TAHOE TRANSPORTATION DISTRICT (TTD)
PROGRAM IMPLEMENTATION COMMITTEE

Meeting Agenda

Tahoe Regional Planning Agency **September 6, 2023**
128 Market Street **2:00 p.m.**
Stateline, NV 89448

The Tahoe Transportation District Program Implementation Committee meeting will be physically open to the public at the Tahoe Regional Planning Agency, Stateline, NV 89449 and in accordance with California and Nevada law, Committee members may be teleconferencing into the meeting via GoToWebinar in accordance with requirements under California Government Code section 54953(f).

Committee members: Wesley Rice-Chair, Cody Bass, Brian Bigley, Andy Chapman, Sherry Hao, Jeffrey Spencer, Raymond Suarez

To attend the TTD Program Implementation Committee Meeting remotely, use the following:
https://attendee.gotowebinar.com/register/4896312628956223070

After registering, you will receive a confirmation email containing information about joining the webinar.

The following location will also be available for participation for the Program Implementation Committee meeting by teleconference:

229 West Loop 121
Belton, TX 76513

Members of the public may observe the meeting and submit comments in person at the above location or via GoToWebinar. Members of the public may also provide public comment by sending comments to the Clerk to the Board by email at jallen@tahoetransportation.org. Please note which agenda item the comment pertains to. Comments will be distributed at the meeting and attached to the minutes of the meeting. All comments should be a maximum of 500 words, which corresponds to approximately three minutes of speaking time. Comments for each agenda item should be submitted prior to the close of that agenda item.

Any member of the public who needs accommodations should email or call Judi Allen who will use her best efforts to provide reasonable accommodations to provide as much accessibility as possible, while also maintaining public safety in accordance with TTD's procedure for resolving reasonable accommodation requests. All reasonable accommodations offered will be listed on the TTD website at tahoetransportation.org.

All items on this agenda are action items unless otherwise noted. Items on the agenda may be taken out of order. The Committee may combine two or more items for consideration. The Committee may remove an item from the agenda or delay discussion relating to an item on the agenda at any time.

I. CALL TO ORDER AND GENERAL MATTERS

A. Roll Call and Determination of Quorum
B. *For Possible Action:* Approval of Agenda for September 6, 2023
C. *For Possible Action:* Approval of Minutes of May 3, 2023

II. PUBLIC INTEREST COMMENTS

All comments are to be limited to no more than three minutes per person. Comments made cannot be acted upon or discussed at this meeting, but may be placed on a future agenda for consideration.

III. DISCUSSION ITEMS

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A.	*Informational Only:* Informational Update on Tahoe Transportation District Active Capital Improvement Program Projects	**3**
B.	*Informational Only:* Informational Update on the Short-Range Transit Plan	**14**
C.	*For Possible Action:* Recommend the TTD Board Authorize the District Manager to Finalize and Execute a Two-year Agreement with Stantec Consulting, Inc. to Prepare a Zero Emission Fleet Conversion Plan in an Amount Not to Exceed $189,857	**19**

IV. DISTRICT MANAGER REPORT

V. COMMITTEE MEMBER REQUESTS AND COMMENTS

This portion of the agenda is for members to make requests for future agenda items or to make a brief report about personal activities without further deliberation by the committee, although any member may request an item to be placed on a future agenda in response to such remarks.

VI. PUBLIC INTEREST COMMENTS

VII. ADJOURNMENT

COMPLIANCE WITH PUBLIC NOTICE REQUIREMENTS

This notice and agenda has been posted at the TTD office and at the Stateline, Nevada post office. The notice and agenda has also been posted at the North Tahoe Conference Center in Kings Beach, the Incline Village GID office and the North Tahoe Chamber of Commerce and on the TTD website: www.tahoetransportation.org.

For those individuals with a disability who require a modification or accommodation in order to participate in the public meeting, please contact Judi Allen at (775) 589-5502 or jallen@tahoetransportation.org.

Nevada Open Meeting Law Compliance
Written notice of this meeting has been given at least three working days before the meeting by posting a copy of this agenda at the principal office of TTD and at three other separate, prominent places within the jurisdiction of TTD not later than 9 a.m. of the third working day before the meeting.

Written notice of this meeting has been given by providing a copy of this agenda to any person who has requested notice of the meetings of the Committee. Such notice was delivered to the postal service used by the Committee not later than 9 a.m. of the third working day before the meeting for transmittal to the requester by regular mail, or if feasible for TTD and the requester has

agreed to receive the public notice by electronic mail, transmitted to the requester by electronic mail sent not later than 9 a.m. of the third working day before the meeting.

Supporting materials were provided to any person requesting such materials and were made available to the requester at the time the material was provided to the members of the Committee or, if provided to the members of the Committee at the meeting, were made available to the requester at the meeting and are available on the TTD website: www.tahoetransportation.org. Please send requests for copies of supporting materials to Judi Allen at (775) 589-5502 or jallen@tahoetransportation.org.

TAHOE TRANSPORTATION DISTRICT
PROGRAM IMPLEMENTATION
COMMITTEE MEETING MINUTES
May 3, 2023

Committee Members in Attendance:

Wesley Rice, Chair, Douglas County
Cody Bass, City of South Lake Tahoe
Brian Bigley, Member at Large
Andy Chapman, TNT-TMA
Sherry Hao, CA Gov Appointee
Jeffrey Spencer, El Dorado County

Committee Members Absent:

Raymond Suarez, SS-TMA

Others in Attendance:

Carl Hasty, Tahoe Transportation District
George Fink, Tahoe Transportation District
Judi Allen, Tahoe Transportation District

I. CALL TO ORDER AND GENERAL MATTERS

A. Roll Call and Determination of Quorum
The meeting of the Committee was called to order by Mr. Rice at 2:02 p.m. at the Tahoe Regional Planning Agency and via GoToWebinar. Roll call was taken and it was determined a quorum was in attendance for the Committee.

B. Approval of Agenda of May 3, 2023
Motion/second by Mr. Chapman/Mr. Bigley to approve the Committee agenda for today's meeting. The motion passed unanimously.

C. Approval of Meeting Minutes for January 23, 2023
Motion/second by Mr. Bigley/Ms. Hao to approve the Committee minutes. The motion passed unanimously.

II. PUBLIC INTEREST COMMENTS

There were no public comments.

Mr. Bass arrived at 2:09 p.m.

III. DISCUSSION ITEMS

A. Presentation on Transit Operations Fund Sources, Uses and Qualifications, and Updates on transit Funding Support
Mr. Hasty and Mr. Fink reviewed this item.

Mr. Spencer asked if TTD uses 5316 or 5312 funding. Mr. Fink answered that TTD does not use those funds at this time. Mr. Haven noted that the 5316 funding was repealed and moved to 5307.

Action Requested: Informational Only

B. Second Update and Discussion on the Work of the Technical Advisory Committee for South Shore Transit Regarding the Integration of Micro-Transit and Fixed Route Service and the Update of the TTD Short-Range Transit Plan
Mr. Hasty and Mr. Fink reviewed this item. Mr. Chapman noted there should be a regional TAC. Mr. Hasty confirmed there will be a larger TAC. Mr. Spencer suggested looking at services that can be done at reduced costs through automation. Ms. Hao asked how the routes were chosen. Mr. Fink responded there are a number of factors in how the routes were chosen. Mr. Bigley asked if California State Parks would have the ability to help with transit to Emerald Bay. Mr. Rice stated he hopes this process is going to bring everything together. Mr. Spencer suggested a water taxi service to Emerald Bay and a funicular to get to the top. Mr. Chapman commented it is important to recognize the need for local dollar contributions. Mr. Bigley agreed there is a need to find a solution for Emerald Bay service. Mr. Bass wants to see the mainline expanded, not reduced.

Action Requested: Informational Only

IV. DISTRICT MANAGER REPORT

Mr. Hasty reported staff will bring a version of this discussion to the June Board meeting, a contract is underway for the facility site assessment, staff is gearing up for the summer East Shore Express service, and he is waiting for a meeting to be scheduled with Caesars' General Manager and Vice President regarding the reimagination of the US50 Project.

V. COMMITTEE MEMBER REQUESTS AND COMMENTS

Mr. Spencer asked for a future agenda item regarding what the fleet has suffered due the heavy winter induced condition of the roads in order to look at applying for federal relief.

VI. PUBLIC INTEREST COMMENTS

There were no public comments.

VII. ADJOURNMENT

The meeting adjourned at 4:09 p.m.

Respectfully Submitted:

Judi Allen
Executive Assistant
Clerk to the Board
Tahoe Transportation District

(The above meeting was recorded in its entirety, anyone wishing to listen to the aforementioned tapes, please contact Judi Allen, Clerk to the Board (775) 589-5502.)

Tahoe Transportation DISTRICT

Connecting our communities

MEMORANDUM

Date: August 30, 2023

To: Tahoe Transportation District (TTD) Program Implementation Committee

From: Jim Marino, Capital Program Manager

Subject: Informational Update on Tahoe Transportation District Active Capital Improvement Program Projects

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Action Requested:
It is requested the Committee review the staff report and hear a presentation on TTD's Capital Improvement Program (CIP) Active Projects. No action is requested currently, but Staff welcomes any feedback at the contact information below.

Fiscal Analysis:
All expenditures associated with these items for the fiscal year are in the approved FY24 budget.

Work Program Impact:
All work associated with these efforts is captured under respective elements of the approved FY24 Work Program and will be included in the FY25 Work Program, with corresponding allotted staff time under respective projects. Time associated with developing project funding opportunities is captured to the extent feasible within limited General Funds. Projects align with Strategic Goal SG-3 Increase the connectivity and reliability of a regional multi-modal transit system around the Basin, which includes micro-transit and other support components; and SG-4 Effectively deliver TTD operations and implement the Regional Transportation Plan by actively seeking sustainable funding resources for capital projects, staff, operations, and planning.

Background:
TTD has a multitude of active projects within the current work program across several functional areas. Transit Hub Projects (Incline Village Mobility Hub, Spooner Mobility Hub/AIS, Corridor Projects (NV SR28, US 50), Facilities Projects (Maintenance and Administration Facility), and Intelligent Transportation Projects (SMART Grant).

Each project has been funded with a variety of Federal, State, local, and private funds. They are highlighted in this report for the purpose of providing a general overview of the program of projects which are considered active and in phase. The capital program is heavily dependent on discretionary grant sources, which are highly competitive. Staff regularly seeks and evaluates State and Federal funding opportunities to submit applications on relevant opportunities and

continues to seek funds to further regional priorities. Project updates and some recent funding efforts are described herein.

More recent project steps have been for transit capital improvements related to bus and bus facilities.

Discussion:
This presentation will be discussing major active projects only. For purposes of this report, active projects are defined as projects that have been funded in part or whole and are moving forward in phase (Planning, Design, Construction).

The following projects will be reviewed via attached Power Point presentation

SR28 Corridor Projects – Nevada:
- North Trailhead Parking & Water Quality Project
- SR28 Central Corridor Project (Sand Harbor to Thunderbird Cove)
- Chimney Beach Parking Expansion

SR89/SR28 Corridor Project – California
- Fanny Bridge

Transit Mobility Hub Projects:
- Incline Village Mobility Hub Project
- Spooner Summit Mobility Hub/AIS Project

US50 Corridor Project:
- US50 Revitalization Project

Facilities Project:
- Maintenance and Administration Facility

Intelligent Transportation System (ITS) Projects:
- SMART Sensor and SaaS Development (Stage 1) Project
- Hazard Mitigation Plan

Additional Information:
If you have any questions or comments regarding this item, please contact Jim Marino at (775) 589-5500 x 512 or jmarino@tahoetransportation.org

Tahoe Transportation District – Capital Program Update

Tahoe Transportation DISTRICT

Capital Program Update – Active Projects

Brief status update of active TTD capital projects

Presented by geographic and functional area

- Nevada SR28 Corridor Projects
  - North Trailhead Parking and Water Quality
  - Central Corridor – Sand Harbor to Thunderbird Cove
  - Chimney Beach Parking Expansion
- California SR89/SR28 Corridor Project
  - Fanny Bridge
- Mobility Hub Projects
  - Incline Village Mobility Hub
  - Spooner Mobility Hub/AIS Station
- US 50 Corridor Project
  - US 50 Revitalization Project – Alternative B
- Intelligent Transportation Systems (ITS) Projects
  - SMART Project
  - Hazard Mitigation Plan
- Facilities Project
  - Maintenance and Administration Facility Project

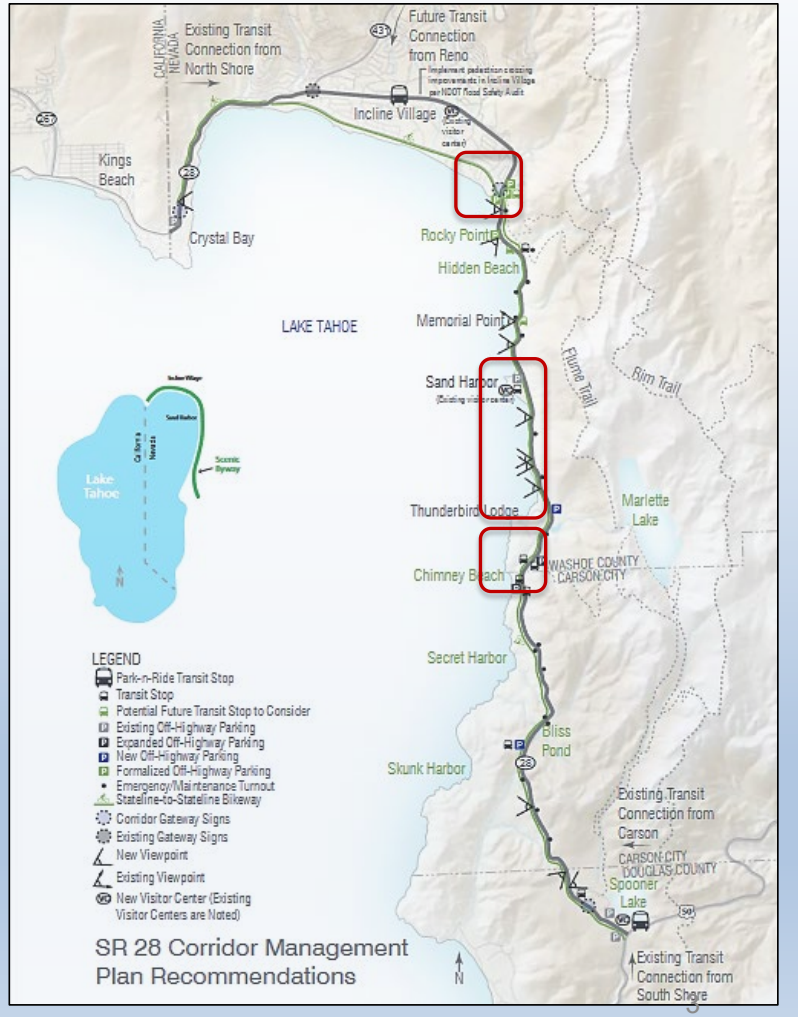
Tahoe Transportation DISTRICT

NV SR28 Corridor Projects - Active

- **North Trailhead Parking & Water Quality**
  - 30+ new parking spaces at East Shore Trailhead; 4-6 new parking spaces at Rocky Point
  - Funded: Yes ($1.82M)
  - Parking Management Proposed: Yes
  - Current Phase: Planning & Design
  - Schedule: PS&E FY23/24; Construction FY24/25

- **SR28 Central Corridor (Sand Harbor to Thunderbird Cove)**
  - 1.75 miles East Shore Trail, Intersection Improvements, Undercrossing at Sand Harbor, Vista Point Improvements, and Visitor Amenities
  - Funded: Design (partial), Construction (none)
  - Current Phase: Planning & Design
  - Schedule: PS&E FY23/24, 24/25, 25/26; Construction FY26/27

- **Chimney Beach Parking**
  - 130 new parking spaces and reduction of same on highway.
  - Funded: Yes ($2.4M)
  - Parking Management Proposed: Yes
  - Current Phase: Planning & Design
  - Schedule: PS&E FY23/24, 24/25; Construction FY25/26



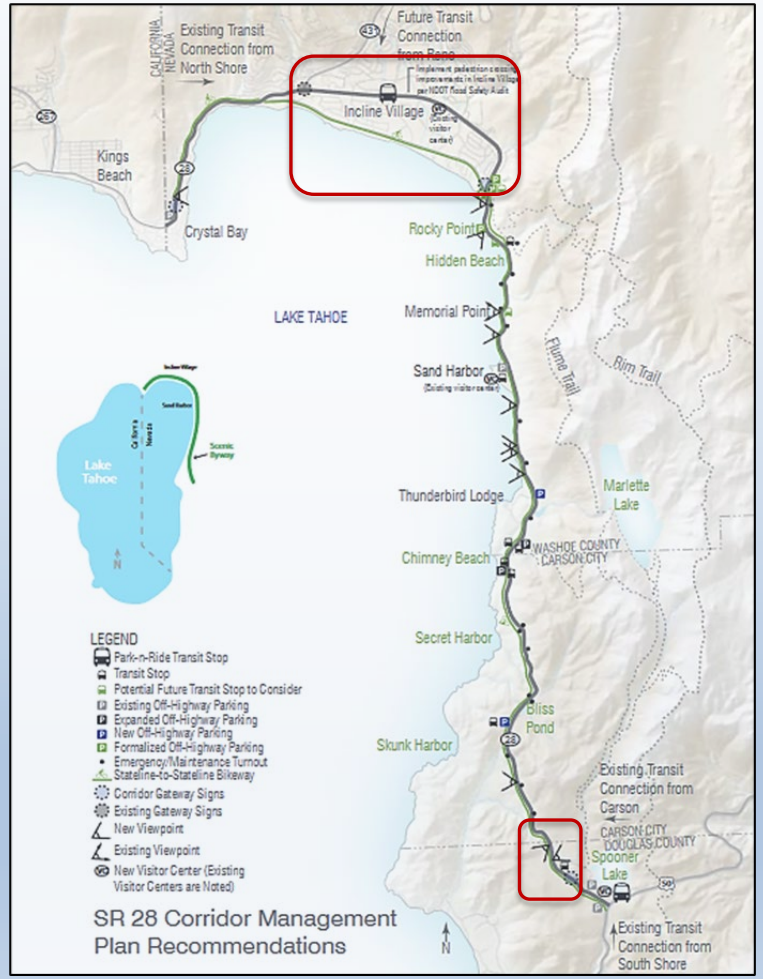
CA SR89/SR28 Corridor Project - Active

- **Fanny Bridge**
  - Bridge Replacement
  - Lead Implementer: Central Federal Lands Highway Division
  - Funded: Yes
  - Current Phase: Permitting (408), Construction (SEZ Mitigation)
  - Schedule: Construction (SEZ Mitigation and Revegetation work) FY23/24; Bridge replacement FY23/24, FY24/25 pending 408 permit approval

Mobility Hub Projects - Active

- **Incline Village Mobility Hub**
  - Mobility Hub infrastructure/East Shore Express Parking
  - Funded: Yes (Planning & Conceptual Design), PS&E and Construction are unfunded
  - Parking Management Proposed: Yes
  - Current Phase: Preliminary Planning
  - Schedule: Site alternatives FY23/24; Site Selection and PS&E FY24/25, 25/26; Construction FY25/26

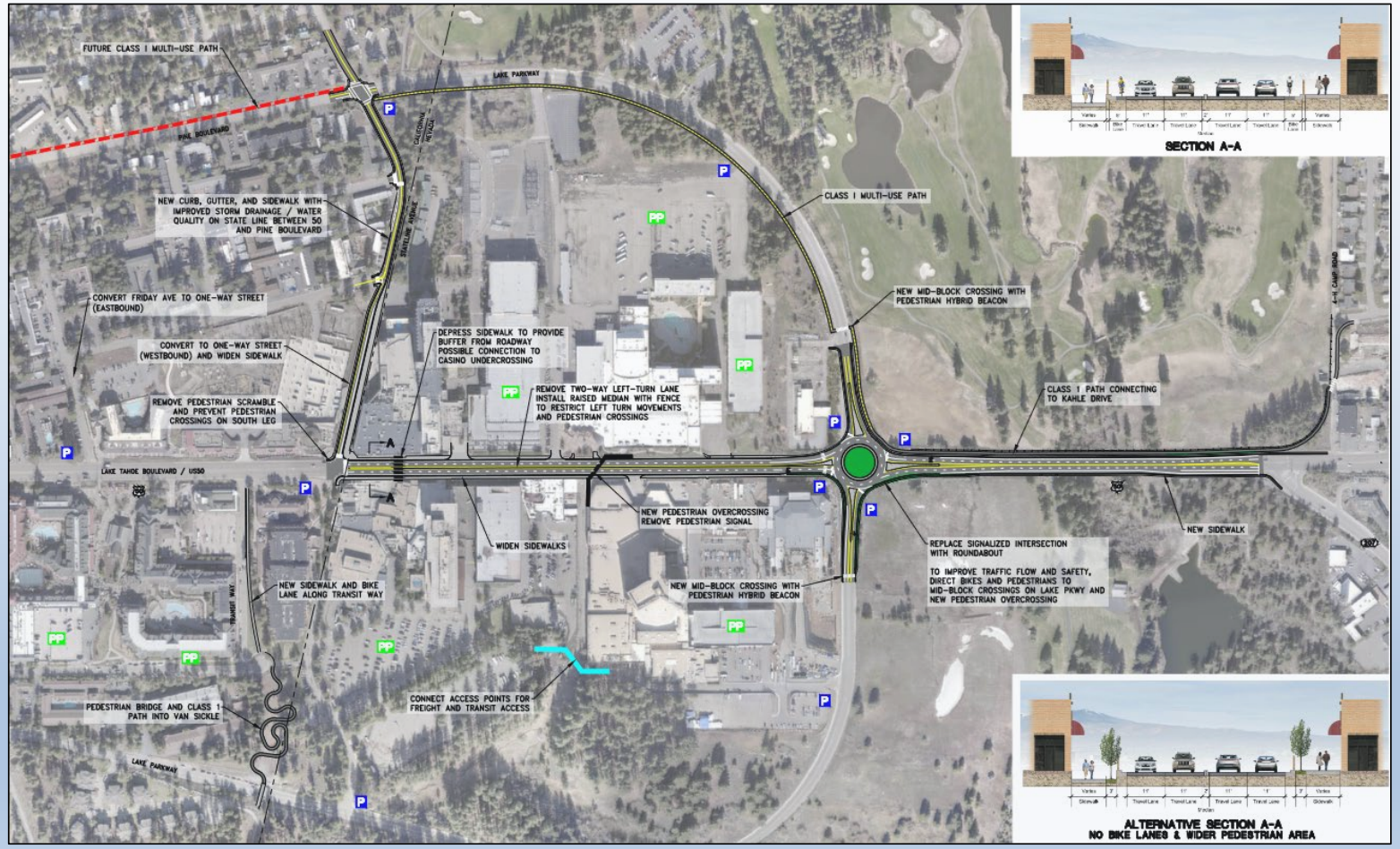
- **Spooner Mobility Hub/AIS Station**
  - Mobility Hub infrastructure, 250 parking spaces, restrooms, .5-mile trail, and Aquatic Invasive Species inspection station (AIS)
  - Design and Construction partnership with NDOT
  - Funded: Yes ($2.8M+-)
  - Current Phase: Planning & Design
  - Schedule: PS&E FY23/24; Construction FY24/25



US 50 Corridor Project - Active

- **US Hwy 50 Revitalization Project**
  - Proposing Modified Alternative B moving forward
  - Alternative includes work mainly on the Nevada side of the Corridor and may consist of the following:
    - Gateway Improvements including multi-use trail from Lake Parkway to Kahle Drive
    - Construction of a roundabout at US50 & Lake Parkway
    - Elimination of center turn lane between Lake Parkway & Stateline Avenue
    - Construction of a center barrier between Lake Parkway & Stateline Avenue to prevent turn movements
    - Construction of pedestrian overpass/underpass within casino corridor
    - Widening of sidewalks within casino corridor
    - Construction of a multi-use trail at Bellamy Ct. to Lake Parkway
    - Construction of a pedestrian overpass from new Bellamy trail to Van Sickle Park
    - Connection of Casino parking lots for freight movement/deliveries
    - Construction of a sidewalk along Transit Way from US50 to Bellamy Ct.
    - Conversion of Stateline Ave to one way (westbound) from US50 to Pine Blvd.
    - Construction of road, sidewalk, and drainage improvements on Stateline Ave between US50 and Pine Blvd
    - Conversion of Friday Avenue to one way (eastbound)
  - Next Steps
    - Meet with Casino Corridor stakeholders
    - Environmental Document review to support revised project
    - Begin PS&E

US 50 Corridor Project - Active



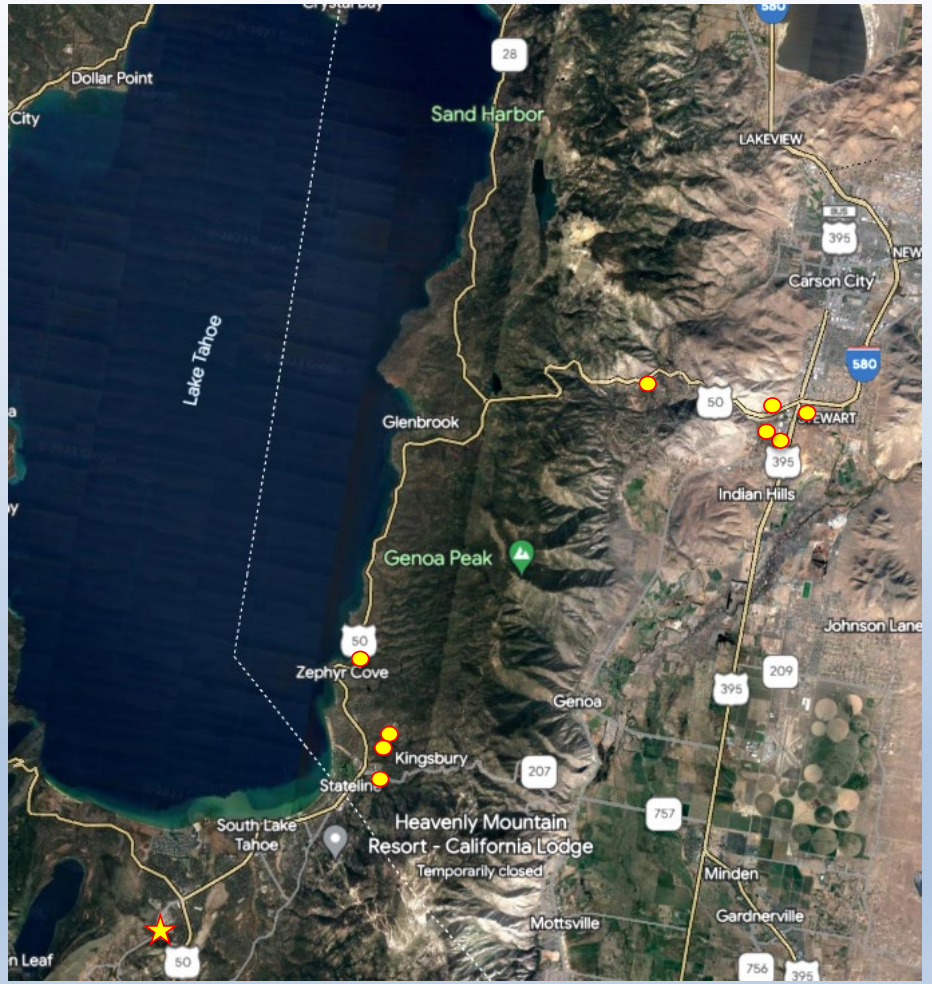
Active ITS Projects

- **SMART Grant**
  - ITS roadway sensor development, data refinement, prototyping SaaS
  - Funded: Yes $1.48M (Stage 1 Planning)
  - Scalable: Yes
  - Current Phase: Planning and Prototyping Sensors/Data/ SaaS
  - Schedule: Planning FY23/24, 24/25 (partial); Stage 2 funding application FY24/25

- **Hazard Mitigation Plan**
  - Basin-wide hazard mitigation plan for multi-modal incident management
  - Funded: Yes
  - Current Phase: Planning
  - Anticipated Schedule: Final documents FY23/24

Active Facilities Project

- **Maintenance & Administration Facility (MAF)**
  - Planning, design, and construction of new MAF to support TTD Operations and Administration
  - Funded: Yes $714K (Planning)
  - Current Phase: Preliminary Planning and Site Analysis
  - Schedule: Planning FY23/24; PS&E FY24/25, 25/26; Construction FY26/27
- **Assessing sites in and out of the Basin**
- **Researching privately owned parcels**
- **Developing site alternatives based on:**
  - Base build, Full build (future needs), and Base and Full Build with Satellite build.
  - Developing Order of Magnitude (OOM) cost for each scenario



Tahoe Transportation DISTRICT

Connecting our communities

MEMORANDUM

Date: August 30, 2023

To: Tahoe Transportation District (TTD) Program Implementation Committee

From: TTD Staff – George Fink, Transportation Services Director

Subject: Informational Update on the Short-Range Transit Plan

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Action Requested:
It is requested the Committee receive an informational update on the District's Short-Range Transit Plan (SRTP) and provide feedback to Staff.

Fiscal Analysis:
All expenditures associated with this item for the fiscal year are in the approved FY24 budget.

Work Program Impact:
All work associated with this effort is captured under respective elements of the approved FY24 work program, with corresponding allotted staff time. This project aligns with Strategic Goal SG-3: Fund and operate regional multi-modal transportation systems.

Background:
The purpose of this item is to update the Committee, encourage discussion, and receive feedback on how to balance competing questions of local versus regional; coverage versus ridership; visitors versus residents versus businesses; fixed route versus demand response and so on.

TTD's programmed services for FY24 are fully funded. However, that is based on the availability of one-time pandemic support funds. These funds are expected to be exhausted by FY26, resulting in a need to modify the transit system to fit available funding or increase funding (Attachment A). The need to reimagine Tahoe's transit systems is already underway in some respects with the addition of micro mobility options (scooters) and micro transit on both the north and south shores. Further planning is envisioning a new service delivery model that is fiscally sound and fulfills TTD's role in connecting the communities within and around Lake Tahoe to each other and the Lake. Communities have stepped up and are "opting in" on micro transit options. Numerous zones exist on the north shore and the Lake Link recently celebrated their first anniversary of its system.

For the past nine months, TTD has hosted the south shore technical advisory committee (SS-TAC) to foster frank discussion about transit funding, service levels, and goals. Members includes representatives from the City of South Lake Tahoe, the Tahoe Regional Planning Agency (TRPA), the South Shore Transportation Management Association (SSTMA), and

TTD. The SS-TAC is a parallel effort to TTD's SRTP update ongoing and is meant to help address community, stakeholder, and political concerns regarding the provision of public transit. The group has consensus on the following points:

1. There are not enough resources to satisfy all the needs.
2. TTD's mission is regional transit connectivity.
3. There is an opportunity to build on the SSTMA's microtransit system.
4. Microtransit could replace Route 55 in South Lake Tahoe.
5. Microtransit could replace all Paratransit, including unincorporated El Dorado County.
6. Lake Link could adjust to meet the requirements of paratransit.
7. The City of South Lake Tahoe is exploring operating Route 50 and possibly extending microtransit City-wide.
8. All fixed routes could be federalized (use federal money and be subject to federal rules).
9. All microtransit zones could be funded using local/state sources.
10. Microtransit funding depends on continuing existing funding commitments or bringing in new funding.
11. Coordinated services and a seamless user experience are important to success.
12. Ridership is the primary consideration of the regional and microtransit route structures.

