Trucking Verification, CEM-2404(F) form provided to the Contractor by the Agency's Contract Manager.

## 6. DBE Certification and De-certification Status

If a DBE subcontractor is decertified during the life of the Agreement, the decertified subcontractor shall notify the Contractor in writing with the date of de-certification. If a subcontractor becomes a certified DBE during the life of the Agreement, the subcontractor shall notify the Contractor in writing with the date of certification. Any changes should be reported to the Agency's Contract Manager within 30 days. **When Reporting DBE Participation, Material or Supplies purchased from DBEs may count as follows:**

- A. If the materials or supplies are obtained from a DBE manufacturer, 100 % of the cost of the materials or supplies will count toward the DBE participation. A DBE manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises, the materials, supplies, articles, or equipment required under the Agreement and of the general character described by the specifications.
- B. If the materials or supplies purchased from a DBE regular dealer, count 60 % of the cost of the materials or supplies toward DBE goals. A DBE regular dealer is a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Agreement, are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a DBE regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A person may be a DBE regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business provided in this section.
- C. If the person both owns and operates distribution equipment for the products, any supplementing of regular dealers' own distribution equipment, shall be by a long-term lease agreement and not an ad hoc or Agreement-by-Agreement basis. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not DBE regular dealers within the meaning of this section.
- D. Materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, will be limited to the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on the job site, provided the fees are reasonable and not excessive as compared with fees charged for similar services.

## Attachment I – Standard Insurance Requirements (Professional Services) (rev.11-16)

Before the commencement of work, Consultant shall submit Certificates of Insurance and Endorsements evidencing that Consultant has obtained the following forms of coverage and minimal amounts specified:

### A. MINIMUM SCOPE OF INSURANCE

- 1.) Commercial General Liability coverage (Insurance Services Office (ISO) “occurrence” form CG 0001 04 13).
- 2.) Automobile Liability Insurance – standard coverage offered by insurance carriers licensed to sell auto liability insurance in California. Construction contracts only - Insurance Services Office’s Business Auto Coverage form number CA 0001 03 10 covering “any auto”.
- 3.) Workers’ Compensation Insurance as required by the Labor Code and Employers Liability Insurance.
- 4.) Professional Liability Insurance - when the contract involves professional services such as engineering architectural, legal, accounting, instructing, and consulting, professional liability insurance is required. **(If not contracting for professional services, delete this paragraph.)**

### B. MINIMUM LIMITS OF INSURANCE

- 1.) **General Liability:** At least \$1,000,000 combined single limit **per occurrence** coverage for bodily injury, personal injury and property damage, plus an annual aggregate of at least \$2,000,000. If a general aggregate limit is used, then either the general aggregate limit shall apply separately to this project/location, or the general aggregate limit shall be **twice** the required per occurrence limit. The Consultant or consultant’s insurance carrier shall notify BCAG if incurred losses covered by the policy exceed 50% of the annual aggregate limit.
- 2.) **Automobile Liability:** Policy limits for work in connection with construction projects shall be at least \$1,000,000 combined single limit per accident for bodily injury and property damage for autos used by the Consultant to fulfill the requirements of this contract, and coverage shall be provided for “Any Auto”, Code 1 as listed on the Acord form Certificate of Insurance.
- 3.) **Workers’ Compensation and Employers Liability:** Workers’ Compensation insurance up to policy limits and Employers Liability insurance each with policy limits of at least \$1,000,000 for bodily injury or disease.
- 4.) **Professional Liability Insurance (If not contracting for professional services, delete this paragraph)** Professional liability insurance covering professional services shall be provided in an amount of at least \$1,000,000 per occurrence or \$1,000,000 or on a claims made basis. However, if coverage is written on a claims made basis, the policy shall be endorsed to provide at least a two-year extended reporting provision.

### C. DEDUCTIBLES

Any deductibles must be declared on certificates of insurance and approved by BCAG.

#### **D. OTHER INSURANCE PROVISIONS**

##### **1. General liability insurance policies shall be endorsed to state:**

- a.) BCAG, its officers, officials, employees and volunteers are to be covered as insured as respects liability arising out of activities performed by or at the direction of the Consultant, including products and completed operations of the Consultant, premises owned, occupied or used by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to BCAG, its officers, officials, employees or volunteers. Auto coverage as provided by unendorsed CA 0001 03 10.
- b.) Consultant's insurance coverage shall be primary insurance, except for auto, as respects BCAG, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by BCAG, its officers, officials, employees or volunteers shall be in excess of the Consultant's insurance and shall not contribute with it.
- c.) Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

#### **E. ACCEPTABILITY OF INSURANCE CARRIERS.**

Insurance is to be placed with insurers who are licensed to sell insurance in the State of California and who possess a Best's rating of no less than A-: VII. If the consultant's insurance carrier is not licensed to sell insurance in the State of California, then the carrier must possess a Best rating of at least A: VIII. (For Best ratings go to <http://www.ambest.com/>)

#### **F. VERIFICATION OF COVERAGE.**

Consultant shall furnish BCAG **certificates of insurance** and original **endorsements** affecting coverage required by this clause. All certificates of insurance and endorsements are to be received and approved by BCAG before work under the contract has begun. BCAG reserves the right to require complete, certified copies of all insurance policies required by this contract.

#### **G. SUBCONTRACTORS.**

Consultant shall include all subcontractors as insured under its policies or require all subcontractors to be insured under their own policies. If subcontractors are insured under their own policies, they shall be subject to all the requirements stated herein, including providing BCAG certificates of insurance and endorsements before beginning work under this contract.





# Request for Taxpayer Identification Number and Certification

**Give Form to the  
 requester. Do not  
 send to the IRS.**

▶ Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

<b>Print or type.</b> See Specific Instructions on page 3.	<p><b>1</b> Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.</p> <hr/> <p><b>2</b> Business name/disregarded entity name, if different from above</p> <hr/> <p><b>3</b> Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only <b>one</b> of the following seven boxes.</p> <p> <input type="checkbox"/> Individual/sole proprietor or single-member LLC                  <input type="checkbox"/> C Corporation                  <input type="checkbox"/> S Corporation                  <input type="checkbox"/> Partnership                  <input type="checkbox"/> Trust/estate         </p> <p> <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____         </p> <p><b>Note:</b> Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is <b>not</b> disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.</p> <p> <input type="checkbox"/> Other (see instructions) ▶ _____         </p>	<p><b>4</b> Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):</p> <p>Exempt payee code (if any) _____</p> <p>Exemption from FATCA reporting code (if any) _____</p> <p style="font-size: small;">(Applies to accounts maintained outside the U.S.)</p>
	<p><b>5</b> Address (number, street, and apt. or suite no.) See instructions.</p> <hr/> <p><b>6</b> City, state, and ZIP code</p> <hr/> <p><b>7</b> List account number(s) here (optional)</p> <hr/>	<p>Requester's name and address (optional)</p> <hr/>

## Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

**Note:** If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

<b>Social security number</b>									
				-			-		
<b>or</b>									
<b>Employer identification number</b>									
				-					

## Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (as defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 1 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

<b>Sign Here</b>	Signature of U.S. person ▶	Date ▶
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## General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9).

## Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

*If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

**Note:** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

## Backup Withholding

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

## What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

## Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.



**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

**Note: ITIN applicant:** Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on a charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-3(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

### Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

### Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

### Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

#### Exempt payee codes

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
  - Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
  - Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 5 <sup>2</sup>
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

<sup>2</sup> However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

**Exemption from FATCA reporting code.** The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(7)

B—The United States or any of its agencies, instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

**Note:** You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

### Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

### Line 6

Enter your city, state, and ZIP code.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note:** See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at [www.SSA.gov](http://www.SSA.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/Businesses](http://www.irs.gov/Businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. Go to [www.irs.gov/Forms](http://www.irs.gov/Forms) to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to [www.irs.gov/OrderForms](http://www.irs.gov/OrderForms) to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note:** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

**Signature requirements.** Complete the certification as indicated in items 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.**

You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.**

You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

**What Name and Number To Give the Requester**

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual of the account <sup>1</sup>
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee The actual owner <sup>1</sup>
6. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>2</sup>
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor <sup>3</sup>
For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

\*Note: The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

**Secure Your Tax Records From Identity Theft**

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

Protect your SSN,

- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.**

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at [spam@uce.gov](mailto:spam@uce.gov) or report them at [www.ftc.gov/complaint](http://www.ftc.gov/complaint). You can contact the FTC at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see [www.IdentityTheft.gov](http://www.IdentityTheft.gov) and Pub. 5027.

Visit [www.irs.gov/IdentityTheft](http://www.irs.gov/IdentityTheft) to learn more about identity theft and how to reduce your risk.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

SAMPLE

**EXHIBIT 10-H1 COST PROPOSAL (Example# 1)** Page 1 of 3

**ACTUAL COST-PLUS-FIXED FEE OR LUMP SUM (FIRM FIXED PRICE) CONTRACTS**  
(DESIGN, ENGINEERING AND ENVIRONMENTAL STUDIES)

Note: Mark-ups are Not Allowed

Prime Consultant     Subconsultant

Consultant \_\_\_\_\_

Project No. \_\_\_\_\_ Contract No. \_\_\_\_\_ Date \_\_\_\_\_

**DIRECT LABOR**

Classification/Title	Name	Hours	Actual Hourly Rate	Total
(Project Manager)	_____	_____	\$ _____	\$ _____
(Sr. Civil Engineer)	_____	_____	\$ _____	\$ _____
(Envir. Scientist)	_____	_____	\$ _____	\$ _____
(Inspector)	_____	_____	\$ _____	\$ _____

**LABOR COSTS**

a) Subtotal Direct Labor Costs \$ \_\_\_\_\_

b) Anticipated Salary Increases (see page 2 for calculation) \$ \_\_\_\_\_

c) **TOTAL DIRECT LABOR COSTS [(a) + (b)]** \$ \_\_\_\_\_

**INDIRECT COSTS**

d) Fringe Benefits (Rate: \_\_\_%) e) Total Fringe Benefits [(c) x (d)] \$ \_\_\_\_\_

f) Overhead (Rate: \_\_\_%) g) Overhead [(c) x (f)] \$ \_\_\_\_\_

h) General and Administrative (Rate: \_\_\_%) i) Gen & Admin [(c) x (h)] \$ \_\_\_\_\_

j) **TOTAL INDIRECT COSTS [(e) + (g) + (i)]** \$ \_\_\_\_\_

**FIXED FEE**

k) **TOTAL FIXED FEE [(c) + (j)] x fixed fee \_\_\_\_\_%** \$ \_\_\_\_\_

**l) CONSULTANT'S OTHER DIRECT COSTS (ODC) – ITEMIZE (Add additional pages if necessary)**

Description of Item	Quantity	Unit	Unit Cost	Total
Mileage Costs			\$	\$
Equipment Rental and Supplies			\$	\$
Permit Fees			\$	\$
Plan Sheets			\$	\$
Test			\$	\$

l) **TOTAL OTHER DIRECT COSTS** \$ \_\_\_\_\_

**m) SUBCONSULTANTS' COSTS (Add additional pages if necessary)**

Subconsultant 1: \_\_\_\_\_ \$  
 Subconsultant 2: \_\_\_\_\_ \$  
 Subconsultant 3: \_\_\_\_\_ \$  
 Subconsultant 4: \_\_\_\_\_ \$

m) **TOTAL SUBCONSULTANTS' COSTS** \$ \_\_\_\_\_

n) **TOTAL OTHER DIRECT COSTS INCLUDING SUBCONSULTANTS [(l)+(m)]** \$ \_\_\_\_\_

**TOTAL COST [(c) + (j) + (k) + (n)]** \$ \_\_\_\_\_

**NOTES:**

- All costs must comply with the Federal cost principles. Subconsultants will provide their own cost proposals.
- The cost proposal format shall not be amended. Indirect cost rates should be based on consultant's annual accounting period and established by a cognizant agency or accepted by Caltrans.
- Anticipated salary increases calculation (page 2) must accompany.

**EXHIBIT 10-H1 COST PROPOSAL (Example# 1)** Page 2 of 3

**ACTUAL COST-PLUS-FIXED FEE OR LUMP SUM (FIRM FIXED PRICE) CONTRACTS**

(CALCULATIONS FOR ANTICIPATED SALARY INCREASES)

**1. Calculate Average Hourly Rate for 1st year of the contract (Direct Labor Subtotal divided by total hours)**

Direct Labor <u>Subtotal</u> per Cost Proposal	Total Hours per Cost Proposal	=	Avg Hourly Rate	<b>5 Year Contract Duration</b>
\$250,000.00	5000		\$50.00	Year 1 Avg Hourly Rate

**2. Calculate hourly rate for all years (Increase the Average Hourly Rate for a year by proposed escalation %)**

	Avg Hourly Rate		Proposed Escalation			
Year 1	\$50.00	+	2%	=	\$51.00	Year 2 Avg Hourly Rate
Year 2	\$51.00	+	2%	=	\$52.02	Year 3 Avg Hourly Rate
Year 3	\$52.02	+	2%	=	\$53.06	Year 4 Avg Hourly Rate
Year 4	\$53.06	+	2%	=	\$54.12	Year 5 Avg Hourly Rate

**3. Calculate estimated hours per year (Multiply estimate % each year by total hours)**

	Estimated % Completed Each Year		Total Hours per Cost Proposal		Total Hours per Year	
Year 1	20.0%	*	5000	=	1000	Estimated Hours Year 1
Year 2	40.0%	*	5000	=	2000	Estimated Hours Year 2
Year 3	15.0%	*	5000	=	750	Estimated Hours Year 3
Year 4	15.0%	*	5000	=	750	Estimated Hours Year 4
Year 5	10.0%	*	5000	=	500	Estimated Hours Year 5
Total	100%		Total	=	5000	

**4. Calculate Total Costs including Escalation (Multiply Average Hourly Rate by the number of hours)**

	Avg Hourly Rate (calculated above)		Estimated hours (calculated above)		Cost per Year	
Year 1	\$50.00	*	1000	=	\$50,000.00	Estimated Hours Year 1
Year 2	\$51.00	*	2000	=	\$102,000.00	Estimated Hours Year 2
Year 3	\$52.02	*	750	=	\$39,015.00	Estimated Hours Year 3
Year 4	\$53.06	*	750	=	\$39,795.30	Estimated Hours Year 4
Year 5	\$54.12	*	500	=	\$27,060.80	Estimated Hours Year 5
	Total Direct Labor Cost with Escalation			=	\$257,871.10	
	Direct Labor Subtotal before Escalation			=	\$250,000.00	
	Estimated total of Direct Labor Salary Increase			=	<b>\$7,871.10</b>	Transfer to Page 1

**NOTES:**

1. This is not the only way to estimate salary increases. Other methods will be accepted if they clearly indicate the % increase, the # of years of the contract, and a breakdown of the labor to be performed each year.
2. An estimation that is based on direct labor multiplied by salary increase % multiplied by the # of years is not acceptable. (i.e. \$250,000 x 2% x 5 yrs = \$25,000 is not an acceptable methodology)
3. This assumes that one year will be worked at the rate on the cost proposal before salary increases are granted.
4. Calculations for anticipated salary escalation must be provided.

**Certification of Direct Costs:**

I, the undersigned, certify to the best of my knowledge and belief that all direct costs identified on the cost proposal(s) in this contract are actual, reasonable, allowable, and allocable to the contract in accordance with the contract terms and the following requirements:

1. Generally Accepted Accounting Principles (GAAP)
2. Terms and conditions of the contract
3. [Title 23 United States Code Section 112](#) - Letting of Contracts
4. [48 Code of Federal Regulations Part 31](#) - Contract Cost Principles and Procedures
5. [23 Code of Federal Regulations Part 172](#) - Procurement, Management, and Administration of Engineering and Design Related Service
6. [48 Code of Federal Regulations Part 9904 - Cost Accounting Standards Board](#) (when applicable)

All costs must be applied consistently and fairly to all contracts. All documentation of compliance must be retained in the project files and be in compliance with applicable federal and state requirements. Costs that are noncompliant with the federal and state requirements are not eligible for reimbursement. Local governments are responsible for applying only cognizant agency approved or Caltrans accepted Indirect Cost Rate(s).

**Prime Consultant or Subconsultant Certifying:**

Name: \_\_\_\_\_ Title \*: \_\_\_\_\_  
Signature : \_\_\_\_\_ Date of Certification (mm/dd/yyyy): \_\_\_\_  
Email: \_\_\_\_\_ Phone Number: \_\_\_\_\_  
Address: \_\_\_\_\_

\*An individual executive or financial officer of the consultant’s or subconsultant’s organization at a level no lower than a Vice President or a Chief Financial Officer, or equivalent, who has authority to represent the financial information utilized to establish the cost proposal for the contract.

List services the consultant is providing under the proposed contract:

**EXHIBIT 10-H2 COST PROPOSAL (Example# 2)** Page 1 of 3

SPECIFIC RATE OF COMPENSATION (USE FOR ON-CALL OR AS-NEEDED CONTRACTS)  
(NON- PREVAILING WAGE CONSTRUCTION ENGINEERING AND INSPECTION CONTRACTS)

**Note: Mark-ups are Not Allowed**

Consultant \_\_\_\_\_  Prime Consultant  Subconsultant

Project No. \_\_\_\_\_ Contract No. \_\_\_\_\_ Participation Amount \$ \_\_\_\_\_ Date \_\_\_\_\_

For Combined Rate	Fringe Benefit % + General &Administrative %	=	Combined ICR%
OR			
For Home Office Rate	Fringe Benefit % + General &Administrative %	=	Home Office ICR%
For Field Office Rate	Fringe Benefit % + General &Administrative %	=	Field Office ICR%

	Fee	=	%
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**BILLING INFORMATION**

**CALCULATION INFORMATION**

Name/Job Title/Classification <sup>1</sup>	Hourly Billing Rates <sup>2</sup>			Effective Date of Hourly Rate		Actual or Avg. Hourly Rate <sup>4</sup>	% or \$ Increase	Hourly Range - or Classifications Only
	Straight <sup>3</sup>	OT(1.5x)	OT(2x)	From	To			
John Doe – Project Manager Civil Engineer II	\$0.00	\$0.00	\$0.00	01/01/2016	12/31/2016	\$0.00		Not Applicable
	\$0.00	\$0.00	\$0.00	01/01/2017	12/31/2017	\$0.00		
	\$0.00	\$0.00	\$0.00	01/01/2018	12/31/2018	\$0.00		
Sue Jones – Construction Engineer/Inspector Engineer I	\$0.00	\$0.00	\$0.00	01/01/2016	12/31/2016	\$0.00		Not Applicable
	\$0.00	\$0.00	\$0.00	01/01/2017	12/31/2017	\$0.00		
	\$0.00	\$0.00	\$0.00	01/01/2018	12/31/2018	\$0.00		
Buddy Black – Claims Engineer Engineer III	\$0.00	\$0.00	\$0.00	01/01/2016	12/31/2016	\$0.00		Not Applicable
	\$0.00	\$0.00	\$0.00	01/01/2017	12/31/2017	\$0.00		
	\$0.00	\$0.00	\$0.00	01/01/2018	12/31/2018	\$0.00		
Land Surveyor	\$0.00	\$0.00	\$0.00	01/01/2016	12/31/2016	\$0.00		
	\$0.00	\$0.00	\$0.00	01/01/2017	12/31/2017	\$0.00	0.0%	
	\$0.00	\$0.00	\$0.00	01/01/2018	12/31/2018	\$0.00	0.0%	
Technician	\$0.00	\$0.00	\$0.00	01/01/2016	12/31/2016	\$0.00		
	\$0.00	\$0.00	\$0.00	01/01/2017	12/31/2017	\$0.00	0.0%	
	\$0.00	\$0.00	\$0.00	01/01/2018	12/31/2018	\$0.00	0.0%	



NOTES:

1. All costs must comply with the Federal cost principles. Subconsultants will provide their own cost proposals.
2. The cost proposal format shall not be amended.
3. Billing rate = actual hourly rate \* (1+ ICR) \* (1+ Fee). Indirect cost rates should be based on the consultant's annual accounting period, established by a cognizant agency or accepted by Caltrans. All costs must comply with the Federal cost principles for reimbursement.
4. For named employees and key personnel enter the actual hourly rate. For classifications only, enter the Average Hourly Rate for that classification.

**EXHIBIT 10-H2 COST PROPOSAL (Example# 2)** Page 2 of 3

SPECIFIC RATE OF COMPENSATION (USE FOR ON-CALL OR AS-NEEDED CONTRACTS)  
(CONSTRUCTION ENGINEERING AND INSPECTION CONTRACTS)

Consultant \_\_\_\_\_  Prime Consultant       Subconsultant

Project No. \_\_\_\_\_ Contract No. \_\_\_\_\_ Date \_\_\_\_\_

<b>SCHEDULE OF OTHER DIRECT COST ITEMS (Add additional pages as necessary)</b>				
<b>Description of Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total</b>
Mileage Costs			\$	\$
Equipment Rental and Supplies			\$	\$
Permit Fees			\$	\$
Plan Sheets			\$	\$
Test			\$	\$
Vehicle			\$	\$
Subconsultant 1:				\$
Subconsultant 2:				\$
Subconsultant 3:				\$
Subconsultant 4:				\$
Subconsultant 5:				\$

Note: Add additional pages if necessary.

NOTES:

1. List other direct cost items with estimated costs. These costs should be competitive in their respective industries and supported with appropriate documentation.
2. Proposed ODC items should be consistently billed regardless of client and contract type.
3. Items when incurred for the same purpose, in like circumstance, should not be included in any indirect cost pool or in the overhead rate.
4. Items such as special tooling, will be reimbursed at actual cost with supporting documentation (invoice).
5. Items listed above that would be considered "tools of the trade" are not reimbursable as other direct cost.
6. Travel related costs should be pre-approved by the contracting agency and shall not exceed current State Department of Personnel Administration rules.

7. If mileage is claimed, the rate should be properly supported by the consultant's calculation of their actual costs for company vehicles. In addition, the miles claimed should be supported by mileage logs.
8. If a consultant proposes rental costs for a vehicle, the company must demonstrate that this is its standard procedure for all of their contracts and that they do not own any vehicles that could be used for the same purpose.
9. The cost proposal format shall not be amended. All costs must comply with the Federal cost principles.
10. Add additional pages if necessary.
11. Subconsultants must provide their own cost proposals.

**Certification of Direct Costs:**

I, the undersigned, certify to the best of my knowledge and belief that all direct costs identified on the cost proposal(s) in this contract are actual, reasonable, allowable, and allocable to the contract in accordance with the contract terms and the following requirements:

7. Generally Accepted Accounting Principles (GAAP)
8. Terms and conditions of the contract
9. [Title 23 United States Code Section 112](#) - Letting of Contracts
10. [48 Code of Federal Regulations Part 31](#) - Contract Cost Principles and Procedures
11. [23 Code of Federal Regulations Part 172](#) - Procurement, Management, and Administration of Engineering and Design Related Service
12. [48 Code of Federal Regulations Part 9904 - Cost Accounting Standards Board](#) (when applicable)

All costs must be applied consistently and fairly to all contracts. All documentation of compliance must be retained in the project files and be in compliance with applicable federal and state requirements. Costs that are noncompliant with the federal and state requirements are not eligible for reimbursement.

**Prime Consultant or Subconsultant Certifying:**

Name: \_\_\_\_\_

Title \*: \_\_\_\_\_

Signature : \_\_\_\_\_

Date of Certification (mm/dd/yyyy): \_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Address: \_\_\_\_\_

\* An individual executive or financial officer of the consultant's or subconsultant's organization at a level no lower than a Vice President or a Chief Financial Officer, or equivalent, who has authority to represent the financial information utilized to establish the cost proposal for the contract.

List services the consultant is providing under the proposed contract:

**EXHIBIT 10-H3 COST PROPOSAL (Example# 3)** Page 1 of 2

COST PER UNIT OF WORK CONTRACTS  
(GEOTECHNICAL AND MATERIAL TESTING)

Note: Mark-ups are Not Allowed

Prime Consultant       Subconsultant

Consultant \_\_\_\_\_

Project No. \_\_\_\_\_ Contract No. \_\_\_\_\_ Date \_\_\_\_\_

**Unit/Item of Work:**

**(Example: Log of Test Boring for Soils Report, or ADL Testing for Hazardous Waste Material Study)**  
**Include as many Items as necessary.**

DIRECT LABOR	Hours	Billing Hourly Rate (\$)	Total (\$)
Professional (Classification)*	_____		_____
Sub-professional/Technical**	_____		_____
EQUIPMENT 1 (with Operator)	_____	_____	_____
EQUIPMENT 2 (with Operator)	_____	_____	_____

**Consultant's Other Direct Costs (ODC) – Itemize:**

Description of Item	Quantity	Unit	Unit Cost	Total
ODC Example: Travel/Mileage Costs			\$	\$
ODC Example: Mobilization/De-mobilization			\$	\$
ODC Example: Supplies/Consumables			\$	\$
ODC Example: Report			\$	\$
ODC (List more ODCs as applicable)			\$	\$
Subconsultant 1:				\$
Subconsultant 2:				\$
Subconsultant 3:				\$
Subconsultant 4:				\$
Subconsultant 5:				\$

Note: Attach additional pages if necessary.

**TOTAL COST PER UNIT OF WORK** \$ \_\_\_\_\_

NOTES:

1. All costs must comply with the Federal cost principles. Subconsultants will provide their own cost proposals. The cost proposal format shall not be amended.
2. Hourly billing rates should be consistent with publicly advertised rates charged to all clients (Commercial, Private or Public).
3. Mobilization/De-mobilization is based on site location and number and frequency of tests/items.
4. ODC items shall be based on actual costs and supported by historical data and other documentation.
5. ODC items that would be considered "tools of the trade" are not reimbursable.
6. Billing Hourly Rates must be actual, allowable, and reasonable.

**Certification of Direct Costs:**

I, the undersigned, certify to the best of my knowledge and belief that all direct costs identified on the cost proposal(s) in this contract are actual, reasonable, allowable, and allocable to the contract in accordance with the contract terms and the following requirements:

- 13. Generally Accepted Accounting Principles (GAAP)
- 14. Terms and conditions of the contract
- 15. [Title 23 United States Code Section 112](#) - Letting of Contracts
- 16. [48 Code of Federal Regulations Part 31](#) - Contract Cost Principles and Procedures
- 17. [23 Code of Federal Regulations Part 172](#) - Procurement, Management, and Administration of Engineering and Design Related Service
- 18. [48 Code of Federal Regulation Part 9904 - Cost Accounting Standards Board](#) (when applicable)

All costs must be applied consistently and fairly to all contracts. All documentation of compliance must be retained in the project files and be in compliance with applicable federal and state requirements. Costs that are noncompliant with the federal and state requirements are not eligible for reimbursement.

**Prime Consultant or Subconsultant Certifying:**

Name: \_\_\_\_\_

Title\*: \_\_\_\_\_

Signature : \_\_\_\_\_

Date of Certification (mm/dd/yyyy): \_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Address: \_\_\_\_\_

\* An individual executive or financial officer of the consultant's or subconsultant's organization at a level no lower than a Vice President or a Chief Financial Officer, or equivalent, who has authority to represent the financial information utilized to establish the cost proposal for the contract.

List services the consultant is providing under the proposed contract:





# Zero-Emission Bus Rollout Plan

Prepared by Center for Transportation and the Environment





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# List of Abbreviations

3R: Redundancy, Resilience, and Emergency Response  
ADA: Americans with Disabilities Act  
A&E: Architecture and Engineering  
ACTC: Alameda County Transportation Commission  
BCAG: Butte County Association of Governments  
BEB: Battery Electric Bus  
CA: California  
CARB: California Air Resources Board  
CNG: Compressed Natural Gas  
COVID/COVID-19: Coronavirus Disease 2019 (SARS-CoV-2)  
CTE: Center for Transportation and the Environment  
DAC: Disadvantaged Community  
FCEB: Fuel Cell Electric Bus  
HVAC: Heating, Ventilation, and Air Conditioning  
ICE: Internal Combustion Engine  
ICT: Innovative Clean Transit  
kW: Kilowatt  
kWh: Kilowatt-Hour  
MV: MV Transportation  
MW: Megawatt  
OEM: Original Equipment Manufacturer  
OET: Operator Excellence Training  
PM: Particulate Matter  
PPI: Producer Price Index  
RCNG: Renewable Compressed Natural Gas  
RFP: Request for Proposals  
SCE: Southern California Edison (SoCal Edison)  
TDA: Transportation Development Act  
VTT: Verification of Transit Training  
ZEB: Zero-Emission Bus

A glossary of useful terms can also be found in Appendix C - Glossary

# Executive Summary

B-Line provides regional and local public transit services in Butte County and covers roughly 700 square miles of service area. The current bus fleet consists of 29 fixed-route buses: 29 diesel buses (11 35-foot diesel and 18 40-foot diesel buses). B-Line also operates 2 types of paratransit services—ADA Paratransit and Dial-A-Ride. Their paratransit fleet consists of 22 gasoline-powered cutaway vehicles (25-feet). Butte County Association of Governments (BCAG) engaged the Center for Transportation and the Environment (CTE) to perform a zero-emission bus (ZEB) transition study to create a plan for a 100% zero-emission fleet by 2040 to comply with the Innovative Clean Transit (ICT) regulation enacted by the California Air Resources Board (CARB).

BCAG's Rollout Plan achieves a zero-emission bus fleet in line with the 2040 target of the ICT Regulation. To achieve this goal, B-Line will replace all of their ICE buses with ZEBs when the vehicles reach the end of their 12-year useful life. By 2040, 24 of the agency's buses are expected to be BEBs and 8 will be FCEBs. The last of the agency's ICE buses will reach end of life in 2039. B-Line will replace each of their ICE cutaways with battery electric cutaways once they reach the end of their 7-year useful life. B-Line's 22 cutaways will all be transitioned to battery electric cutaways by 2036.