Draft Service Model:

- Route 1 (Route 50) is proposed to serve the US 50 corridor from Stateline Transit Center or Kingsbury Transit Center to the Y Transit Center. Frequency would be determined by the level of funding.
- Route 2 is proposed to re-establish service between Stateline Transit Center and Carson City via Spooner Summit.
- Route 3 (Route 22) is proposed to continue to serve Minden/Gardnerville but would not serve Daggett Summit Village beyond Tina & Tramway.
- Route 4 (East Shore Express) is proposed to continue as a seasonal connection between Incline Village and Sand Harbor.
- Microtransit Zone 1. This zone covers from Al Tahoe, CA to Lake Village, NV.
- Microtransit Zone 2. This zone is proposed to cover west SLT.
- Microtransit Zone 3. This zone is proposed to cover EDC/Meyers.

Services Proposed for Transition:

- Route 55 is proposed to transition to microtransit.
- Route 19X is proposed to transition to a direct connection between Carson City and South Lake Tahoe.
- Paratransit is proposed to transition to a component of microtransit.
- The consolidation of the existing Route 55, Route 19X, and paratransit service free up resources for other priorities.

Financial:

Lake Tahoe's south shore receives approximately $2.175M in federal transit operating funds from the Lake Tahoe Urbanized Area (Lake Tahoe UZA). The remaining portion of funding – approximately $1.675M supports Placer County/TART. Outside the basin rural, Nevada services receive approximately $465,000. Another $2.548M is allocated from TDA

(LTF/STA/SGR). California's Low Carbon Transit Operations Program (LCTOP) brings in $278,000. The sale of Low Carbon Fuel Standard (LCFS) credits amounts to roughly $40,000. South Tahoe Public Utility District (STPUD) contributes $35,000 in mitigation fees. Nevada State Parks allocates $85,000 to support the East Shore Express.

To assist in funding microtransit services, this proposal assumes $1.24M from the SSTMA, $270,000 from El Dorado County; and $862,500 from the City of South Lake Tahoe. Note that $600,000 of the listed City of South Lake Tahoe amount is contingent on Douglas County allocating funding to support micro transit. However, the City of South Lake Tahoe's ability to contribute and their conditions on doing so may be shifting soon affecting both the amount available, the conditions of the allocation, and the timing of allocations. Based on staff's existing understanding of funding, the service model should be able to set aside $300,000 annually for capital match (vehicles, facilities, amenities, property, etc.).

Regional TAC & Public Participation:

Although there is local momentum and increased collaboration on discussing how to fund and implement transportation systems sensitive to the region's needs, it is important the regional stakeholders meet and confer to discuss how this will affect services, how TTD can develop effective outreach, and confirm funding commitments. Moving from paratransit to microtransit is a sizable shift for Lake Tahoe's most vulnerable population. While there is a need for a transition plan for the operation, a transition plan for the passengers is also recommended. Moving passengers from the existing Route 55 to microtransit will require extensive outreach as well. Passengers in Douglas County and Carson City that typically travel between the areas will no longer have that connection provided by Route 19X. How do we reach them and what alternative options do they have? TTD's approach to engagement will focus on conversations with people through workshops and hosted online events to have discussions about their experiences, needs, desires, and challenges. These efforts will be augmented with surveys available on the SRTP website.

Discussion:

One of the prime outcomes of the south shore and regional technical advisory groups is for the stakeholders in and around Lake Tahoe to explore what resources are available for public transit, the requirements of those funding sources, and what public transit concepts can gain consensus for possible adoption. As mentioned in the background above, the SRTP process is readying to move onto gathering public input which will influence the draft system structure. Staff envisions continuing to meet with the regional TAC and providing the public feedback throughout the process. The input from the TACs and public will then be analyzed to assess how the new transit services will impact the region's goals to address congestion, greenhouse gas (GHG) emissions and reduce vehicle miles travelled (VMT).

If the City of South Lake Tahoe and the TTD Board decide at a future date to take the next step in the process to enter into an agreement about operation of fixed route service on US 50, that decision is most likely to lead to the development of a detailed transition plan for final approval. A transition plan will be more detailed than the work completed to date and will likely include funding source uses for service type, relationships to use of federal and state funds, requirements of fleet and fleet use, and detailed operating agreements over a period of five years or more to name a few expectations. It will be paramount that any change in operators and the corresponding relationship to TTD will maintain the confidence of the Federal Transit Administration and other key transit partners, such as the Tahoe Regional Planning Agency as

the Regional Transportation Planning Agency in California and the Tahoe Metropolitan Planning Organization under federal authority, as well as the transit public and other partnering agencies.

In the short term, major change is inevitable. At the end of FY26, the current system is projected to begin running at a deficit. Staff are aiming to transition to a new system no later than July 1, 2025. By completing the transition planning early (planning, partnerships, funding, and operating agreements, etc.), TTD will be able to retain a year in arrears for FTA grants to smooth out any congressional cliffhangers.

Staff expects to continue providing regular updates to this Committee and TTD Board throughout the SRTP process, culminating in a decision on service direction later this calendar year after compiling additional public, stakeholder, and regional input.

Additional Information:
If you have any questions or comments regarding this item, please contact George Fink at (775) 589-5325 or gfink@tahoetransportation.org.

Attachment:

A. Five-year budget outlook at existing service levels

Tahoe Transportation District
Transit Fund
5 Year Budget
Operations Only
Excludes Depreciation, Amortization, Disposals, Warranties and Capital Transfers Into TO Fund from CIP Fund

	FY24	FY25	FY26	FY27	FY28
REVENUES					
FTA	5,642,289	6,408,896	6,879,813	5,304,910	3,974,243
TDA incl Prior Carryover	2,228,119	2,763,750	2,131,150	2,000,000	2,375,000
Other State Funding	0	278,372	0	278,372	0
Contributions	125,936	90,000	85,000	85,000	85,000
SRECTrade (Electrification Credits)	20,000	20,000	20,000	20,000	20,000
Other (Vouchers, Scrap, Interest)	125,000	26,500	11,500	1,500	1,500
Total Revenues	**8,141,344**	**9,587,518**	**9,127,463**	**7,689,782**	**6,455,743**
EXPENSES					
Personnel	4,777,548	5,316,267	5,534,273	5,810,564	6,048,424
Repairs & Maintenance	573,104	578,028	583,148	606,473	630,730
Fuel Including Taxes	286,535	297,996	309,916	322,313	335,205
Grant Match	352,474	1,138,750	375,000	375,000	375,000
Administrative Support	440,000	460,000	480,000	480,000	480,000
Other	1,711,683	1,796,477	1,845,126	1,923,299	2,005,221
Total Expenses	**8,141,344**	**9,587,518**	**9,127,463**	**9,517,649**	**9,874,580**
Increase / (Decrease) to Fund Balance	**0**	**0**	**0**	**(1,827,867)**	**(3,418,837)**

Tahoe Transportation DISTRICT

Connecting our communities

MEMORANDUM

Date: August 30, 2023

To: Tahoe Transportation District (TTD) Program Implementation Committee

From: TTD Staff – George Fink, Transportation Services Director

Subject: Recommend the TTD Board Authorize the District Manager to Finalize and Execute a Two-year Agreement with Stantec Consulting, Inc. to Prepare a Zero Emission Fleet Conversion Plan in an Amount Not to Exceed $189,857

Action Requested:
It is requested the Committee recommend the TTD Board of Directors authorize the District Manager to finalize and execute a two-year agreement with Stantec Consulting, Inc. to prepare a Zero Emission Fleet Conversion Plan (ZEFCP) in an amount not to exceed $189,857.

Fiscal Analysis:
All expenditures associated with this item for the fiscal year are in the approved FY24 budget, with $309,500 from California's State Highway Account (SHA) grant funds and $40,099 in local match from the Transportation Development Act (TDA) allocations – a match of 11.47%. The total project budget is $349,599. The selected bidder price is under budget. Submitted proposals cost ranged from $300,968 to $185,857.

Work Program Impact:
All work associated with this effort is captured under respective elements of the approved FY24 Work Program and will be included in the FY25 work program, with corresponding allotted staff time. This project aligns with Strategic Goal SG-3 Increase the connectivity and reliability of a regional multi-modal transit system around the Basin.

Background:
In December 2022, the Board of Directors directed Staff to achieve a zero-emission bus (ZEB) fleet by 2040. TTD released a Request for Proposals (RFP) on July 17, 2023 seeking assistance to develop a ZEFCP to meet this challenge. The RFP included an extensive scope of work that analyzes the planning, scheduling and dispatching bus routes, operations and fleet maintenance, fleet size, funding ZEB procurements, staffing and training personnel, infrastructure needs, fuel/charging cost, regulatory compliance, and maintenance and management. The plan will provide TTD with the tools it needs to transition to a zero-emission fleet by 2040. The plan will also encourage increased use of the non-motorized transportation systems by providing a safe, convenient, efficient, and easily accessible transit service for all users, that supports bicyclists, pedestrians, mobility hubs, and park & ride users. There will be extensive public and stakeholder engagement and collaboration as well.

GF/ja AGENDA ITEM: III.C.

The final plan will be a road map to full zero emission technology adoption, incorporating the entire lifecycle of the vehicles and supporting infrastructure.

Discussion:
Staff received five qualifying proposals from Center for Transportation and the Environment, NV5, and Nelson\Nygaard; Energetics; Frontier Energy, Inc.; HDR Engineering, Inc.; and Stantec Consulting Services, Inc. TTD staff reviewed the proposals per the grant agreement following Caltrans' Local Assistance Procedure Manual for the Procurement of Non-A&E Consultant Contracts and selected a consultant based on the team's responsiveness, project understanding, response to the scope of work, references, and price.

Stantec Consulting Services, Inc. stood out for their unparalleled understanding of the Lake Tahoe environment, current transit planning efforts in the region, prior planning efforts, and TTD operational knowledge. Staff has issued a Notice of Intent to Award to Stantec Consulting Services, Inc. Stantec is ready to begin immediately and estimates a twelve-month schedule, with completion of the plan in September 2024.

The scope, pricing, and schedule are acceptable, and staff seeks a recommendation for approval by the TTD Board to award the contract to Stantec.

Additional Information:
If you have any questions or comments regarding this item, please contact George Fink at (775) 589-5325 or gfink@tahoetransportation.org.

Attachment:
A. Draft Contract with Stantec

AGREEMENT FOR GOODS AND SERVICES
BETWEEN
TAHOE TRANSPORTATION DISTRICT
AND
STANTEC CONSULTING SERVICES, INC.

This Agreement for Services ("Agreement") is entered into as of this ____ day of October 2023 by and between Tahoe Transportation District, a bi-state special purpose district created by the Tahoe Regional Planning Compact, ("District") and Stantec Consulting Service, Inc. ("Contractor"). District and Contractor are sometimes hereinafter individually referred to as "Party" and hereinafter collectively referred to as the "Parties."

RECITALS

A. District has sought, by request for proposals, the performance of the services defined and described particularly in Section 2 of this Agreement.

B. Contractor, following submission of a proposal for the performance of the services defined and described particularly in Section 2 of this Agreement, was selected by the District to perform those services.

C. District has authority to enter into this Agreement and the District's District Manager has authority to execute this Agreement.

D. The Parties desire to formalize the selection of Contractor for performance of those services defined and described particularly in Section 2 of this Agreement and desire that the terms of that performance be as particularly defined and described herein.

OPERATIVE PROVISIONS

NOW, THEREFORE, in consideration of the mutual promises and covenants made by the Parties and contained here and other consideration, the value and adequacy of which are hereby acknowledged, the Parties agree as follows:

SECTION 1. TERM OF AGREEMENT.

Subject to the provisions of Section 20 "Termination of Agreement" of this Agreement, the Term of this Agreement is for eighteen (18) months from date of execution.

SECTION 2. SCOPE OF SERVICES & SCHEDULE OF PERFORMANCE.

(a) Scope of Services. Contractor agrees to perform the services set forth in Exhibit "A" "Scope of Services" (hereinafter, the "Services") and made a part of this Agreement by this reference.

(b) Schedule of Performance. The Services shall be completed pursuant to the schedule specified in Exhibit "A." Should the Services not be completed pursuant to that schedule, the Contractor shall be deemed to be in Default of this Agreement. The District, in its sole discretion, may choose not to enforce the Default provisions of this Agreement and may instead allow Contractor to continue performing the Services.

SECTION 3. ADDITIONAL SERVICES.

Contractor shall not be compensated for any work rendered in connection with its performance of this Agreement that are in addition to or outside of the Services unless such additional services are authorized in advance and in writing in accordance with Section 27 "Administration and Implementation" or Section 28 "Amendment" of this Agreement. If and when such additional work is authorized, such additional work shall be deemed to be part of the Services.

SECTION 4. COMPENSATION AND METHOD OF PAYMENT.

(a) Subject to any limitations set forth in this Agreement, District agrees to pay Contractor the amounts specified in Exhibit "B" "Compensation" and made a part of this Agreement by this reference. The total compensation, including reimbursement for actual expenses, shall not exceed One Hundred Eighty-Nine Thousand, Eight Hundred and Fifty Seven dollars ($189,857.00), unless additional compensation is approved in writing in accordance with Section 27 "Administration and Implementation" or Section 28 "Amendment" of this Agreement.

(b) Each month Contractor shall furnish to District an original invoice for all work performed and expenses incurred during the preceding month. The invoice shall detail charges by the following categories: labor (by sub-category), travel, materials, equipment, supplies, and subcontractor contracts. Subcontractor charges shall be detailed by the following categories: labor, travel, materials, equipment and supplies. If the compensation set forth in subsection (a) and Exhibit "B" include payment of labor on an hourly basis (as opposed to labor and materials being paid as a lump sum), the labor category in each invoice shall include detailed descriptions of task performed and the amount of time incurred for or allocated to that task. District shall independently review each invoice submitted by the Contractor to determine whether the work performed and expenses incurred are in compliance with the provisions of this Agreement. In the event that no charges or expenses are disputed, the invoice shall be approved and paid according to the terms set forth in subsection (c). In the event any charges or expenses are disputed by District, the original invoice shall be returned by District to Contractor for correction and resubmission.

(c) Except as to any charges for work performed or expenses incurred by Contractor which are disputed by District, District will use its best efforts to cause Contractor to be paid within thirty (30) days of receipt of Contractor's correct and undisputed invoice.

(d) Payment to Contractor for work performed pursuant to this Agreement shall not be deemed to waive any defects in work performed by Contractor.

SECTION 5. PROGRESS REPORTS.

(a) Consultant shall submit progress reports to District with every invoice.

(b) Progress reports shall be sufficiently detailed for District to determine if Consultant is performing to expectations and is on schedule. Progress reports will communicate interim findings and afford occasions for airing difficulties or special circumstances encountered so that solutions can be developed. Progress reports shall include the total number of hours worked by Consultant and any subconsultants and shall include descriptions of the Services performed, including a description of any deliverables submitted during the reporting period and the anticipated tasks, work and deliverables proposed for the subsequent reporting period.

(c) Separate progress reports shall be provided for each invoice. District's review of progress reports will ensure that Consultant's work meets a level of acceptability.

SECTION 6. INSPECTION AND FINAL ACCEPTANCE.

District may inspect and accept or reject any of Contractor's work under this Agreement, either during performance or when completed. District shall reject or finally accept Contractor's work within sixty (60) days after submitted to District. District shall reject work by a timely written explanation, otherwise Contractor's work shall be deemed to have been accepted. District's acceptance shall be conclusive as to such work except with respect to latent defects, fraud and such gross mistakes as amount to fraud. Acceptance of any of Contractor's work by District shall not constitute a waiver of any of the provisions of this Agreement including, but not limited to, Section 16 "Indemnification" and Section 17 "Insurance."

SECTION 7. OWNERSHIP OF DOCUMENTS.

All original maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer files, files and other documents prepared, developed or discovered by Contractor in the course of providing the Services (hereinafter the "Work Product") pursuant to this Agreement shall become the sole property of District upon full payment of all monies owed to Contractor and may be used, reused or otherwise disposed of by District without the permission of the Contractor. Upon completion, expiration or termination of this Agreement, Contractor shall turn over to District all such original maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer files, files and other documents.

If and to the extent that District utilizes for any purpose not related to this Agreement any maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer files, files or other documents prepared, developed or discovered by Contractor in the course of providing the Services pursuant to this Agreement, Contractor's guarantees and warranties in Section 9 "Standard of Performance" of this Agreement shall not extend to such use of the maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer files, files or other documents.

SECTION 8. COST PRINCIPLES

Contractor agrees that (a) Contract Cost Principles and Procedures, 48 CFR, Federal Acquisition Regulations System, Chapter 1, Part 31, et seq., shall be used to determine the allowability of individual Project costs and (b) all parties shall comply with Federal administrative procedures in accordance with 2 CFR, Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. Contractor shall also comply with Federal administrative procedures in accordance with 2 CFR, Part 200, Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards to the extent applicable.

SECTION 9. RETENTION OF RECORDS/AUDITS.

(a) All accounting records and other supporting papers of Contractor shall be maintained for a minimum of three (3) years from the date of final payment and shall be held open to inspection, copying, and audit by representatives of Caltrans, the California State Auditor, and auditors representing the federal government. Copies thereof will be furnished Contractor upon receipt of any request made by Caltrans or its agents.

(b) For the purpose of determining compliance with applicable State law in connection with the performance of District agreements with third parties pursuant to Government Code Section 8546.7, District, Contractor, and Caltrans, shall each maintain and make available for inspection all books, documents, papers, accounting records, and other evidence pertaining to the performance of such contracts, including, but not limited to, the costs of administering those various contracts. All the above referenced parties shall make such materials available at their respective offices at all reasonable times during the entire Project period and for three (3) years from the date of final payment. Caltrans, the California State Auditor, or any duly authorized representative of Caltrans or the United States Department of Transportation, shall each have access to any books, records, and documents that are pertinent to a Project for audits, examinations, excerpts, and transactions.

(c) Contractor will permit access to all records of employment, employment advertisements, employment application forms, and other pertinent data and records by the State Fair Employment Practices and Housing Commission, or any other Agency of the State of California designated by Caltrans, for the purpose of any investigation to ascertain compliance with this project.

SECTION 10. INDEPENDENT CONTRACTOR.

(a) Contractor is and shall at all times remain a wholly independent contractor and not an officer, employee or agent of District. Contractor shall have no authority to bind District in any manner, nor to incur any obligation, debt or liability of any kind on behalf of or against District, whether by contract or otherwise, unless such authority is expressly conferred under this Agreement or is otherwise expressly conferred in writing by District.

(b) The personnel performing the Services under this Agreement on behalf of Contractor shall at all times be under Contractor's exclusive direction and control. Neither District, nor any elected or appointed boards, officers, officials, employees or agents of District, shall have

control over the conduct of Contractor or any of Contractor's officers, employees, or agents except as set forth in this Agreement. Contractor shall not at any time or in any manner represent that Contractor or any of Contractor's officers, employees, or agents are in any manner officials, officers, employees or agents of District.

(c) Neither Contractor, nor any of Contractor's officers, employees or agents, shall obtain any rights to retirement, health care or any other benefits which may otherwise accrue to District's employees. Contractor expressly waives any claim Contractor may have to any such rights.

SECTION 11. STANDARD OF PERFORMANCE.

Contractor represents and warrants that it has the qualifications, experience and facilities necessary to properly perform the Services required under this Agreement in a thorough, competent and professional manner. Contractor shall at all times faithfully, competently and to the best of its ability, experience and talent, perform all Services. In meeting its obligations under this Agreement, Contractor shall employ, at a minimum, generally accepted standards and practices utilized by persons engaged in providing services similar to the Services required of Contractor under this Agreement. In addition to the general standards of performance set forth this section, additional specific standards of performance and performance criteria may be set forth in Exhibit "A" "Scope of Work" that shall also be applicable to Contractor's work under this Agreement. Where there is a conflict between a general and a specific standard of performance or performance criteria, the specific standard or criteria shall prevail over the general.

SECTION 12. COMPLIANCE WITH APPLICABLE LAWS; PERMITS AND LICENSES.

Contractor shall keep itself informed of and comply with all applicable federal, state and local laws, statutes, codes, ordinances, regulations and rules in effect during the term of this Agreement. Contractor shall obtain any and all licenses, permits and authorizations necessary to perform the Services set forth in this Agreement. Neither District, nor any elected or appointed boards, officers, officials, employees or agents of District, shall be liable, at law or in equity, as a result of any failure of Contractor to comply with this section.

SECTION 13. PREVAILING WAGE LAWS.

Contractor understands, acknowledges and agrees to comply with any and all applicable state and federal laws requiring payment of prevailing wages for work performed in connection with publicly-funded projects. Contractor and any subcontractors shall comply with all applicable state and federal prevailing wage rates, statutes, rules and regulations then in effect if required by state or federal laws or regulations. In the event of conflict between applicable federal and state provisions, the higher prevailing wage rate will apply.

SECTION 14. NONDISCRIMINATION.

(a) Contractor shall not deny the contract's benefits to any person on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status, nor shall they discriminate unlawfully

against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status. Contractor shall ensure that the evaluation and treatment of employees and applicants for employment are free of such discrimination.

(b) Contractor shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code Sections 12900 et seq.), the regulations promulgated thereunder (Cal. Code Regs., Tit. 2, Sections 11000 et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Gov. Code Sections 11135-11139.5), and the regulations or standards adopted by Caltrans to implement such article.

(c) Contractor shall permit access by representatives of the Department of Fair Employment and Housing and Caltrans upon reasonable notice at any time during normal business hours, but in no case less than 24 hours' notice, to such of its books, records, accounts, and all other sources of information and its facilities as said Department or Caltrans shall require to ascertain compliance with this clause.

(d) Contractor shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

SECTION 15. UNAUTHORIZED ALIENS.

Contractor hereby promises and agrees to comply with all of the provisions of the Federal Immigration and Nationality Act, 8 U.S.C.A. §§ 1101, et seq., as amended, and in connection therewith, shall not employ unauthorized aliens as defined therein. Should Contractor so employ such unauthorized aliens for the performance of the Services, and should the any liability or sanctions be imposed against District for such use of unauthorized aliens, Contractor hereby agrees to and shall reimburse District for the cost of all such liabilities or sanctions imposed, together with any and all costs, including attorneys' fees, incurred by District.

SECTION 16. CONFLICTS OF INTEREST.

(a) Contractor covenants that neither it, nor any officer or principal of its firm, has or shall acquire any interest, directly or indirectly, which would conflict in any manner with the interests of District or which would in any way hinder Contractor's performance of the Services. Contractor further covenants that in the performance of this Agreement, no person having any such interest shall be employed by it as an officer, employee, agent or subcontractor without the express written consent of the District Manager. Contractor agrees to at all times avoid conflicts of interest or the appearance of any conflicts of interest with the interests of District in the performance of this Agreement.

(b) District understands and acknowledges that Contractor is, as of the date of execution of this Agreement, independently involved in the performance of non-related services for other governmental agencies and private parties. Contractor is unaware of any stated position of District relative to such projects. Any future position of District on such projects shall not be considered a conflict of interest for purposes of this section.

(c) District understands and acknowledges that Contractor will perform non-related services for other governmental agencies and private Parties following the completion of the Services under this Agreement. Any such future service shall not be considered a conflict of interest for purposes of this section.

SECTION 17. CONFIDENTIAL INFORMATION; RELEASE OF INFORMATION.

(a) All information gained or work product produced by Contractor in performance of this Agreement shall be considered confidential, unless such information is in the public domain or already known to Contractor. Contractor shall not release or disclose any such information or work product to persons or entities other than District without prior written authorization from the District Manager, except as may be required by law.

(b) Contractor, its officers, employees, agents or subcontractors, shall not, without prior written authorization from the District Manager or unless requested by the District Attorney of District, voluntarily provide declarations, letters of support, testimony at depositions, response to interrogatories or other information concerning the work performed under this Agreement. Response to a subpoena or court order shall not be considered "voluntary" provided Contractor gives District notice of such court order or subpoena.

(c) If Contractor, or any officer, employee, agent or subcontractor of Contractor, provides any information or work product in violation of this Agreement, then District shall have the right to reimbursement and indemnity from Contractor for any damages, costs and fees, including attorney's fees, caused by or incurred as a result of Contractor's conduct.

(d) Contractor shall promptly notify District should Contractor, its officers, employees, agents or subcontractors, be served with any summons, complaint, subpoena, notice of deposition, request for documents, interrogatories, request for admissions or other discovery request, court order or subpoena from any party regarding this Agreement and the work performed thereunder. District retains the right, but has no obligation, to represent Contractor or be present at any deposition, hearing or similar proceeding. Contractor agrees to cooperate fully with District and to provide District with the opportunity to review any response to discovery requests provided by Contractor. However, this right to review any such response does not imply or mean the right by District to control, direct, or rewrite said response.

SECTION 18. INDEMNIFICATION.

(a) Indemnification for Professional Liability. Where the law establishes a professional standard of care for Contractor's services, to the fullest extent permitted by law, Contractor shall indemnify, protect, defend and hold harmless District and any and all of its officials, employees and agents ("Indemnified Parties") from and against any and all liability (including liability for claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs of any kind, whether actual, alleged or threatened, including attorney's fees and costs, court costs, interest, defense costs, and expert witness fees) arise out of, are a consequence of, or are in any way attributable to, in whole or in part, any negligent or wrongful act, error or omission of Contractor, or by any individual or entity for which Contractor is legally liable, including but not limited to officers, agents, employees or sub-contractors of Contractor, in the performance of professional services under this Agreement.

(b) Indemnification for Other than Professional Liability. Other than in the performance of professional services and to the full extent permitted by law, Contractor shall indemnify, protect, defend and hold harmless District, and any and all of its employees, officials and agents from and against any liability (including liability for claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs of any kind, whether actual, alleged or threatened, including attorney's fees and costs, court costs, interest, defense costs, and expert witness fees), where the same arise out of, are a consequence of, or are in any way attributable to, in whole or in part, the performance of this Agreement by Contractor, or by any individual or entity for which Contractor is legally liable, including but not limited to officers, agents, employees or sub-contractors of Contractor.

(c) Indemnification from Subcontractors. Contractor agrees to obtain executed indemnity agreements with provisions identical to those set forth in this section from each and every subcontractor or any other person or entity involved by, for, with or on behalf of Contractor in the performance of this Agreement naming the Indemnified Parties as additional indemnitees. In the event Contractor fails to obtain such indemnity obligations from others as required herein, Contractor agrees to be fully responsible according to the terms of this section. Failure of District to monitor compliance with these requirements imposes no additional obligations on District and will in no way act as a waiver of any rights hereunder. This obligation to indemnify and defend District as set forth herein is binding on the successors, assigns or heirs of Contractor and shall survive the termination of this Agreement or this section.

(d) Limitation of Indemnification. Notwithstanding any provision of this section to the contrary, in California design professionals are required to defend and indemnify the District only to the extent permitted by California Civil Code Section 2782.8, which limits the liability of a design professional to claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the design professional. The term "design professional," as defined in Section 2782.8, is limited to licensed architects, licensed landscape architects, registered professional engineers, professional land surveyors, and the business entities that offer such services in accordance with the applicable provisions of the California Business and Professions Code. To the extent that California Civil Code Section 2782.8 applies to this Agreement, the indemnification obligations of Contractor shall be limited in accordance with that section.

(e) District's Negligence. The provisions of this section do not apply to claims occurring as a result of District's sole negligence. The provisions of this section shall not release District from liability arising from gross negligence or willful acts or omissions of District or any and all of its officials, employees and agents.

SECTION 19. INSURANCE.

Contractor agrees to obtain and maintain in full force and effect during the term of this Agreement the insurance policies set forth in Exhibit "C" "Insurance" and made a part of this Agreement. All insurance policies shall be subject to approval by District as to form and content. These requirements are subject to amendment or waiver if so approved in writing by the District Manager. Contractor agrees to provide District with copies of required policies upon request.

SECTION 20. ASSIGNMENT.

The expertise and experience of Contractor are material considerations for this Agreement. District has an interest in the qualifications and capability of the persons and entities who will fulfill the duties and obligations imposed upon Contractor under this Agreement. In recognition of that interest, Contractor shall not assign or transfer this Agreement or any portion of this Agreement or the performance of any of Contractor's duties or obligations under this Agreement without the prior written consent of the District. Any attempted assignment shall be ineffective, null and void, and shall constitute a material breach of this Agreement entitling District to any and all remedies at law or in equity, including termination of this Agreement pursuant to Section 20 "Termination of Agreement." District acknowledges, however, that Contractor, in the performance of its duties pursuant to this Agreement, may utilize sub-contractors.

SECTION 21. PROJECT MANAGER AND CONTINUITY OF PERSONNEL.

Contractor designates Analy Castillo as its Project Manager for this Agreement. The Project Manager, or a District approved designee, shall be accessible to District during normal District working hours and shall respond within twenty-four (24) hours to District inquiries or requests. The Project Manager shall be responsible for all matters related to Consultant's personnel, operations and any subconsultants including, but not limited to (1) assigning qualified personnel to perform the work and prepare deliverables; and (2) reviewing, monitoring, training and directing Consultant's personnel and any subconsultants. There shall be no change in the person designated as the Project Manager without prior written approval by District.

Contractor shall make every reasonable effort to maintain the stability and continuity of Contractor's staff and subcontractors, if any, assigned to perform the Services. Contractor shall notify District of any changes in Contractor's staff and subcontractors, if any, assigned to perform the Services prior to and during any such performance.

SECTION 22. TERMINATION OF AGREEMENT.

(a) Termination for Convenience. District may terminate this Agreement, in whole or in part, at any time by giving written notice of termination to Contractor if District determines that termination is in its best interest. In the event such notice is given, Contractor shall cease immediately all work in progress. Contractor shall be paid its costs, including contract close-out costs, on work performed up to the time of termination.

(b) Termination for Cause. If District notifies Contractor of a default under Section 21 "Default" and Contractor fails to cure the default within the time frame provided, District may terminate this Agreement immediately. Contractor will only be paid for Services performed in accordance with the manner of performance set forth in this Agreement.

(c) Property of District. Upon termination of this Agreement by either Contractor or District, all property belonging exclusively to District which is in Contractor's possession shall be returned to District. Contractor shall furnish to District a final invoice for work performed and expenses incurred by Contractor, prepared as set forth in Section 4 "Compensation and Method of Payment" of this Agreement. This final invoice shall be reviewed and paid in the same manner as set forth in Section 4 "Compensation and Method of Payment" of this Agreement.

SECTION 23. DEFAULT.

In the event that Contractor is in default under the terms of this Agreement, the District may give notice to Contractor specifying the nature of the default and providing the Contractor a timeframe to cure the default. The District may hold all invoices until the default is cured. If Contractor does not cure the default to District's satisfaction in the timeframe given, the District may take necessary steps to terminate this Agreement under Section 20 "Termination of Agreement." Any failure on the part of the District to give notice of the Contractor's default shall not be deemed to result in a waiver of the District's legal rights or any rights arising out of any provision of this Agreement.