All of B-Line's services operate out of a single operations, maintenance, and administrative facility at 326 Huss Drive, Chico, CA 95928. BCAG plans to install both charging and hydrogen fueling infrastructure at this location to support their mixed fleet. BCAG also explored redundancy, resilience and emergency response options related to fueling in the event that B-Line would be expected to provide service during an emergency or power outage.

B-Line's bus service provides transportation opportunities to numerous Disadvantaged Communities (DACs) and moving toward zero-emission buses will help improve the health of DACs and non-DACs alike. The agency will build upon an existing training structure for bus maintenance and operators to provide the necessary battery-electric bus (BEB) and fuel cell electric bus (FCEB) specific training that will be required for the agency to own and operate BEBs and FCEBs. The agency estimates that pursuing a ZEB fleet in place of an internal combustion engine (ICE) fleet will cost an additional \$40M in bus costs and infrastructure alone between 2023 and 2040, which will require significantly more funding opportunities. BCAG plans to pursue funding opportunities at the federal, state, and local levels to help fill this funding gap.

# A

## Transit Agency Information

### BCAG Profile

#### History

In June 2005, B-Line was formed in order to consolidate transit systems previously operated by the County of Butte (Butte County Transit), the City of Chico (Chico Area Transit), the City of Oroville (Oroville Area Transit) and the Town of Paradise. B-Line service is delivered by a contract transit operator, Transdev, Inc., which also performs dispatching and maintenance duties at the Butte Regional Operations Center (BROC) in the City of Chico.

BCAG is the Regional Transportation Planning Agency (RTPA) and Metropolitan Planning Organization (MPO) for Butte County, as designated by the Secretary of the Business Transportation & Housing Agency for the State of California. Through the BCAG Joint Powers Agreement, the BCAG Board also serves as the administrative and policymaking agency for B-Line allowing for better routes, a uniform fare structure, improved service with timed transfers, consistent headways for ease of use, and comprehensive customer service.<sup>1</sup>

#### Service Area and Bus Service

B-Line provides regional and local public transit services in Butte County and covers roughly 700 square miles. The current bus fleet consists of 29 fixed-route buses: 29 diesel buses (11 35-foot diesel and 18 40-foot diesel buses).

B-Line operates 21 fixed routes, which includes 5 regional routes, 15 local routes, and service to Chico Airport. Regional routes connect the towns and cities of Chico, Oroville, Paradise, Magalia, Gridley, and Biggs. Local routes serve the Chico urban area and the city of Oroville. The average speed of the regional routes is 28.9 mph. For local routes, the average speed is 15 mph. The average speed for the express route is 17.3 mph.

B-Line also operates 2 types of paratransit services—ADA Paratransit and Dial-A-Ride. Their paratransit fleet consists of 22 gasoline-powered cutaway vehicles (25-feet).

---

<sup>1</sup> BCAG Unmet Transit Needs Assessment – 2021/2022 <http://www.blinetransit.com/documents/UTN/2122-Transit-Needs-Assessment-Final.pdf>

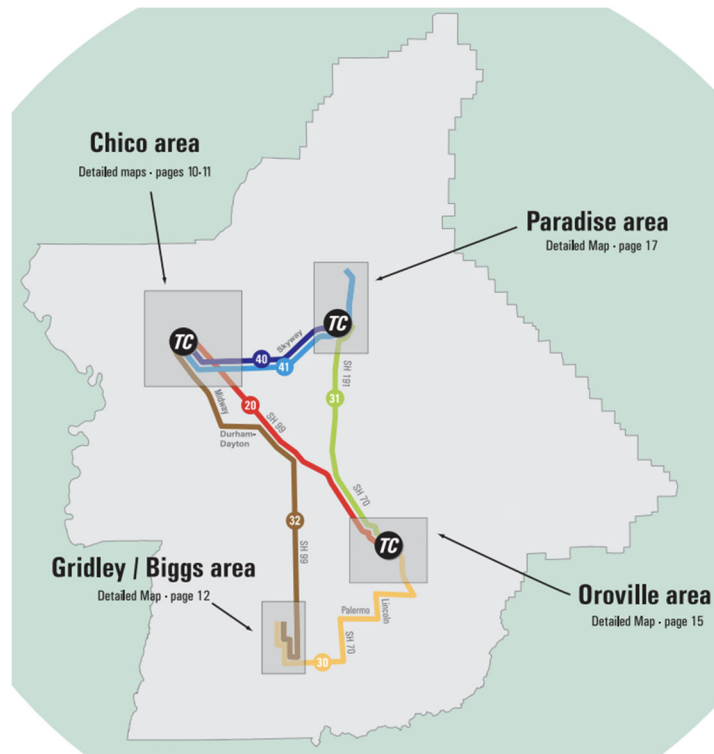


Figure 1 - BCAG Service Area

## Ridership

B-Line serves a diverse community, with a large portion of its daily passengers being individuals without cars (by choice or because of financial limitation), university students, and paratransit riders. Although ridership on transit in general has been decreasing over the past few years due in part to lower gas prices and more affordable automobiles, which has allowed more people the opportunity to own personal cars, the ridership reductions seen by B-Line in recent years are more directly tied to reduced population in its service area following the Camp Fire.<sup>2</sup> In 2018, the Camp Fire burned through Butte County and destroyed homes and businesses in the town of Paradise, which is served by B-Line. In 2020, B-Line's service was further reduced by the Coronavirus Disease 2019 SARS-CoV-2 (COVID/COVID-19) pandemic.

B-Line's service experienced significant reduction after the 2018 Camp Fire and has not returned to its original service levels and is not expected to. Since the beginning of the COVID-19 pandemic, the services have stayed the same with the exception of Route 40 and 41, which runs through areas affected by the Camp Fire—demand for bus service in Paradise has remained low. Based on BCAG's data of available ridership and total fares received from July 2018 through the month of June 2019 (pre-COVID levels), there were 949,871 fixed-route passengers and 141,277 paratransit passengers.<sup>3</sup> BCAG anticipates annual ridership to be less than this over the next 5 years. In response to the changing ridership needs, due in part to the Camp Fire and COVID, BCAG is conducting a Route Optimization Study, which will be completed in the Summer of 2023 in order to re-assess how to most efficiently serve individual routes as well as the whole system.

<sup>2</sup> Grengs, Joe; Levine, Jonathan; and Shen, Qingyun. (2013). Evaluating transportation equity: An inter-metropolitan comparison of regional accessibility and urban form. FTA Report No. 0066. For the Federal Transit Administration

<sup>3</sup> Page 21 of BCAG's Unmet Transit Needs Assessment – 2021/2022 <http://www.blinetransit.com/documents/UTN/2122-Transit-Needs-Assessment-Final.pdf>

## BCAG Basic Information

### Transit Agency's Name:

Butte Regional Transit

### Mailing Address:

Butte County Association of Governments  
326 Huss Drive, Suite 150  
Chico, CA 95928

### Transit Agency's Air Districts:

BCAG is part of the Butte County Air Quality Management District.

### Transit Agency's Air Basin:

Butte County Air Quality Management District is part of the Sacramento Valley Air Basin District.<sup>4</sup>

### Total number of buses in Annual Maximum Service:

The maximum number of active buses operating fixed-route service out of the Butte Regional Operations Center is 32. B-Line also operates 22 gas cutaway vehicles in support of dial-a ride and paratransit service.

### Urbanized Area:

Chico, CA. Chico is 28 square miles of land area with 2,161 people per square mile living within that area.

### Population of Urbanized Area:

101,475 people

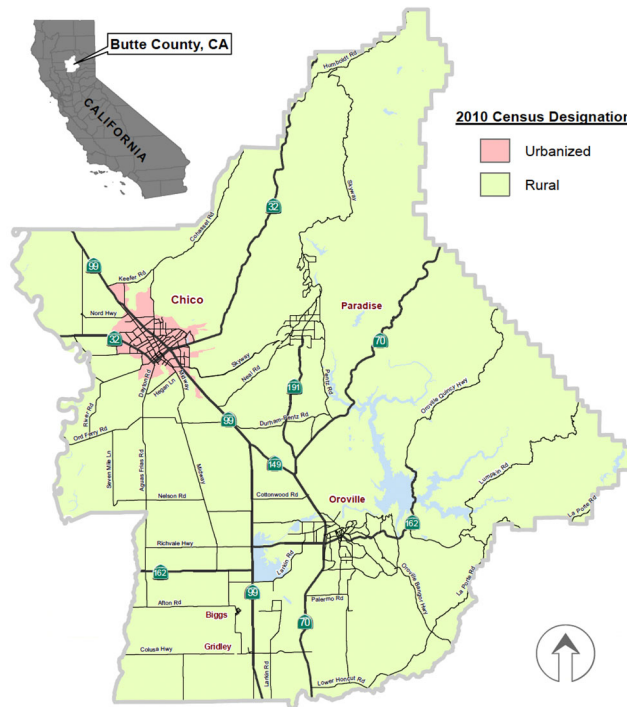


Figure 2 - Butte County Urbanized and Rural Map

### Contact Information for Inquiries on the BCAG ICT Rollout Plan:

Andy Newsum, Deputy Director, Butte County Association of Governments

<sup>4</sup> <https://www.airquality.org/Meetings/Sacramento-Valley-Basinwide-Air-Pollution-Control-Council>



326 Huss Drive, Suite 150  
Chico, CA 95928  
Tel: (530) 809-4616  
[ANewsum@bcag.org](mailto:ANewsum@bcag.org)

**Is your transit agency part of a Joint Group? No**

## Fleet Facility

BCAG currently has one maintenance facility, located at 326 Huss Ln, Chico, CA 95928 as shown in **Figure 3**.



*Figure 3 - Butte Regional Operations Center*

## BCAG's Sustainability Goals

Butte County Association of Governments (BCAG) has developed a plan to transition to a fully zero emission bus (ZEB) fleet composed of battery electric and fuel cell electric buses by 2040, in accordance with the Innovative Clean Transit (ICT) regulation, requiring all California transit agencies to follow zero-emission procurement guidelines with the goal of achieving 100% zero-emission fleets by 2040. BCAG has committed to purchasing zero emission buses, demonstrating the agency's commitment to reducing emissions. BCAG has worked with CTE to select a plan that prioritizes B-Line's local needs and conditions, namely considering resilience, redundancy, and emergency response adaptation options. B-Line's transition to a fully ZEB fleet will ultimately benefit communities through cleaner air, greater independence from fossil fuels, and more environmental sustainability.

# B

## Rollout Plan General Information

### Overview of the Innovative Clean Transit Regulation

On December 14, 2018, CARB enacted the Innovative Clean Transit (ICT) regulation, setting a goal for California public transit agencies to have zero-emission bus fleets by 2040. The regulation specifies the percentage of new bus procurements that must be zero-emission buses for each year of the transition period (2021–2040). The annual percentages for Small Transit agencies are as follows:

ICT Zero-Emission Bus Purchase Requirements for Small Agencies:

**January 1, 2026** - 25% of all new bus purchases must be zero-emission

**January 1, 2027** - 25% of all new bus purchases must be zero-emission

**January 1, 2028** - 25% of all new bus purchases must be zero-emission

**January 1, 2029+** - 100% of all new bus purchases must be zero-emission

**March 2021-March 2050** – Annual compliance report due to CARB

This purchasing schedule guides agency procurements to realize the goal of zero-emission fleets in 2040 while avoiding any early retirement of vehicles that have not reached the end of their 12-year useful life. Agencies have the opportunity to request waivers that allow purchase deferrals in the event of economic hardship or if zero-emission technology cannot meet the service requirements of a given route. These concessions recognize that zero-emission technologies may cost more than current internal combustion engine (ICE) technologies on a vehicle lifecycle basis and that zero-emission technology may not currently be able to meet all service requirements.

### BCAG's Rollout Plan General Information

Rollout Plan's Approval Date: August 25, 2022

Resolution No: 2022-23-03

Is a copy of the approved resolution attached to the Rollout Plan?

Yes, please see **Appendix A – Approved Board Resolution**.

#### Contact for Rollout Plan follow-up questions:

Andy Newsum, *Deputy Director*, Butte County Association of Governments

326 Huss Drive, Suite 150

Chico, CA 95928

Tel: (530) 809-4616

[ANewsum@bcag.org](mailto:ANewsum@bcag.org)

#### Who created the Rollout Plan?

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

BCAG created their ICT Rollout Plan in combination with a Zero-Emission Bus Transition Master Plan, which explains BCAG's plans for transition in greater detail. The Master Plan will be maintained and updated annually. As a result of CTE's fleet transition planning methodology described herein and in greater detail in the Master Plan, BCAG decided to pursue a zero-emission bus fleet composed of 75% BEBs and 25% fuel cell electric buses (FCEB). BCAG's fleet transition strategy is to replace each ICE bus with a BEB as they reach the end of their 12-year useful life. In 2030, however, rather than replacing all 13 buses that have reached the end of their useful life with BEBs, BCAG plans to procure 8 FCEBs in addition to 5 BEBs, thus resulting in a mixed fleet. Pending the availability and feasibility of zero emissions cutaway or Class V style public transit vehicles, BCAG plans to replace their ICE cutaways with

battery electric cutaways once they reach the end of their 7-year useful life according to the ICT purchasing requirement, resulting in a 100% zero emission cutaway fleet by 2036.

This document, the ICT Rollout Plan, contains the information for BCAG's zero-emission fleet transition trajectory as requested by the ICT Regulation. It is intended to outline the high-level plan for implementing of the transition. The Rollout Plan provides estimated timelines based on information on bus purchases, infrastructure upgrades, workforce training, and other developments and expenses that were available at the time of writing. BCAG may update the Rollout Plan as needed as the industry continues to develop and as the Master Plan is updated.

## Additional Agency Resources

BCAG agency website: <http://www.bcag.org/index.html>



# Technology Portfolio

## ZEB Transition Technology Selection

BCAG has elected to pursue a BEB Majority Mixed Fleet comprised of 75% BEBs and 25% FCEBs for their 35' and 40' buses and a 100% battery electric fleet for their cutaways. The fleet is projected to be 100% zero-emission in 2040. As detailed below, BCAG explored four possible ZEB transition scenarios: BEB Only, two Mixed Fleet scenarios (one 75% BEB & one 75% FCEB), and FCEB Only. BCAG decided against a BEB Only or FCEB Only fleet to avoid being tied to a single fuel technology. BCAG's chosen BEB Majority Mixed Fleet scenario allows the agency to rely primarily on the more mature and relatively less expensive BEB technology for a majority of their fleet, while benefiting from the resilience and redundancy that is provided by having a portion of the fleet transition to FCEBs.

## Local Developments and Regional Market

California has become a global leader for zero-emission buses, as well as the zero-emission fuel and fueling infrastructure required to support these vehicles. California is home to four bus OEMs that manufacture zero-emission buses. Although three of these OEMs do not currently build FCEBs, growing demand for this vehicle technology may encourage these manufacturers to enter the market.

The state legislature has fostered growth in zero-emission fuels through the state's Low-Carbon Fuel Standard (LCFS) program, which incentivizes the consumption of fuels with a lower carbon intensity than traditional combustion fuels and through funding opportunities offered by CARB and CEC. The state's electrical utility companies have also supported the transition to ZEB technology by offering incentive programs for heavy duty EV charging infrastructure and service upgrades. California BEB deployments represent 37% of the nation's BEB deployments.<sup>5</sup>

California also has one of the most mature hydrogen fueling networks in the nation. The state's hydrogen market has developed to support the growing number of fuel cell electric vehicles on the roads in the state. California has four medium-and-heavy-duty fueling stations in operation and four more in development. Additionally, the number of hydrogen production and distribution centers is growing to meet increased hydrogen demand as it gains popularity as a transportation fuel. California FCEB deployments represent 75% of the nation's FCEB deployments.<sup>5</sup>

## ZEB Transition Planning Methodology

BCAG's ICT Rollout Plan was created in combination with BCAG's ZEB Transition Master Plan, utilizing CTE's ZEB Transition Planning Methodology. CTE's methodology consists of a series of assessments that enable transit agencies to understand what resources and decisions are necessary to convert their fleets to zero-emission technologies. The results of the assessments help the agency decide on a step-by-step process to achieve its transition goals. These assessments consist of data collection, analysis, and modeling outcome reporting stages. These stages are sequential and build upon findings in previous steps. The assessment steps specific to BCAG's Rollout Plan are outlined below:

1. Planning and Initiation
2. Requirements Analysis & Data Collection
3. Service Assessment
4. Fleet Assessment

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<sup>5</sup> CALSTART. 2021. THE ADVANCED TECHNOLOGY TRANSIT BUS INDEX: A NORTH AMERICAN ZEB INVENTORY REPORT. [https://calstart.org/wp-content/uploads/2022/01/2021-ZIO-ZEB-Final-Report\\_1.3.21.pdf](https://calstart.org/wp-content/uploads/2022/01/2021-ZIO-ZEB-Final-Report_1.3.21.pdf)

5. Fuel Assessment
6. Facilities Assessment
7. Maintenance Assessment
8. Total Cost of Ownership Assessment

For **Requirements Analysis & Data Collection**, CTE collects data on the agency's fleet, routes and blocks, operational data (e.g., mileage and fuel consumption), and maintenance costs. Using this data, CTE establishes service requirements to constrain the analyses in later assessments and produce agency-specific outputs for the zero-emission fleet transition plan.

The **Service Assessment** phase initiates the technical analysis phase of the study. Using information collected in the Data Collection phase, CTE evaluates the feasibility of using zero-emission buses to provide service to the agency's routes and blocks over the transition plan timeframe from 2021 to 2040. Results from the Service Assessment are used to guide ZEB procurement plans in the Fleet Assessment and to determine energy requirements in the Fuel Assessment.

The **Fleet Assessment** projects a timeline for the replacement of existing buses with ZEBs that is consistent with BCAG's existing fleet replacement plan and known procurements. This assessment also includes a projection of fleet capital costs over the transition timeline and is optimized to meet state mandates or agency goals, such as minimizing costs or maximizing service levels.

The **Fuel Assessment** merges the results of the Service Assessment and Fleet Assessment to determine annual fuel requirements and associated costs. The Fuel Assessment calculates energy costs through the full transition timeline for each fleet scenario, including the agency's existing ICE buses. To more accurately estimate battery electric bus (BEB) charging costs, a focused Charging Analysis is performed to simulate daily system-wide energy use. As older technologies are phased out in later years of the transition, the Fuel Assessment calculates the changing fuel requirements as the fleet transitions to ZEBs. The Fuel Assessment also provides a total fuel cost over the transition timeline.

The **Facilities Assessment** determines the infrastructure necessary to support the projected zero-emission fleet composition over the transition period based on results from the Fleet Assessment and Fuel Assessment. This assessment evaluates the required quantities of charging infrastructure and/or hydrogen fueling station projects and calculates the costs of infrastructure procurement and installation sequenced over the transition timeline.

The **Maintenance Assessment** calculates all projected fleet maintenance costs over the transition timeline. Maintenance costs are calculated for each fleet scenario and include costs of maintaining existing fossil-fuel buses that remain in the fleet and maintenance costs of new BEBs and FCEBs.

The **Total Cost of Ownership Assessment** compiles results from the previous assessment stages to provide a comprehensive view of all fleet transition costs, organized by scenario, over the transition timeline.

## Requirements Analysis & Data Collection

The Requirements Analysis and Data Collection stage begins by compiling operational data from BCAG regarding its current fleet and operations and establishing service requirements to constrain the analyses in later assessments. CTE requested data such as fleet composition, fuel consumption and cost, maintenance costs, and annual mileage from B-Line to use as the basis for analyses. CTE also collected GPS data from a representative sample of B-Line's routes, which was used as the basis for modelling energy efficiencies for BEBs operating in B-Line's service area. The calculated efficiencies were then used in the Service Assessment to determine the energy requirements of B-Line's service.

CTE evaluated BEBs and FCEBs in B-Line's service to support BCAG's technology selection. The range of FCEBs, however, does not have the same level of sensitivity to environmental and operating conditions as BEBs. After collecting route and operational data, CTE determined that B-Line's longest block is 225 miles long. Based on observed performance, CTE estimates FCEBs are able to complete any block under 350 total miles, which means that FCEB technology already has the capability to meet B-Line's service requirements. Although FCEBs were determined to have the capability of serving all of B-Line's routes, BCAG was interested in exploring BEB Only and Mixed Fleet scenarios as well, so it was necessary to determine how much of B-Line's service could feasibly be served by depot-only charged BEBs in order to develop a set of ZEB transition scenarios that would allow the agency to make an informed decision on what technology or technologies would be most suitable to the agency's needs.

The energy efficiency and range of BEBs are primarily driven by bus specifications, such as on-board energy storage capacity and vehicle weight. Both metrics are affected by environmental and operating variables including the route

profile (e.g., distance, dwell time, acceleration, sustained top speed over distance, average speed, and traffic conditions), topography (e.g., grades), climate (e.g., temperature), driver behavior, and operational conditions such as passenger loads and auxiliary loads. As such, BEB efficiency and range can vary dramatically from one agency to another or even from one service day to another. It was therefore critical for BCAG to determine efficiency and range estimates based on an accurate representation of its operating conditions.

To understand BEB performance on B-Line's routes, CTE modeled the impact of variations in passenger load, accessory load, and battery degradation on bus performance, fuel efficiency, and range. CTE ran models with different energy demands that represented *nominal* and *strenuous* conditions. Nominal loading conditions assume average passenger loads and moderate temperature over the course of the day, which places low demands on the motor and heating, ventilation, and air conditioning (HVAC) system. Strenuous loading conditions assume high or maximum passenger loading and near maximum output of the HVAC system. This nominal/strenuous approach offers a range of operating efficiencies to use for estimating average annual energy use (nominal) or planning minimum service demands (strenuous). Route modeling ultimately provides an average energy use per mile (kilowatt-hour/mile [kWh/mi]) for each route, bus size, and load case.

In addition to loading conditions, CTE modeled the impact of battery degradation on a BEB's ability to complete a block. The range of a battery electric bus is reduced over time due to battery degradation. A BEB may be able to service a given block with beginning-of-life batteries, while later it may be unable to complete the entire block at some point in the future as batteries near their end-of-life or derated capacity (typically considered 70-80% of available service energy).

## Service Assessment

Given the conclusion that FCEBs could meet the range requirements for B-Line's service, the Service Assessment focused on evaluating the feasibility of BEBs in B-Line's service area. The efficiencies calculated in the Requirements Analysis & Data Collection stage were used to estimate the energy requirements of B-Line's service. The main focus of the Service Assessment is called the block analysis, which determines if generic battery electric technology can meet the service requirements of a block based on range limitations, weather conditions, levels of battery degradation and route specific requirements. The Transit Research Board's Transit Cooperative Research Program defines a block as "the work assignment for only a single vehicle for a single service workday".<sup>6</sup> A block is usually comprised of several trips on various routes. The energy needed to complete a block is compared to the available energy of the bus assigned to service the block. If the bus's usable onboard energy exceeds the energy required by the block, then the conclusion is that the BEB can successfully operate on that block.

The Service Assessment projects the performance of a BEB that is charged overnight at the depot and operates on BCAG's service schedule at the time of the plan's writing. The results are used to determine when along the transition timeline a fleet of overnight depot-charged BEBs can feasibly serve B-Line's territory or if another zero-emission technology is required to maintain service. This information can then be used to inform the scale and timing of BEB procurements in the Fleet Assessment.

## Modeling & Procurement Assumptions

CTE and BCAG defined the following assumptions and requirements used throughout the study:

The Service Assessment energy profile assumed a 5% improvement in battery capacity every year with a starting battery capacity of 440 kWh for 35' and 40' buses, which was the average battery capacity seen in commercially-available buses in 2021. Electric cutaways are modeled to have a battery capacity of 110 kWh and were assumed to have the same 5% rate of improvement in battery capacity every year.

This analysis also assumed that B-Line will maintain blocks in a similar distribution of distance, relative speeds, and elevation changes to pre-COVID-19 service because buses will continue to serve similar locations within the service area and general topography remains constant even if specific routes and schedules change.

Fleet size and vehicle length distribution do not change over time. The analysis assumed that buses reaching the end of their useful life would be replaced with vehicles of the same size. Total fleet size remains the same over the transition period.

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<sup>6</sup> TRB's Transit Cooperative Research Program. 2014. TCRP Report 30: Transit Scheduling: Basic and Advanced Manuals (Part B). [https://onlinepubs.trb.org/onlinepubs/tcrp/tcrp\\_rpt\\_30-b.pdf](https://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_30-b.pdf)

Buses are assumed to operate for a 12-year service life. Cutaways are assumed to operate for a 7-year service life. Usable on-board energy is assumed to be that of a mid-life battery (10% degraded) with a reserve at both the high and low end of the battery’s charge potential. As previously discussed, battery age affects range, so a mid-life battery was assumed as the average capacity of the battery’s service life. Charging batteries to 100% or dropping the charge below 10% also degrades the batteries over time, which is why the analysis assumes that the top and bottom portions of the battery are unusable.

CTE accounts for battery degradation over the transition period with the assumption that B-Line can rotate the ZEBs to battery capacity to block energy requirements. As the zero-emission fleet transition progresses, older buses can be moved to shorter, less demanding blocks and newer buses can be assigned to longer, more demanding blocks to account for battery degradation in BEBs over time. B-Line can rotate the fleet to meet demand, assuming there is a steady procurement of BEBs each year to match service requirements. CTE accounts for this variability in battery age by using a mid-life usable battery capacity to determine block feasibility.

## Results

The Service Assessment determines the timeline for when B-Line’s service may become achievable by BEBs on a single depot charge. Coupled with the FCEB range-to-block length comparison, the block analysis determines when, or if, a full transition to BEBs or FCEBs may be feasible. BCAG and CTE can then use these results to inform ZEB procurement decisions in the Fleet Assessment. Results from this analysis are also used to determine the specific energy requirements and fuel consumption of the fleet over time. These values are then used in the Fuel Assessment to estimate the costs to operate the transitioning fleet.

While routes and block schedules are unlikely to remain the same over the course of the transition period, these projections assume the blocks will maintain a similar distribution to current service because B-Line will continue to serve similar destinations within the city. This core assumption affects energy use estimates and block achievability in each year.

The results of B-Line’s Service Assessment can be seen below in **Figure 4**. Based on CTE’s analysis, 72% of B-Line’s blocks could be served by a single charge of a depot-only BEB with a 440-kWh battery and, with the assumed 5% improvement every year, 100% of BCAG’s blocks could be served by this technology by 2035, which means that all of B-Line’s service is feasible with depot-only charged BEBs within the transition period.

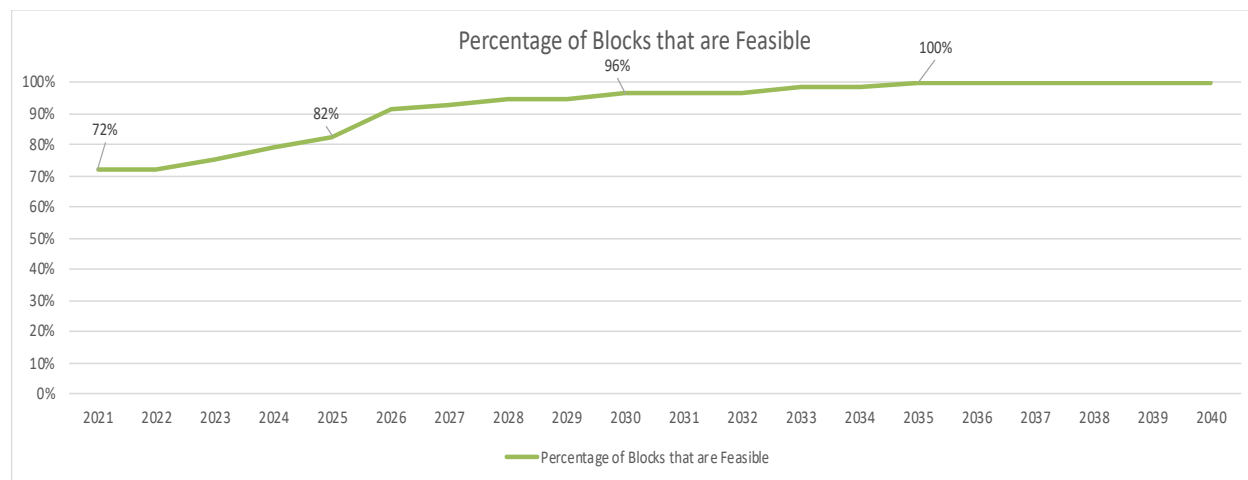


Figure 4 - BEB Block Achievability Percentage by Year

As noted previously, FCEBs are assumed to be able to complete any block under 350 total miles and BCAG’s longest block is 225 miles long, which means that FCEB technology already has the capability to meet B-Line’s service requirements.

## Cutaway Modeling

CTE’s modeling also included an analysis for battery electric cutaway vehicles using B-Line’s paratransit drive cycles. CTE found that the power limitations of the battery electric cutaway motor may limit the possible service to 8-9% of B-Line’s paratransit annual service. By 2025, 16.4% of B-Line’s paratransit annual service would be considered

feasible and by 2030, an electric cutaway vehicle is projected to be able to complete about half of their annual service.

Since the paratransit fleet also expends a significant amount of energy idling, CTE conducted an Endurance Analysis, which brought the energy requirements of the HVAC while idling into consideration for determining the range of these vehicles. Endurance may be more representative of the paratransit duty cycle as it accounts for idling energy during breaks, loading, or pauses in service along with miles traveled. Taking into account endurance, by 2025, only 4.4% of B-Line's paratransit annual service would be considered feasible. The results found that idling would have a significant detrimental impact on cutaway range.