SECTION 24. EXCUSABLE DELAYS.

Contractor shall not be liable for damages, including liquidated damages, if any, caused by delay in performance or failure to perform due to causes beyond the control of Contractor. Such causes include, but are not limited to, acts of God, acts of the public enemy, acts of federal, state or local governments, acts of District, court orders, fires, floods, epidemics, strikes, embargoes, and unusually severe weather. The term and price of this Agreement shall be equitably adjusted for any delays due to such causes.

SECTION 25. COOPERATION BY DISTRICT.

All public information, data, reports, records, and maps as are existing and available to District as public records, and which are necessary for carrying out the Services shall be furnished to Contractor in every reasonable way to facilitate, without undue delay, the Services to be performed under this Agreement.

SECTION 26. NOTICES.

All notices required or permitted to be given under this Agreement shall be in writing and shall be personally delivered, or sent by electronic mail or certified mail, postage prepaid and return receipt requested, addressed as follows:

To District:
Tahoe Transportation District
Attn: George Fink, Transportation Services Director
P.O. Box 499
Zephyr Cove, NV 89448
gfink@tahoetransportation.org

To Contractor:
Stantec Consulting Services, Inc.
Attn: Dr. Analy Castillo
2890 East Cottonwood Parkway, Suite 300
Salt Lake City, UT 84121
analy.castillo@stantec.com

Notice shall be deemed effective on the date personally delivered or transmitted by facsimile or, if mailed, three (3) days after deposit of the same in the custody of the United States Postal Service.

SECTION 27. AUTHORITY TO EXECUTE.

The person or persons executing this Agreement on behalf of Contractor represents and warrants that he/she/they has/have the authority to so execute this Agreement and to bind Contractor to the performance of its obligations hereunder.

SECTION 28. ADMINISTRATION AND IMPLEMENTATION.

This Agreement shall be administered and executed by the District Manager or his or her designated representative. The District Manager shall have the authority to issue interpretations and to make amendments to this Agreement, including amendments that commit additional funds, consistent with Section 28 "Amendment" and the District Manager's contracting authority under District's ordinances, rules and regulations.

SECTION 29. AMENDMENT.

No amendment to or modification of this Agreement shall be valid unless made in writing and approved by the Contractor and by the District. The District Manager shall have the authority to approve any amendment to this Agreement if the total compensation under this Agreement, as amended, would not exceed the District Manager's contracting authority under the District's ordinances, rules and regulations. All other amendments shall be approved by the District's Board. The Parties agree that the requirement for written modifications cannot be waived and that any attempted waiver shall be void.

By written notice or order, District may, from time to time, order work suspension or make changes to the Services to be provided by Contractor. If any such work suspension or change causes an increase or decrease in the price of this Agreement or in the time required for its performance, or otherwise necessitates an amendment to this Agreement, Contractor shall promptly notify District thereof within ten (10) days after the change or work suspension is ordered, and an amendment to this Agreement shall be negotiated. However, nothing in this clause shall excuse Contractor from complying immediately with the notice or order issued by District.

SECTION 30. BINDING EFFECT.

This Agreement shall be binding upon the heirs, executors, administrators, successors and assigns of the Parties.

SECTION 31. WAIVER.

Waiver by any Party to this Agreement of any term, condition, or covenant of this Agreement shall not constitute a waiver of any other term, condition, or covenant. Waiver by any Party of any breach of the provisions of this Agreement shall not constitute a waiver of any other provision nor a waiver of any subsequent breach or violation of any provision of this Agreement.

Acceptance by District of any work or services by Contractor shall not constitute a waiver of any of the provisions of this Agreement.

SECTION 32. LAW TO GOVERN; VENUE.

In the event of litigation between the Parties, venue in state trial courts shall lie exclusively in the County of El Dorado, California where the dispute arises from Services performed in California, or shall lie exclusively in the County of Douglas, Nevada where the dispute arises from Services performed in Nevada. In the event of litigation in a U.S. District Court, venue shall lie exclusively in the Eastern District of California for Services performed in California, or in the District of Nevada for Services performed in Nevada.

SECTION 33. ATTORNEYS FEES, COSTS AND EXPENSES.

In the event litigation or other proceeding is required to enforce or interpret any provision of this Agreement, the prevailing Party in such litigation or other proceeding shall be entitled to an award of reasonable attorney's fees, costs and expenses, in addition to any other relief to which it may be entitled.

SECTION 34. ENTIRE AGREEMENT.

This Agreement, including the attached Exhibits, is the entire, complete, final and exclusive expression of the Parties with respect to the matters addressed therein and supersedes all other agreements or understandings, whether oral or written, or entered into between Contractor and District prior to the execution of this Agreement. No statements, representations or other agreements, whether oral or written, made by any Party which are not embodied herein shall be valid and binding.

SECTION 35. SEVERABILITY.

If any term, condition or covenant of this Agreement is declared or determined by any court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions of this Agreement shall not be affected thereby and the Agreement shall be read and construed without the invalid, void or unenforceable provision(s).

SECTION 36. CONFLICTING TERMS.

Except as otherwise stated herein, if the terms of this Agreement conflict with the terms of any Exhibit hereto, or with the terms of any document incorporated by reference into this Agreement, the terms of this Agreement shall control.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the date and year first-above written.

TAHOE TRANSPORTATION DISTRICT

_____
Carl Hasty
District Manager

ATTEST:

_____
Judi Allen
Clerk of the Board

_____
By: _____
Its: _____

By: _____
Its: _____

EXHIBIT "A"
SCOPE OF SERVICES

Contractor shall complete the scope of services per their proposal titled, “Zero-Emission Fleet Conversion Plan” submitted to TTD on August 11, 2023 and incorporated in its entirety herein.

EXHIBIT "B"
COMPENSATION

Contractor shall be compensated per their proposal titled, “Zero-Emission Fleet Conversion Plan” COST PROPOSAL – TTD ZEB Fleet Conversion Plan submitted to TTD on August 11, 2023 and incorporated in its entirety herein, not to exceed $189,857.

TASK NO.								
0	1	2	3	4	5	6	7	8
Project Mgmt /Admin	**Public Outreach**	**Existing Conditions Report**	**Zero Emission Transit Options Analysis**	**System Charging Fueling Infra. Plan**	**Estimate GHG Reduction Benefits of ZEB Fleet Conversion**	**Develop Plan-Level Cost Estimates**	**Funding Sources and Next Steps**	**Draft and Final ZEB Conversion Plan**
$18,836	$54,795	$24,545	$19,772	$25,345	$6,008	$12,889	$5,921	$21,748

Project Summary	Hours	Labour	Expense	Subs	Total
Total	1,247	$130,881	$2,000	$56,976	**$189,857.00**

EXHIBIT "C"
INSURANCE

A. Insurance Coverages. Contractor shall provide and maintain insurance, acceptable to the District, in full force and effect throughout the term of this Agreement, against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Services by Contractor, its agents, representatives or employees. Contractor shall procure and maintain the following scope and limits of insurance:

Only the following "marked" requirements are applicable:

__X__ **Commercial General Liability (CGL):** Insurance written on an occurrence basis to protect Contractor and District against liability or claims of liability which may arise out of this Agreement in the amount of one million dollars ($1,000,000) per occurrence and subject to an annual aggregate of two million dollars ($2,000,000). Coverage shall be at least as broad as Insurance Services Office form Commercial General Liability coverage (Occurrence Form CG 0001). There shall be no endorsement or modification of the CGL limiting the scope of coverage for either insured vs. additional insured claims or contractual liability. All defense costs shall be outside the limits of the policy.

__X__ **Vehicle Liability Insurance:** Vehicle liability insurance in an amount not less than $1,000,000 for injuries, including accidental death, to any one person, and subject to the same minimum for each person, in an amount not less than one million dollars ($1,000,000) for each accident, and property damage insurance in an amount of not less than one million dollars ($1,000,000). A combined single limit policy with aggregate limits in an amount of not less than $2,000,000 shall be considered equivalent to the said required minimum limits. Coverage shall be at least as broad as Insurance Services Office form number CA 0001 covering Automobile Liability, including code 1 "any auto" and endorsement CA 0025, or equivalent forms subject to the approval of the District.

__X__ **Workers' Compensation Insurance:** Workers' Compensation insurance as required by the State of California and/or Nevada and a minimum of one million dollars ($1,000,000) of employers' liability coverage. Contractor shall provide an endorsement that the insurer waives the right of subrogation against the District and its respective elected officials, officers, employees, agents and representatives. In the event a claim under the provisions of the California Workers' Compensation Act is filed against District by a bona fide employee of Contractor participating under this Agreement, Contractor is to defend and indemnify the District from such claim.

_____ **Professional Liability Insurance:** Professional liability insurance appropriate to the Contractor's profession in an amount not less than one million dollars $1,000,000 per occurrence. This coverage may be written on a "claims made" basis, and must include coverage for contractual liability. The professional liability insurance required by this Agreement must be endorsed to be applicable to claims based upon, arising out of or

related to Services performed under this Agreement. The insurance must be maintained for at least three (3) consecutive years following the completion of Contractor's services or the termination of this Agreement. During this additional three (3) year period, Contractor shall annually and upon request of the District submit written evidence of this continuous coverage.

B. Other Provisions. Insurance policies required by this Agreement shall contain the following provisions:

1. All Coverages.

a. Each insurance policy required by this Agreement shall be endorsed and state the coverage shall not be suspended, voided, cancelled by the insurer or either Party to this Agreement, reduced in coverage or in limits except after 30 days' prior written notice by certified mail, return receipt requested, has been given to District.

b. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

2. Commercial General Liability and Automobile Liability Coverages.

a. District, and its respective elected and appointed officers, officials, and employees and volunteers are to be covered as additional insureds as respects: liability arising out of activities Contractor performs; products and completed operations of Contractor; premises owned, occupied or used by Contractor; or automobiles owned, leased, hired or borrowed by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to District, and their respective elected and appointed officers, officials, or employees.

b. Contractor's insurance coverage shall be primary insurance with respect to District, and its respective elected and appointed, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by District, and its respective elected and appointed officers, officials, employees or volunteers, shall apply in excess of, and not contribute with, Contractor's insurance.

c. Contractor'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.

d. Any failure to comply with the reporting or other provisions of the insurance policies, including breaches of warranties, shall not affect coverage provided to District, and its respective elected and appointed officers, officials, employees or volunteers.

e. The insurer waives all rights of subrogation against the District, its elected or appointed officers, officials, employees or agents.

3. Workers' Compensation Coverage. Unless the District Manager otherwise agrees in writing, the insurer shall agree to waive all rights of subrogation against District, and its respective elected and appointed officers, officials, employees and agents for losses arising from work performed by Contractor.

C. Other Requirements. Contractor agrees to deposit with District, at or before the effective date of this Agreement, certificates of insurance necessary to satisfy District that the insurance provisions of this contract have been complied with. The District may require that Contractor furnish District with copies of original endorsements effecting coverage required by this Exhibit "C". The certificates and endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. District reserves the right to inspect complete, certified copies of all required insurance policies, at any time.

1. Contractor shall furnish certificates and endorsements from each subcontractor identical to those Contractor provides.

2. Any deductibles or self-insured retentions must be declared to and approved by District. At the option of District, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects District or its respective elected or appointed officers, officials, employees and volunteers, or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration, defense expenses and claims.

3. The procuring of such required policy or policies of insurance shall not be construed to limit Contractor's liability hereunder nor to fulfill the indemnification provisions and requirements of this Agreement.

EXHIBIT "D"

The United States Department of Transportation (USDOT) Standard Title VI/Non-Discrimination
APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations**: The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination**: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment**: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports**: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance**: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the

Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination

because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

Stantec

REQUEST FOR PROPOSALS FOR

Zero-Emission Fleet Conversion Plan

AUGUST 11, 2023

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Stantec Consulting Services Inc.
5390 Kietzke Lane Suite 103 | Reno, NV 89511

August 11, 2023

Judi Allen
Tahoe Transportation District
128 Market Street, Suite 3F
Stateline, NV 89449

RE: TTD Zero Emission Fleet Conversion Plan Proposal

Dear Judi:

Curbing climate change by reducing carbon emissions is critical for the health of our communities and natural ecosystems and of major concern in the Tahoe Basin due to the impacts on the natural environment and water clarity from visitations. Acknowledging this, the Tahoe Transportation District (TTD) has adopted a number of clean transit initiatives, including the recent purchase of three battery-electric buses (BEBs) and Lake Tahoe Community College (LTCC) Mobility Hub Project, which is outfitted with two on-route chargers. In addition, the TTD is committed to adhering to CARB's Innovative Clean Transit (ICT) mandate to fully transition their fleet to zero-emission by 2040, despite being a bi-state agency that is exempt from CARB oversight.

Stantec is an industry leader in advancing transitions to zero emission fleets in transportation, in both the public and private sectors. This starts with planning through route modeling and analysis to determine the best solution(s) for your fleet. Stantec has developed a tool called ZEVDecide that provides an in-depth analysis of your fleet while considering topography, extreme weather, passenger load, and other critical components for the operations of transit buses. The modeling results will be one of the first milestones for the project and will provide the direction for different ZEB solutions. Furthermore, we have used our decision-making approach called the Multicriteria Decision Analysis to guide agencies through the selection process of potential fleet alternatives. No two agencies are the same, and the complexity of each of them translates to different options and alternatives that can look like deciding between electric or hydrogen buses; or deciding between on-route charging or additional buses to cover the same level of service. No matter the type of scenario, a comprehensive evaluation is critical to verify the selected solution is truly the best fit for your agency's needs.

Our team brings together thought leaders and experts in facility assessment, planning and design, electrical analysis and design, operations planning, and funding strategies. Stantec's ZEB Transition experts include **Analy Castillo**, who obtained her Ph.D. from the University of California, Irvine where she specialized in the deployment of ZEBs and fueling/charging infrastructure; making her a true expert in this field. We will also utilize the technical expertise and knowledge from **Graeme Masterton,** who has worked extensively with the TTD. We will leverage his knowledge to ensure that our modeling and fleet concepts are applicable to TTD's service now, and into the future given potential service changes resulting from the Short Range Transit Plan and a desired long range plan based on the 2017 Long Range Transit Master Plan.

Understanding the importance of stakeholder and public outreach, we have partnered with AIM Consulting, Inc. (AIM), a certified SBE and DBE specializing in inclusive and impactful civic engagement. Stantec and AIM have worked together on a number of different transportation plans across California, including the ZEB Rollout Plan for the El Dorado County Transportation Commission and the Stanislaus Regional Transit Authority. We are proud to be partnering with such a qualified DBE that will help advance the adoption of ZEBs in the region, and help to create a plan built on community consensus and participation.

Stantec has identified many of the challenges for this project and has already begun to formulate solutions which is reflected in our strategic approach detailed within this proposal. We are excited at the prospect of working with the TTD on this transformational project and look forward to the next step in the procurement process. Our selected group of experts has the correct combination of ZEB planning expertise, broad thinking, technical capability, and innovative project delivery experience that this project requires. Our Stantec approach is driven by client delivery, with the end goal of exceeding your expectations.

Best Regards,

Pamela Bailey-Campbell
Senior Principal/Principal in Charge
pamela.bailey-campbell@stantec.com

Analy Castillo, Ph.D.
Project Manager
analy.castillo@stantec.com

TTD Cover Letter Requirements	Stantec Responses
Name, address and telephone number of the firm's contact person; and signed by the chief executive officer, owner, or chair of the firm.	Analy Castillo, Project Manager & Zero Emissions Technical Lead 2890 East Cottonwood Parkway, Suite 300 | Salt Lake City, UT 84121 Our cover letter is signed by Senior Principal, Pamela Bailey-Campbell, who is authorized to sign and contract on behalf of Stantec Consulting Services Inc.
A company profile including the proposer's name, business address, and telephone number, as well as a brief description of the proposer's size (nationally and locally), date of establishment, type of organization, and local organizational structure.	Stantec is global architecture, engineering, and planning firm employing 28,000 professional staff in 400 offices. For the purposes of this proposal, we will utilize our office in Reno, NV. The address is 5390 Kietzke Lane, Suite 103, Reno, NV 89511. Phone number is 775-398-1221. In our Reno office, we employ 61 professional staff. Other offices near Tahoe include our Sacramento office which employs 300 professional staff. We will be contracting for this proposal as Stantec Consulting Services Inc., which is a subsidiary of Stantec Inc. Founded in 1954, Stantec Inc. is a publicly traded entity listed on the New York Stock Exchange (Symbol: STN) and the Toronto Stock Exchange (Symbol: STN). We are required to be financially stable in order to maintain these listings and we are required to adhere to the Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission "(2013 framework)" (the COSO criteria). We are subject to ongoing independent audits that prove our financial stability and credit worthiness. For a complete view of our audited financial statements, visit the Financial Reports & Filings section of our web site at https://www.stantec.com/en/investors/stantec-financial-information. Please note that Stantec Inc.'s operating subsidiaries and affiliates (e.g., Stantec Consulting Ltd., Stantec Consulting Services Inc., etc.) are not publicly traded, but are owned and/or controlled by Stantec Inc. Stantec Inc.'s financial statements are consolidated to include its subsidiaries and structured entities that are controlled, but do not necessarily include all affiliates.
A summary of the proposal	The Stantec team is assisting transit agencies and cities across North America to plan for transition to 100 percent Zero-Emission Bus (ZEB) fleets. Our Stantec team is committed to meet the project goals, deliverables, and schedule outlined in this proposal. Our team includes experts in delivering projects with similar goals throughout North America. We are excited by the opportunity to partner with TTD on this Zero-Emission Fleet Conversion Plan project. Stantec brings thought leaders and experts in zero emission bus transition plans, facility assessments, planning and design, electrical analysis and design, operations planning, and funding strategies. Stantec has been dedicated to the transit industry for more than 60 years, is an active participating member of the American Public Transportation Association, and is a thought leader on Zero-Emission bus planning, analysis, and rollout plans as well as the planning and design of operations & maintenance facilities. The key to timely delivery of your services is an experienced, flexible partner who is committed to anticipating your project needs. As you will see in our qualifications, we are an industry leader in delivering similar projects for transit agencies. This strategic experience gives us the keen ability to maintain quality control throughout all project phases. Within this Technical Proposal, we think you will find that Stantec has the right experience and highly qualified team for this assignment.
Statement of acknowledgement of having received all addenda, if any are issued.	Stantec has received Responses to Questions dated August 1, 2023.
Whether or not the firm is a certified DBE or Small Business Enterprise.	Stantec is not a DBE or SBE firm.
Age of the firm	69 years old
If the annual gross receipts of the firm are less than $1 million, less than $5 million, less than $10 million, or less than $15 million.	Stantec's gross receipts for 2022 exceeded $3B USD
Specifically indicate any requirements in this RFP which are not acceptable or cannot be performed.	Stantec and its team will perform all scope indicated in this RFP.

TTD Cover Letter Requirements	Stantec Responses
Discuss project understanding, approach to the Scope of Work, communications with TTD during the project, and identify assigned staff.	We have provided this information in our technical proposal. Please see our response starting on page 10.
Specifically indicate any provisions in the form of the agreement (Attachment C), including insurance and indemnification provisions, which are not acceptable and propose any alternative language or terms.	We have reviewed your proposed RFP/contract terms and believe that should we be selected for this assignment, we will be able to conclude a mutually satisfactory contract with you. We have included suggested modifications to the Attachment C - Draft Contract. These suggested modifications can be found in the final section of our proposal.
Provide a signed copy of the Certification Regarding Debarment, Suspension, and other Responsibility Matters (Attachment D).	See attached
Provide three (3) references for current clients from the last two (2) years.	**El Dorado County Transit Authority Zero Emission Bus Fleet Conversion Plan** El Dorado County Transportation Commission 2828 Easy Street, Suite 1; Placerville, CA 95667 Dan Bolster, Senior Transportation Planner dbolster@edctc.org | 530-642-5262 **Sacramento County Short Range Transit and Zero-Emission Bus Plan** Sacramento County Department of Transportation 4111 Branch Center Road, Sacramento, CA 95827 Mikki McDaniel, Principal Planner mcdanielm@saccounty.net | 916-875-4769 **Tuolumne County Transportation Council Zero-Emission Bus Transition Plan** 2 S Green St., Sonora, CA 95370 Shannon Thaggard, Transportation Planner II sthaggard@co.tuolumne.ca.us 209-533-5537
Provide a statement which discloses any past on-going or potential conflicts of interest that the firm may have because of providing the goods and services.	Stantec is not aware of any past or present conflicts of interest involving this project or agency.

Background and Project Summary

Background and Project Summary

The Tahoe Transportation District (TTD) is a bi-state organization that oversees and implements multimodal plans and projects in the Lake Tahoe Basin area. The TTD currently provides public transportation services around the Lake Tahoe Basin and into five neighboring counties through five fixed routes and ADA paratransit services. The TTD provides these services through a combination of buses and cutaways in addition to a fleet of non-revenue vehicles. Understanding its commitment to the environment and sustainability in the region, the TTD has already acquired three battery electric buses (BEBs) and installed on-route fast chargers at the LTCC Mobility Hub. The existing services do not reflect the desired services within the Basin and connecting to the surrounding counties nor the potential for waterborne services connecting the north and south shores with electric ferry services. This is also an opportune time to consider the impact of a new facility and mobility hubs on the need for electrification infrastructure throughout the basin and into the Carson City area. There may also be potential to ensure connectivity with TART services where future electric recharging stations may be located.

Having worked with other agencies in the region, including creating the Zero-Emission Bus (ZEB) Rollout Plan for the El Dorado County Transportation Commission and our previous and ongoing work with the TTD, the Stantec team has a good understanding of the challenges that agencies like the TTD will face – long routes or large distances to cover. To help TTD achieve its goal of developing a Zero Emission Fleet Conversion Plan that aligns with CARB goals as identified in the Innovative Clean Transit (ICT) mandate, the TTD requires a thorough analysis of its bus fleet, transit operations, costs, and financial capabilities.

Your success is our success. The transition from "A to ZEB" is not an easy one. No two transit agencies are alike, and no two solutions can be the same. Therefore, community is at the center of every solution we design. Stantec is a leader in the adoption of ZEB fleets, from strategic planning to full design and implementation, making us experts at the details because we understand the big picture and future implications. This is all to say, the team we are proposing is proven and ready to fully support TTD.

Getting to where we want to go starts with understanding where we are today. Stantec will begin the project with a kickoff meeting that will help to define the goals, objectives, and guiding principles of the project. Once these goals, milestones, criteria, and performance metrics have been developed, the next step is to evaluate TTD's fleets, operations, and other key factors to establish baseline conditions related to ZEB implementation, including any plans for future service changes based on the Short Range Transit Plan or Long Range Transit Master Plan. The overall outcome of this initial effort is an Existing Conditions report to inform our recommendations. Our evaluation starts with a review of transit operation planning essentials including (but not limited to) studying existing routes, blocking, and vehicle assignments. We will also conduct in-person or virtual site-visits to your existing and potential future facilities to understand the baseline for potential modifications to accommodate ZEBs.

Stantec's approach is to model the predictive energy requirements of a zero-emission fleet based on representative operational and ambient conditions of the TTD fleet. To capture how operational conditions can affect the fuel economy and the energy/fuel requirements specific to the service area of the Lake Tahoe Basin, Stantec will use its proprietary modeling tool called ZEVDecide. Supplemented by strategic data collection, ZEVDecide models the energy demand of ZEBs based on driving cycles we develop based on real-life driving conditions and traffic levels. The estimated fuel efficiency is then combined with the route length and block configuration to calculate the energy requirements at the route and block level, as well as the state of charge of the batteries at the end of each service day for BEBs and fuel tank levels for fuel cell electric buses (FCEBs). Lastly, we will conduct a sensitivity analysis to evaluate how factors like battery degradation, topography, climate, and passenger load affect the expected fuel economy. Combining the data-driven modeling together with a multicriteria evaluation of several factors, we will develop a preferred fleet concept. The preferred ZEB fleet concept will strive to balance operations, financial considerations, maintenance tradeoffs, and the constraints of ZEB technologies.

With a preferred fleet concept, Stantec's next task involves developing a needs and opportunities assessment that will detail what TTD will need to do as it moves towards a ZEB future. This includes leveraging the existing conditions analysis and assessments of the potential facility locations, and the results of the modeling to design a charging profile (for BEBs) and/or fueling requirements (for FCEBs) that will then inform the design of facilities, sizing of necessary electrical equipment, operator training, phased fleet replacement plan, and so on.

Once Stantec has evaluated capital, operations, refurbishment, and maintenance costs from a start-up and lifetime perspective for the recommended propulsion technology, we will finalize the ZEB scenario of our financial modeling, for comparison to the status quo (or base case) scenario previously developed. What will be most noteworthy is how forecasted costs–both capital as well as operations and maintenance (O&M)–compare between the two scenarios, as this will give an indication of where incremental funding may be required or where cost savings may materialize. Findings will be synthesized and communicated in discounted 2023 dollars to allow for a comparison between the scenarios. This is an important step as it will strengthen the business case that acts as the foundation for the ZEB Rollout Plan's implementation.

The Stantec team will compile 1) all the products from the key steps, 2) stakeholder outreach findings and 3) agency review inputs into the final ZEB rollout plan report that will capture:

- Approach and methodology
- Key operational considerations
- Summary of stakeholder engagement
- Summary results of the modeling
- Charging profiles (for BEBs, if selected) or fuel demand (for FCEBs)
- Fueling and charging infrastructure strategies and requirements
- Facility assessment and yard layout plans for the selected facility location
- Phasing and implementation plan
- 20-year financial comparison of the base case and the ZEB case

Company Experience and Capabilities

Company Experience & Capabilities

STANTEC

Stantec has been serving the transit industry for more than 60 years. With approximately 25,000 employees, Stantec is a global design practice with 400 offices worldwide. The public agency sector makes up more than 50% of our annual revenue and the majority of our staff work on public sector projects. We understand that the journey can be as important as the destination. Our specialists work in every mode of transit, including bus, light rail, intercity rail, subway, streetcar, bus rapid transit, microtransit, and self-driving vehicles. We challenge conventional thinking at every stage to provide revolutionary, yet realistic options for safe, efficient, and affordable transit.

FROM A TO ZEB: WE TRANSFORM TRANSPORTATION

Stantec brings a unique combination of expertise in ZEB infrastructure planning and design, route and energy analysis, and a thorough understanding of funding opportunities available to transit agencies. Our team will serve as your trusted advisor to understand, plan for, and deploy zero emission solutions.

We have worked on more than 61 zero-emission bus and vehicle projects globally within the last 5 years. We help our clients align the pieces through producing ZEB transition plans, route and energy analysis, implementation of charging infrastructure, design of hydrogen fueling stations, and facility design to accommodate ZEBs.

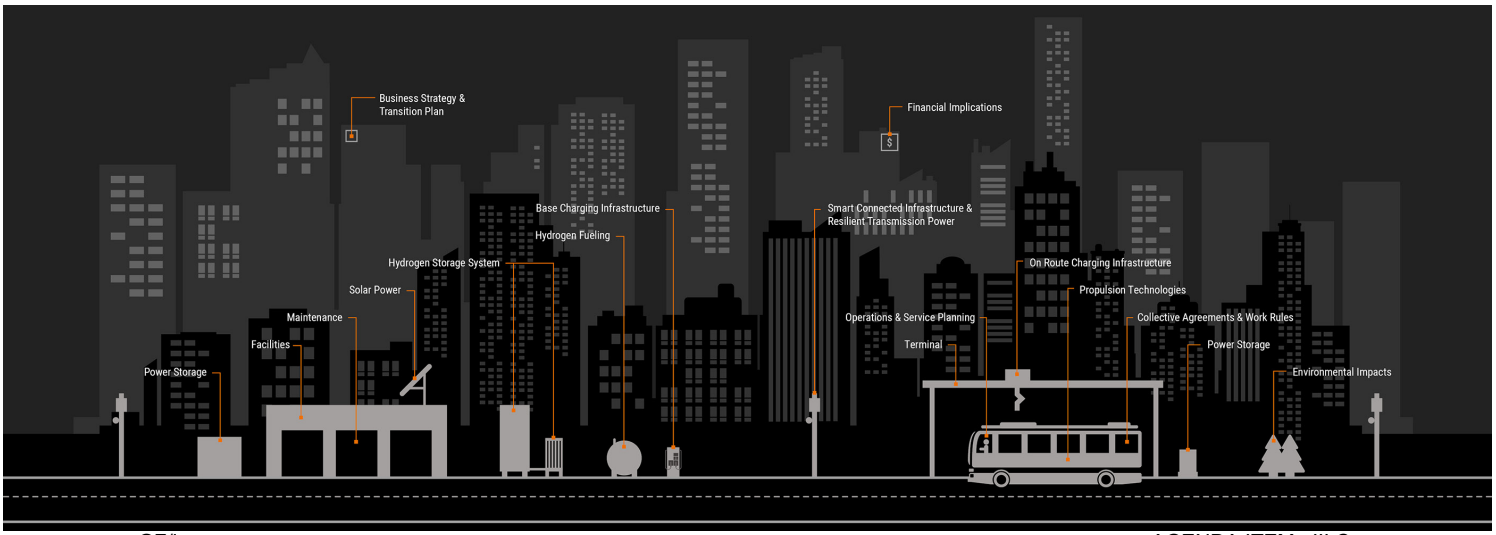
TRANSITION PLANS & INFRASTRUCTURE PLANNING AND DESIGN

Your success is our success! Stantec is a leader in assisting transit agencies with the adoption of ZEB fleets. The transition from A to ZEB is not an easy one. No two transit agencies are alike, and no two solutions can be the same. Our clients' needs are at the center of every solution we design. With over 60 years of experience, Stantec has built a dedicated design practice that has delivered over 500 operations & maintenance facilities across North America. Our experienced staff is assisting transit agencies in their transition to ZEB fleets and planning and designing the charging and hydrogen infrastructure requirements at new and existing facilities. Adding to our planning and facilities experience, Stantec partners with transit agencies to identify the infrastructure and power requirements for on-site and on-route charging. In addition, we plan and design hydrogen refueling stations. Coordinating with public utility companies brings our clients the services needed to implement their zero-emission fleet refueling and charging requirements.

WHAT IS THE IDEAL TECHNOLOGY MIX OF ZEBS FOR MY FLEET?

To provide data-driven decision making for your future fleet, Stantec uses a planning tool called **ZEVDecide**. This tool is composed of multiple modules allowing services tailored to your needs. What are the benefits of ZEVDecide?

- Energy modeling to predict the performance of Battery Electric Buses (BEBs) and Hydrogen Fuel Cell Electric Buses (HFCEBs) per route and per operating block.
- Projections of total fuel demand (electricity and hydrogen).
- Charging schedule for BEBs based on vehicle dispatching and blocking.
- Provides hydrogen station specifications and power requirements.
- Power requirements for each facility for the charging and hydrogen dispensing of BEBs and HFCEBs, respectively.
- Cost optimization that helps determine the ideal proportion of each technology type in a fleet while minimizing the cost of ownership.
- Rate modeling and energy fuel cost projections.



SUBCONSULTANT TEAM

AIM CONSULTING

PUBLIC OUTREACH (DBE/SBE)

AIM Consulting, Inc. (AIM) was established in 2005 and provides public participation and strategic communication services for infrastructure and land use projects in rural, suburban, and urban communities throughout Northern California. AIM understands the importance in creating ways to engage priority populations who were negatively impacted by historic planning, experienced less public investment in their neighborhoods and often have significant barriers to engaging with the local government agencies in these processes.

For many of our projects our team successfully facilitates community engagement processes from early planning through design and construction. AIM specializes in large planning processes with complex regulatory and design considerations. AIM helps affected community members understand these complex processes to ensure meaningful engagement and successful outcomes for all parties.

AIM's communication strategies include both earned and paid media, online and social media, presentations, and grassroots awareness campaigns. They establish strong partnerships with public agencies, private businesses, community-based organizations, and advocacy groups. They research and adopt, when appropriate, industry best practices of public participation and communication technologies and have instilled a consistent quality assurance process.

Aim Consulting is an S-Corporation that is certified as a Small Business Enterprise by the State of California, Department of General Services (Supplier No. 44639) and as a Disadvantaged Business Enterprise by the State of California, Department of Transportation (UCP Firm No. 35954).

JACOBUS & YUANG

COST ESTIMATING (SBE)

Jacobus & Yuang (JYI Estimate) is an independent third-party cost consultancy with offices in Ventura and Los Angeles Counties. JYI Estimate is a California Certified Small Business. JYI Estimate provides managed solutions through cost advice for their clients who are investing in infrastructure, property maintenance and construction development. Because JYI Estimate is embedded in the regional construction community, they deliver costs that are reflective of the market and are detailed using a clear, efficient construction development perspective. Typically, JYI's cost estimates fall within 5% of the low bid amounts on projects and often within 3% of the bid.

One key to our success lies in our structure. As a specialized, multinational practice of subject matter experts (SMEs), we maintain the focus and responsiveness of a boutique firm within Stantec's broader network of 400 global offices and over 28,000 professionals. We work in communities to help synthesize clear and achievable visions.

Through public engagement, research, planning, modeling, and financing and implementation strategies, we articulate shared aspirations into actionable plans and help carry them through to implementation.

We work together on forward-thinking projects for our communities and infrastructure of tomorrow across North America. We deliver services through our many local offices; pairing our local strengths with our industry-leading SMEs. Our proposed team uses this method of delivery for your project.

The table below is a brief snapshot of our team's qualifications. For key team member qualifications, please see the Staffing Section for Résumés. Stantec team key personnel will be available to the extent proposed for the duration of your project.

Project Staff/Role	Firm	Qualifications	Years of Experience
Pamela Bailey-Campbell Principal-in-Charge	Stantec	» Master of Business Administration » Bachelor of Science, Biology	33
Analy Castillo, Ph.D. Project Manager	Stantec	» Ph.D. Environmental Engineering » Master of Science, Environmental Engineering » Bachelor of Science, Chemical Engineering	11
Amanda McDaniel, MPL, AICP Deputy Project Manager	Stantec	» Master of Arts, Urban Planning, (Concentration: Transportation Planning & Sustainable Land Use Planning) » Bachelor of Arts, Geography (Concentration: Urban Geography, Cultural Geography, Human-Environment Interactions, and GIS	3
Coleen Shade, LEED AP QA/QC	Stantec	» Master of Arts » Bachelor of Science	33
Graeme Masterton Transit Planning & Operations	Stantec	» Master of Arts (Community and Regional Planning) » Bachelor of Arts (Urban and Economic Geography)	35
Ian Lowell Modeling Lead	Stantec	» Bachelor of Science, Planning Public Policy and Management	3
Mariya Carey, PE Modeling	Stantec	» Master of Science in Civil Engineering » Bachelor of Science in Civil Engineering	15
Kelly Watts Transit Planning	Stantec	» Master of Arts, East Asian Languages and Literatures » Bachelor of Arts, Environmental Studies	5
Mengyun (Mandy) Li Transit Planning	Stantec	» Master of Science, Transportation Planning and Engineering » Bachelor of Engineering, Transportation Engineering	2
Tony Zavanelli, PE, CEM Power Systems Lead	Stantec	» Master of Science, Bachelor of Science, Mechanical Engineering » Professional Engineer #M24645, State of California	41
Reb Guthrie Fueling Systems Lead	Stantec	» Bachelor of Science, Economics	27
Joseph Velasco, PE Fueling Systems Engineer	Stantec	» Bachelor of Science in Mechanical Engineering » Professional Engineer #38787, State of California	14
Will Todd, AIA, LEED AP Facilities Architect	Stantec	» Bachelor of Science in Architecture » Registered Architect #35467, State of California	15
Katie Demaio Public Outreach Lead	AIM Consulting	» Bachelor of Arts	20
Cobus Malan Cost Estimating	Jacobus & Yuang	» Bachelor of Science, in Quantity Surveying	40

Methodology

TASK 0: PROJECT MANAGEMENT

A successfully executed project requires a thorough approach to project management that outlines a plan, allocates resources, builds capacity, implements quality assurance/quality control (QA/QC) throughout the life cycle of the project, and provides enough flexibility to deal with unforeseen issues and mitigate risks. Stantec pursues a rigorous project management approach built upon deep experience with projects of all sizes, and our proposed project management team includes subject matter experts who have worked with many transit agencies on projects ranging from ZEB analysis and to deployment to rail and bus studies.

Analy Castillo will serve as Project Manager, an experienced specialist in ZEBs and transit operations and expert project manager for fleet transition plans. Analy is Stantec's ZEB Technical Lead and developed Stantec's proprietary modeling tool—ZEVDecide—that performs route modeling and energy predictions. **Amanda McDaniel** will serve as Deputy Project Manager. Amanda has experience working as Lead Analyst or Deputy Project Manager on over a dozen ZEB projects.

Analy and Amanda understand the challenges, opportunities, and sequence for the transition of fleets to clean technologies, having completed numerous plans for agencies across California and North America. Stantec has set in place a deputy PM for the good practice of resilience in each of our projects. If for unforeseen circumstances the designated PM becomes unavailable, after notifying the TTD, the deputy PM will be able to step in seamlessly since Amanda will be up to date on the project's progress and future steps. Furthermore, having a deputy PM allows for a continuous quality control process since deliverables and project next steps are discussed as a group. We believe that quality is paramount throughout the entire lifespan of a project, right from the outset in the proposal stage. Our project managers follow a process—Project Management (PM) Framework—on every project, as shown in the graphic above. This 10-step process begins with the proposal and concludes with the final project closeout. While our Project Manager Analy Castillo is responsible for executing this process, every team member embraces and contributes to the various steps.

As an ISO9001:2008 registered firm, our projects and employees regularly undergo audits of our projects and processes. These audits assess our compliance with integrated management system requirements, evaluate the effectiveness of our PM Framework procedures, and identify opportunities to improve our processes and procedures. As a result of these audits, we maintain thorough record keeping and transparency throughout the project. Quality Control (QC) is one key step in the PM Framework process; however, the entire project management process incorporates the key principles which result in quality deliverables and service.

Upon receiving the Notice to Proceed, we will schedule a project kickoff meeting and prepare an agenda for discussion. The kickoff meeting will help refine the project scope, schedule and timelines, budget and cost tracking, QA/QC protocols and procedures, and major deliverables. The kickoff meeting will also be an opportunity to understand how frequently touch points are to happen between the TTD and Stantec (such as monthly update meetings) and to coordinate these important touch points. The purpose of these meetings will be to review project deliverables, identify potential questions and project approach alternatives, and set next steps and project direction. At the end of each month the PM will also generate monthly progress reports that document activities and deliverables completed, key accomplishments and meetings, and current or anticipated issues related to scope, schedule, and budge that will supplement each month's invoice.

We are aware that TTD's first job is to operate transit services—we will be cognizant and respectful of your time when developing data requests, scheduling meetings, and submitting deliverables. Beyond the update meetings, the project staff will also be available for on-call discussions to quickly address unforeseen issues and to provide updates to the agency's project manager. .

STANTEC PM FRAMEWORK

0 Prepare **proposal** that includes **preliminary Project Plan** including scope, project budget, resources, deliverables, and schedule; conduct and document independent review of final proposal; conduct and document hazard assessment and apply applicable controls if a field or site visit is required during proposal phase.

1 Obtain **written instructions** to proceed and execute an **approved contract;** obtain written subconsultant agreements (if applicable).

2 Prepare **Project Plan** to appropriate level of detail; conduct and document **independent review.**

3 Establish hard copy and electronic **project record directories** and file project records accordingly.

4 Complete Health, Safety & Environment **risk management assessment** and documentation for all projects involving field work.

5 Monitor **PM Dashboard** regularly; follow best practices for managing project **financials**, including time charges, work in progress, accounts receivable, and estimates to complete (ETC).

6 Obtain the client's written approval on **scope of service changes** in a timely manner.

7 Conduct and document a **quality review** of all final deliverables prior to issue.

8 Conduct and document **independent review** of all final deliverables prior to issue.

9 Close off project **financial** and close out **project files.**

*A final deliverable is defined as any record (written or graphic) based on professional expertise or judgment that is intended to be relied only by others and that provides direction to others as part of a service to the public.

TASK 1: PUBLIC OUTREACH

OUTREACH MANAGEMENT

The sub-consultant AIM will provide strategic advice and counsel, review project materials and reports, coordinate with the TTD and project team, and monitor team communications throughout the project. In addition, as needed, the Stantec team and all sub-consultant representatives will attend a project kick-off meeting and coordination meetings by phone with TTD and the project development team (PDT).

The project will build off the important public outreach being developed as part of TTD's Short Range Transit Plan update, 2017 Corridor Connection Plan, Short-and Long-Range Transit Plans, and TRPA's 2020 Regional Transportation Plan; and by strategically employing a suite of outreach opportunities to engage the public and project stakeholders in order to provide a transparent planning process.

STAKEHOLDER DATABASE & ONGOING COMMUNICATIONS

Stantec and the sub-consultant AIM will work with TTD and the project team to develop and maintain a stakeholder database throughout the project's duration, building upon the contacts identified through other TTD projects. This database will include stakeholder names, contact information, the preferred method of contact, and potential key concerns and/or areas of project interest.

The quality of the project will be enhanced by the full and equitable participation of constituencies such as the youth, elderly, disabled, and disadvantaged community members that have been underrepresented in transportation planning efforts in the past. To include these groups as stakeholders in the planning process, TTD will contact regional community groups and Health and Human Services regarding the opportunity to participate in the project as a stakeholder.

In addition to underrepresented groups, project stakeholders will also represent diverse communities, including varied socio-economic groups, community-based organizations, emergency responders, and local agencies active in the project area including:

- Tahoe Regional Planning Agency/Tahoe Metropolitan Planning Organization
- California Highway Patrol
- Nevada Highway Patrol
- California Department of Transportation (Caltrans)
- Nevada Department of Transportation (NDOT)
- City of South Lake Tahoe
- Placer County
- El Dorado County
- Douglas County
- Carson City
- Washoe County
- Nevada Division of Environmental Protection
- California Environmental Protection Agency
- United States Forest Service
- California State Parks
- Nevada State Parks
- California Tahoe Conservancy
- Sierra Nevada Alliance
- Tahoe Prosperity Center
- Mountain Housing Council
- Sierra Business Council
- Tahoe Resource Conservation District
- Nevada Tahoe Conservation District
- Various Chambers of Commerce
- Various Visitor Authorities
- Truckee North Tahoe Transportation Management Association
- South Shore Transportation Management Association
- Air Quality Management Districts
- Commissions on Aging
- Health and Human Services
- Public Health Departments
- County Departments of Transportation
- Community Development Departments
- Long Range Planning
- County Offices of Emergency Services
- State Offices of Emergency Services
- Offices of Education
- Liberty Utilities
- NV Energy
- Sacramento Area Council of Governments
- Sacramento Regional Transit
- El Dorado Transportation Commission
- Washoe Regional Transportation Commission
- Placer Tahoe Area Regional Transit (TART)
- TART Connect

PROJECT WEBPAGE
AIM will develop content for a project webpage, which will be hosted on a separate domain. AIM will update the webpage with accurate and timely information to notify community members of important project information and opportunities to provide input throughout the project. Community members will be able to access project information, such as FAQs, surveys, and engagement activities, and provide their contact information to receive electronic project updates.

STAKEHOLDER ADVISORY COMMITTEE (UP TO 4 MEETINGS)
The Stakeholder Advisory Committee (SAC) will enable the project to engage a diverse range of groups and individuals in the project area. Each SAC group, organization, and agency will appoint one of their members to be their representative to attend SAC meetings, express the specific interests of their group or organization, and communicate SAC meeting information to the other members of their group or organization. As people who live and work in communities within the project area and are likely users of TTD's transit service, SAC members (and the public at large) are local experts who will be invaluable assets to the project and will be relied upon to provide their unique perspectives on issues such as:

- Existing conditions in the project area
- Existing and future transit demand in their communities
- Potential locations for charging stations and charging infrastructure
- Last-mile / first-mile connectivity within the project area
- How an efficient, reliable transit system could encourage increased ridership
- The location of desired destinations, activity centers, education, and employment

AIM will coordinate and facilitate up to four SAC Committee Meetings throughout the length of the project. Our team of professional facilitators will work with the project team and TTD staff to develop meeting agendas and presentation content that are on point and easy to understand, then facilitate discussions in a way that engages all parties and generates a thoughtful discussion that leads to agreements and direction that moves the project forward. It is anticipated that these meetings will be virtual via Zoom/Teams for budget and schedule.

VIRTUAL PUBLIC MEETINGS (2)
AIM will develop two Virtual Public Meetings to engage community members. The meetings will provide the public with an opportunity to provide input at two key milestones during the plan's development.

The first public meeting will be held early in the planning process to introduce the project to the public, the purpose and scope of the project, and inform the public of opportunities to provide input on the development of the project.

The second public meeting will present elements of the draft TTD Zero Emission Bus Fleet Conversion Plan to solicit feedback from public comments to inform the completion of the Final TTD Zero Emission Bus Fleet Conversion Plan.

AIM will develop a run of show, PPT presentations, and a meeting summary at the end of each meeting. AIM recommends virtual meetings due to the size and travel area of the project zones.

Notification: In coordination with TTD and the project team, AIM will develop and disseminate project information to notify the community at large about the virtual community meetings. AIM will develop content for the project webpage with details about the meetings and create content for TTD to share on its existing social media channels. AIM will partner with key stakeholder representatives to promote the meetings through email, social media, and website updates to encourage participation.

COMMUNICATION COLLATERAL
AIM will develop outreach materials to inform the community about the project. These materials may include such information as PowerPoint presentations, flyers, digital brochures, comment cards, fact sheets, and FAQ's. A template for each collateral item will be developed, that can be easily updated, and distributed through electronic means. All materials will be made in both English and Spanish when necessary.

COMMUNITY SURVEY (1)
AIM will develop and create one project survey utilizing an online service such as SurveyMonkey as well as in-person hard copy surveys to survey new and potential riders to assess the potential impacts of the Zero Emission Fleet Rollout Plan. AIM will provide additional notifications via social media, CBO's outreach, and community engagement for responses. AIM will gather responses from the outreach and compose a summary of findings including direct comments.

DELIVERABLES:
- Stakeholder Advisory Committee meetings and collateral (stakeholder list, meeting schedule and summaries, PowerPoint Presentation, etc.)
- Public Meeting 1 summary and notes
- Public Meeting 2 summary and notes

TASK 2: EXISTING CONDITIONS REPORT

Stantec will conduct a market scan and state of the industry analysis of ZEB technologies for land-based and water-borne transit applications. Such assessment will evaluate the current operations of vehicles, market availability, required infrastructure to support battery and hydrogen technologies, overall trade-offs of each technology, and capital costs for vehicles and infrastructure.

Further, Stantec has first-hand experience with agencies that have developed pure BEB fleets (over 20 transition plans), solely FCEB (3 agencies), and fleets with a mix of technologies (2 agencies) which allows our experts to conduct a comprehensive analysis of infrastructure requirements and operational implications for such fleet scenarios.

We find this Technology Assessment report particularly useful to provide a knowledge base of where the industry is and where it's headed in the next 12+ years. This review will provide a helpful knowledge base for TTD staff, its Board, and the public to understand the benefits and drawbacks of different ZEB technologies, and how TTD can leverage these options for a successful transition to clean technologies.

Getting to where we want to go starts with understanding where we are today. Stantec will start the analysis by evaluating TTD's fleet, operations, and other key factors to establish baseline conditions related to ZEB implementation. The overall outcome of this effort is an Existing Conditions report on status quo requirements without ZEBs to 2040 to inform our recommendations.

Our evaluation starts with a review of transit operations planning "essentials" including (but not limited to):

- Studying existing routes to identify attributes such as lengths and topographical challenges
- Identifying the current fleet size required to meet pull-out as well as FTA-mandated spare ratios
- Analysis of operational characteristics, including vehicle scheduling, blocking, revenue hours and miles, deadhead in addition to other non-revenue hours and miles, as well as by vehicle type to provide a granular view of TTD's services
- Proposed or anticipated changes to TTD's service
- Minority communities as defined by census tract data
- Applicable collective bargaining agreements to understand unique work rules or other showstoppers in the ZEB transition
- Analysis of operational and maintenance data related to TTD's current BEBs

This high-level review of transit operations planning essentials establishes a service level baseline for us to develop status-quo cost projections and informs our needs and gap analysis, as well as the parameters to evaluate the success of ZEB under the current operations of TTD.

One of the major advantages of transitioning to zero-emission vehicles are the myriad of benefits they provide to local air quality, reducing local pollution burden, strengthening public health, and aiding in environmental justice. As part of the Existing Conditions report, Stantec will develop a series of maps (in GIS format, utilizing data provided by the TTD where not publicly available) showing basic information including the service area, current and proposed transportation network (including transit and active transportation), current land use, and zoning, and other relevant information such as utility provider service areas and potential charging and fueling locations. We will also map demographic and socio-economic

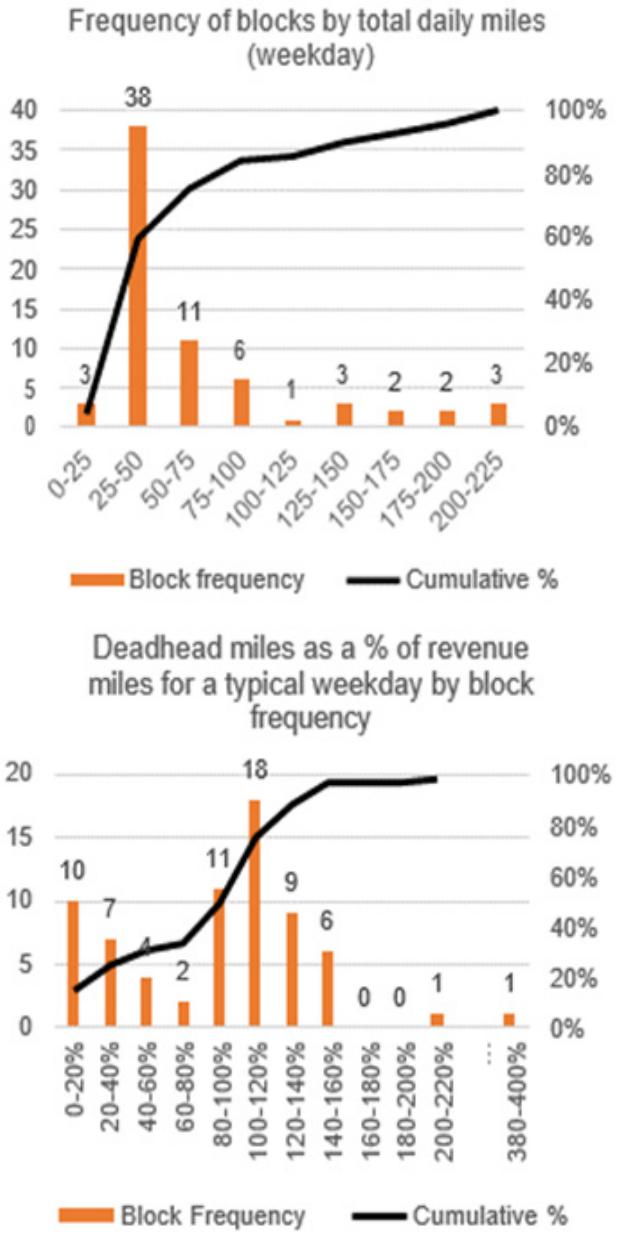


Figure 1: Typical analyses conducted for fixed-route services to determine preliminary ZEB feasibility and lay the groundwork for the power analysis and route modeling.

data, such as population and employment density and other demographics including minority populations, low-income populations, zero-vehicle households, and others as identified by TTD. Understanding where priority communities are can help TTD deploy ZEBs in a way that provides the greatest benefits to areas of greatest need first.

For the portion of TTD's service area in California, Stantec will utilize CalEnviroScreen, a mapping tool developed by the California EPA to identify disadvantaged communities at the census tract level using a variety of socio-economic, geographic, public health, and environmental hazard criteria to understand if ZEB deployment can be prioritized to first serve the communities experiencing the greatest pollution burden.

Stantec has developed an effective data collection strategy to minimize the burden of the TTD staff while ensuring the team can count with quality and relevant information. By providing the initial data request at the kickoff meeting, we are able to discuss data needs at the onset of the project and walk through the required data with the TTD team. We have found that this beneficial in being able to identify items that may be more difficult to acquire, take more time to put together, or requires coordination with other departments.

Furthermore, Stantec will conduct a field review with TTD of the project area (including potential locations for charging infrastructure and current and potential operations and maintenance facilities) to assess existing conditions. Representatives from relevant ZEB transition streams—operations, power, buildings, maintenance, fleet and fueling—will be in attendance (either in person or virtually). The findings from this preliminary review will be summarized and documented in the Existing Conditions report. After modeling has been completed and a fleet concept has been chosen as part of Task 3, we will revisit this preliminary assessment in Task 4 to asses feasible sites in greater detail, at which point Stantec will coordinate with relevant stakeholders and utilities.

We will ask questions, take pictures and gain direct understanding of the current facilities that the ZEB transition plan will build upon. We will engage with TTD staff who have hands-on experience operating, maintaining, and fueling fixed-route, dial-a-ride, paratransit, and nonrevenue fleets. A summary of our findings will be provided in the existing conditions report.

DELIVERABLE

» Existing Conditions Report

TASK 3: ZERO EMISSION TRANSIT OPTIONS ANALYSIS

Our next step is to use data provided by TTD—service schedules, blocking, passenger loads, vehicle assignment, mileage—together with other data related to your service area, along with vehicle specs from the original equipment manufacturers (OEMs) to perform a modeling "deep dive". This will ultimately answer the question: could TTD feasibly implement and operate ZEBs for its current service design, and if so, what are the power and fuel requirements?

The successful electrification of a bus system relies on a reliable prediction of future power and energy requirements. ZEB manufacturers provide technical specifications of the anticipated fuel economy of their vehicles. While these values can be used for a rough estimate of simple energy demand, real-world operations have proven to deviate greatly from the manufacturer's fuel economy projections since they are calculated and reported on 'best performance'. Some of the

Figure 2: Stantec completed a spatial analysis of disadvantaged communities for the Santa Barbara MTD as part of their ZEB Rollout Plan. This identified one disadvantaged community, a census tract in which their second terminal (Terminal 2) is located. Through discussions with MTD, it was determined that ZEB deployment could be prioritized out of Terminal 2 to help lessen pollution burden in the area.

factors that shape fuel efficiency are topography, weather conditions, passenger loads, average route speed, and operator driving behavior.

Additionally, the complexity of these factors will make the energy/fuel demand from one route or service type completely different from the demand of another route in the same transit system. For example, the fuel economy when a BEB operates with more frequent stops and lower driving speed within the city can be around 2.5 kWh/mi, and for the same bus the fuel economy can be as low as 1.98 kWh/mi when traveling at higher speeds with fewer stops along a freeway.

Miscalculating the fuel economy can have significant repercussions not only for the expected range, which can affect service delivery, but also cost projections if the expected power or hydrogen demand is mismatched with infrastructure or supply, either over- or under-sized. Therefore, the first step to a successful electrification plan is the predictive modeling of operations for generic ZEBs.

ROUTE MODELING

Stantec's approach to model the predictive energy requirements of an electrified fleet is to use the manufacturer's expected fuel economy as a reference, but then to model the bus efficiency based on representative operational and ambient conditions of the fleet, while incorporating any real-world data that TTD can provide from their electric fleet. To capture how operational conditions can affect the fuel economy—and the energy/fuel requirements specific to the service area of TTD— Stantec uses its proprietary modeling tool called ZEVDecide, supplemented by strategic data collection methods (Figure 3).

ZEVDecide models the mechanical energy demand of ZEBs based on representative driving cycles. A driving cycle is a speed versus time profile that is used to simulate the vehicle performance, and consequently, the energy use. Stantec will develop custom driving cycles for each route in TTD's system that incorporates the topography, average speed of routes, route length, traffic level, and number of stops using GTFS data and Google API, which collects real-world data on driving conditions, traffic levels, maximum and average speeds, and the overall roadway network.

Stantec believes this is a robust approach to modeling that responsibly balances data granularity and the cost to undertake the analysis.

BUS PERFORMANCE MODELING

The next step is to model the drivetrain power requirements specific to the acceleration profile from the driving cycles, also called "bus performance modeling". To do so, ZEVDecide considers different vehicle specifications, such as curb weight and frontal area, to estimate the aerodynamic drag and rolling resistance coefficients.

Additionally, the power requirements from auxiliary components and from the HVAC system is configured for each vehicle type and according to current manufacturer designs. The vehicle specifications are then paired with the acceleration profile from the driving cycle to predict the energy efficiency and fuel economy specific to each route.

Since the analysis is created for a generic build of BEBs and FCEBs, the model estimates an energy efficiency independently

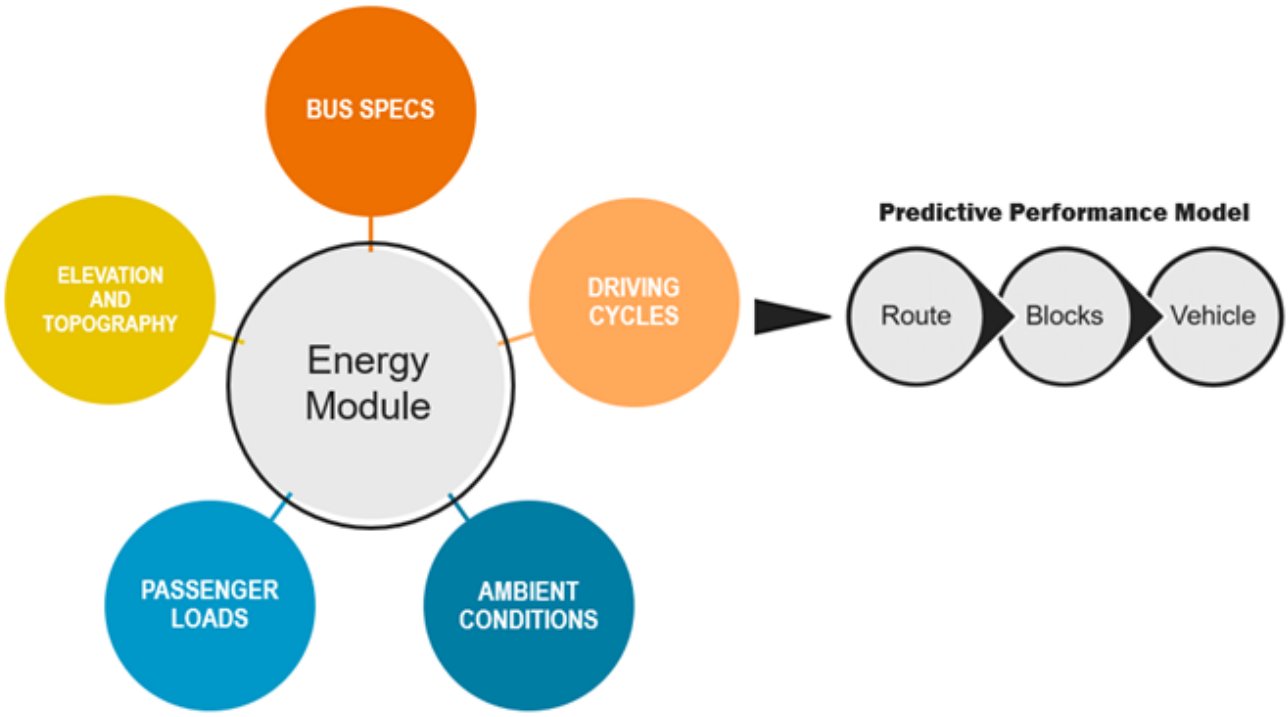


Figure 3: ZEVDecide input parameters for bus performance modeling

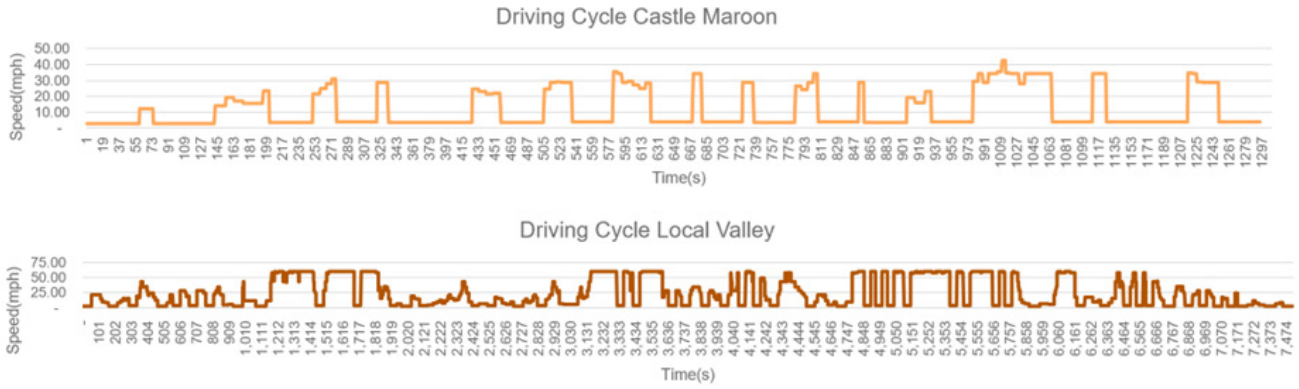


Figure 4: Example of custom driving cycles Stantec has developed

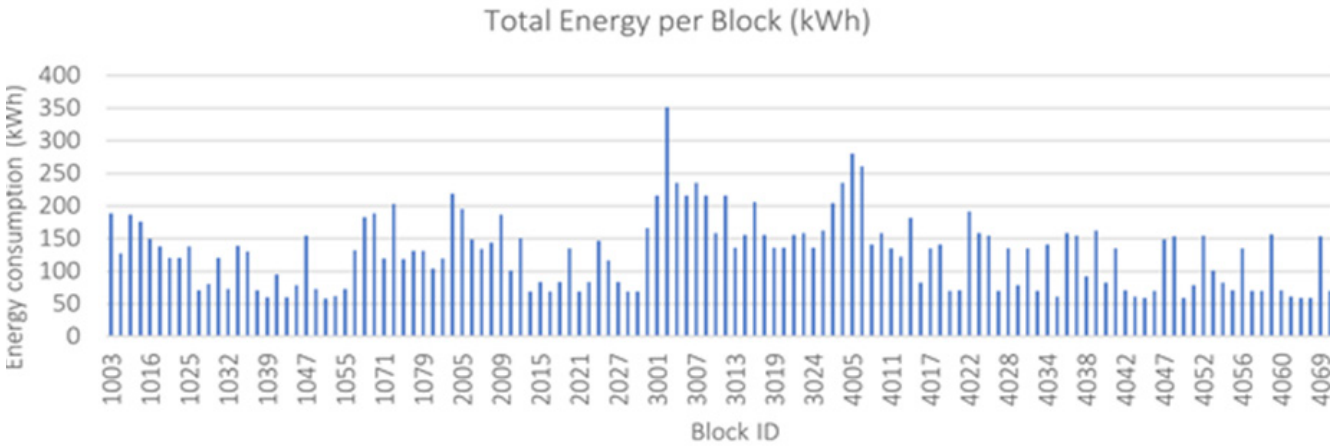


Figure 5: Example of energy consumption (kWh) of motor coach vehicle blocks for a commuter service. The modeling results show the variety in energy consumption that helps inform facility modifications, charging infrastructure, and utility demand

from fixed vehicle configurations, giving flexibility to the future fleet procurement to be fulfilled by one, or a combination, of vehicle manufacturers. Therefore, the resulting analysis will be vendor agnostic. Furthermore, the baseline vehicle specifications in the modeling will be established in collaboration with TTD staff to reflect the needs and preference of their fixed-route network (e.g., vehicle's length, battery size, etc.).