Based on the results of the analysis, battery-electric cutaways would require some form of opportunity charging throughout the day to complete B-Line's paratransit service. Pantograph and inductive charging have not yet been demonstrated to be feasible for electric cutaways, so this option was not considered. Demand response service is run sporadically throughout the day, with vehicles typically returning to the depot after completing their assignments. Based on this service pattern, it was assumed that battery-electric cutaways could be charged throughout the day when they return to the depot which would allow them to complete all of B-Line's service.

## Description of ZEB Technology Solutions Considered

For this study, CTE developed 4 scenarios to compare to a baseline scenario and analyze the feasibility and cost effectiveness of implementing each bus technology as well as the co-implementation of both technologies. The scenarios are referred to by the following titles and described, in detail, below. A baseline scenario was developed to represent the typical "business-as-usual" case with retention of ICE buses for cost comparison purposes.

0. Baseline (current technology)
1. BEB Only
- 2a. Mixed Fleet - BEB Majority
- 2b. Mixed Fleet - FCEB Majority
3. FCEB Only

In the **BEB with Depot-Only Charging scenario**, BEBs are purchased and deployed only on blocks that are within a BEB's achievable range as determined by CTE's modeling. If depot-charged BEBs are not capable of meeting a transit agency's daily service requirements, there is an exception in the ICT regulation that will allow the agency to request an exemption to retain ICE buses in their fleet. Based on CTE's modeling, all of B-Line's blocks are fully achievable using BEB technology by 2035.

In the **Mixed Fleet – BEB Majority – (75% BEB) scenario**, FCEBs supplement a primarily BEB fleet to make up a fully ZEB fleet. The costs for infrastructure and installation of two different charging and fueling infrastructures are taken into account. FCEBs and hydrogen fuel, however, are more expensive than BEBs and electricity, so this scenario allows B-Line to assign the less expensive BEB technology where possible and supplement service with FCEBs as needed in support of resilience and redundancy adaption measures.

A **Mixed Fleet – FCEB Majority (75% FCEB) scenario** BEBs supplement a primarily FCEB fleet to make up a fully ZEB fleet. The costs for infrastructure and installation of two different charging and fueling infrastructures are taken into account. Based on CTE's modeling, all of B-Line's blocks are fully achievable using BEB technology by 2035, however, the range of FCEBs already currently exceed that of BEBs. This assessment therefore considers FCEBs capable of replacing diesel buses at a 1:1 ratio and allows B-Line the flexibility to operate the FCEBs in any of its blocks. In turn, blocking assignments are a key consideration for BEBs, particularly for those that are purchased prior to 2035. Overall, a mixed fleet is more resilient as it would allow service to continue if either fuel became temporarily unavailable for any reason.

Finally, the **FCEB Only scenario** was developed to examine the costs for hydrogen fueling and transitioning to a 100% FCEB fleet. A fully FCEB fleet avoids the need to install two types of fueling infrastructure by eliminating the need for depot charging equipment. Fleets comprised entirely of fuel cell electric buses also offer the benefit of scalability compared to battery electric technologies. Adding FCEBs to a fleet does not necessitate large complementary infrastructure upgrades. Despite this benefit, the cost of FCEBs and hydrogen fuel are still more expensive than BEBs and electricity at current market prices.

When considering the various scenarios, this study can be used to develop an understanding of the range of costs that may be expected for BCAG's ZEB transition, but ultimately, can only provide an estimate. Furthermore, this study aims to provide an overview of the myriad considerations the agency must take into account in selecting a transition



scenario that go beyond cost, such as space requirements, safety implications, and operational changes that may differ between scenarios.

# D

## Current Bus Fleet Composition and Future Bus Purchases

### Fleet Assessment Methodology

The Fleet Assessment projects a timeline for the replacement of existing buses with BEBs and FCEBs. The timeline is consistent with BCAG's fleet replacement plan that is based on the 12-year service life of transit buses and 7-year service life of cutaways. This assessment also includes a projection of fleet capital costs over the transition timeline.

### ZEB Cost Assumptions

CTE and BCAG developed cost assumptions for future bus purchases. Key assumptions for bus costs for the BCAG Transition Plan are as follows:

- ICE vehicle prices were provided by BCAG and are inclusive of costs for configurable options and taxes.
- Battery Electric 35'/40' and Fuel Cell Electric 35'/40' prices are from the 2022 CA State Contract Bus Pricing Report plus the annual PPI and tax (7.25%).
- Battery Electric 35'/40' prices include \$50K for extended battery warranty & \$120K for configurable options.
- Fuel Cell Electric 35'/40' prices include \$11k for extended fuel cell battery warranty & for \$120K configurable options.
- Electric Cutaway price is based on the CA State Contract and also includes \$50K for extended battery warranty & \$75K for configurable options and tax (7.25%).
- BEB battery capacity and range will improve, but the cost will remain stable due to economies of scale.
- Annual costs were not adjusted for inflation.
- Costs for retrofits or bus conversions are not included because BCAG does not plan to convert any ICE buses to battery electric powertrains.

Table 1 - Fleet Assessment Cost Assumption

	Fuel Type				
Length	CNG	Gas	Diesel	Electric	Fuel Cell
Cutaway	NA	\$70,000	NA	\$376,000	NA
35'	NA	NA	\$575,000	\$897,000	\$1,431,000*
40'	\$399,000	NA	\$600,000	\$1,171,000	\$1,431,000

\*Bus size not currently available for this technology

## Description of BCAG's Current Fleet

B-Line's current service and fleet composition provide the baseline for evaluating the costs of transitioning to a zero-emission fleet. BCAG staff provided the following key data on current service:

- Fleet composition by powertrain and fuel
- Routes and blocks
- Mileage and fuel consumption
- Maintenance costs

## Fleet

In 2021, the B-Line bus fleet included 29 diesel buses used for fixed route service, and 22 gasoline powered cutaways used for paratransit service. Bus services operate out of one depot in Chico, CA. Operations, maintenance, and fueling functions are performed at the depot.

## Routes and Blocks

B-Line's current service consists of 21 fixed routes run on 57 blocks. Routes range in length from 4.26 miles to 52.26 miles and blocks range in distance from 45.63 miles to 225.34 miles. Buses pull out as early as 4:25 and return as late as 22:20. BCAG's service runs through the County of Butte, the City of Chico, the City of Oroville, and the Town of Paradise.

## Current Mileage and Fuel Consumption

### Annual mileage of the fleet:

1,840,000 miles

B-Line's ZEB Transition Plan assumes that the amount of service miles will remain the same.

### Annual fuel consumption:

240,000 gallons of diesel

80,000 gallons of gasoline

### Fleet average efficiency:

5.75 miles per DGE

### BCAG current fuel expense:

\$1,160,000 per year

**Average fuel costs:**  
 \$3.80 per diesel gallon  
 \$3.60 per gasoline gallon

## ICE Maintenance Costs

In 2019, BCAG spent approximately \$729k on scheduled and unscheduled maintenance, including both parts and labor, for the entire fleet. This results in the average annual maintenance costs per mile by vehicle type in **Table 2**. Buses also undergo one engine overhaul at midlife summarized in **Table 3**.

*Table 2 - Labor and Materials Cost Assumptions*

Vehicle Type	Estimate (Per Mile)
30'/35' Diesel Bus	\$ 0.32
40' Diesel Bus	\$ 0.35
Gas Cutaway	\$ 0.35

*Table 3 - Midlife Overhaul Cost Assumptions*

Type	Overhaul Scope	Estimate
Diesel	Engine/Transmission Overhaul	\$36k per bus
Cutaway	Engine/Transmission Overhaul	\$10k per cutaway

## Zero-Emission Bus Procurement Plan and Schedule

As previously discussed, a fleet made up primarily of depot-charged BEBs (75% of the fleet) with 25% FCEBs will be sufficient to meet B-Line's service demands. BCAG's fleet transition strategy is to replace each diesel and compressed natural gas (CNG) bus with a BEB or FCEB as they reach the end of their 12-year useful life and replace each gas cutaway with a battery electric cutaway as they reach the end of their 7-year useful life beginning in 2030. Paratransit and dial a ride service will be delivered with vehicles sized to fit the agencies needs and meet current ICT regulation guidance and criteria. There are smaller vehicles becoming available that may meet the needs of Butte Regional Transit that may be incorporated into the fleet of vehicles currently used for these services. The analysis contained herein, however, assumes that 25ft ICE cutaways will be replaced by 25ft battery electric cutaways. **Figure 5** below provides the number of each bus type that will be purchased each year through 2040 with this replacement strategy.



Figure 5 - Projected Bus Purchases, Mixed Fleet - BEB Majority

**Figure 6** demonstrates the annual composition of B-Line's fleet through 2040. By 2040, B-Line's fleet will consist entirely of zero emission vehicles.

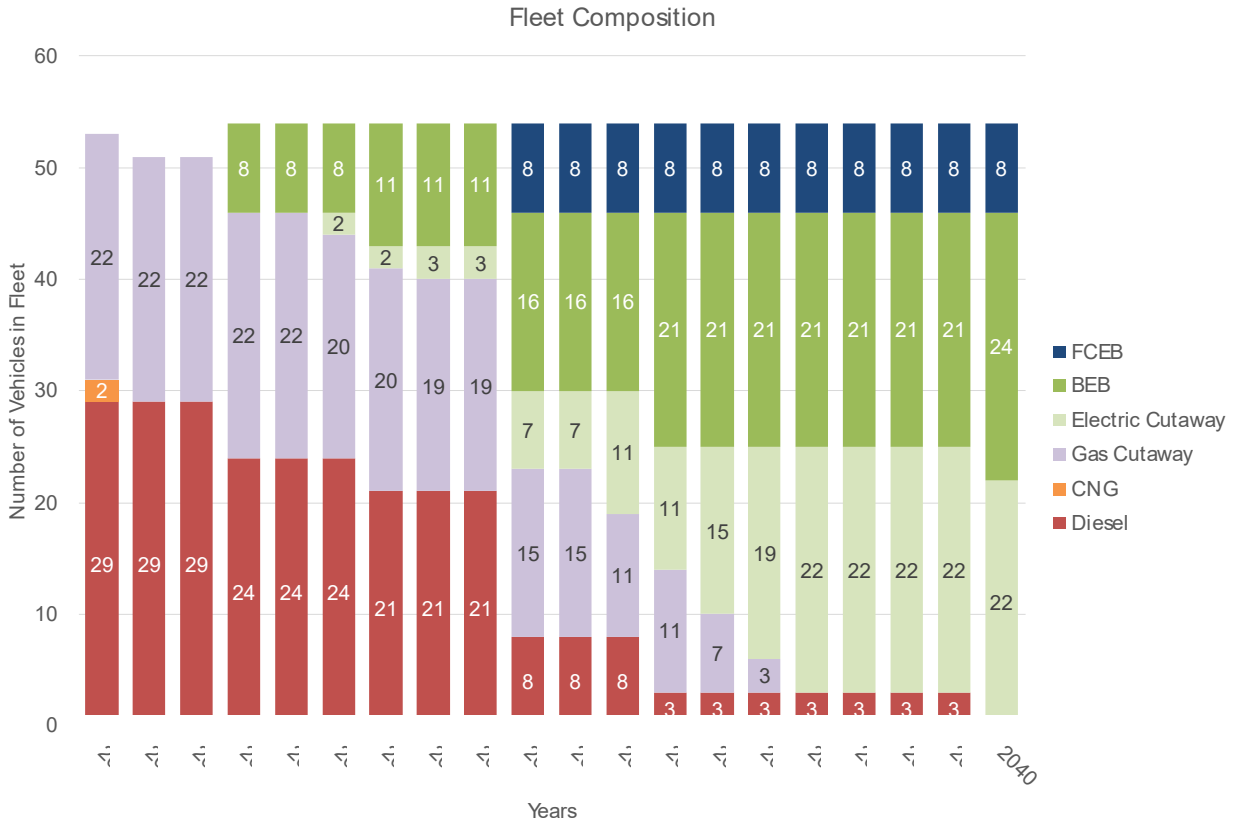


Figure 6 - Annual Fleet Composition, Mixed Fleet - BEB Majority

**Figure 7** shows the annual total bus capital costs in the selected transition scenario. 2030 is a major purchase year when 13 diesel buses will reach the end of their 12-year useful service life and 4 gasoline powered cutaways will reach the end of their 7-year useful life.

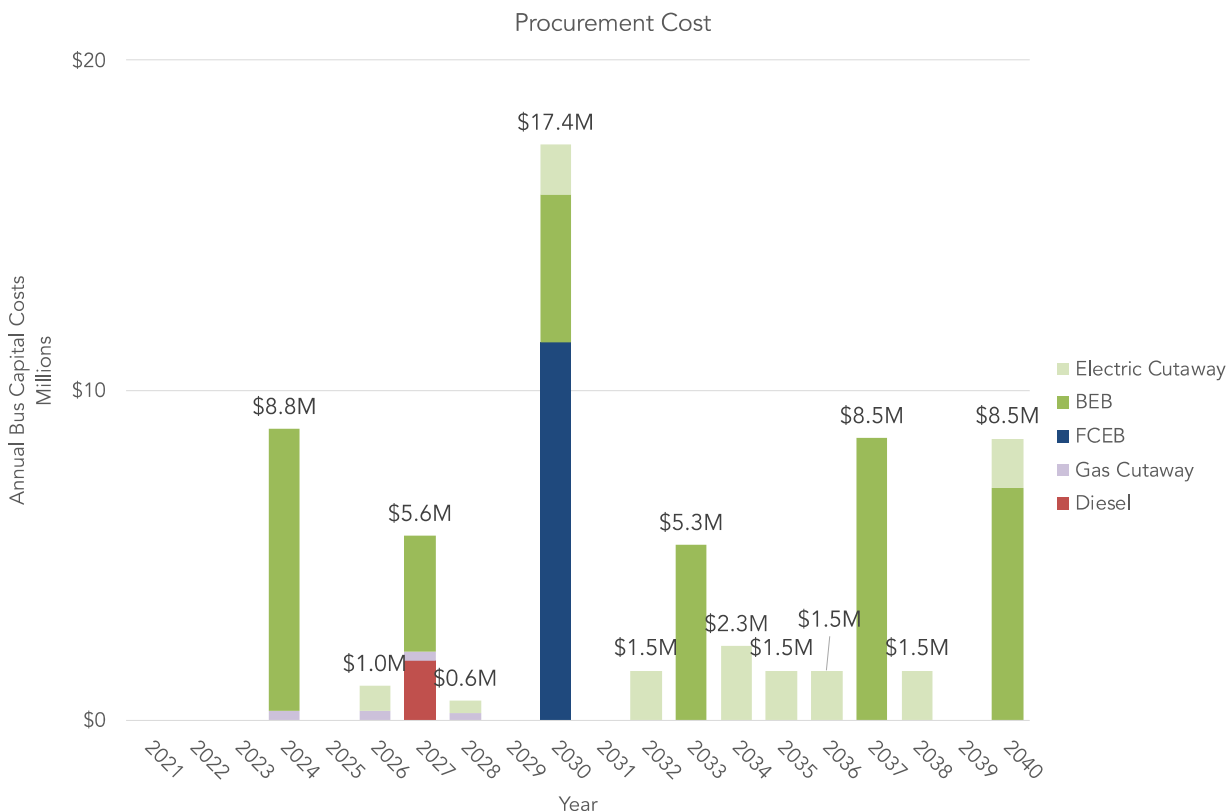


Figure 7 - Annual Capital Cost, Mixed Fleet - BEB Majority

As seen in **Table 4**, the capital investment required for purchasing ZEBs is significantly higher than for ICE buses. This highlights the importance of staying vigilant in the search for funding opportunities to help fill this gap.