Once the bus configuration is set, the powertrain power profile is modeled into fuel economy while considering passenger load, critical weather-related accessory loads (heating and cooling), and general mechanical power needed for vehicle acceleration.

FLEET OPERATIONS REQUIREMENTS

For fixed-route services, the calculated fuel efficiency is then combined with the route mileage and block configuration to calculate the energy requirements at the block level, as well as the state of charge (SOC) of the batteries at the end of each service day or hydrogen levels for FCEBs (Figure 5).

For TTD paratransit services, the predicted fuel economy is combined with vehicle utilization for each vehicle to predict the average SOC of the batteries and hydrogen usage at the end of the day to ultimately calculate the total fuel consumption. Since the vehicle utilization varies from day to day for these demand-response services, Stantec relies on historical data provided by the agencies to develop a statistical analysis that generates the probability of vehicle conversion to ZEBs for these demand-response services.

The modeled efficiency will provide valuable information for future service planning that will be realistic and reliable because it is related to the expected range, SOC, fuel levels, and energy/hydrogen consumption. Furthermore, this analysis will identify the route conversion to ZEB feasibility and whether on-route charging is required due to range limitations or what schedule modifications can facilitate the route electrification. Lastly, a sensitivity analysis will be conducted to evaluate how factors like battery degradation, topography, climate, and passenger load affect the expected fuel economy.

PREFERRED FLEET CONCEPT

Once modeling is complete, we will understand not only the power and fuel requirements for a ZEB-equivalent fleet, but also the feasibility of each technology type for your service. Indeed, some blocks may be served by either FCEBs or BEBs, some may require on-route charging, others may require FCEBs, and some service may not be feasibly converted to a ZEB in a one-to-one manner from a conventional fossil fuel bus.

Next, Stantec uses a multiple criteria evaluation approach to outline the trade-offs to the fleet concepts and arrive at a preferred fleet mix that considers both quantitative and qualitative constraints and opportunities associated with each fleet concept.

By combining a cost optimization method together with the multiple criteria evaluation, the preferred fleet mix will be identified through a workshop session with the staff and pertinent stakeholders. Our analysis approach will help delineate the preferred fleet mix that will minimize overall costs while meeting all operational goals.

As part of the multicriteria decision analysis, Stantec will develop an in-depth comparison between BEB and FCEB operations to TTD's existing fleet, examining the trade-offs of each technology to assess how each function of the agency could get affected by the transition to either of these zero-emission technologies (Figure 6).

The 50-Point **ZEVCheck** will be use as a guiding pathway to evaluate the operating characteristics of BEBs versus FCEBs.

The analysis will include, but is not limited to:

- Planning, scheduling, and run-cutting needs
- Logistics for charging/fueling cycles
- Maintenance equipment and facility infrastructure needs
- Unscheduled and Scheduled Maintenance
- Operator and Maintenance Staff Training
- Warranties
- IT technology requirements
- Other infrastructure needs, such as for on-route charging (what and where, etc.)
- Needs of disadvantaged communities
- Operational Reliability and Performance
- Safety Risks
- Mid-life Overhauls for batteries and fuel cell systems

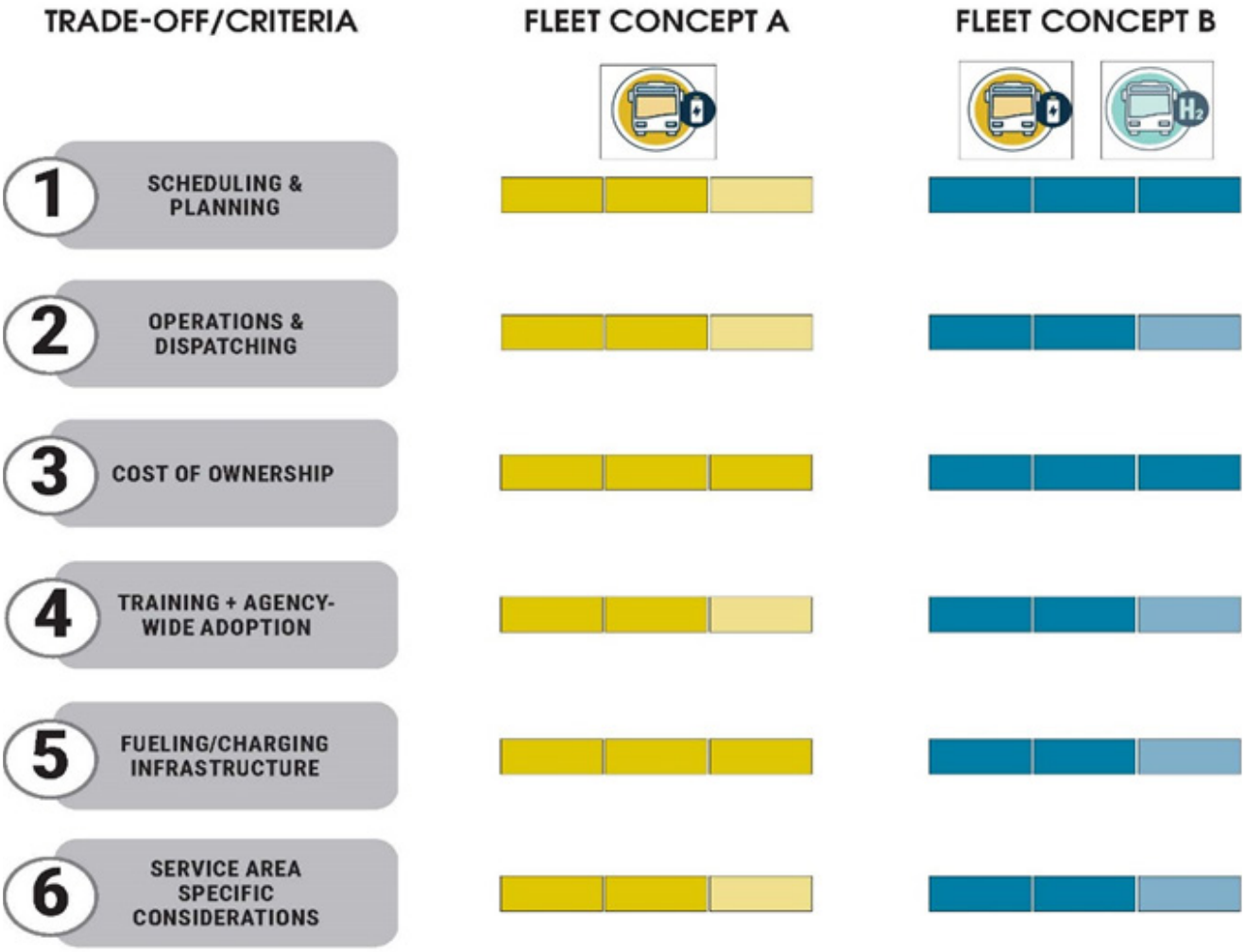


Figure 6: Example of Multi-Criteria Decision Process

Following the multicriteria analysis and selection of a preferred fleet concept, a vehicle replacement and ZEB conversion schedule will be developed that is feasible and realistic based on the needs of TTD, and adheres to the CARB ICT Regulation for a full transition by 2040.

Please note that the market scan summarizing available vehicle types for land-based and water-borne transit and analysis of BEB and FCEB procurement, fueling and charging characteristics, and operating costs will be developed as a part of the Existing Conditions Report in Task 2.

Deliverables for this task will be compiled into a Modeling Presentation which will include all of the activities detailed above.

DELIVERABLE

» Modeling Summary (Presentation)

TASK 4: SYSTEM CHARGING FUELING INFRASTRUCTURE PLAN

With a preferred fleet concept, Stantec's next task involves developing a facilities assessment that will detail what TTD must do as it moves towards a ZEB future. This includes leveraging the assessments of the facilities developed in Task 2, and the results of the modeling from Task 3 to inform the infrastructure sizing and determining any necessary equipment options. This task will include an analysis of:

» Site evaluation for a new Operating Base and Maintenance Facility

» Electrical infrastructure needs

» Fueling/charging infrastructure needs

» Maintenance equipment and facility infrastructure needs

» IT technology requirements

» Other infrastructure needs, such as for on-route charging (what and where, etc., based on locations identified during the field visit and assessment in Task 2)

» TTD's current bus operations and maintenance training programs and recommendations

» Charging profile and infrastructure power demand modeling

First, Stantec will complete a high-level evaluation of TTD's current operations and maintenance facility in South Lake Tahoe, in addition to up to three other potential locations, to understand the feasibility of these sites as future locations for TTD's ZEB operations and maintenance. The assessment will be based on the requirements for TTD's future fleet as determined through Task 3. Following this assessment, one location will be selected as the most feasible, which will be used as the basis for the more in-depth and detailed charging/fueling and infrastructure requirements detailed in this task.

ANALYSIS OF ELECTRICAL INFRASTRUCTURE NEEDS

The primary concern planning the infrastructure required to support a BEB fleet is the electrical capacity to charge the buses efficiently and effectively. Our experience with other transit agencies that have implemented successful fleet conversion programs has demonstrated that there are several factors that must be considered when developing a conversion plan, including early involvement of the local utility company and a strategic phasing plan.

The local energy demand to operate BEBs can be large and can exceed not only the capacity of the on-site electrical system but some cases, the local utility distribution system. For instance, we find that several of our clients at full BEB buildout require anywhere from five to ten times the amount of peak power demand compared to their current operations. Charging several vehicles simultaneously is not as simple as just plugging them in. Configuring the charging systems and the charger management system to provide maximum operating flexibility while minimizing required infrastructure upgrades is a key goal.

We will coordinate with NV Energy, Liberty Utilities, and other relevant entities to develop a strategy for BEB fueling infrastructure. This strategy includes but is not limited to interconnection for charging equipment and specific rates for charging infrastructure.

Since the BEB fleet conversion will be phased in, the infrastructure design needs to be able to grow incrementally without impacting daily operations. Vehicle and charger technology are changing rapidly, and improved systems are coming to market continuously. The infrastructure also needs to be able to have the flexibility to accommodate and take advantage of new, higher capacity and more capable BEB systems that will be available as the fleet transition is implemented. The electrical system design is one component of the overall infrastructure design. Fleet operations, maintenance, the service cycle, and yard management also must be considered since all the design components interact and impact the overall success of the system. The Stantec team will evaluate yard and fleet operations and incorporate that information into the overall infrastructure plan. Activities that will be performed under the Electrical Infrastructure Analysis include:

» Forecasting the electrical charging needs based on the modeling while anticipating the growth or changes required when deploying an all-electric fleet

» If hydrogen FCEBs are the final recommendation for the fleet, then the modeling will provide the power requirements to operate the refueling station as the necessary grid connection upgrade

» Consideration of grid connection upgrades to the future infrastructure site

» Evaluation of the existing depot electrical and operations infrastructure to project necessary upgrades to support the new fleet and future electrical demand from all activities managed by TTD

- Coordination with the local electric utility to identify system capacities, when such capacity will be surpassed, and to confirm their ability to meet the projected energy demands
- Preparation of a comprehensive infrastructure plan throughout the fleet transition period that identifies the required infrastructure upgrades, both internal to the TTD facility and local utilities (e.g., on-site transformer and conduit needs), and provide a phasing plan that will result in an infrastructure that can fully support the evolving fleet

ANALYSIS OF YARD LAYOUT AND CHARGER LOCATION

Introducing electric charging for buses at any given transit facility will only increase the complexity of the current circulation and parking situation. ZEBs will be implemented over time, thus requiring infrastructure for the current conventional vehicles, while introducing the recharging/ refueling equipment and related maintenance and servicing issues, which are different than that of fossil fuel vehicles.

This section will investigate alternative charging equipment and configurations, layouts, and the impacts on the operational flow during the transition and after full implementation. The deliverable, a conceptual site layout, will consider charger physical specifications (i.e., potential size), as well as proposed vehicle flow that considers the new areas for the charger cabinets, charger dispensers, and any additional electrical infrastructure to operate the chargers. Additionally, Stantec will develop a preliminary architectural and engineering design of the on-site electrical infrastructure upgrades required to support the BEB fleet out of the selected facility to support the fleet growth and potential mid-day charging requirements, if deemed necessary through the modeling exercise. Both of these site concept layouts will inform the order of magnitude cost estimates, which will be develop by our subconsultant partner Jacobus & Yuang, Inc.

CHARGING PROFILE AND INFRASTRUCTURE POWER MODELING

For a potential BEB solution, the fleet's energy demand from the predictive modeling is combined with operational considerations—such as vehicle dispatching schedules—to estimate: 1) the ideal number of chargers, 2) charger capacity, and ultimately, 3) the power demand. Using the power requirements, as well as details form the service schedule, a charging profile is generated defining charging times and number of connected chargers to mitigate power demand during on-peak rate hours (Figure 7).

For the FCEB fleet, the modeling results are also combined with the operational considerations to finalize the fueling station configurations, which includes 1) the number of needed dispensers, 2) required flow rate of compressors to ensure service for the entire fleet during the available refueling window, 3) size of hydrogen storage and station capacity, 4) required grid connection upgrades, and 5) footprint for the station. The final design of any station will be directly related to the available refueling window and the dispatch hours of the vehicles.

RATE MODELING AND FUEL COST

The cost of electricity varies significantly depending on the time of day in response to varying demand and generation sources, i.e., demand charges and time of use rates. Stantec will coordinate with local utilities, including NV Energy and Liberty Utilities, to get information regarding relevant rate structures to be evaluated and to identify future cost of electricity when charging an electric fleet. Figure 6 is an example of charging optimization where minimal charging during peak hours helps mitigate the cost of electricity while charging at off-peaks is maximized to avoid excessive power peaks that would result in costly grid connection upgrades.

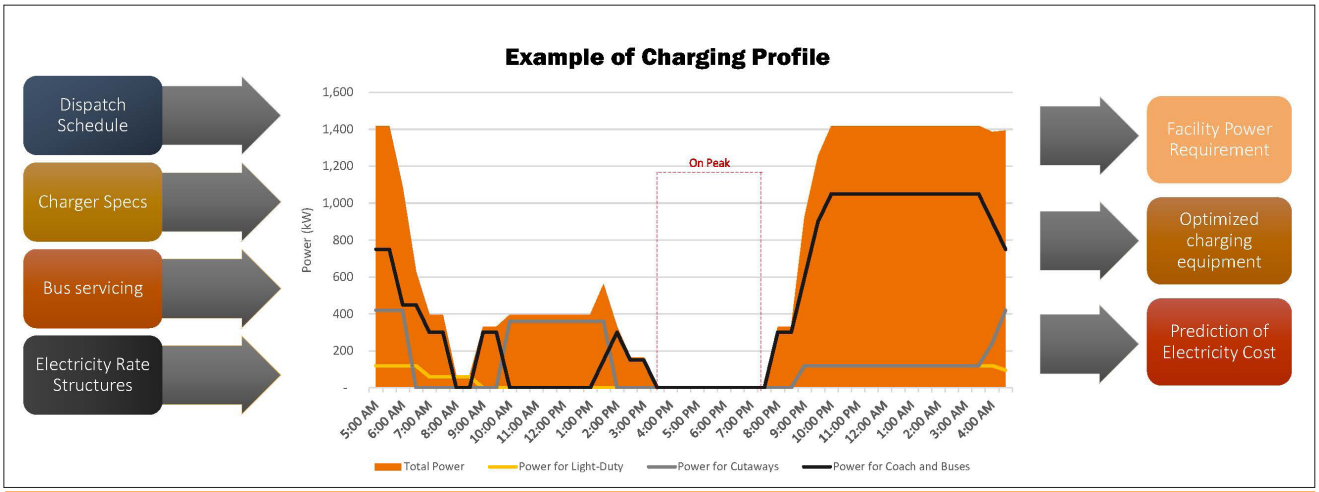


Figure 7: Example of Charging Profile for a Fully Electrified Fleet

ANALYSIS OF YARD LAYOUT WITH HYDROGEN REQUIREMENTS

If hydrogen FCEBs are the preferred fleet alternative, the fleet's hydrogen demand is then combined with operational considerations — such as time window for refueling buses and available footprint — to estimate 1) max capacity of the hydrogen station in kg per day, 2) hydrogen- storage capacity, 3) number of dispensers, 4) power requirement of the station, and 5) overall equipment specifications (e.g., flow rate of dispensers, capacity of the compressors, etc.). The deliverable will be the hydrogen station footprint, as well as a layout concept with a proposed vehicle flow that considers the new hydrogen refueling area (Figure 8).

WORKFORCE TRAINING REVIEW AND RECOMMENDATIONS

As part of this task, Stantec will review TTD's current bus operations and maintenance training programs and present recommendations to ensure TTD employee have the skills and training necessary to operate and maintain ZEBs. We will begin with a review of TTD's current training program and procedures for the three BEBs TTD currently operates. We will leverage information provided by OEMs regarding minimum recommended training for operations and maintenance staff and the California statewide contract procurement for ZEBs, as well as other resources including the California Training Consortium, National Transit Institute, ZEB University program, Zero Emission Bus Resource Alliance, and others. This review will allow us to identify gaps in TTD's current workforce training program and make recommendations for improvement.

The deliverable for this task will be a Charging/Fueling/Infrastructure Strategy presentation that summarizes all of the activities, including charging/fueling strategy, analysis and findings of the site evaluation, site plan and infrastructure requirements, coordination with utilities, on-route charging needs and locations, charging profile and power demand modeling, and workforce training considerations. We recommend a presentation as the optimal format for these deliverables so that Stantec and the TTD team can have a collaborative discussion regarding the charging and fueling plan prior to development of the final ZEB Rollout Plan.

DELIVERABLE

» Charging/Fueling/Infrastructure Strategy (presentation)

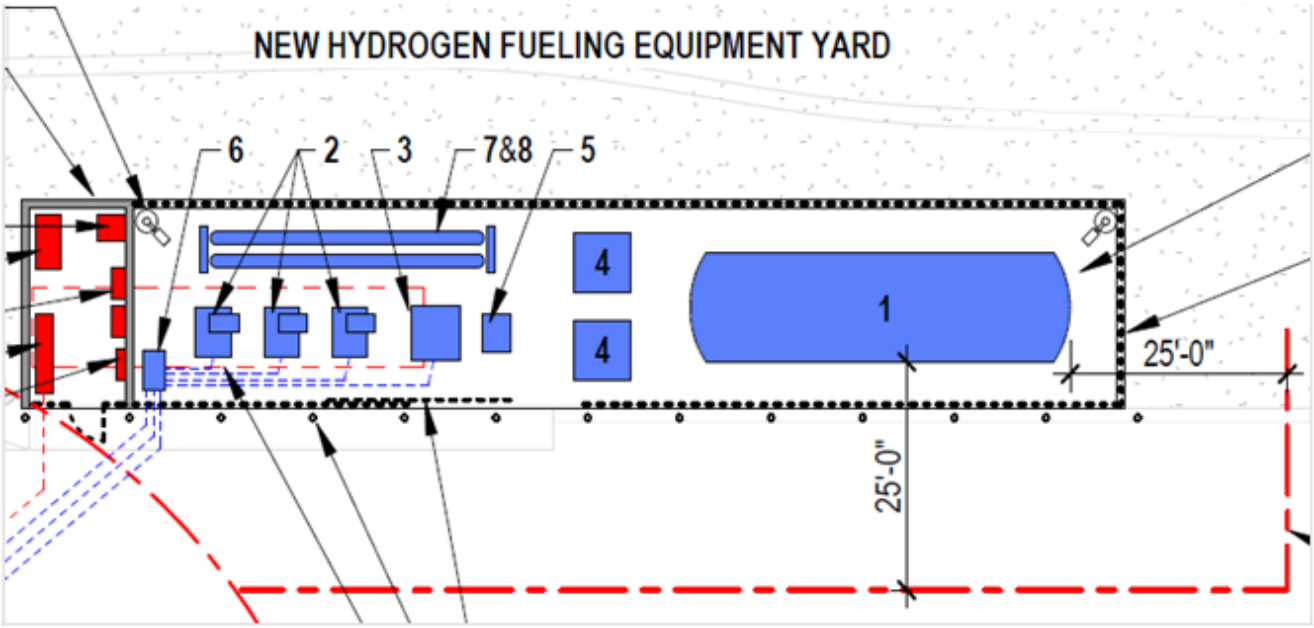


Figure 8: Example of hydrogen refueling plant as a concept design

TASK 5: ESTIMATE GHG REDUCTION BENEFITS OF ZEB FLEET CONVERSION

Following the development of charging/fueling and infrastructure requirements, Stantec will utilize ZEVDecide to complete a GHG impacts analysis, which will quantify the GHG emissions reductions TTD will achieve by transitioning to a ZEB fleet. ZEVDecide's GHG impact analysis incorporates both tailpipe and upstream emissions (GHG emissions associated with the production of the energy source). Our calculations are presented in tons of CO_2 equivalent, which is calculated using the short-term 20-year global warming potential of CO_2, methane, black carbon, and particulate matter. We calculate the upstream and tailpipe emissions associated with the future ZEB fleet as well as if TTD were to continue with its current fleet makeup, and present the difference between the two fleets. We convert our findings in metric tons using an EPA calculator to show "equivalent benefits" (Figure 9) – we have seen this be especially beneficial in presenting findings in an impactful way to stakeholders and the general public.

As specified by the scope of work, we will also present the findings in terms of passenger miles. The analysis and outputs of the GHG analysis will be incorporated into the draft and final ZEB Rollout Plan.

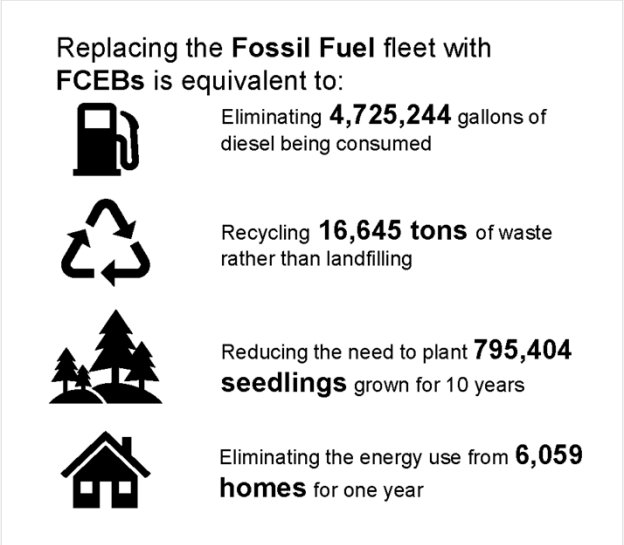


Figure 9: Equivalent benefits of implementing a hydrogen fleet calculated as part of our GHG analysis

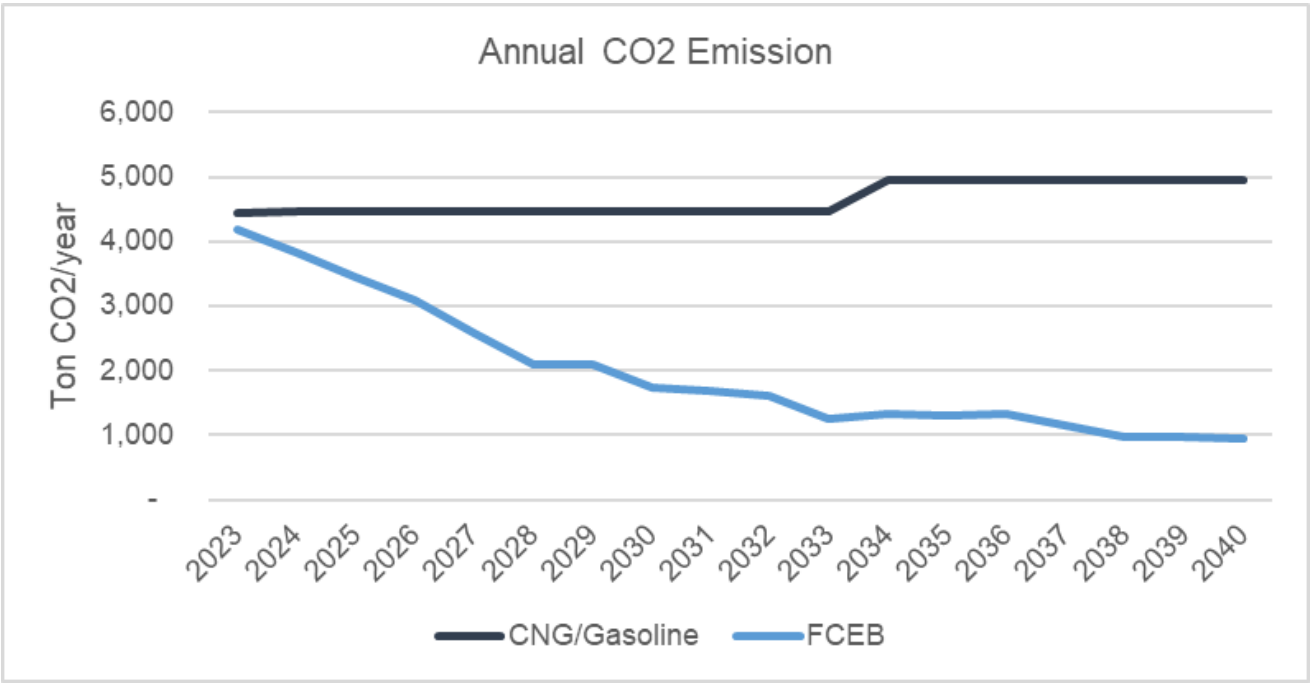


Figure 10: GHG analysis comparing the "base case fleet" to the "ZEB case fleet" demonstrating the annual tailpipe and upstream emissions reduction between 2023 and 2040

TASK 6: DEVELOP PLAN-LEVEL COST ESTIMATES

Status quo cost projections are important as they allow us to contrast and compare the difference between the current fiscal reality of base case conditions, and your ZEB future which is likely to incur additional costs. There may be "sticker shock" for policy and decision makers during this transition. Conveying that messaging will be important.

Stantec's analysis will reveal what TTD's costs would be if the current propulsion type remains in place until 2040 (to remain in compliance with ICT timelines)—a status quo (or base case) scenario assuming fleet growth and service hours per TTD's expansion plans. Our status quo cost projections will include the current cost of fleet operations including maintenance, fueling, bus replacement frequency and other relevant factors such as major midlife/overhaul costs, etc. Next, Stantec will apply a discount rate to future cash flows to ensure all costs are presented in 2023 dollars. Stantec will compile all the costs related to owning and operating a ZEB fleet, taking into account the transition period where a combination of ZEB and diesel/gasoline vehicles will be in operation. This analysis will also be used to refine the implementation plan and all the requirements of a full transition plan. We present our approach for each of the key cost categories listed below.

VEHICLE COSTS

Stantec will derive capital ZEB costs based on our extensive database of costs derived from past experiences, in particular, basing our assumptions stage contract pre-agreements, such as the California Department of General Services quotes for ZEB for California agencies, or the Washington procurement contract lists. Stantec also maintains a database of recent peer purchase prices so we can accurately monitor fluctuations in the marketplace with the supply of ZEBs increasing. Stantec has also conducted a literature review and has established a price trend for the cost of vehicles over the next 20 years that accounts for purchase price reductions due to economies of scale with a balance of the offer-demand dynamic that will occur once these technologies are mature and fully penetrate in the market.

DIESEL AND GASOLINE FUELING

Though current fueling will ultimately be phased out as the agency transitions to ZEB technologies, it will remain a critical element of TTD's bus strategy up to the 2040 timeframe or beyond. Accordingly, Stantec understands that determining the cost of diesel/gasoline through the transition will be an important metric and basis of comparison versus the cost of the future ZEB-based 'fuels'.

In order to determine these costs, Stantec will examine the key variable constituent cost of diesel/gasoline. These costs will be determined by studying TTD's current and recent expenditures in these areas, as well as by researching anticipated trends and reviewing historical data of diesel fuel prices over the past five years. Based on the information reviewed, Stantec will make a best available projection on the price of diesel/gasoline in the future to serve as a baseline for cost comparison. The projection method could be based on historical costs or based on existing Energy Information Administration forecasts, or a combination of both. All these fuel-cost elements will then be extrapolated and mapped over the course of the ZEB-transition timeframe as a basis for understanding the comparative delta to fuel costs associated with the ZEB-compliant alternatives.

ELECTRICITY AND HYDROGEN FUEL

The cornerstone for bus fleet energy demands can be determined through detailed modeling of the individual bus routes as described previously. These detailed models will be used to evaluate bus operation and charging requirements, or fuel capacity requirements for FCEBs, and will form the basis for evaluating the charging/fueling infrastructure that will be required as well as the timing and cost of the energy supplies.

To calculate the cost of electricity, Stantec will work with the TTD to first understand what the TTD is currently paying for electricity for their current BEBs. Stantec will work with Liberty Utilities and NV Energy to define near-term electricity costs and tariff structures to develop a cost baseline for evaluating charging alternatives, based on potential charging locations selected in Task 4. Costs will also be estimated out for a 20-year lifecycle cost analysis of each ZEB option. Hydrogen costs will be based on market research of current costs and anticipated rates. This information will then be used to make reasonable projections for the cost of electricity (and hydrogen) over the next twenty years. Our team will compile data from agencies that operate BEB and FCEBs, as well as data from OEMs to get a wider picture of the fuel cost. Furthermore, historical data from demonstration projects across the country for the different bus technologies has already been collected and analyzed to create a cost library that will supplement the cost projections.

BEB CHARGING INFRASTRUCTURE

Determining the holistic costs for BEB-charging infrastructure at a given division will have many factors, all of which the Stantec team has recent experience designing and implementing. The capital-cost factors for in-yard charging that may be considered include:

- Offsite utility distribution and primary feeder
- Onsite transformer(s)
- Utility service and metering
- Associated civil-site upgrades
- Onsite distribution, conduits and wiring
- Full-power charger and dispensers in yard
- Lower-power charger in maintenance bays
- Consideration to incorporate onsite energy storage • Support infrastructure for chargers and dispensers, including possible overhead gantries to support inverted pantograph dispensers
- Robust IP and data pathways
- Considerations for phasing and associated inflation
- Consideration of onsite power generation

A final consideration that Stantec will evaluate is possible inter-agency sharing of infrastructure and costs for opportunity chargers. Given the standards-based interface for opportunity chargers (J3105 pantograph), cooperative development may be appropriate. The capital cost assessment will be conducted by our partner Jacobus & Yuang, Inc. through Rough Order of Magnitude Estimates for the location of TTD's future operations and maintenance facility, which will have been determined as a part of Task 4.

HYDROGEN FUELING INFRASTRUCTURE

To the extent that the modeling and TTD/Stantec team's evaluation calls for implementation of FCEB propulsion within the system, appropriate capital cost modeling will be developed on a per-facility basis as appropriate. Jacobus & Yuang, Inc. will be developing a Rough Order of Magnitude Estimate for the future facility. Hydrogen fuel can be derived and implemented in a range of modes. Accordingly, the infrastructure cost modeling will be broken out based on technical approach, and will contain a combination of the following capital cost elements as applicable:

- Offsite utility distribution and primary feeder.
- Onsite transformer(s) or upgrades
- Metering or upgrades
- Onsite distribution, conduits, and wiring
- Hydrogen fuel supply
- Water electrolysis – includes requirements for very high input electrical energy
- Gaseous hydrogen via tube-trailer exchange
- Liquefied hydrogen via tanker truck
- High-pressure compression of gaseous hydrogen – 350 bar / 5,000 PSI
- Addition of gaseous-detection and alarming systems at the maintenance buildings to account for hydrogen • High-pressure pumping of liquefied hydrogen (also 350 bar) with heat exchanger to produce high-pressure gas
- Gaseous H2 dispensing infrastructure
- Considerations for phasing and associated inflation, since the build out of the ZEB fleet will likely take more than 10 years to complete
- Consideration of onsite power generation,
- Modifications to maintenance buildings air circulation system to account for use of hydrogen and to comply with current codes and standards.
- High-pressure buffer storage

ADDITIONAL GENERAL CAPITAL COSTS

A final factor that relates to facility cost and implementation of either ZEB-propulsion technology is the phase out and decommissioning of the existing diesel infrastructure at TTD's facilities. Other facility modifications that may be required will be included in the recommendations and cost estimates as well, modifications such as maintenance bay upgrades, yard layout changes, and hydrogen related detection systems. All capital cost estimating will be led by Stantec Team's dedicated cost estimator, Jacobus & Yuang, Inc. Additionally, the specific and ever-evolving technical details and specialty equipment costs for charging and hydrogen systems will be coordinated by Stantec's charging- and hydrogen-infrastructure specialists.

ZEB AND BASE CASE FINANCIAL REPORT

Once Stantec has evaluated capital, operations, refurbishment, and maintenance costs from a start-up and lifetime perspective for the recommended propulsion technology, we will be able to finalize the ZEB scenario of our financial modeling, for comparison to the status quo (or base case) scenario previously developed. What will be most noteworthy is how forecasted costs – both capital and O&M – compare between the two scenarios, as this will give an indication of where incremental funding may be required, or where cost savings may materialize. Findings will be synthesized and communicated in discounted 2023 dollars to allow for an apples-to-apples comparison between the scenarios (Figure 11). This is an important step as it will strengthen the business case that acts as the foundation for the ZEB Rollout Plan's implementation.

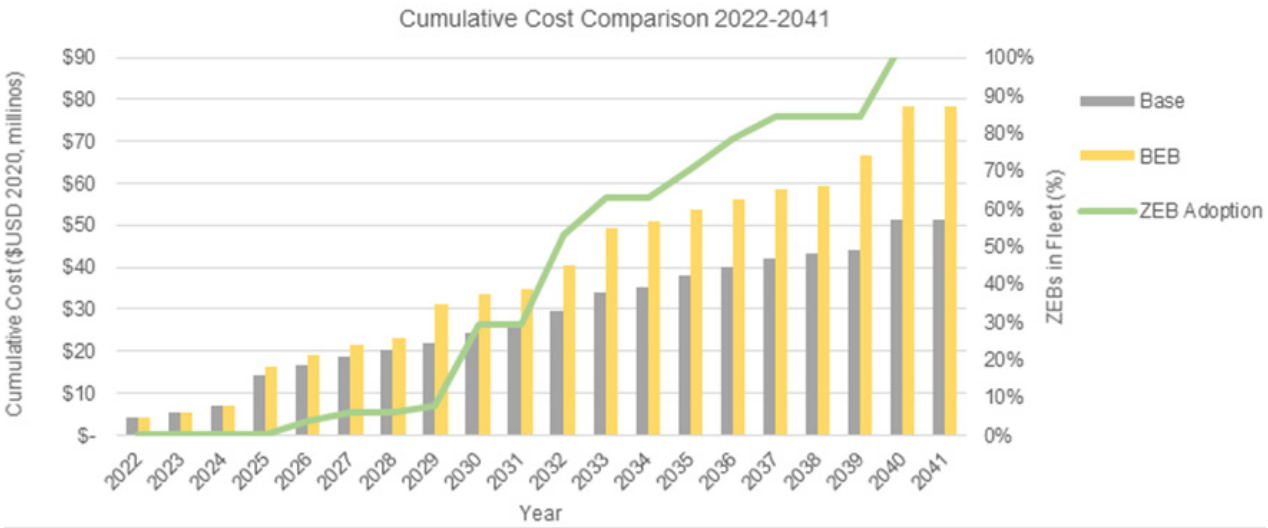


Figure 11: Example of financial results modeling for Cumulative Total Costs for the ZEB Case vs the Base Case.

Stantec will evaluate the yearly total cash flow assuming a twenty-year lifecycle from ZEB implementation and will compare it to the diesel base case. It is in the comparison of ZEB implementation against the "business as usual" scenario that provides the most compelling quantitative analysis in support of the ZEB business case.

Stantec relies on Microsoft Excel for ZEB financial modeling exercises. Excel is the preferred modeling program for the following reasons:

- It is a format that the transit industry is familiar with, so TTD can be confident that it will have a good understanding of the financial model's inputs, operations, and outputs.
- Allows for transparency, whereas other financial modeling software programs tend to be a "black box" whereby one can easily view the inputs and outputs, but how the model functions in its core is largely a mystery; this does little to instill confidence in the minds of decision-makers.
- Allows for the development of inputs and outputs dashboards, easily facilitating not only the analysis but also documentation and integration of the results with other elements of the ZEB Rollout Plan.

Financial analysis and cost estimates will be presented in the draft and final ZEB Rollout Plan.

DELIVERABLE:

- Plan-level cost estimates

TASK 7: IDENTIFY POTENTIAL FUNDING SOURCES AND STRATEGIES AND IMPLEMENTATION PLAN/NEXT STEPS

Identifying sources of funding is an essential, and perennial concern for all transit agencies. Stantec will provide a fulsome review of the possible avenues for applicable funding incentives and other competitive funding sources available to TTD. Although a complete list of funding incentives and sources will be established during the study, we will at a minimum detail the process and potential return for seeking the following list of funding sources:

- The Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), where a voucher application process could offset the cost of a new ZEB vehicle by $120,000 - $175,000 USD.
- H2 infrastructure where up to $100,000 for equipment cost for each fuel cell voucher.
- EnergIIZE Commercial Vehicles infrastructure voucher program to support the infrastructure deployment.
- The Low Carbon Fuel Standard, where agencies using fuel and fuel blend stocks with carbon intensity below the established threshold receive credit incentives, with additional incentives for electric/hydrogen powered charging stations.
- State Transit Assistance
- Proposition 1B Transit Capital/Transit Security Funding
- Low-Carbon Transit Operations Program (LCTOP)
- 5307/5309/5311 Funds
- Opportunities for leasing vehicles and/or electric bus batteries, where some suppliers have leasing programs available.
- FTA Low or No Emission Vehicle Program (Low-No)
- FTA Bus & Bus Facilities
- FTA Tribal Transit
- NHTSA Autonomous Funds
- USDOT BUILD (formerly TIGER)
- DOT Autonomous Program
- Beneficiary Mitigation Plans for Volkswagen Settlement Funding
- Community Air Protection Program (CAPP)
- Carl Moyer Funding
- District DMV (AB923 & AB2766)
- AB617 Protections thru New Select CAP Investments
- Electric Program Investment Charge (EPIC)
- Transit and Intercity Rail Program (TIRCP), which applies to both urban/intercity and BRT

DELIVERABLE:

- Summary of potential funding sources

TASK 8: DRAFT AND FINAL ZEB CONVERSION PLAN

To concisely tie together the entire scope of the project, the Stantec team will prepare a final, cohesive and concise report that summarizes the work of all previously completed tasks. Our Project Manager will take the lead on the final report to ensure all deliverables are being met and clearly stated throughout the entire report. Our team also understands the critical importance of the delivery of the project and its findings; accordingly, our Project Manager and the entire Stantec Team will work closely with TTD to develop presentations and summaries that can be utilized for various presentations and meetings. Our presentations will solicit feedback, respond to questions, and resolve critical issues.

The final report will include an executive summary and the main body of the report will be organized in a logical manner which includes all previously described tasks and deliverables, and also takes into consideration other findings, assessments, evaluations, conclusions, and strategies uncovered over the course of the project. A clear rationale for the recommended ZEB technology(s) will be provided, which will be supported by a compelling business case and a summary of associated operating and capital costs for the transition to this ZEB technology.

The ZEB Rollout Plan will also include a phased, year-by-year implementation plan to help guide TTD through the ZEB transition period. Stantec will compile and review prior outputs regarding the preferred fleet alternative, fleet needs, fueling needs, site plans, energy requirements, and cost estimates and budgets to develop strategic steps for a ZEB phasing plan.

Part of this analysis includes workshopping with staff and testing various phasing scenarios to help address key implementation challenges, such as:

- Alignment with other ongoing planning efforts related to transit service
- Alignment with other construction or capital projects at the transit facility and/or related facilities
- Ensuring that fueling/charging equipment is phased in a logical manner to minimize construction disruptions and reduce operational constraints
- Assessment of potential policy and legislative developments that could impact the implementation of ZEB technologies
- Ensuring that fueling/charging equipment is phased in prior to vehicle procurements to support ZEBs
- Refining ZEB procurement phasing/fleet replacement plan that leverages TTD's fleet management plan that remains in compliance with ICT mandate goals and timelines

This phasing strategy will be able to identify necessary short, middle, and long-term strategies for a successful transition to zero-emission vehicles.

For other agencies, the outline Stantec has used and which we propose for this report includes:

- Introduction
- Summary of existing conditions
- Block-level modeling results
- Preferred fleet composition concept
- Fleet procurement strategies
- Facility and infrastructure modifications
- Workforce training
- Potential funding sources and financing
- Financial analysis/impact
- Other transition items
- Phasing and Implementation

The draft Rollout Plan will be presented to TTD's Program Implementation Committee (PIC), TRPA/TMPO Governing Board, SAC, and at the second public meeting for review and feedback.

Based on the input and feedback received from these stakeholders, Stantec will update the draft report and finalize for submission based on one consolidated round of comments. The final ZEB Rollout Plan will be presented at TTD's Board Meeting.

Cover or title page of the draft and final Rollout Plan will include credit for the financial contribution of the Sustainable Transportation Planning Grant Program to FTA, FHWA, and/or Caltrans.

DELIVERABLES

- Draft ZEB Rollout Plan
- Final ZEB Rollout Plan
- Powerpoint for meetings

Proposed Project Schedule

The proposed schedule is based off a Notice of Intent to Award Contract date of August 30, 2023. The schedule proposes a 12-month timeline for completion. This is based on Stantec's previous experience completing similar projects for agencies of a similar size.

	Tahoe Transportation District Zero Emission Fleet Conversion Plan											
TASK	**September 2023**	**October 2023**	**November 2023**	**December 2023**	**January 2024**	**February 2024**	**March 2024**	**April 2024**	**May 2024**	**June 2024**	**July 2024**	**August 2024**
Task 0: Project Management	A	A	A	A	A	A	A	A	A	A	A	A
Task 1: Public Outreach	B		C		D						E, C	
Task 2: Existing Conditions Report				F								
Task 3: Zero Emission Transit Options Analysis						G						
Task 4: System Charging Fueling Infrastructure Plan									H			
Task 5: Estimate GHG Reduction Benefits of ZEB Fleet Conversion												
Task 6: Develop Plan-Level Cost Estimates												
Task 7: Identify Potential Funding Sources and Strategies and Implementation Plan/Next Steps												
Task 8: Draft and Final ZEB Conversion Plan										I		J

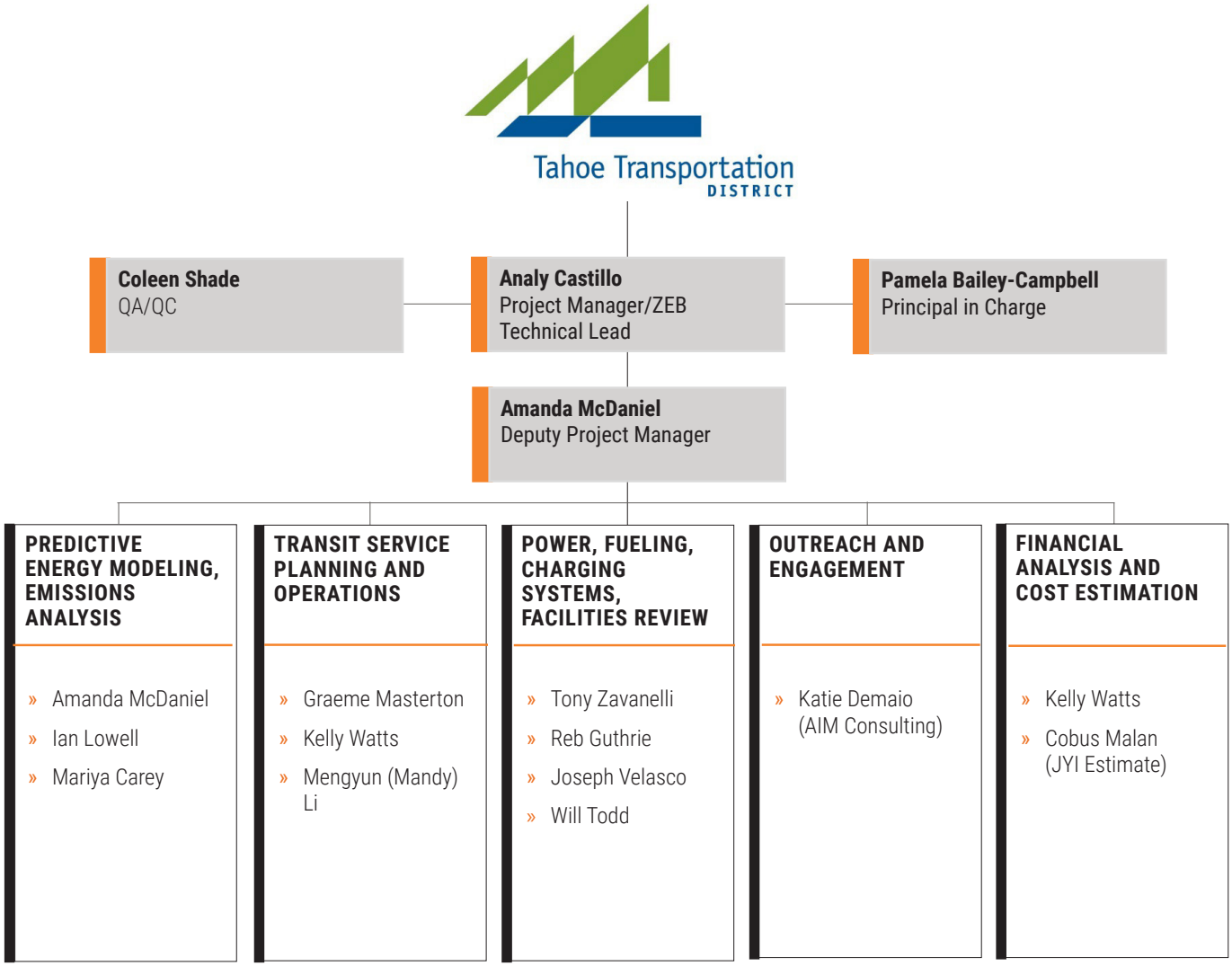
Please note that this schedule reflects a timeline that requires TTD to provide all requested data no more than 10 business days from request, as well as timely feedback and comments on draft deliverables.

Deliverables

A Monthly Progress Reports
B Establish Stakeholder Database and SAC
C SAC Meetings and Summaries (4 total)
D Public Meeting 1 and Summary
E Public Meeting 2 and Summary
F Existing Conditions Report
G Modeling Summary (Presentation)
H Charging/Fueling/Infrastructure Strategy (Presentation)
I Draft Rollout Plan
J Final Rollout Plan

Staffing

Staffing


Tahoe Transportation DISTRICT
Coleen Shade
QA/QC
Analy Castillo
Project Manager/ZEB Technical Lead
Pamela Bailey-Campbell
Principal in Charge
Amanda McDaniel
Deputy Project Manager
PREDICTIVE ENERGY MODELING, EMISSIONS ANALYSIS
» Amanda McDaniel
» Ian Lowell
» Mariya Carey
TRANSIT SERVICE PLANNING AND OPERATIONS
» Graeme Masterton
» Kelly Watts
» Mengyun (Mandy) Li
POWER, FUELING, CHARGING SYSTEMS, FACILITIES REVIEW
» Tony Zavanelli
» Reb Guthrie
» Joseph Velasco
» Will Todd
OUTREACH AND ENGAGEMENT
» Katie Demaio (AIM Consulting)
FINANCIAL ANALYSIS AND COST ESTIMATION
» Kelly Watts
» Cobus Malan (JYI Estimate)

Pamela Bailey-Campbell

Principal in Charge
Stantec

EDUCATION
Master of Business Administration, University of Denver

Bachelor of Science, Biology, Missouri Southern State University

REGISTRATIONS
None

YEARS EXPERIENCE
4 year with Stantec

33 years total

Pamela Bailey-Campbell is a member of Stantec's Smart Mobility team and a nationally recognized transportation leader with 30 years of experience serving as project manager and executive advisor to public sector clients for including funding for emerging practices and technologies. Pamela has provided comprehensive advisory services to a broad range of clients including transportation agencies, municipalities, departments of transportation and non-profits across the US and Canada. Pamela is a former CFO for a transportation agency and helps clients to create new revenue strategies and secure non-traditional funding. She is also a leader in Smart Mobility projects including a prominent role on the recently released TCRP report reviewing the state of the practice for low-speed automated vehicles. She is also currently the Deputy Project Manager for the Las Vegas GoMed project, deploying connected and autonomous shuttles in regular service for the Regional Transportation Commission of Southern Nevada in the Las Vegas medical district. She also recently completed work with National Cooperative Highway Research Program (NCHRP) on nine critical topics covering the benefits and challenges related to various automated and shared mobility including items such as safety, data sharing and governance, and associated infrastructure requirements. Pamela has served as Principal in Charge, Project Manager, and/or QA/QC Lead on the following projects:

PROJECT EXPERIENCE

- Sacramento Regional Transit Short-Range Transit and Zero-Emission Bus Plan, Sacramento, CA
- Ventura County Transportation Commission ZEB Fleet Rollout Plan, Ventura, CA
- Gold Coast Transit ZEB Rollout Plan, Oxnard, CA
- Butte County Transit Services, Chico, CA
- StanRTA ZEB Rollout Plan, Modesto, CA
- Calaveras County Association of Governments ZEB Analysis, San Andreas, CA
- Charleston Area Regional Transit Authority Electric Bus Master Plan, Charleston, SC
- Ann Arbor Area Transit Bus Propulsion Study, Ann Arbor, MI
- Canada Infrastructure Bank Zero Emission Buses, Canada
- RTC of Southern Nevada, Las Vegas Medical District Automated Circulator and Connected Pedestrian Program, Las Vegas, NV
- Autonomous Shuttle Deployment and Living Lab, CO
- Las Vegas Medical District Automated Circulator and Connected Pedestrian Program, Las Vegas, NV
- Transit Cooperative Research Program (TCRP) - Low Speed Autonomous Shuttle Vehicles (LSAVs), Washington D.C.
- National Academy of Sciences National Cooperative Highway Research Program Topical White Papers for Automated Vehicles and Shared Mobility, Washington D.C.
- New England Connected Vehicle and Automated Vehicle Legal and Regulatory Assessment, New England

Analy Castillo, Ph.D.

Project Manager
Stantec

EDUCATION

Ph.D. Environmental Engineering, University of California

Master of Science, Environmental Engineering, University of California Irvine

Bachelor of Science, Chemical Engineering, Rafael Landivar University, Guatemala

YEARS EXPERIENCE

3 years with Stantec

11 years total

Transitioning to 100% ZEBs is an unprecedented challenge for transit agencies. For over a decade, **Analy Castillo** has brought hydrogen fuel cell and battery-powered buses to city streets. Driven to improve air quality, Analy became passionate about environmental sustainability as uncontrolled growth in the cities of her native country, Guatemala, turned blue skies to gray. After moving to California, Analy found like-minded colleagues in UC Irvine's Advanced Power & Energy PhD Program where her ZEB research included the first hydrogen fuel cell pilot programs in Orange County. Her research and publications have influenced policymakers and ZEB regulations. A model she developed for her thesis optimizing ZEB phasing is now being used by our transit team. This model, ZEVDecide, helps transit agencies determine their unique mix of battery and hydrogen fuel cell buses based on the terrain, routes, and infrastructure. As a consultant, her expertise in the systems, operations, and planning impacts related to ZEBs makes her invaluable to clients. Analy has served as project manager and predictive energy modeler on the following projects.

PROJECT EXPERIENCE

- Ann Arbor Area Transportation Authority Bus Propulsion Plan, Ann Arbor, MI
- Anaheim Transportation Network Zero Emission Bus Modeling & Analysis, Anaheim, CA
- Arlington Transit BEB Charging Infrastructure Plan, Arlington, VA
- Beach Cities Transit Services Study, Redondo Beach, CA
- Ben Franklin Transit Zero Emission Bus Rollout Plan, Richland, WA
- Butte County Association of Governments, CA
- Calaveras County Transportation Authority Zero Emission Bus Rollout Plan, Calaveras County, CA
- Charleston Area Regional Transportation Authority Electric Bus Master Plan, Charleston, SC
- City of Elk Grove e-Tran Zero Emission Bus Fleet Transition Plan, Elk Grove, CA
- El Dorado County Transportation Commission Zero Emission Bus Fleet Conversion Plan, Placerville, CA
- Gold Coast Transit District Zero Emission Bus Rollout Plan, Oxnard, CA
- Golden Gate Bridge Highway and Transportation Department Zero Emission Bus Rollout Plan, San Francisco, CA
- King County Metro Interim Base Electrification, WA
- Kings County Association of Governments Zero Emission Bus Implementation Plan, Leemore, CA
- Metropolitan Water District of Southern California Districtwide Zero & Near Zero Emissions Fleet Infrastructure Conceptual Transition Study, Southern California
- Napa Valley Transit Authority Zero Emission Bus Rollout Plan, Napa, CA
- Niagara Falls Transit Zero Emission Bus Rollout Plan, NY
- Norwalk Transit Zero Emission Bus Rollout Plan, Norwalk, CA
- Orange County Transportation Authority Zero Emission Bus Rollout Plan, Orange, CA
- Riverside Transit Agency Zero Emission Bus Rollout Plan, Riverside, CA
- Santa Barbara MTD Zero Emission Bus Rollout Plan, CA
- Santa Barbara County Association of Governments Central Coast Zero-Emission Vehicle Strategy, Santa Barbara, CA
- Santa Monica Big Blue Bus Charging Infrastructure Plan, Santa Monica, CA
- Stanislaus County RTA Zero Emission Bus Rollout Plan, Stanislaus, CA
- Tuolumne County Zero Emission Bus Rollout Plan, Tuolumne, CA
- Ventura County Transit Authority Zero Emission Bus Rollout Plan, Camarillo, CA
- Washington Metropolitan Area Transportation Authority Bladensburg BEB Charging Infrastructure Plan, Washington, DC

Amanda McDaniel, MPL

Deputy Project Manager
Stantec

EDUCATION

Master of Arts, Urban Planning (Concentration: Transportation Planning & Sustainable Land Use Planning), University of Southern California, Los Angeles, California

Bachelor of Arts, Geography (Concentration: Urban Geography, Cultural Geography, Human-Environment Interactions, and GIS, University of North Texas, Denton, Texas

MEMBERSHIPS/ ASSOCIATIONS

Women in Transportation (WTS), Los Angeles Chapter

Young Professionals in Transportation, Los Angeles Chapter, Deputy Chair

American Planning Association, AICP Candidate Program, California

YEARS EXPERIENCE

3 years with Stantec

3 years total

Amanda McDaniel brings a diverse background—ranging from spatial analysis, nonprofit work, and land use planning—to provide a truly comprehensive viewpoint to transit analysis and consulting. A recent graduate of USC's Master of Urban Planning program, Amanda has had the opportunity to analyze transit and urban mobility projects in both professional and academic settings. During her graduate studies, Amanda spent time working with the Los Angeles County Metropolitan Transportation Authority (LA Metro), where she gained firsthand experience in both transit asset management planning and mobility corridors planning, assisting with feasibility studies and environmental reviews for future transit lines in Los Angeles County. Amanda brings her public-sector experience to her current role to respond to the needs of clients on a range of transit, transportation, and urban mobility projects, focusing on community and responding to the unique needs and contexts of each community she provides services to. Amanda served as Transit Planner, Predictive Energy Modeler, and/or Deputy Project Manager on the following projects.

PROJECT EXPERIENCE

- Ben Franklin Transit Fleet Conversion to Zero Emissions Study, Richland, WA
- Gold Coast Transit District ZEB Rollout Plan and Analysis, Oxnard, CA
- Santa Barbara MTD Facilities Master Plan, Santa Barbara, CA
- City of Elk Grove Zero Emission Bus Fleet Transition Plan, CA
- Golden Gate Transit ZEB Rollout Plan & Analysis Services, CA
- El Dorado County Transit Zero Emission Bus Rollout Plan, El Dorado County, CA
- Tuolumne County Transit Agency Zero Emission Bus Rollout Plan
- Santa Monica Big Blue Bus Charging Infrastructure Project, Santa Monica, CA
- Roaring Fork Transportation Authority Zero Emission Bus Rollout Plan, Glenwood Springs, CO
- Zero-Emission Bus Analysis, Infrastructure Analysis and Rollout Plan for Lassen Transit Service Agency and Plumas Transit Systems, Lassen County, CA
- Merced County Association of Governments Zero Emission Bus Rollout Plan, Merced, CA
- City of Regina Fleet Electrification Roadmap, Regina, SK
- Orange County Transportation Authority ZEB Rollout Plan, Orange County, CA
- Riverside Transit Agency ZEB Analysis, and Rollout Plan, Riverside, CA
- Winnipeg Transit Master Plan, Winnipeg, MB
- Anaheim Transportation Network Route by Route Power Modeling Services, CA
- Calaveras County ZEB Analysis, Calaveras County, CA
- VCTC Intercity Transit and Valley Express Bus Service Zero Emission Bus Fleet Rollout Plan for, Ventura County, CA
- CARTA Electric Bus Master Plan, Charleston, SC
- BCAG/BRT ZEB Rollout Plan, Butte County, CA
- Ann Arbor Area Transit Bus Propulsion Study, Ann Arbor, MI
- OCTA OC ACCESS Fleet Mix Study, Orange County, CA
- Stanislaus Regional Transit Authority Electrification Plan, Stanislaus County, CA
- Napa Valley Transportation Authority CARB Zero-Emission Bus Rollout Plan, Napa, CA
- Norwalk Transit System Zero Emission Bus Rollout Plan, Norwalk, CA
- Imperial County Transportation Commission Zero-Emission Bus Analysis and Rollout Plan, Imperial County, CA
- Kings Area Rural Transit and Corcoran Area Transit Zero Emission Bus Implementation Plan, Kings County, CA
- Sacramento County Zero Emission Bus Plan and Short Range Transit Plan, Sacramento County, CA

Coleen Shade, as a principal and environmental planner, brings both natural resources knowledge and expertise from a planning career spanning more than 30 years with both the public and private clients. Her experience includes environmental, land use, community, recreation, safety, and infrastructure planning that supports local and regional resiliency. Bringing diverse agencies with multiple missions together to create comprehensive plans are efforts enhanced by Coleen's work within many of California's unique landscapes. She has a keen ability to engage and facilitate multi-interest, multi-agency, and multi-stakeholder processes that create outcomes that meet client needs, regulatory requirements, and invests the participants project the outcomes. Coleen's has worked on leading CEQA and NEPA clearance efforts and she has both managed and contributed to the preparation of individual environmental and multi-agency joint documents. From the development of policies to prohibit two-stroke engines on Lake Tahoe, to the negotiation of northern goshawk disturbance exclusion areas, and to the development of a set of land tenure criteria for public/private land transfers in Mono and Inyo Counties, she has successfully planned and facilitated community workshops, managed agency and stakeholder engagement work sessions, and facilitated technical working group meetings.

Coleen Shade, LEED AP

QA/QC
Stantec

EDUCATION

Master of Arts, California State University (CSU), Humboldt

Bachelor of Science, California State University (CSU), Humboldt

YEARS EXPERIENCE

3 years with Stantec

33 years total

PROJECT EXPERIENCE

- Phase I Conservation Element Development for Regional Plan, Washoe County, Nevada
- Environmental Permitting - Van Sickle Bi-State Park, Lake Tahoe
- Vegetation, Wildlife, and Fish Resources, Lake Tahoe
- Plumas County General Plan Update, Climate Action Policies, and Environmental Impact Report (EIR), Plumas County, California
- City of Caliente Federal Emergency Management Agency (FEMA) Environmental Assessment, Caliente, Nevada
- Harrison Avenue Streetscape and Water Quality Improvement Project, South Lake Tahoe, California
- Tahoe Keys Property Owners Association (POA) West Channel Dredging Project, South Lake Tahoe, CA
- Bonanza Neighborhood Park, South Lake Tahoe, California
- Penn Valley Area Plan Update, Nevada County, California
- Eastern Sierra Land Tenure Project, Mono County, CA
- Nevada County General Plan Safety Element Update, Nevada County, California
- Tahoe Keys Marina and the North Tahoe Marina, South Lake Tahoe, CA
- TRPA Shorezone Policy for Lake Tahoe Environmental Impact Statement (EIS)/ EIR/EIS, Lake Tahoe
- Timber Production Zone (TPZ) Rezone, Nevada County, CA
- Nevada City School of the Arts Comprehensive Master Plan, Use Permit and Mitigate Negative Declaration, Nevada County, California
- Walker River State Recreation Area Rafter 7 Ranch and Pitchfork Ranch Units, Yerington, Nevada

Tony Zavanelli, PE, CEM

Power, Charging Systems
Stantec

EDUCATION

Master of Science, Mechanical Engineering, University of California Berkeley

Bachelor of Science, Mechanical Engineering, University of California Berkeley

REGISTRATIONS

Professional Engineer #M24645
State of California

Association of Energy Engineers
Green Building Engineer, AEE
State of California

Association of Energy Engineers
Certified Energy Manager, AEE
State of California

MEMBERSHIPS/ ASSOCIATIONS

Association of Energy Engineers

American Society of Mechanical Engineers

YEARS EXPERIENCE

29 years with Stantec

41 years total

Tony Zavanelli has over 30 years of engineering and project management experience in the fields of cogeneration, solar energy, alternative energy, energy conservation, demand side management, and HVAC. An experienced engineering consultant for a wide variety of clients, Tony has worked on everything from nuclear power plants to biomass buildings and natural gas power stations. For the past 20 years he has focused on smaller scale cogeneration power systems and demand side management projects. Tony has served as the Power Charging Systems lead on the following projects.