Table 4 - BCAG Bus Capital Investment to transition to a 100% ZEB fleet by 2040

	ICE Baseline*	ZEB Incremental Costs	Total Investment
<b>Bus Capital Costs</b>	\$38M	\$26M	\$64M

\*Represents the capital costs that would have been incurred in the absence of the ICT Regulation

## Additional Considerations

When purchasing FCEBs and BEBs, the process may differ slightly from the process BCAG currently uses to purchase vehicles. First, when contracting with FCEB and BEB manufacturers, BCAG should ensure expectations are clear between the bus OEM and the agency. As with a CNG and diesel purchases the agreement should be clear regarding the bus configurations, technical capabilities, build and acceptance process, production timing with infrastructure, warranties, training, and other contract requirements. Additionally, by developing and negotiating specification language collaboratively with the bus vendor(s), BCAG can work with the vendor(s) to customize the bus to their needs as much as is appropriate, help advance the industry based on agency requirements and recommended advancements, ensure the acceptance and payment process is fully clarified ahead of time, fully document the planned capabilities of the bus to ensure accountability, and generally preempt any unmet

expectations. Special attention should be given in defining the technical capabilities of the vehicle, since defining these for ZEBs may differ from ICE buses.

When developing RFPs, purchasing off state and cooperative agreement contracts, and contracting for BEB and FCEB procurement, BCAG should specify the source of funding for the vehicle purchases to ensure grant compliance, outline data access requirements, define the price and payment terms, establish a delivery timeline, and outline acceptance and performance requirements. BCAG should test the buses upon delivery for expected performance in range, acceleration, gradeability, highway performance, and maneuverability. Any such performance requirements must be included in the technical specification portion of the RFP and contract to be binding for the OEM. Defining technical specifications for ZEBs will also differ slightly from their current diesel, CNG and gasoline vehicles since they will need to include requirements for hydrogen fuel cell and battery performance. It is also recommended that BCAG purchase an extended battery warranty for the vehicles, which should be specified in the RFP and contract.

FCEB procurement will also differ from ICE procurements since there are fewer OEMs presently manufacturing these vehicles, although this is expected to change with increasing demand. BCAG will also be able to apply for additional funding for these vehicles through zero-emission vehicle specific funding opportunities, which are discussed further in which are discussed further in **Section H: Potential Funding Sources**.



# E

## Facilities and Infrastructure Modifications

### BCAG Facility Configuration and Depot Layout

**Depot Address:**

326 Huss Lane, Chico CA, 95928

**Electric Utility:**

PG&E

**Located in a NOx Exempt Area?**

No

**Bus Parking Capacity:**

50+

**Current Vehicle Types Supported:**

BCAG's depot currently supports fueling and maintenance of diesel and CNG buses and gasoline cutaways.

**Propulsion Types That Will be Supported at Completion of ZEB Transition:**

Battery electric and hydrogen fuel cell electric propulsion

### Facilities Assessment Methodology

Mixed fleet BEB and FCEB deployments such as BCAG's require installation of charging stations and improvements to existing electrical infrastructure as well as hydrogen fueling infrastructure. FCEB deployments require installation of a fueling station and may require improvements such as upgrades to the switchgear or utility service connections. Planning and design work, including development of detailed electrical and construction drawings required for permitting, is also necessary once specific charging equipment has been selected.

Building off of the fleet procurement schedule that was outlaid in the Fleet Assessment, CTE then uses industry average pricing to develop infrastructure scenarios that estimate the cost of building out the infrastructure necessary to support a full fleet transition to ZEBs. This plan assumes that infrastructure projects will be completed prior to each bus delivery. To project the costs of fueling infrastructure, CTE used industry pricing provided by A&E subcontractors and an infrastructure build timeline based on the procurement timeline. This plan assumes that infrastructure projects will be completed prior to each bus delivery. These projects are described in detail below.

### Infrastructure Upgrade Requirements to Support Zero-Emission Buses

#### Description of Depot-Fueling Infrastructure Considered

In the Mixed Fleet: BEB Majority scenario, charging infrastructure is required to service a total of 24 BEBs and 22 electric cutaways, and hydrogen fueling infrastructure is also required to fuel eight FCEBs to achieve a completely zero-emission bus fleet by 2040. Because there are separate costs associated with each type of ZEB technology, the facilities assessment for this scenario is broken down by each fuel type. The total cost of this scenario will be slightly more than \$16M.

## BEB Charging Infrastructure Summary

In order to support the BEB portion of the fleet, BCAG will need to work with a contractor to conduct detailed infrastructure planning, purchase chargers and dispensers, and add service capacity to their site. The estimated infrastructure costs for these technology & infrastructure expenses are as follows:

- **INFRASTRUCTURE PLANNING.** Building charging infrastructure requires planning at the depot. This assessment assumes that a planning project costs \$200,000 and occurs only once per depot. The total cost of planning projects for BCAG's single depot is estimated at \$200,000.
- **DISPENSERS AND CHARGERS.** A total of 46 dispensers will be needed at BCAG's depot to accommodate 24 BEBs and 22 battery electric cutaways in the fleet. In total, this scenario will require 23 chargers under the assumption that there will be two dispensers per charger. Charging projects include purchase and installation of 150 kW chargers and dispensers. This would come to \$8.8 million for BCAG by 2040.
- **ELECTRIC SERVICE UPGRADE.** BCAG requires an estimated 3 MW of additional electricity capacity by 2040 to accommodate charging for 24 BEBs and 22 battery electric cutaways. To meet the growing demand for electricity, the BROC depot will need to upgrade its system to at least 1 MW of capacity by 2024, 1 MW of capacity by 2030, and 1 MW by 2034. This is estimated to cost around \$2.4 million over the transition period.
- **GENERAL CONDITIONS / GENERAL REQUIREMENTS:** A 15% General Conditions and Requirements cost is applied to all projects to account for costs incurred by the contractor that are not directly construction costs, such as business operations.
- **CONTINGENCY.** A 20% contingency is added on all project costs.
- **MARKET FACTOR.** 7% is added on all project costs, conditions, and contingency.
- **BONDS AND INSURANCE.** 2% is added on all project costs, conditions, contingency, and market factors.
- **CONTRACTOR'S FEE.** 6.5% is added on all project costs, conditions, contingency, and market factors.

CTE recommends that BCAG complete the infrastructure over time as necessary to support their gradual BEB deployments. The estimated total BEB infrastructure costs for the Mixed Fleet scenario are approximately \$11.4 million (see **Figure 8**) and costs are incrementally incurred with each BEB purchase.

## FCEB Fueling Infrastructure Summary

In addition to BEB charging, hydrogen fueling is required to support the Mixed Fleet: BEB Majority Scenario. Like BEB infrastructure, a FCEB infrastructure deployment will also require hiring an infrastructure planning contractor. A storage capacity project, maintenance bay upgrades and fueling infrastructure costs will also be necessary to allow BCAG to fuel their hydrogen fuel cell vehicles on site. Infrastructure is assumed to be built out in one project that will conclude prior to the first FCEB deployment in 2030. The estimated infrastructure costs for these technology & infrastructure expenses are as follows:

- **INFRASTRUCTURE PLANNING.** Building hydrogen infrastructure requires planning at the depot. This assessment assumes that a planning project costs \$200,000 and occurs only once per depot. The total cost of planning projects for BCAG's single depot will be approximately \$200,000.
- **STORAGE CAPACITY PROJECTS.** The total cost for storage capacity projects at BCAG will be approximately \$500,000 over the transition period.
- **MAINTENANCE BAY UPGRADES.** Maintenance bay upgrades are required to make the bays compliant with hydrogen safety regulations. At BCAG, CTE integrated the A&E's estimated cost for each bay upgrade at \$58,000. This cost estimate stems from the requirement of additional ventilation systems necessary for hydrogen detection. With six maintenance bay and gas detection upgrades, the total cost for hydrogen infrastructure in this scenario is estimated at \$1.2 million.
- **H2 FUELING INFRASTRUCTURE.** The number of dispensers is a variable that can be scaled to fit the number of vehicles that need to be fueled. A single dispenser is capable of fueling a single bus every 15 minutes. Therefore, having two dispensers will allow vehicles to be fueled twice as fast as a single dispenser. Because this scenario requires fueling only 12 vehicles, which could be fueled in three hours with a single dispenser, and since this three-hour fueling window is acceptable to BCAG, a single dispenser and associated fueling elements is assumed, which is estimated to cost \$1.9 million.

- **GENERAL CONDITIONS / GENERAL REQUIREMENTS:** A 15% General Conditions and Requirements cost is applied to all projects to account for costs incurred by the contractor that are not directly construction costs, such as business operations.
- **CONTINGENCY.** A 20% contingency is added on all project costs.
- **MARKET FACTOR.** 7% is added on all project costs, conditions, and contingency.
- **BONDS AND INSURANCE.** 2% is added on all project costs, conditions, contingency, and market factors.
- **CONTRACTOR'S FEE.** 6.5% is added on all project costs, conditions, contingency, and market factors.

Figure 8 shows the estimated infrastructure costs for the FCEB technology, which includes the following costs and reaches a sum of \$4.6 million.

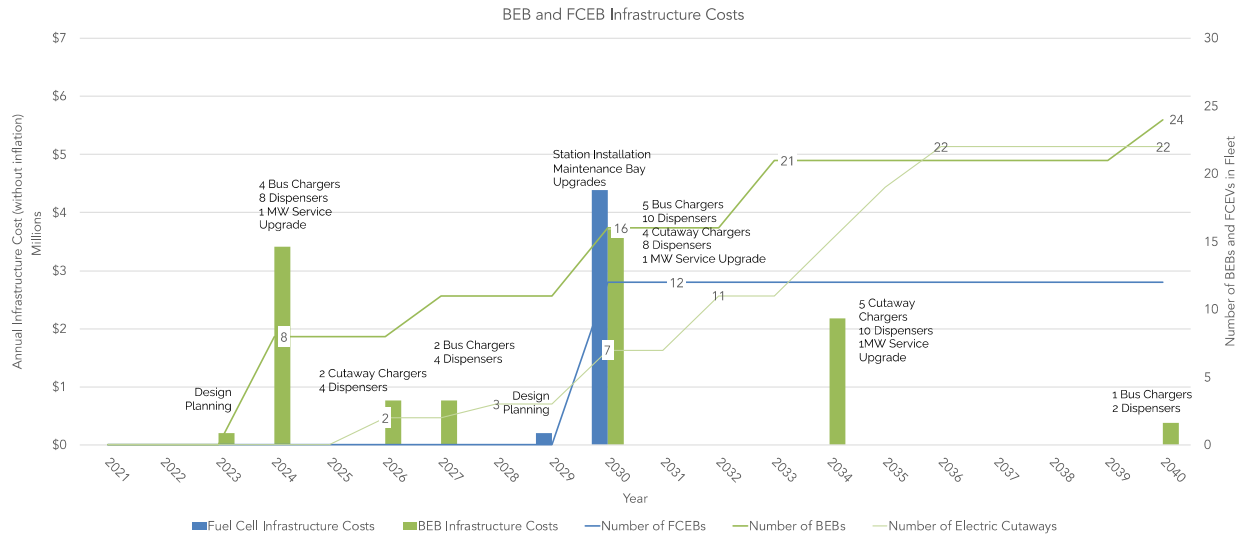


Figure 8 - Infrastructure Costs, Mixed Fleet - BEB Majority Charging Scenario

In addition to assessing the fueling and maintenance infrastructure requirements for BCAG’s ZEB transition, CTE also conducted a Redundancy, Resilience, and Emergency Response (3R) Assessment, which investigates the new risks to an agency’s ability to provide service during power outages or fuel disruptions and the ability to support required emergency response activities, such as community evacuation with a full ZEB fleet. The project team applied a risk assessment methodology to evaluate various adaptation measures that reduce risks from identified threats. The effectiveness of adaptation measures is informed by factors such as cost, risk reduction capabilities, a transit agency’s risk tolerances, facility constraints, and environmental impacts.

BCAG’s primary concerns are addressing ZEB fleet operation in the event of a fuel interruption (i.e., power outage or hydrogen fuel delivery disruption) and planning for evacuation support. BCAG has previously been impacted by severe wildfires, which required community evacuation, and may also put BCAG at risk from planned power outages. It is expected that severe wildfires and flooding events will become more likely and more extreme in the future due to climate change impacts.

CTE worked with BCAG to determine what the agency’s minimum service requirements would be under several scenarios that would affect the agency’s ability to fuel ZEBs, such as a wildfire, flood, or power outage and then created adaptation measures to meet the determined service demands. Adaptation measures explored include backup power options, such as a generator or maintaining additional hydrogen storage on-site, maintaining backup buses or creating an alternative fueling site. Adaptation measures were assessed to cost between \$400,000 to \$3,189,000 with varying effectiveness. Although BCAG has not chosen an adaptation package at this time, the knowledge that these options are available gives the agency confidence in their ability to provide necessary evaluation services with a fully ZEB fleet although implementing such a strategy will add to the capital costs of their transition.

## Utility Partnership Review

BCAG is working with the Utility provider, Pacific Gas and Electric (PG&E), which currently serves BCAG's depot. BCAG is aware that taking advantage of PG&E's benefits and ensuring a successful battery electric bus deployment requires close, ongoing coordination with PG&E.

Further, BCAG understands establishing and maintaining a partnership with the alternative fuel provider is critical to successfully deploying zero-emission vehicles and maintaining operations. Hydrogen fueling requires a plan for infrastructure installation, delivery, storage, dispensing, and upgrades to maintenance facilities. While fueling operations for hydrogen may require fewer operational changes than electric bus charging, understanding the local hydrogen supply market can be its own challenge. To overcome this challenge, BCAG may consider a competitive bid process for a design/build project as a reasonable approach to determining the appropriately sized station and selecting the most appropriate fueling technology at the best price. BCAG is also located in a region that has been targeted for hydrogen production from biowaste projects. BCAG will strive to partner with local producers as much as possible.

# F

## Providing Service in Disadvantaged Communities

### Providing Zero-Emission Service to DACs

In California, CARB defines disadvantaged communities (DACs) as communities that are both socioeconomically disadvantaged and environmentally disadvantaged due to local air quality. Lower income neighborhoods are often exposed to greater vehicle pollution levels due to proximity to freeways and the ports, which puts these communities at greater risk of health issues associated with tailpipe emissions.<sup>7</sup> ZEBs will reduce energy consumption, harmful emissions, and direct carbon emissions in six opportunity zones and disadvantaged communities in rural Northern California as shown in the service map below. B-Line serves the following census communities identified as DACs: 6007003700 and 6007001300, which have a pollution burden of 85-90% according to CalEnviroScreen. They are shown in **Figure 9** below.