PROJECT EXPERIENCE

- Santa Monica Big Blue Bus Charging Infrastructure Project, Santa Monica, CA
- SamTrans Charging Infrastructure Project, San Mateo, CA
- Anaheim Transportation Network Route by Route Power Modeling Services, CA
- Gold Coast Transit District ZEB Rollout Plan and Analysis, Oxnard, CA
- City of Elk Grove Zero Emission Bus Fleet Transition Plan, CA
- Golden Gate Transit ZEB Rollout Plan & Analysis Services, CA
- Riverside Transit Agency ZEB Analysis and Rollout Plan, Riverside, CA
- Orange County Transportation Authority ZEB Rollout Plan, Orange County, CA
- Ben Franklin Transit Fleet Conversion to Zero Emissions Study, Richland, WA
- Santa Barbara MTD Facilities Master Plan, Santa Barbara, CA
- El Dorado County Transit Zero Emission Bus Rollout Plan, El Dorado County, CA
- Tuolumne County Transit Agency Zero Emission Bus Rollout Plan
- Merced County Association of Governments Zero Emission Bus Rollout Plan, Merced, CA
- Calaveras County ZEB Analysis, Calaveras County, CA
- VCTC Intercity Transit and Valley Express Bus Service Zero Emission Bus Fleet Rollout Plan for, Ventura County, CA
- Ann Arbor Area Transit Bus Propulsion Study, Ann Arbor, MI
- Stanislaus Regional Transit Authority Electrification Plan, Stanislaus County, CA
- Napa Valley Transportation Authority CARB Zero-Emission Bus Rollout Plan, Napa, CA
- Norwalk Transit System Zero Emission Bus Rollout Plan, Norwalk, CA
- Imperial County Transportation Commission Zero-Emission Bus Analysis and Rollout Plan, Imperial County, CA
- Kings Area Rural Transit and Corcoran Area Transit Zero Emission Bus Implementation Plan, Kings County, CA
- Tri-Delta Transit Electric Bus Demonstration Project, Antioch, CA
- North County Transit District Photovoltaic Condition Assessment, Oceanside, CA

Reb Guthrie

Fueling Infrastructure
Stantec

EDUCATION
Bachelor of Science, Economics, Arizona State University, College of Business

CERTIFICATIONS
Earned certification from the NGV Institute (Las Vegas) for advanced techniques in theory, design and development of CNG infrastructure

YEARS EXPERIENCE
2 year with Stantec

27 years total

With nearly 30 years' experience in fleet-fueling design, **Reb Guthrie's** work on the assessment, specification development, and design of over 170 compressed natural gas (CNG) fueling facilities and over 50 petroleum fueling stations for more than 125 municipalities, transit agencies, counties, and school districts throughout the United States. Recently, Reb's leveraged his years of experience to pivot to the design of zero emission fueling infrastructures—he's worked on more than 30 hydrogen fueling and bus and heavy-duty electric charging projects, as well as Zero-Emission Bus (ZEB) Transition Plans. Focusing on innovation, client service, and excellence, Reb has a long track record of delivering effective solutions throughout the United States, allowing us to expand our transit capabilities.

PROJECT EXPERIENCE

- TriMet Powell Garage Bus Operations & Maintenance Facility, Portland, OR
- Santa Monica Big Blue Bus Charging Infrastructure Project, Santa Monica, CA
- SamTrans Charging Infrastructure Project, San Mateo, CA
- Intercity Transit Pattison Bus Operations and Maintenance Facility, Olympia, WA
- Gold Coast Transit District ZEB Rollout Plan and Analysis, Oxnard, CA
- City of Elk Grove Zero Emission Bus Fleet Transition Plan, CA
- Golden Gate Transit ZEB Rollout Plan & Analysis Services, CA
- Riverside Transit Agency ZEB Analysis and Rollout Plan, CA
- Orange County Transportation Authority ZEB Rollout Plan, CA
- Santa Monica Big Blue Bus Charging Infrastructure Project, Santa Monica, CA
- LA Metro ZEB Master Plan, Los Angeles, CA
- Metro Transit Heywood 2 Bus Operations & Maintenance Facility, Minneapolis, MN
- San Luis Obispo RTA Bus Operations & Maintenance Facility, San Luis Obispo, CA
- RTA CNG Project, Riverside, CA
- Santa Monica Big Blue Bus Fuel/Wash Facility Upgrades, Santa Monica, CA
- General Motors Fueling Facility, Burbank, CA
- Gold Coast Transit Bus Operations & Maintenance, Facility, Oxnard, CA
- C-TRAN Hydrogen-Bus Fueling Facility, Vancouver, WA
- Eastern Contra Costa Transit Authority Hydrogen Fueling Station, Antioch, CA
- RTC of Southern Nevada Hydrogen Fueling Infrastructure, Las Vegas, NV
- Livermore Amador Valley Transit Authority Design Engineering for Hydrogen Fueling Infrastructure, Livermore, CA
- Maryland DOT Feasibility Analysis for Hydrogen Fueling at the Northwest Depot, Baltimore, MD
- OCTA Facility Modifications for Hydrogen Fueling at Santa Ana Bus Base, Santa Ana, CA
- TriMet Feasibility Analysis for Hydrogen Fueling at Five Bus Depots, Portland, OR
- North County Transit District Design Replacement System for Methane & Hydrogen Gas Detection at Breeze Bus Maintenance Facility, Escondido, CA
- Santa Monica Big Blue Bus Gas Detection System Upgrades, Santa Monica, CA
- Foothill Transit Pomona OMF Hydrogen Gas Detection Modification, Pomona, CA

Joseph Velasco, PE

Senior Fueling Systems Engineer
Stantec

EDUCATION
Bachelor of Science in Mechanical Engineering, University of California Irvine

CERTIFICATIONS
Professional Engineer #38787, State of California

YEARS EXPERIENCE
1 year with Stantec

14 years total

With over 10 years of experience in cryogenics (LIN, LOX, LAR, LHY), hydrogen and CNG refueling, **Joseph Velasco** has specified cryogenic and gaseous storage, heat-exchangers, rotating equipment, piping, valves, and other mechanical components. He developed a proprietary automation program used in Decoking at oil refineries around the world including Chevron, Tupras (Turkey), Petron (Philippines), Sinopec (China) and Sunor (Canada). He has traveled globally to commission mechanical and control systems for which he was responsible for in designing. His works spans not only in using commercially available equipment, but he has also led several prototype designs used in medium to high pressure hydrogen applications. He has worked for Air Products, Flowserve, Clean Energy Fuels, and FirstElement Fuel reflecting his interest in alternative energy.

PROJECT EXPERIENCE

- East Bay Municipal District, EBMUD LD/HD H2 Station, Oakland, CA
- C-TRAN Hydrogen Fueling Station, Vancouver, WA
- Foothill Transit H2 Fueling Station at Pomona Bus Maintenance Facility, Pomona, CA
- Eastern Contra Costa Transit Authority Hydrogen Fueling Station, Antioch, CA
- TriMet Feasibility Analysis for Hydrogen Fueling at Five Bus Depots, Portland, OR
- RTC of Southern Nevada Hydrogen Fueling Infrastructure, Las Vegas, NV
- Livermore Amador Valley Transit Authority Design Engineering for Hydrogen Fueling Infrastructure, Livermore, CA
- Amazon CNG Truck Stop, Groveport, OH

Will Todd, AIA, LEED AP

Project Architect
Stantec

EDUCATION
Bachelor of Science in Architecture, University of Michigan

REGISTRATIONS
Registered Architect #35467
State of California

YEARS EXPERIENCE
15 years with Stantec

15 years total

A project architect with over 13 years of experience, **Will Todd** plays an integral role in successfully guiding major projects from the initial planning phases all the way through design development, construction documentation, construction administration support, and building department review and permitting. Will is passionate about making an impact, even if it is behind the scenes. He provides essential support and coordination to the design team, and interfaces with a full range of consultants to ensure our projects are delivered thoughtfully and efficiently. One of his most significant projects to date is the award-winning LA Metro Division 13 Operations & Maintenance Facility in Los Angeles. This rare experience of working on a project from pre-concept design through the final punch-list so early in his career has given him invaluable experience he takes on to each of his new projects. Will has been the Project Architect on the following projects.

PROJECT EXPERIENCE

- Santa Monica Big Blue Bus Charging Infrastructure Project, Santa Monica, CA
- SamTrans Charging Infrastructure Project, San Mateo, CA
- Anaheim Transportation Network Route by Route Power Modeling Services, CA
- Gold Coast Transit District ZEB Rollout Plan and Analysis, Oxnard, CA
- Santa Barbara MTD BEB Analysis and Planning, Santa Barbara, CA
- City of Elk Grove Zero Emission Bus Fleet Transition Plan, CA
- Golden Gate Transit ZEB Rollout Plan & Analysis Services, CA
- El Dorado County Transit Zero Emission Bus Rollout Plan, El Dorado County, CA
- Riverside Transit Agency ZEB Analysis and Rollout Plan, Riverside, CA
- Orange County Transportation Authority ZEB Rollout Plan, Orange County, CA
- San Luis Obispo Regional Transit Authority Bus Operations & Maintenance Facility, San Luis Obispo, CA
- Napa Valley Transit Authority Bus Operations & Maintenance Facility, Napa, CA
- Fresno Area Express Transit Facility Assessment, Master Plan, and Facility Modifications, Fresno, CA
- TriMet Powell Bus Garage, Portland, OR
- OCTA Hydrogen Fueling Station, Santa Ana, CA
- Tuolumne County Transit Agency Zero Emission Bus Rollout Plan
- Merced County Association of Governments Zero Emission Bus Rollout Plan, Merced, CA
- Calaveras County ZEB Analysis, Calaveras County, CA
- VCTC Intercity Transit and Valley Express Bus Service Zero Emission Bus Fleet Rollout Plan for, Ventura County, CA
- Ann Arbor Area Transit Bus Propulsion Study, Ann Arbor, MI
- Stanislaus Regional Transit Authority Electrification Plan, Stanislaus County, CA
- Napa Valley Transportation Authority CARB Zero-Emission Bus Rollout Plan, Napa, CA
- Norwalk Transit System Zero Emission Bus Rollout Plan, Norwalk, CA
- Imperial County Transportation Commission Zero-Emission Bus Analysis and Rollout Plan, Imperial County, CA
- Kings County Area Rural Transit and Corcoran Area Transit Zero Emission Bus Implementation Plan, Kings County, CA

Ian Lowell

Modeling Technical Lead
Stantec

EDUCATION
Bachelor of Science, Planning Public Policy and Management, University of Oregon

YEARS EXPERIENCE
1 years with Stantec

3 years total

Ian Lowell values sustainable transportation solutions of all sized communities. His background in active transportation pairs with transit planning for multimodal network solutions. In addition to expanding capture of bicycle and pedestrian data, Ian's work with Park City Municipal engaged community members in active transportation. He brings a passion for community, natural spaces, and culturally conscience placemaking within the built environment. Experience with electrified buses and bike share, Ian brings a holistic approach to zero-emission transportation with the goal of appropriate fit transition to meet community needs. The belief that every community-regardless of demographics or size- deserve sustainable means of transportation guides his work.

PROJECT EXPERIENCE

- Sacramento County Short Range Transit and Zero Emission Bus Plan, Sacramento, CA
- Beach Cities Transit, Transit Services Study, Redondo Beach, CA
- Charleston Area Regional Transportation Authority Zero Emission Bus Master Plan, Charleston, SC
- Ben Franklin Transit ZEB Fleet Conversion Study, Richland, WA
- Area Transportation Authority System Reimagine Study/Transportation Development Plan, State College, PA
- Santa Barbara MTD Short-Range Transit Plan, Santa Barbara, CA
- Center Area Transportation Authority System Reimagine Study/Transportation Development Plan, State College, PA
- Santa Barbara MTD Short-Range Transit Plan, Santa Barbara, CA
- MWD Energy Sustainability Plan, Los Angeles, CA
- City of Regina Energy and Sustainability Framework Implementation Plan and Design

Kelly Watts

Financial Analysis
Stantec

EDUCATION

MA, East Asian Languages and Literatures, University of Hawaii

BA, Environmental Studies, Northern Arizona University

YEARS EXPERIENCE

2 years with Stantec

5 years total

Kelly Watts is experienced in working with people from diverse backgrounds and skilled in aligning the priorities of cross functional groups to accomplish project goals. She possess knowledge of principles, methods, and practices of project and asset management for various disciplines. Additionally, Kelly is adept at advancing complex project initiatives through effective communication, successful prioritization of multiple assignments, adapting to changing priorities, and analytical problem solving.

PROJECT EXPERIENCE

- Ann Arbor Transit Bus Propulsion Study, Ann Arbor, MI
- Gold Coast Transit Zero Emission Bus Analysis, Ventura County, CA
- Honolulu Transit Comprehensive Operations Analysis (COA), Honolulu, HI
- Central Coast Zero Emission Vehicle Study, Santa Barbara, CA
- OCTA Network Redesign, Orange County, CA
- Transportation Demand Management Plan, Honolulu, HI
- Computerized Maintenance Management System (CMMS) Implementation, Fort Collins, CO
- ICTC Zero-Emission Bus Analysis and Rollout Plan, Imperial County, CA
- City of Regina Fleet Electrification Roadmap, Regina, SK, Canada
- Kings Area Rural Transit and Corcoran Area Transit Zero Emission Bus Implementation Plan, Kings County, CA
- City of Thousand Oaks ZEB Rollout Plan, Thousand Oaks, CA
- Moorpark ZEB Plan, Moorpark, CA
- Tuolumne County Transit Agency Zero Emission Bus Rollout Plan,
- Sonora, CA
- Orange County Transportation Authority OC ACCESS Fleet Mix Study, Orange County, CA
- City and County of Honolulu Transportation Demand Management Plan, Honolulu, HI

Mariya Carey, PE

Route Modeling
Stantec

EDUCATION

Master of Science in Civil Engineering, City College of New York

Bachelor of Science in Civil Engineering, City College of New York

YEARS EXPERIENCE

14 years with Stantec

15 years total

Mariya Carey is a traffic engineer who has more than ten years of technical experience in toll facility studies, transit operations and pedestrian/vehicular traffic analyses. She also has expertise in multiple traffic and planning tools that include TransCad, Cube, VISUM, Synchro/SimTraffic, HCS and ArcGIS. Ms. Carey was previously employed at the MTA New York City Transit, where she oversaw the planning analysis for the subway system and maintained their in-house ridership modeling tools.

PROJECT EXPERIENCE

- Zero-Emission Bus Analysis, Infrastructure Analysis and Rollout Plan for Lassen Transit Service Agency and Plumas Transit Systems
- RFTA ZEB Fleet Transition Plan, Glenwood Springs, CO
- Environmental Assessment of Proposed Increases of Toll Facility Charges, New York, New York
- Environmental Assessment of Proposed Increases of Toll Facility Charges, New York, New York
- South East Queens Transportation Study, Queens, New York
- Niagara Falls Bus Ridership and Revenue Study, Niagara Falls, New York & Canada
- Canarsie Line Power and Station Improvements, New York, New York
- Woodhaven Boulevard Select Bus Service, New York, New York
- F Express Service Evaluation, New York, New York
- Desert Express High Speed Rail (HSR) Update, Nevada & California
- Illiana Corridor Project – Level 2 Traffic and Revenue Study, Chicago, Illinois, and Indiana
- Lafayette Regional Expressway – Level 2 Traffic and Revenue Study, Lafayette, Louisiana
- Grayson County Tollway Project – Level 1 Traffic and Revenue Study, Grayson County, Texas
- Southern Connector - Traffic and Revenue Forecast Update, Greenville-Pickens, South Carolina
- I-15 Managed Lanes – Level 2 Traffic and Revenue Study, Riverside County, California
- US 301 mainline Toll Road–Traffic and Revenue Forecast, Delaware
- The I-95/395 High Occupancy Toll (HOT) Lanes Traffic and Revenue Update, Virginia
- Jefferson County Parkway Level 1 Feasibility Study, Denver, Colorado
- I-77 High Occupancy and Toll Lanes – Level 2 Traffic and Revenue Study, Charlotte, North Carolina
- Traffic and Revenue Study for US 183A, Austin, Texas

Graeme Masterton

Transit Planning & Operations
Stantec

EDUCATION
Master of Arts (Community and Regional Planning), University of British Columbia (UBC)

Bachelor of Arts (Urban and Economic Geography), University of Toronto

YEARS EXPERIENCE
10 years with Stantec

35 years total

Transit Service planning is the physical planning and psychological behavior of moving people–whether on a daily basis for transit or as a large single movement at an event or as an incident result. Transit planning requires an understanding of active modes and traffic because they are all linked along the journey. Urban influences, land use opportunities and constraints, road network challenges, passenger behavior, and the desire to create innovative and cost-efficient transit networks that function for the passenger and the operator is his passion. A well designed transit network becomes part of the urban fabric and used by everyone for its simplicity and value. A great transit network values the customers' time and understands some trips require a less direct path. Transit that is easy to understand, easy to use, and simple to operate creates its own ridership--grows with the community. Layers of transit service, from high frequency to community shuttle can be designed to create an effective network that grows with the community with each layer services a different purpose.

PROJECT EXPERIENCE

- Linking Tahoe Multi-Modal Transportation Master Plan, Lake Tahoe, California
- Edmonton Transit - Task Mapping for Maintenance Functions
- Comprehensive Review of Edmonton Transit, Edmonton, Alberta
- White Rock/South Surrey Service Review *
- Strathcona County Transit Internal Process Mapping, Strathcona, Alberta
- Victoria Regional Transit Annual Service Plans, Victoria, British Columbia
- Access Transit (TransLink)
- Evergreen Line Essential Elements Report, Vancouver, British Columbia
- Victoria Rapid Transit Project, Victoria, British Columbia
- Evergreen Line Preliminary Design Process, Vancouver, British Columbia
- Thunder Bay Transit Route Optimization Study and Terminal Concept Plan, Thunder Bay, ON, Canada
- Transit Infrastructure and Service Plan + Rapid Transit Plan, Winnipeg, MB, Canada
- Lethbridge Alberta Transit Master Plan, Lethbridge, Alberta
- Greater Bridgeport Alternate Modes Plan, Bridgeport, CT
- Tourism and Travel Demand Management Study, Monmouth County, NJ

Mengyun Li

Transit Planning
Stantec

EDUCATION

Master of Science, Transportation Planning and Engineering, New York University

Bachelor of Engineering, Transportation Engineering, Nanjing Tech University

YEARS EXPERIENCE

2 years with Stantec

2 years total

Mengyun (Mandy) Li is a Transportation Planner with experience in transportation planning and data-driven technologies. She has involved in various projects including toll rate and revenue studies, travel demand modeling, zero emissions buses, traffic data processing and analysis development. She has worked on projects in Southern California, Texas, Washington and North Carolina. She has worked extensively with data analysis and processing related tools, such as MySQL, Jupyter, Tableau, ArcGIS, and Microsoft Excel, as well as Python, Java, JavaScript, C++, R programming languages. She is also familiar with some transportation modelling software packages, such as Cube Voyager, TransCAD, and EMME.

PROJECT EXPERIENCE

- Santa Barbara MTD Zero Emission Bus Study, Santa Barbara, CA
- Electrical Vehicle Charger Placement Mapping
- City of Regina City of Regina Fleet Electrification Roadmap, Regina, SK
- Zero-Emission Bus Analysis, Infrastructure Analysis and Rollout Plan for Lassen Transit Service Agency and Plumas Transit Systems, Lassen County, CA
- North Carolina Regional Travel Demand Model Development for Region 17 (On-going), North Carolina
- I-95 Stamford Planning and Environmental Linkages (PEL) Study (On-Going), Stamford, CT
- TxDOT Concession Marketing Initiative Study, Texas
- Central Texas Turnpike System 2022 Traffic and Revenue Study, Texas
- Riverside County Transportation Commission (RCTC) I-15 Express Lanes Traffic Operations, Riverside, CA

Katie Demaio

Public Outreach
AIM Consulting

EDUCATION
Bachelor of Arts, James Madison University, Harrisonburg, VA

YEARS EXPERIENCE
2 years with AIM Consulting

20 years total

Katie Demaio, CEO/Senior Project Manager, brings to AIM Consulting over ten years of management experience, including community awareness and engagement. Katie assists clients with creating content for ongoing messaging, collateral materials, social media content, and interactive online engagement tools for public information and community engagement. Katie also manages and facilitates stakeholder interviews and focus groups, community meetings, traveling workshops, and special events.

PROJECT EXPERIENCE

- StanRTA ZEB Rollout Plan, Stanislaus, CA
- Calaveras County Transportation Commission ZEB Rollout Plan, Calaveras County, CA
- Elk Grove Zero Emission Fleet Transition Plan, Elk Grove, CA
- El Dorado County Transportation Commission ZEB Rollout Plan, El Dorado County, CA
- Stanislaus Council of Governments Public Transit Human Services Coordination Plan, Stanislaus County, CA
- Placer County Transportation Planning Agency Short Range Transit Plan, Placer County, CA
- City of Sacramento Bicycle Master Plan Update, Sacramento, CA
- Fast Fairfield and Suisun Transit (FAST) Comprehensive Operational Analysis
- County of Santa Cruz Soquel Drive Buffered Bike Lane and Congestion Mitigation Project
- City of Rocklin, Rocklin Road/I-80 Interchange Project

Cobus Malan

Cost Estimator
Jacobus & Yuang

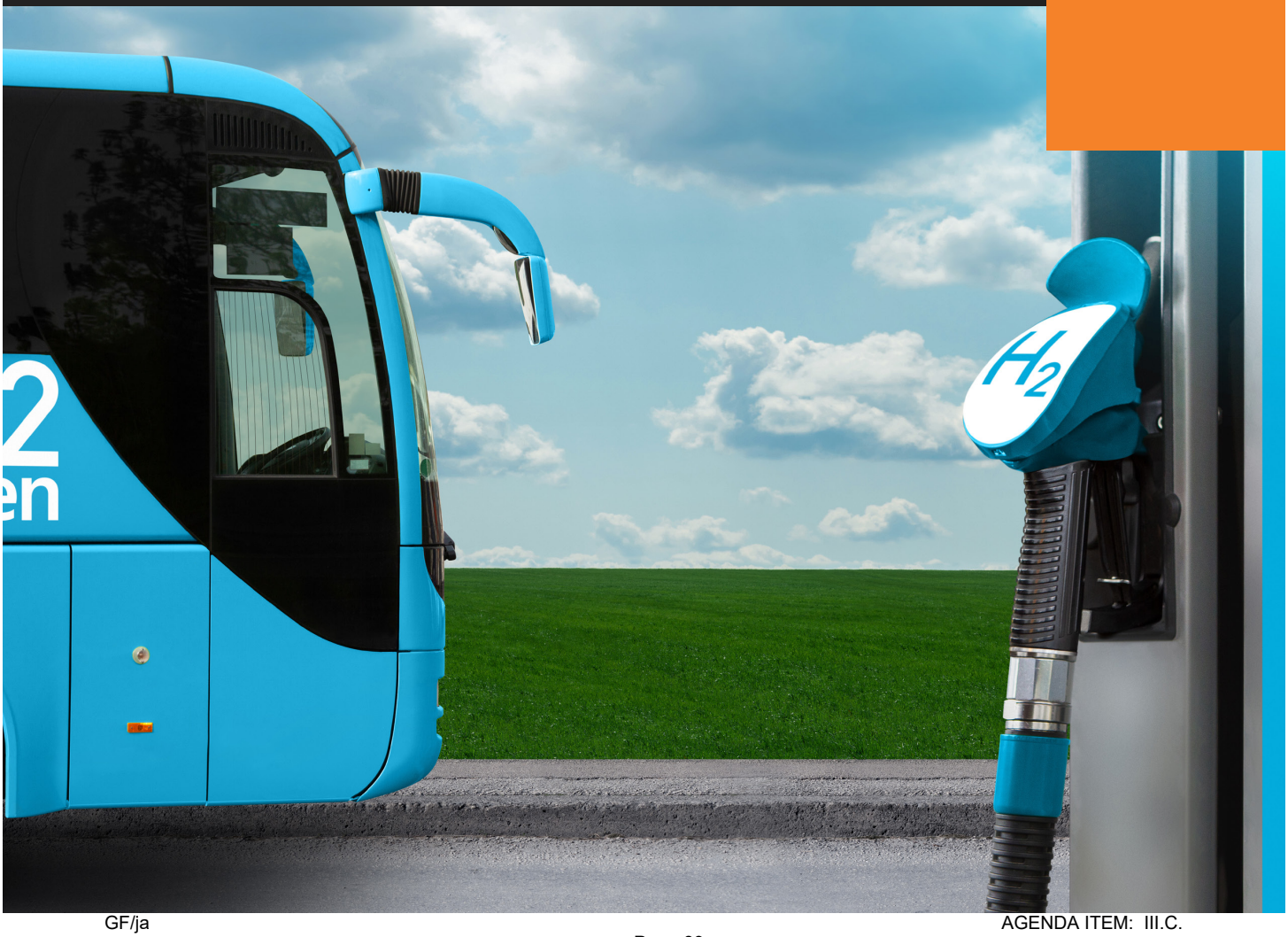
EDUCATION
Bachelor of Science, in Quantity Surveying, University of the Witwatersrand, South Africa

As Executive Principal, **Cobus Malan** has acquired at least 38 years' in-depth diverse construction costing experience in all aspects of work, from the perspective of a professional Quantity Surveying and estimating practice, as well as working with general contractors, design professionals, design build contractors and developers. In capacity as Quantity Surveyor, Cobus uses his diverse experience in applying first principals to construction cost estimating, by paying particular attention to the multitrade detailed cost consequential aspects of a project. His consulting experience is supplemented by assisting in evaluation and settlement of Change Orders, helping to keep a finger on the pulse of industry costs. This experience is also enhanced through the research he performs in capacity as Associate Editor for the nationally published SWG Cost Publications. Miscellaneous Bus, Transit and Maintenance projects furthermore constitute a perfect match in regard to Cobus' attention to detail matched with his multitrade experience and the firm's in-house multi-disciplinary estimating skills.

PROJECT EXPERIENCE

- Gold Coast Transit District ZEB Rollout Plan and Analysis, Oxnard, CA
- Santa Barbara MTD BEB Analysis and Planning, Santa Barbara, CA
- Anaheim Transportation Network Route by Route Power Modeling Services, CA
- City of Elk Grove Zero Emission Bus Fleet Transition Plan, CA
- El Dorado County Transit Zero Emission Bus Rollout Plan, El Dorado County, CA
- Riverside Transit Agency ZEB Analysis and Rollout Plan, Riverside, CA
- Orange County Transportation Authority ZEB Rollout Plan, Orange County, CA
- Santa Monica Big Blue Bus Charging Infrastructure Project, Santa Monica, CA
- San Luis Obispo Regional Transit Authority Bus Operations & Maintenance Facility, San Luis Obispo, CA
- Napa Valley Transit Authority Bus Operations & Maintenance Facility, Napa, CA
- Fresno Area Express Transit Facility Assessment, Master Plan, and Facility Modifications, Fresno, CA
- TriMet Powell Bus Garage, Portland, OR

Qualifications



El Dorado County Zero Emission Bus Fleet Plan

El Dorado Transit (EDT) provides local transit, commuter service to Sacramento, as well as several demand response services, including dial-a-ride for communities across western El Dorado County. EDT serves a community that values nature and environmental sustainability and is rich in natural resources, including nearby Lake Tahoe. Developing a sustainable zero-emission bus plan not only addresses the state mandate for a compliant plan by July 2023, but will help also reduce GHG emissions from EDT's fleet, improving overall air quality in the region. Stantec is analyzing existing conditions, fleet operations, and service. We are engaging a broad array of stakeholders to gain their input on the plan and the suggested service changes. Our team is providing route modeling for both fixed-route and demand-response service which will help develop a roadmap for a complete transition of EDT's revenue and non-revenue fleet. We are also recommending facility modifications and upgrades.

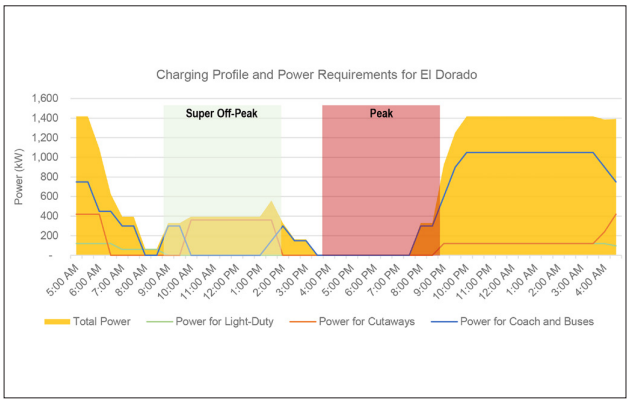
PROJECT LOCATION
Napa, CA

STANTEC SERVICES
Architecture, Industrial Engineering, Transit Advisory Services

PROJECT SIZE
51 vehicles

PROJECT DATES
11/2020-11/2021

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang: Cost Estimating



City of Elk Grove Zero Emission Fleet Transition Plan

Stantec is providing a detailed roadmap for converting the existing fleet of the City's Owned and Operated Transit System (e-tran) to a fully zero emission fleet. The City has an existing plan to utilize Low Carbon Transit Operation Program (LCTOP) funds to develop electric charging infrastructure at the City's Corporation Yard for a future electric bus fleet. This Zero Emission Bus Transition Plan will expand on this initial planning effort using LCTOP funds to construct the required infrastructure at the Corporation Yard. Stantec's plan will include a high-level analysis of zero emission bus technology and an analysis of the existing fleet and recommendations for the procurements, capital improvements, and infrastructure and maintenance planning required to replace the existing fleet with ZEBs as well as coordination with future on-site renewable energy generation and energy storage needs. Stantec's plan will have a system-wide benefit, as its findings and recommendations will impact both local and commuter service routes, laying the groundwork for providing ZEB service to all e-tran routes. It is the City's intent that once this plan is complete, it will allow for a more efficient implementation and development of a ZEB fleet.