Environmental impacts, both from climate change and from local pollutants, disproportionately affect transit riders. For instance, poor air quality from tailpipe emissions and extreme heat harm riders waiting for buses at roadside stops. The transition to zero-emission technology will benefit the region by reducing fine particulate pollution and improving overall air quality. In turn, the fleet transition will support better public health outcomes for residents in DACs served by the selected routes.

Public transit has the potential to improve social equity by providing mobility options to low-income residents lacking access to a personal vehicle and helping to meet their daily needs. In California, transit use is closely correlated with car-less households as they are five times more likely to use public transit than households with at least one vehicle.<sup>8</sup> Although 21% of Californians in a zero-vehicle household are vehicle free by choice, 79% do not have a vehicle due to financial limitations. Many low-income people therefore rely solely on public transportation for their mobility needs.<sup>9</sup> B-Line's current fleet of fixed route diesel buses consume an annual average of 240,000 gallons of diesel. The combustion of this fuel exposes those who are reliant on public transportation to diesel exhaust, which has been classified as a probable human carcinogen with links to asthma and other lung related health issues.<sup>10</sup> Portions of B-Line's service area are in the 90th-100th percentile for diesel particulate matter (PM) according to CalEnviroScreen 4.0. Moving B-Line's fleet to zero-emission technology will help alleviate this pollution, which will improve the health of communities impacted by high diesel PM and all Sacramento Valley communities.

Access to quality transit services provides residents with a means of transportation to go to work, to attend school, to access health care services, and run errands. By purchasing new vehicles and decreasing the overall age of its fleet, B-Line is also able to improve service reliability and therefore maintain the capacity to serve low-income and disadvantaged populations. Replacing diesel vehicles with zero-emission vehicles, will also benefit these populations by improving local air quality and reducing exposure to harmful emissions from diesel exhaust.

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<sup>7</sup> Reichmuth, David. 2019. Inequitable Exposure to Air Pollution from Vehicles in California. Cambridge, MA: Union of Concerned Scientists. <https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles-california-2019>

<sup>8</sup> Grengs, Joe; Levine, Jonathan; and Shen, Qingyun. (2013). Evaluating transportation equity: An inter-metropolitan comparison of regional accessibility and urban form. FTA Report No. 0066. For the Federal Transit Administration

<sup>9</sup> Paul, J & Taylor, BD. 2021. Who Lives in Transit Friendly Neighborhoods? An Analysis of California Neighborhoods Over Time. Transportation Research Interdisciplinary Perspectives. 10 (2001) 100341. <https://reader.elsevier.com/reader/sd/pii/S2590198221000488?token=CABB49E7FF438A88A19D1137A2B1851806514EF576E9A2D9462D3FAF1F6283574907562519709F8AD53DEC3CF95ACF27&originRegion=us-east-1&originCreation=20220216190930>

<sup>10</sup> National Resources Defense Council Coalition for Clean Air. No breathing in the aisles — diesel exhaust inside school buses. New York: The Council; January 2001. Available: [www.nrdc.org/air/transportation/schoolbus/sbusinx.asp](http://www.nrdc.org/air/transportation/schoolbus/sbusinx.asp)

## Map of Disadvantaged Communities served by B-Line

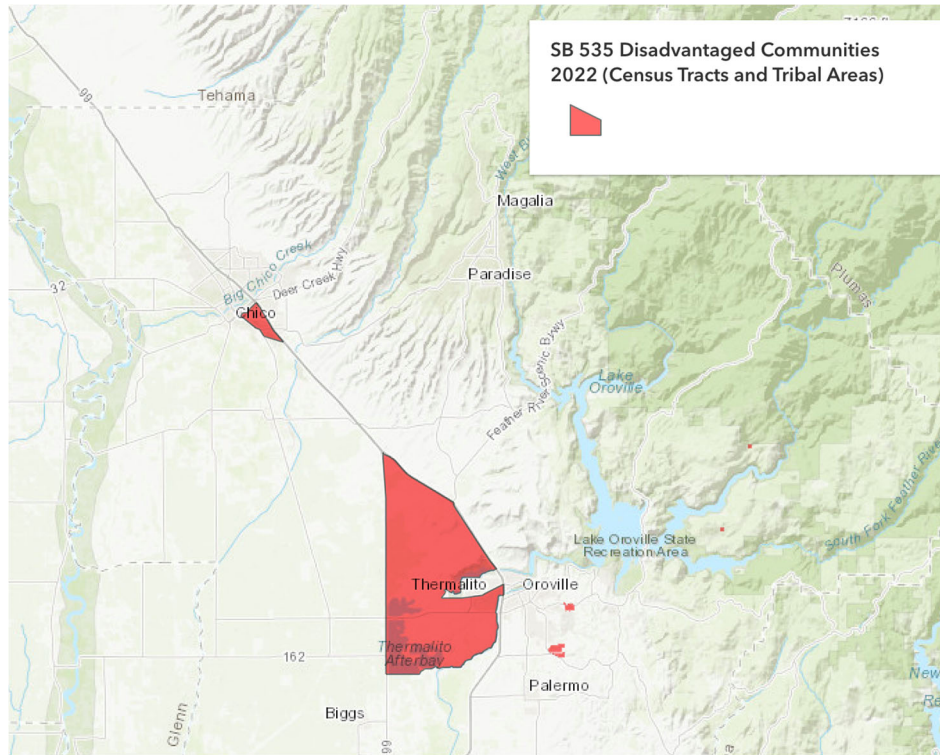


Figure 9 - B-Line Disadvantaged Communities Service Map

## Emissions Reductions for DACs

Greenhouse gases (GHG) are the compounds primarily responsible for atmospheric warming and include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). The effects of greenhouse gases are not localized to the immediate area where the emissions are produced. Regardless of their point of origin, greenhouse gases contribute to overall global warming and climate change.

Criteria pollutants include carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), particulate matter under 10 and 2.5 microns (PM<sub>10</sub> and PM<sub>2.5</sub>), volatile organic compounds (VOC), and sulfur oxides (SO<sub>x</sub>). These pollutants are considered harmful to human health because they are linked to cardiovascular issues, respiratory complications, or other adverse health effects.<sup>11</sup> These compounds are also commonly responsible for acid rain and smog. Criteria pollutants cause economic, environmental, and health effects locally where they are emitted. CARB defines DACs in part as disadvantaged by poor air quality because polluting industries or freight routes have often been cited in these communities. The resulting decrease in air quality has led to poorer health and quality of life outcomes for residents.

By transitioning to ZEBs from diesel buses, B-Line's zero-emission fleet will produce fewer carbon emissions and fewer harmful pollutants from the vehicle tailpipes. Communities disadvantaged by pollution served by B-Line's fleet will therefore directly benefit from the reduced tailpipe emissions of ZEBs compared to ICE buses.

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<sup>11</sup> Institute of Medicine. *Toward Environmental Justice: Research, Education, and Health Policy Needs*. Washington, DC: National Academy Press, 1999; O'Neill MS, et al. Health, wealth, and air pollution: Advancing theory and methods. *Environ Health Perspect*. 2003; 111: 1861-1870; Finkelstein et al. Relation between income, air pollution and mortality: A cohort study. *CMAJ*. 2003; 169: 397-402; Zeka A, Zanobetti A, Schwartz J. Short term effects of particulate matter on cause specific mortality: effects of lags and modification by city characteristics. *Occup Environ Med*. 2006; 62: 718-725.

## Estimated Ridership in DACs

B-Line serves a diverse community, with a large portion of their daily passengers being individuals without cars (by choice or because of financial limitation), university students, and paratransit riders. Although ridership on transit in general has been decreasing over the past few years due, at least in part, to lower gas prices, combined with more affordable low-cost automobiles, which has allowed more people the opportunity to own and operate personal cars, the ridership reductions seen by B-Line in recent years are more directly tied to reduced population in their service area following the Camp Fire.<sup>12</sup> In 2018, the Camp Fire burned through Butte County and destroyed homes and businesses in the town of Paradise, which is served by BCAG's transit services. In 2020, B-Line's service was further reduced by the Coronavirus Disease 2019 SARS-CoV-2 (COVID/COVID-19) outbreak.

B-Line's service experienced significant reduction after the 2018 Camp Fire and has not returned to its original service levels and is not expected to. Since the beginning of the COVID-19 pandemic, the services have stayed the same with the exception of Route 40 and 41, which runs through areas affected by the Camp Fire—demand for bus service in Paradise has remained low. Based on BCAG's data of available ridership and total fares received from July 2018 through the month of June 2019 (pre-COVID levels), there were 949,871 fixed-route passengers and 141,277 paratransit passengers<sup>13</sup>. BCAG anticipates annual ridership to be less than this over the next five years. In response to the changing ridership needs, due in part to the Camp Fire and COVID, BCAG is conducting a Route Optimization Study, which will be completed in the Summer of 2023 in order to re-assess how to most efficiently serve individual routes as well as the whole system.

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<sup>12</sup> Grengs, Joe, Jonathan Levine, and Qingyun Shen. (2013). Evaluating transportation equity: An inter-metropolitan comparison of regional accessibility and urban form. FTA Report No. 0066. For the Federal Transit Administration

<sup>13</sup> Page 21 of BCAG's Unmet Transit Needs Assessment – 2021/2022 <http://www.blinetransit.com/documents/UTN/2122-Transit-Needs-Assessment-Final.pdf>



# Workforce Training

## BCAG's Current Training Program

BCAG is experienced in recruiting, hiring, training, and integrating new staff to ensure that BCAG's employees are qualified to provide quality services to their riders. The level of training that BCAG drivers and maintenance staff engage in is dependent upon their level of experience at time of hiring. BCAG's training is conducted by Transdev, which specializes in operator and maintenance training.

### Operator Development Program (ODP)

The Operator Development Program is designed to teach all the essential skills to enable Operators to do their job at the highest level of safety and competence. It integrates classroom courses, closed-course, and behind the wheel training modules. New hire training is 120 hours, and follow up training is required annually. Training includes:

- Technical Training
- Safe Driving
- Behind-the-Wheel (BTW) Training
- Cadetting In-service Training
- Ongoing Safety Monitoring
- Disability Awareness, Passenger Sensitivity, and Customer Service Training
- Training Documentation/Evaluation
- Operator Retraining

Operators must meet 33 Performance Standards and Skills.

### Mechanics Training

Transdev has developed a maintenance training program that ensures that technicians are equipped to diagnose and address every eventuality with precision, thereby ensuring the necessary order or repair is completed correctly the first time and that a safe fleet of vehicles is available for operations. Technicians also receive annual refresher trainings, and any new systems and equipment that are added to BCAG's operations are immediately incorporated into the program.

### Dispatchers and Supervisors Training

All Dispatchers and Road Supervisors complete all modules of Operator training, with 40 hours of additional training and on the job training. This includes job shadowing and ongoing training completed at least quarterly.

## BCAG's ZEB Training Plan

### OEM Training

BCAG plans to take advantage of trainings from the bus manufacturers and station suppliers, including maintenance and operations training, station operations and fueling safety, first responder training and other trainings that may be offered by the technology providers. OEM trainings provide critical information on operations and maintenance aspects specific to the equipment model procured. Additionally, many procurement contracts include train-the-trainer courses through which small numbers of agency staff are trained and subsequently train agency colleagues. This method provides a cost-efficient opportunity to provide widespread agency training on new equipment and technologies.



## Bus and Fueling Operations and Maintenance

The transition to a zero-emission fleet will have significant effects on BCAG's workforce. Meaningful investment is required to upskill maintenance staff and bus operators trained in ICE vehicle maintenance and ICE fueling infrastructure.

BCAG training staff will work closely with the OEM providing vehicles to ensure all mechanics, service employees, and bus operators complete necessary training prior to deploying ZEB technology and that these staff undergo refresher training annually and as needed. BCAG staff will also be able to bring up any issues or questions they may have about their training with their trainers. Additionally, trainers will observe classes periodically to determine if any staff would benefit from further training.

## ZEB Training Programs Offered by Other Agencies

Several early ZEB adopters have created learning centers for other agencies embarking on their ZEB transition journeys. One such agency is SunLine Transit Agency, which provides service to the Coachella Valley and hosts the West Coast Center of Excellence in Zero Emission Technology (CoEZET). The Center of Excellence supports transit agency adoption, zero-emission commercialization and investment in workforce training. Similarly, AC Transit offers training courses covering hybrid and zero-emission technologies through their ZEB University program. BCAG's transit provider, Transdev, is investing in resources to become an organization capable of training operators and mechanics in the operation, maintenance and repair of zero emission vehicles BCAG plans to take advantage of these trainings offered by experienced agencies as well as contributing to the development of in-house training with contract transportation providers.

# H

## Potential Funding Sources

### Sources of Funding for ZEB Transition

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

#### Federal

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

##### Annual Reliable Funding

- Federal Transportation Administration (FTA)
  - Urbanized Area Formula program
  - State of Good Repair Grants

##### Future Funding Opportunities

- United States Department of Transportation (USDOT)
  - Better Utilizing Investments to Leverage Development (BUILD) Grants
- Federal Transportation Administration (FTA)
  - Bus and Bus Facilities Discretionary Grant
  - Urbanized Area Formula program
  - State of Good Repair Grants
  - Capital Investment Grants – New Starts
  - Capital Investment Grants – Small Starts
  - Low-or No-Emission Vehicle Grant
  - Metropolitan & Statewide Planning and Non-Metropolitan Transportation Planning
  - Flexible Funding Program – Surface Transportation Block Grant Program
- Federal Highway Administration (FHWA)
  - Congestion Mitigation and Air Quality Improvement Program
- Environmental Protection Agency (EPA)
  - Environmental Justice Collaborative Program-Solving Cooperative Agreement Program

#### State

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

##### Secured Funding

- California Department of Transportation (Caltrans)
  - State Transit Assistance (STA) + STA SB1

##### Future Funding Opportunities

- California Air Resources Board (CARB)
  - Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)
  - State Volkswagen Settlement Mitigation

- Carl Moyer Memorial Air Quality Standards Attainment Program
- Cap-and-Trade Funding
- Low Carbon Fuel Standard (LCFS)
- California Transportation Commission (CTC)
  - Solution for Congested Corridor Programs (SCCP)
- California Department of Transportation (Caltrans)
  - Low Carbon Transit Operations Program (LCTOP)
  - Transportation Development Act
  - Transit and Intercity Rail Capital Program
  - Transportation Development Credits
  - New Employment Credit
- California Energy Commission

## Local

Additionally, BCAG will pursue local funding opportunities to support zero-emission bus deployment. While the aforementioned funding opportunities are mentioned by name, BCAG will not be limited to these sources and will regularly assess opportunities for fiscal support for the ZEB program.

## Legislation Supporting the Zero-Emission Transition

Policies and regulations supporting the transition to zero-emission are proliferating as the efforts to decarbonize the transportation sector expand. BCAG will monitor the implementation of relevant policies and legislation. With the passage of the *Bipartisan Infrastructure Law* and issuance of *Executive Order 14008: Tackling the Climate Crisis at Home and Abroad*, the federal government has set a renewed focus on zero-emission transit. BCAG's goal to deploy zero-emission vehicles supports the federal administration's priorities of renewing transit systems, reducing Greenhouse Gas emissions from public transportation, equity, creation of good paying jobs, and connecting communities. State legislation such as the Innovative Clean Transit Regulation further supports the replacement of fossil-fuel vehicles on the roads of California. Moreover, on August 25, 2022, the CARB approved the Advanced Clean Cars II Rule, requiring all new vehicles sold in California to be zero-emission vehicles (ZEVs) by 2035.

# Start-up and Scale-up Challenges

## Financial Challenges

Challenges can arise with any new propulsion technology, its corresponding infrastructure, or in training operators and maintenance staff. Nearly all transit agencies must contend with the cost barriers posed by zero-emission technologies. The current market cost of ZEBs is between \$750,000 and \$1,700,000, which is about \$250,000 to \$1,200,000 more costly than traditional diesel buses. Additionally, the necessary infrastructure to support these buses adds to the financial burden of transitioning to a ZEB fleet, as outlined below in **Table 5**. BCAG will seek financial support to cover the cost of their FCEBs from the resources discussed in Section H.

Table 5 - Incremental Cost of ZEB Transition

Incremental cost of ZEB Transition			
	ICE Baseline*	ZEB Incremental Costs	ZEB Transition Scenario Costs
Bus Capital Expense	\$38M	\$26M	\$64M
ZEB Fueling Infrastructure	\$2	\$14M	\$16M
Total	\$40M	\$40M	\$80M

\*Represents the capital costs that would have been incurred in the absence of the ICT Regulation

As seen in **Table 5**, costs of required fueling infrastructure and fueling operations for ZEB technologies pose another hurdle for transit agencies transitioning to zero-emission service. Continued financial support at the local, state and federal level to offset the capital cost of this new infrastructure is imperative. For alternative fuels such as hydrogen, financial support from state and federal grant opportunities for green hydrogen supply chains and increasing economies of scale on the production side will ultimately benefit transit agencies deploying and planning for FCEBs and BEBs.

CARB can support BCAG by ensuring continued funding for the incremental cost of zero-emission buses and fueling infrastructure. Funding opportunities should emphasize proper transition and deployment planning and should not preclude hiring consultants to ensure best practices and successful deployments. The price and availability of hydrogen, both renewable and not, continue to be challenges that can be allayed by legislation subsidizing and encouraging renewable fuel production.

## Limitations of Current Technology

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

# Appendix A – Approved Board Resolution



BUTTE COUNTY ASSOCIATION OF GOVERNMENTS  
**RESOLUTION NO 2022-23-03**



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**RESOLUTION OF THE BUTTE COUNTY ASSOCIATION OF GOVERNMENTS  
APPROVING A ROLLOUT PLAN FOR THE TRANSITION TO A 100% ZERO  
EMISSION PUBLIC TRANSIT FLEET BY 2040**

**WHEREAS**, The Office of Administrative Law (OAL) adopted and made effective the Final Regulation Order for the Innovative Clean Transit Regulation (ICTR) produced by the California Air Resources Board (CARB) on August 13, 2019.

**WHEREAS**, Title 13 of the California Code of Regulations (CCR) amended sections 2023, 2023.1, 2023.2, 2023.3 and 2023.4, added new sections 2023.5 – 2023.11 and codified under new Article 4.3 titled Innovative Clean Transit;

**WHEREAS**, BCAG and B-Line solicited for and obtained the Center for Transportation and the Environment (CTE) to prepare a Zero Emissions Transition Study and Rollout Plan for compliance with the ICTR;

**WHEREAS**, CTE produced a Zero Emission Bus (ZEB) Master Plan with multiple scenarios and combinations utilizing fleet, fuel, maintenance, and infrastructure costs for battery electric buses (BEB) and hydrogen fuel cell buses (FCEB);

**WHEREAS**, CTE also produced a Rollout Plan identifying the majority BEB scenario as being the preferred scenario for BCAG and B-Line to comply with the ICT regulation;

**NOW THEREFORE BE IT RESOLVED** that the Butte County Association of Governments formally adopts the Rollout Plan prepared by CTE identifying the majority battery electric bus (BEB) as the preferred scenario to comply with the ICT Regulation to transition the B-Line to a 100% zero emissions fleet by 2040.

BCAG  
Resolution 2022-23-03  
Page 2

**PASSED AND ADOPTED** by the Butte County Association of Governments on the  
26<sup>th</sup> day of May 2022 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED:

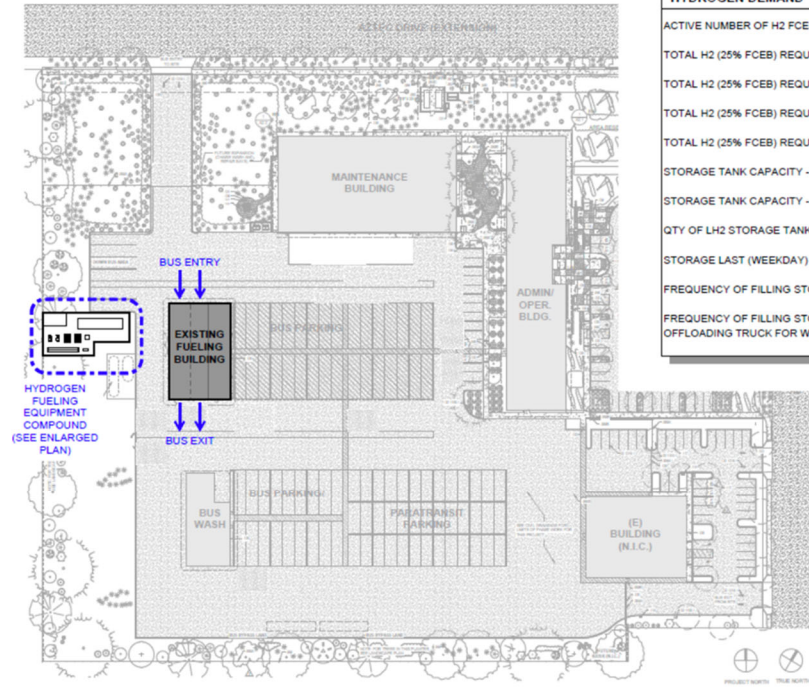
  
\_\_\_\_\_  
JODY JONES, CHAIR  
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

ATTEST:

  
\_\_\_\_\_  
JON A. CLARK, EXECUTIVE DIRECTOR  
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

# Appendix B – ZEB Transition Site Plans

## Hydrogen infrastructure:



HYDROGEN DEMAND	
ACTIVE NUMBER OF H2 FCEB VEHICLES (40' / CUTAWAY)	8 / 4
TOTAL H2 (25% FCEB) REQUIRED/DAY (WEEKDAY) [KG]	243
TOTAL H2 (25% FCEB) REQUIRED/DAY (WEEKDAY) [GAL]	907
TOTAL H2 (25% FCEB) REQUIRED/DAY (WEEKEND) [KG]	94
TOTAL H2 (25% FCEB) REQUIRED/DAY (WEEKEND) [GAL]	351
STORAGE TANK CAPACITY - NOMINAL [GAL]	9,000
STORAGE TANK CAPACITY - 90% USABLE [GAL]	8,100
QTY OF LH2 STORAGE TANKS	1
STORAGE LAST (WEEKDAY) [DAYS]	8
FREQUENCY OF FILLING STORAGE PER WEEK	0.05
FREQUENCY OF FILLING STORAGE DELIVERED BY OFFLOADING TRUCK FOR WEEKDAY CONSUMPTION	ONE FUEL DELIVERY EVERY 10 DAYS

- NOTES:**
1. HYDROGEN DISPENSERS MAY BE LOCATED IN EXISTING FUELING STATION. DISPENSERS SHOULD BE LOCATED IN AN OPEN-AIR LOCATION. DETAILS WILL BE STUDIED IN DESIGN PHASE FOR BEST LOCATION.
  2. PER ABOVE TABLE, 8 (40-FT) BUSES AND 4 CUTAWAYS ARE CONSIDERED FOR CALCULATING STORAGE AND FREQUENCY OF DELIVERY.
  3. PER ABOVE TABLE A 9,000 GAL STORAGE TANK WILL LAST ABOUT 8 DAYS PER WEEKDAY CONSUMPTION.
  4. CONSIDERING LESS FUEL CONSUMPTION OVER WEEKENDS, ONE FUEL DELIVERY WOULD BE NEEDED EVERY 10 WEEKDAYS.

**Stantec**  
 Stantec Proj No.  
 2073016390

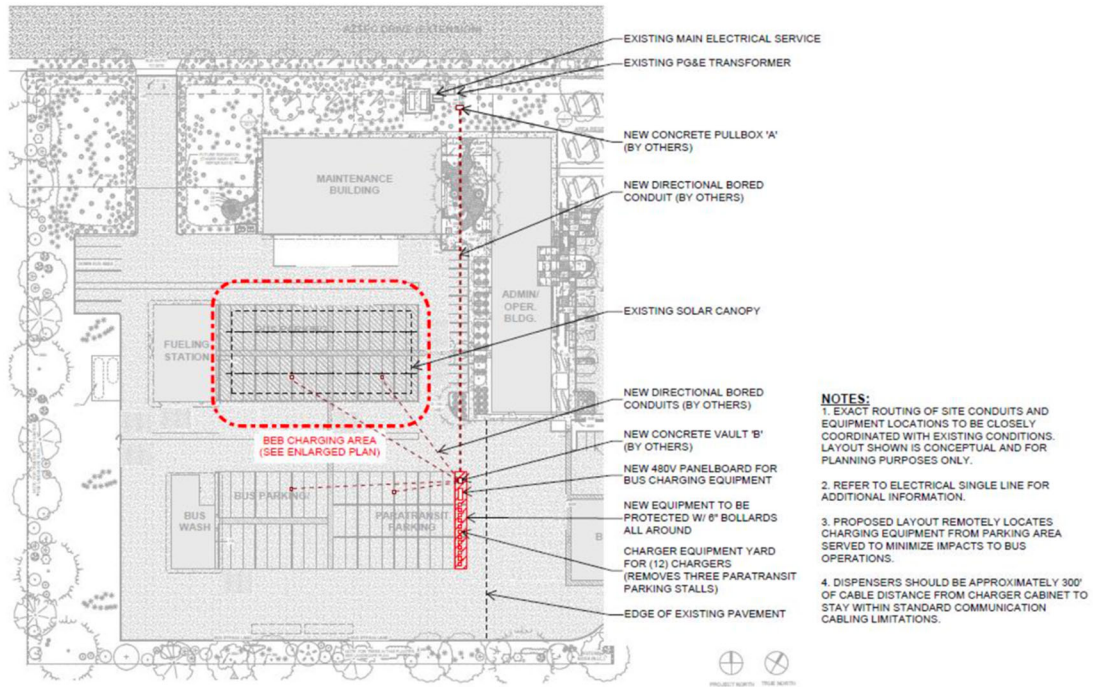
BCAG-BRT ZERO EMISSIONS VEHICLE ROLLOUT PLAN  
 BUTTE REGIONAL TRANSIT OPERATIONS CENTER  
 326 HUSS LANE, CHICO, CA 95928  
 SCENARIO 2 - MAJORITY BEB FLEET  
 CONCEPTUAL LIQUIFIED HYDROGEN SYSTEM SITE PLAN

DATE:  
 02/09/22

DWG:

**2.1**

## Battery-electric infrastructure:





# Appendix C – Glossary

**Auxiliary Energy:** Energy consumed (usually as a by time measure, such as “x”kW/hour) to operate all support systems for non-drivetrain demands, such as HVAC and interior lighting.

**Battery Electric Bus:** Zero-emission bus that uses onboard battery packs to power all bus systems.

**Battery Nameplate Capacity:** The maximum rated output of a battery under specific conditions designated by the manufacturer. Battery nameplate capacity is commonly expressed in kWh and is usually indicated on a nameplate physically attached to the battery.

**Block:** Refers to a vehicle schedule, the daily assignment for an individual bus. One or more runs can work a block. A driver schedule is known as a “run.”

**Charging Equipment:** The equipment that encompasses all the components needed to convert, control and transfer electricity from the grid to the vehicle for the purpose of charging batteries. May include chargers, controllers, couplers, transformers, ventilation, etc.

**Depot Charging:** Centralized BEB charging at a transit agency's garage, maintenance facility, or transit center. With depot charging, BEBs are not limited to specific routes, but must be taken out of service to charge.

**Energy:** Quantity of work, measured in kWh for ZEBs.

**Energy Efficiency:** Metric to evaluate the performance of ZEBs. Defined in kWh/mi for BEBs, mi/kg of hydrogen for FCEBs, or miles per diesel gallon equivalent for any bus type.

**Fuel Cell Electric Bus:** Zero-emission bus that utilizes onboard hydrogen storage, a fuel cell system, and batteries. The fuel cell uses hydrogen to produce electricity, with the waste products of heat and water. The electricity powers the batteries, which powers the bus.

**Greenhouse Gas Emissions:** Zero-emission buses have no harmful emissions that result from diesel combustion. Common GHGs associated with diesel combustion include carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), nitrous oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), and particulate matter (PM). These emissions negatively impact air quality and contribute to climate change impacts.

**Hydrogen Fueling Station:** The location that houses the hydrogen production (if produced onsite), storage, compression, and dispensing equipment to support fuel cell electric buses.

**On-route Charging:** BEB charging while on the route. With proper planning, on-route charged BEBs can operate indefinitely, and one charger can charge multiple buses.

**Operating Range:** Driving range of a vehicle using only power from its electric battery pack to travel a given driving cycle.

**Route Modeling:** A cost-effective method to assess the operational requirements of ZEBs by estimating the energy consumption on various routes using specific bus specifications and route features.

**Useful Life:** FTA definition of the amount of time a transit vehicle can be expected to operate based on vehicle size and seating capacity. The useful life defined for transit buses is 12-years. For cutaways, the useful life is 7 years.

**Validation Procedure:** to confirm that the actual bus performance is in line with expected performance. Results of validation testing can be used to refine bus modeling parameters and to inform deployment plans. Results of validation testing are typically not grounds for acceptance or non-acceptance of a bus.

**Zero-Emission Vehicle:** A vehicle that emits no tailpipe emissions from the onboard source of power. This is used to reference battery-electric and fuel cell electric vehicles, exclusively, in this report.

**Well-to-wheel Emissions:** Quantity of greenhouse gas, criteria pollutants, and/or other harmful emissions that includes emissions from energy use and emissions from vehicle operation. For BEBs, well-to-wheel emissions would take into account the carbon intensity of the grid used to charge the buses. For FCEBs, well-to-wheel emissions would take into account the energy to produce, transport, and deliver the hydrogen to the vehicle