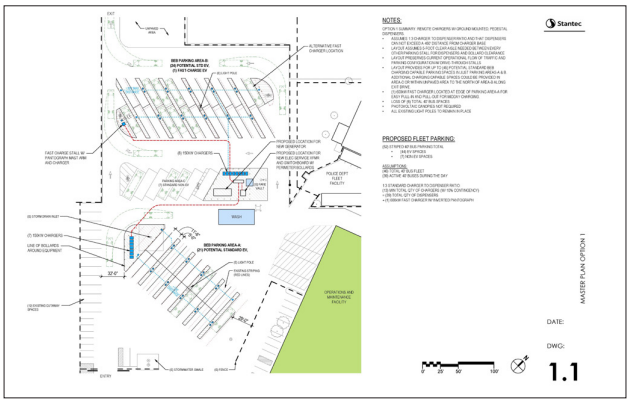
PROJECT LOCATION
Napa, CA

STANTEC SERVICES
Architecture, ZEVDecide Modeling, Route by Route Analysis, Electrical Engineering, Grid Analysis, Transit Advisory Services, Facility Analysis, Solar Analysis, Resiliency

PROJECT SIZE
62 buses

PROJECT DATES
3/2020-4/2021

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang: Cost Estimating



StanRTA Zero Emission Bus Rollout and Facilities Plan

The Stanislaus Regional Transit Authority (StanRTA) needed a consultant to develop a comprehensive Zero-Emission Bus (ZEB) Rollout and Facilities Plan to comply with the California Air Resources Board's (CARB's) Innovative Clean Transit regulation. StanRTA selected our team to provide a detailed plan of the technology, needs, and strategies that will help them transition to a ZEB fleet and prepare a facility with the infrastructure needed to deploy this fleet.

As part of the plan, we are identifying the types of ZEB technologies and developing a schedule for construction of associated facilities and infrastructure modifications. We are also creating a strategy for deployment of ZEBs along with a training plan for operators and repair staff. In addition to the plan, we are also assisting StanRTA with identifying potential funding sources to help implement it.

Once completed, the plan will not only satisfy CARB regulations but offer StanRTA a solid roadmap to move forward.

PROJECT LOCATION
Modesto, CA

STANTEC SERVICES
Transit Service Planning and Operations, Power & Charging Systems Analysis, Hydrogen Supply Analysis, Facilities/ Architecture Analysis, Financial Analysis, Fleet Analysis, Fueling Analysis

PROJECT DATES
10/2022-present

TEAM
Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Facilities/ Architecture), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating), AIM Consulting (Outreach)

Riverside Transit Agency ZEB Rollout Plan

Stantec conducted a system-wide analysis comparing its current fleet of buses operating fixed-route transit in the agency's western Riverside County service area to Zero-Emission buses (ZEBs) in response to the CARB's ICT Regulation, which mandates the full conversion of bus fleets to Zero-Emission by 2040. The study recommends ZEB mode and provides a Zero-Emission Bus Rollout Plan for fixed-route revenue fleet conversion by 2040. The study findings support this plan by identifying a comprehensive and sustainable plan for RTA which complies with the regulation. The analysis considers the operational and financial impacts of a full fleet conversion; examine the difference in the capital and operating costs of new battery-electric or hydrogen fuel cell bus technology versus a compressed natural gas or gasoline bus, the capital cost of associated ZEB infrastructure, the capital cost of rehabilitation or purchase of interim non-ZEB vehicles and infrastructure, and the overall operating cost impacts.

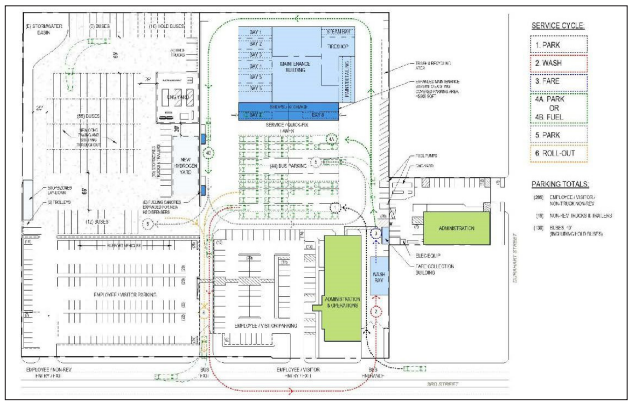
PROJECT LOCATION
Riverside, CA

STANTEC SERVICES
Architecture, Energy Engineering, Energy Modeling, Transit Advisory Services; Solar Analysis, Resiliency

PROJECT SIZE
224 buses

PROJECT DATES
10/2019-12/2020

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Electrical Lead), Jacobus & Yuang (Cost Estimating)



Anaheim Trans. Network ZEB Analysis & Charging Plan

The Anaheim Transportation Network (ATN) was planning to convert its 100-bus fleet to zero emission. Using our ZEVDecide modeling tool, we developed power requirements and an accompanying charging strategy. ZEVDecide modeled the expected fuel economy of the buses for each of the different routes. We then did a block-analysis to calculate the entire fleet's energy demand. We developed charging schedules to ensure day to day service. Additionally, Stantec provided fuel cost projections under different scenarios for the operation of the battery electric buses. Based on this information, we designed the new electrical system for the first 75 new bus chargers as well as the new building and ancillary yard loads. The design includes an extensive underground power distribution system that connects each of the charger locations to the main switchboard. The first phase of the project will include approximately 46 ground-mounted chargers and dispensers. A solar canopy over the bus charging area was designed with a battery electric storage system (BESS), providing resiliency if off-site power is lost and reducing the overall energy cost. The electrical design includes the infrastructure to support either overhead or ground mounted charging for the future buses.

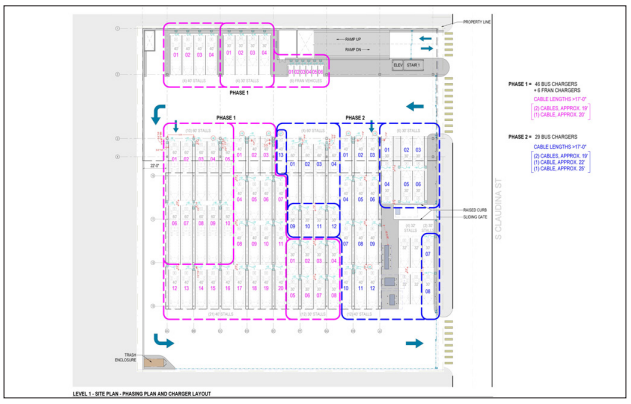
PROJECT LOCATION
Anaheim, CA

PROJECT DATES
10/2019-present

STANTEC SERVICES
Architecture, ZEVDecide Modeling, Route Analysis, Electrical Engineering, Grid Analysis, Transit Advisory Services, Solar Analysis

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead)

PROJECT SIZE
47 bus chargers - Phase 1
29 bus chargers - Phase 2
6 small vehicle chargers
3 EVSE level 2 chargers



Ben Franklin Transit ZEB Fleet Conversion Analysis

With a goal of providing the best transportation services for their customers in southeastern Washington state, Ben Franklin Transit (BFT) is looking towards a zero emission future for its bus fleet. They engaged us to perform an analysis of their current operations in order to convert their fixed-route bus fleet to zero emission bus (ZEB) technologies. Our study identified—on a life cycle basis—the economic costs, performance issues, risks, and recommended timeline associated with transition to a zero emission transit bus fleet. Analysis also considered financial and operational impacts of battery electric transit bus technologies. Study results were presented to the BFT's board of directors to help better inform their decision making on the transition to a ZEB fleet. The result of our work helped BFT make decisions in the areas of policy, procurement, and technology as they take this next step towards a more sustainable future.

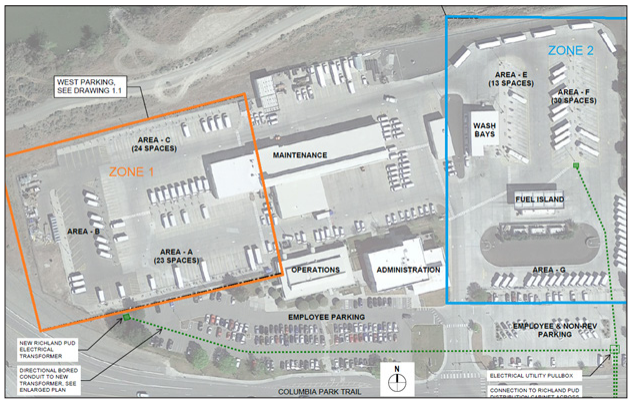
PROJECT LOCATION
Richland, WA

PROJECT DATES
11/2021-present

STANTEC SERVICES
Architecture, ZEVDecide Modeling, Route by Route Analysis, Electrical Engineering, Grid Analysis, Transit Advisory Services, Facility Analysis, Solar Analysis, Resiliency

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating)

PROJECT SIZE
66 buses



Santa Monica Big Blue Bus Charging Infrastructure

Stantec is assisting SMBBB to devise an electric vehicle charging strategy as it switches its fleet of 195 buses by 2030. The Big Blue Bus implementation date is a decade ahead of a statewide mandate. The charging infrastructure project, set for completion in March 2021, starts with an in-depth review of route modeling for Big Blue Bus to determine if battery electric buses or hydrogen fuel cell electric buses are the best fit for the community. The Stantec Team is conducting a block-by-block analysis to understand power requirements throughout the 58-square-mile service area. During the transition to 100 percent ZEB operations, the Big Blue Bus fleet composition will evolve over time, and both natural gas-powered buses and electric buses will be in service simultaneously. The phased approach provides flexibility for the transit agency as it reduces its environmental footprint. The infrastructure plan will accommodate the shifting fleet composition and the ultimate decommissioning and removal of the existing fueling system in place.

PROJECT LOCATION
Santa Monica, CA

STANTEC SERVICES
Architecture, MEP Engineering, Structural Engineering, Energy Engineering, Transit Advisory Services, Solar Analysis, Resiliency

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating)

PROJECT SIZE
195 buses

PROJECT DATES
10/2019-present

Golden Gate Transit ZEB Rollout Plan

GGT's Rollout Plan is informed by Stantec's ZEVDecide tool, which is calculating total power requirements, fueling/charging scheduling windows, cost of ownership and establishing an optimal fleet mix of battery electric buses and hydrogen fuel cell buses based on prevailing circumstances. Once complete, the final ZEB rollout plan will help inform priorities, key decision points, and other critical considerations. The project includes in-depth analysis of the District's four facilities and existing routes to determine the optimal fleet composition of battery electric buses and/or hydrogen fuel cell electric buses for the community. Stantec is conducting a survey of all ZEB alternatives currently in the marketplace, assisting with resiliency planning, and help identify technology options for maximizing the use of renewable energy. Stantec is also assisting in the development of a training plan and schedule for ZEB operators and maintenance/repair staff. An interesting twist to the GGT ZEB rollout plan from others Stantec is leading is that 54 percent of GGT's bus fleet is comprised of motor coach buses, a segment still very much undefined within the ZEB space.

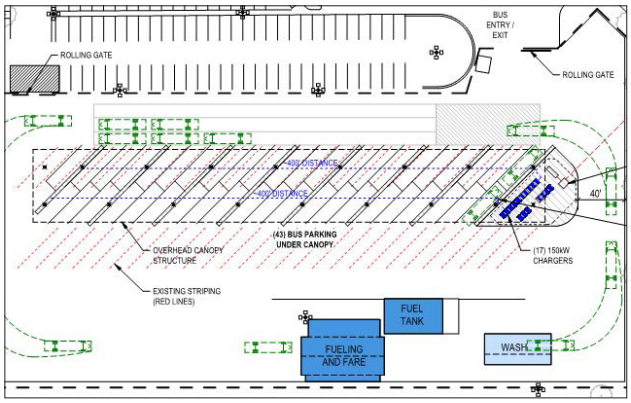
PROJECT LOCATION
San Francisco, CA

STANTEC SERVICES
Architecture, ZEVDecide Modeling, Route by Route Analysis, Electrical Engineering, Grid Analysis, Transit Advisory Services, Facility Analysis

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating)

PROJECT SIZE
150 buses

PROJECT DATES
3/2020-4/2021



Gold Coast Transit District ZEB Rollout Plan

The project started with a site visit to GCTD's new facility to document operational, maintenance, and planning practices, as well as to evaluate the facility for preparedness for ZEB transition. Stantec conducted an existing conditions review as well as a market scan to understand the needs of GCTD as it relates to service delivery and operations. Stantec used its proprietary tool for bus modeling and route simulation to estimate the fuel economy and feasibility of battery-electric buses (BEBs) and hydrogen fuel-cell electric buses (FCEBs) for GCTD's operations. Our analysis discovered that while BEBs could be feasible, their adoption would require a complex mix of different BEBs with different battery sizes, constraining flexibility and operations. FCEBs, under modeling conditions, were able to achieve full service in a 1-to-1 fashion, and adopting a hydrogen solution also facilitates paratransit and on-demand vehicle transition, given the large range these vehicles operate. Our team is currently exploring potential hydrogen solutions and infrastructure and designs that will not only meet GCTD's needs, but potentially also serve regional transit partners (like VCTC), Port Hueneme, and personal vehicles. Exploring these approaches could help reduce costs by recouping investments through user fees and other funds.

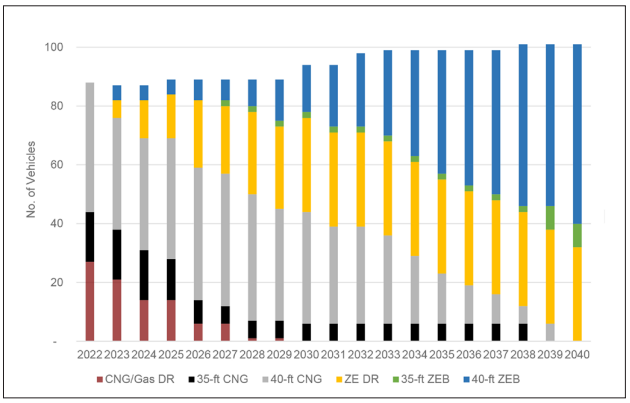
PROJECT LOCATION
Oxnard, CA

STANTEC SERVICES
Transit Service Planning and Operations, Predictive Energy Modeling, Power & Charging Systems Analysis, Hydrogen Supply Analysis, Facilities/ Architecture Analysis, Financial Analysis, Fleet Analysis, Fueling Analysis

PROJECT SIZE
87 buses

PROJECT DATES
8/2021-7/2022

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating)



OCTA ZEB Rollout Plan

OCTA utilized Stantec's support to develop their ZEB Rollout Plan to guide upcoming vehicle and infrastructure investments. The regulation applies to a transit agency that owns, operates, leases, rents, or contracts with another entity to operate buses in California. Large transit agencies, such as OCTA, must purchase or operate a minimum number of Zero-Emission 40-foot buses as determined by CARB's phasing schedule. The regulation further requires 100% of the fleet operated by an agency in revenue service must be Zero-Emission buses by 2030. OCTA operates primarily a fleet of CNG buses. For nearly two years, OCTA has been testing in service a hydrogen vehicle and is now in the process of receiving 10 hydrogen 40-foot buses. Stantec worked with OCTA on a new hydrogen fueling station at the Santa Ana maintenance facility to fuel these buses. OCTA operates the fixed-route and paratransit services from five (5) facilities throughout the county.

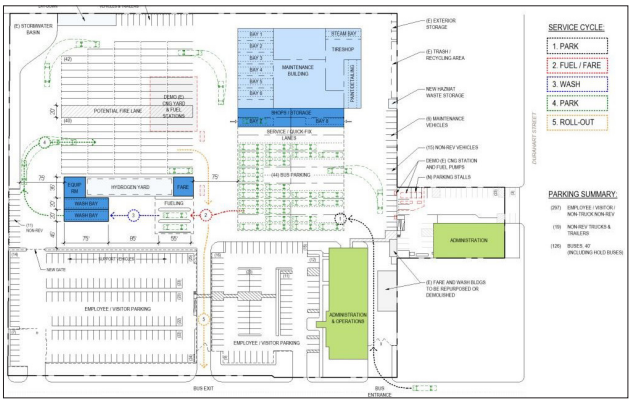
PROJECT LOCATION
Orange, CA

STANTEC SERVICES
Architecture, Energy Engineering, Transit Advisory Services

PROJECT SIZE
550 buses

PROJECT DATES
10/2019-7/2020

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating)



Calaveras Transit Agency ZEB Rollout Plan & Analysis

Calaveras Transit Agency engaged Stantec to develop a study and provide a Zero Emission Bus Rollout Plan for fixed-route revenue fleet conversion by 2040. The study findings will support this plan by identifying a comprehensive and sustainable plan for CTA that complies with the CARB regulation. The analysis will consider the operational and financial impacts of a full fleet conversion; examine the difference in the capital and operating costs of new battery electric bus technology versus a fossil-fuel powered bus, the capital cost of associated ZEB infrastructure, the capital cost of rehabilitation or purchase of interim non-ZEB vehicles and infrastructure, and the overall operating cost impacts. Of special significance is the need for a rigorous analysis of fleet scheduling/operations with the various range limitations of ZEB buses. Additionally, the financial analysis will consider lifetime/ lifecycle costs, payback periods, net present values (NPV), and time sensitivity. An alternative site analysis will need to be conducted for the operational facility, as it is being leased and the addition of required infrastructure to support ZEB operations may be better utilized at a facility owned by CTA.

STANTEC SERVICES
Architecture, ZEVDecide Modeling, Route by Route Analysis, Electrical Engineering, Grid Analysis, Transit Advisory Services, Facility Analysis, Solar Analysis, Resiliency

TEAM
Stantec: Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating)

PROJECT SIZE
6 buses

PROJECT DATES
9/2021-present

Santa Barbara MTD Facility Master Plan & ZEB Study

Stantec took a comprehensive look at SBMTD's current transit operations and facilities to project their needs for the next 20 years. The scope was broken into three phases. In phase 1, Stantec's Transit Advisory group provided a thorough assessment of SBMTD's current operations and took that information as a starting point to provide knowledge-based projections for the future, giving a clear picture of the future fleet and facilities requirement, particularly the conversion to zero emission buses.

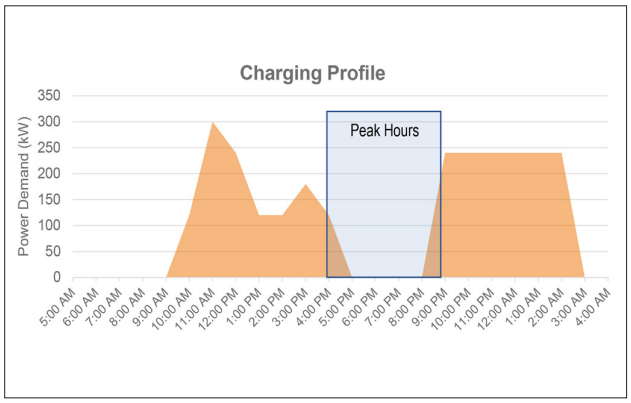
Parallel to phase 1, SBMTD's two facilities were assessed by the multidisciplinary Stantec Architecture and Engineering team. The team assessed and documented the existing conditions of the facilities to establish a baseline for the master planning process and outline the various needs at the facilities. Finally, Stantec proceeded with an iterative master plan process which directly engaged with SBMTD's staff and board members for feedback. A final master plan and implementation plan, along with associated costs/budgets were established for the two facilities. Stantec was then retained to conduct route modeling to determine the appropriate BEB specs, energy and charging requirements, and facility needs to prepare MTD for a ZEB future.

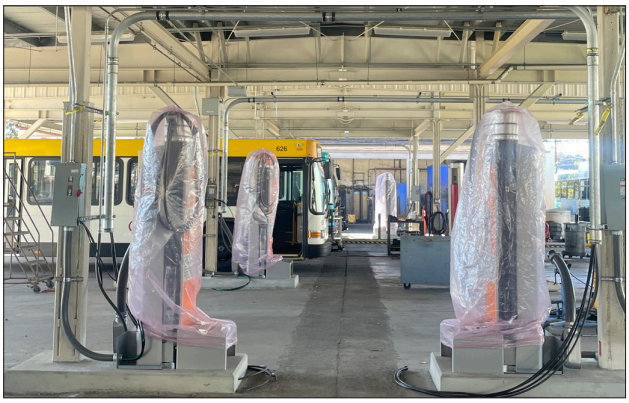
STANTEC SERVICES
Architecture, Electrical Engineering, Mechanical Engineering, Civil Engineering, Landscape Architecture, ICT, Route Modeling, Energy & Charging Specs

TEAM
Stantec: Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating)

PROJECT SIZE
125 buses

PROJECT DATES
1/2019-11/2020





TriDelta Transit BEB Demonstration Project

In June 2018 following 2 over two years of research, planning, and testing, Tri-Delta Transit began operating their first batter electric transit bus. As part of the pilot program, Tri-Delta Transit planned to launch a total of four battery electric buses by the end of 2018.The new 40-foot electric buses are used throughout Tri-Delta Transit's service area and carry up to 38 seated passengers with up to another 18 riders standing. Like all Tri-Delta Transit buses, the new electric buses are ramp-equipped to accommodate wheelchairs and mobility devices, have priority seating for seniors and people with disabilities, and exterior bike racks that can accommodate up to two bikes. The buses can drive for more than 100 miles on a single charge.

Stantec's role consisted of a study and design for installation of four Bus Charging Stations and 5 Electric Vehicle Charging pedestals for the Tri-Delta Transit Maintenance Facility. Each bus charger has the capacity to charge two buses. This was a federally funded project with Tri-Delta transit matching the federal award of $250,000.

PROJECT LOCATION
Antioch, CA

STANTEC SERVICES
Energy Engineering

PROJECT SIZE
4 Electric Bus Charging Stations

5 Electric Vehicle Charging Stations

PROJECT DATES
2015-2017

TEAM
Stantec: Tony Zavanelli

Ventura County Transit ZEB Fleet Plan

Stantec is conducting a system-wide analysis comparing VCTC's current fleets of buses to zero-emission buses (ZEBs). The study will develop a recommended ZEB mode and provide a Zero Emission Bus Rollout Plan for revenue fleet conversion by 2040 with associated infrastructure and operating plan.

The analysis will consider the operational and financial impacts of a full fleet conversion; and examine the difference in the capital and operating costs of new battery-electric or hydrogen fuel cell bus technology versus the current fleet technologies, the capital cost of associated ZEB infrastructure, the capital cost of rehabilitation or purchase of interim non-ZEB vehicles and Infrastructure, and the overall operating cost impacts.

Operating cost impacts will consider an exhaustive list of affected items including labor, employee training, fuel and maintenance costs, and the impacts on revenue streams and farebox recovery ratio. Of special significance is the need for a rigorous analysis of fleet scheduling/operations with the various range limitations of ZEB buses. Additionally, the financial analysis will consider lifetime/lifecycle costs, payback periods, net present values (NPV), and time sensitivity.

PROJECT LOCATION
Camarillo, CA

STANTEC SERVICES
Architecture, ZEVDecide Modeling, Route Analysis, Electrical Engineering, Grid Analysis, Transit Advisory Services, Solar Analysis

PROJECT SIZE
10 buses

PROJECT DATES
2/2022-present

TEAM
Stantec: Analy Castillo (ZEB Lead), Amanda McDaniel (Operations Lead), Will Todd (Design Lead), Reb Guthrie (Fueling Lead), Tony Zavanelli (Power Lead), Jacobus & Yuang (Cost Estimating)

OCTA Facility Modifications for Hydrogen Fueling

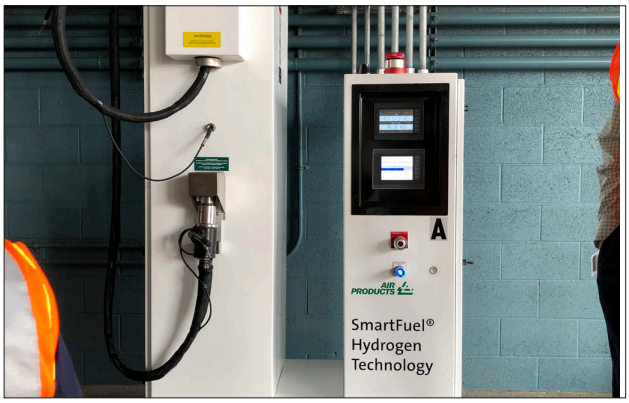
Through Stantec's on-call contract, our team was tasked by OCTA to provide engineering support services for the utility modifications required for a new hydrogen fueling station at their Santa Ana Bus Base. The scope of our work involves providing a new water line, communications line, and electrical service to the new fueling station. The team's main challenge involves coordinating with Southern California Edison (SCE) to tap into the existing heavily burdened electrical service. The team is working very closely with SCE and OCTA's facilities management and engineering staff to coordinate and minimize impacts to the existing facility. Led by Stantec, the design team studied multiple options for providing the utility connections for the new fueling station, reviewed them with OCTA and stakeholders and coordinated with the fueling station design and construction team. Ultimately the Stantec team sought to provide the required utility connections while minimizing costs and impacts to the existing facility.

PROJECT LOCATION
Santa Ana, CA

STANTEC SERVICES
Project Management, Electrical Engineering

PROJECT DATES
2018-present

TEAM
Stantec: Will Todd (Project Manager), Reb Guthrie (Fueling Systems Lead), Jacobus & Yuang (Cost Estimating)



Fresno Area Express Facility Modifications for BEB

The project scope includes multi-phase facility improvements to the Fresno Area Express Facility in Fresno, California. There are five separate, but related packages associated with this project: Underground Diesel Tank Removal, Fire Alarm Facility Upgrades, Facility Entry Gates, Electrical Bus Charging & Site Improvements, and Bus Wash, Vault Room, Employee and Visitor Parking Lot. The scope includes addition of new PG&E service for bus electrification charging, re-lighting of existing parking areas with new high efficiency LED systems, design of additional solar array to expand their solar system, re-design of vehicle and bus entrance gates to provide enhanced security, lighting and stacking space, lighting and power design for bus service addition and re-design of bus wash facility including connections for new equipment.

PROJECT LOCATION
Fresno, CA

STANTEC SERVICES
Architecture, Interior Design, Industrial Design, Electrical Engineering

PROJECT DATES
2018-present

TEAM
Stantec: Will Todd (Design Lead), Reb Guthrie (Fueling Lead); Jacobus & Yuang (Cost Estimating)

NVTA Vine Transit Bus Ops & Maintenance Facility

Stantec is working with NVTA on the $30 million project that supports fleet expansion, including the future implementation of electric buses. Stantec is part of a design team that provided full design services for the new facility located outside of the City of Napa. The 31,500-square-foot, three-building purpose-built facility will house NVTA's operations and maintenance efforts. The new facility includes an operations building with space for 100-plus operators, a 6-bay maintenance building, and a vehicle wash building. It is designed to accommodate an expanded fleet of more than 80 transit vehicles, while also providing much-needed meeting and collaboration space. The new facility will also serve as a regional meeting facility for NVTA, providing much-needed meeting and collaboration space for the communities and cities that they serve.

The facility was designed for employee comfort, with an emphasis on optimization for daylight. Clerestory windows allow daylight to flow deep into the buildings, and natural ventilation was incorporated in the maintenance building to support employee health and well-being. The project will also seek to achieve net-zero energy through extensive use of photovoltaics and planning for future electric bus charging to bolster the resiliency of NVTA's new facility and transit service.

PROJECT LOCATION
Napa, CA

STANTEC SERVICES
master planning, programming, architecture, interior design, sustainable design

PROJECT SIZE
31,500 sf

PROJECT DATES
11/2017-present

TEAM
Stantec: Will Todd (Project Manager)

San Luis Obispo RTA Bus Ops & Maintenance Facility

The new facility will play a vital role in the RTA's ability to grow and provide safe, reliable transit services for San Luis Obispo County. Due to the agency's wide coverage area, the facility was programmed to operate, service and maintain the entire fleet and serve as the headquarters for the agency, but the facility will only house the approximately 65 transit vehicles that will dispatch out of this location. The remainder of the future 112 vehicle fleet will dispatch from RTA's several small park-out facilities across the county. The architectural planning for the facility focused on efficiency and the family atmosphere of the agency. The design team combined employee amenity spaces such as break rooms and kitchens into larger, shared spaces at the core of the facility to engage staff to co-mingle and eliminate the literal walls between departments. The combining of shared spaces reduced the overall program, saving costs from the beginning of the project. The design completely eliminates the operational use of fossil fuels on-site, maximizes the potential for photovoltaic power generation on the building roof and over vehicle parking, utilizes ultra-local building materials, and has been designed to accommodate a future all-electric vehicle fleet to be implemented by 2040.

PROJECT LOCATION
San Luis Obispo, CA

STANTEC SERVICES
Architecture, Interior Design, Industrial Design, MEP Engineering, Civil Engineering, Landscape Architecture, ICT

PROJECT SIZE
6.5 acres, 27,500 sf

PROJECT DATES
2018-present

TEAM
Stantec: Will Todd (Design Lead), Reb Guthrie (Fueling Lead)

samTrans Electrical Infrastructure Upgrades

samTrans is transitioning its entire fleet of diesel-powered transit vehicles to Zero-Emissions Buses (ZEB), with a fully electric fleet anticipated by 2038. samTrans hired Stantec to develop thirty percent (30%) design documents for the electrical infrastructure upgrades at two bus maintenance facilities -- North Base and South Base -- to support the transition to battery-electric buses as well as system growth.

samTrans intends to utilize battery-electric technologies to fulfill its goals, and the transition to BEB's will require significant power infrastructure investment to support the charging and management of these vehicles. Such infrastructure upgrades include, but are not limited to, the following: new power feeds (PG&E substations), master control panels, smart energy management, in-ground trenches for power distribution, power cable networks, concrete islands for charging units, overhead canopies for final power delivery and solar-power collection.

samTrans will implement BEB vehicles and corresponding chargers into its fleet in a multi-phased bus replacement schedule through 2038.

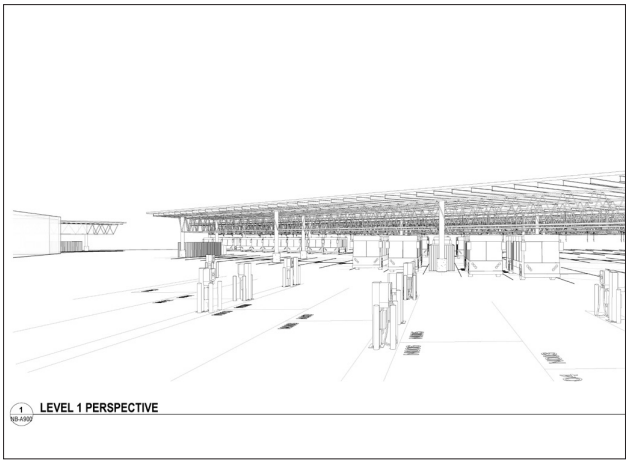
PROJECT LOCATION
San Mateo, CA

STANTEC SERVICES
Architecture, Electrical Engineering, Fueling Systems, Structural Engineering

PROJECT SIZE
275 buses

PROJECT DATES
9/2021-2024

TEAM
Stantec: Tony Zavanelli (Project Manager); Reb Guthrie (Fueling)



King County Metro Interim Base Electrification

The $67 million IBE project will provide parking and charging stations for 120 ZEB buses at the existing King County Interim South Base in Tukwila. The IBE project, which is the continuation of fleet electrification for Metro, will be the County's first progressive design-build, which provides an integrated approach, greater resources, and shared expertise between the design-build team and King County.

King County Metro, which serves a population of more than 2.1 million people, is leading the transit industry as an early adopter of battery-electric buses that produce no exhaust fumes, are quieter, and have the potential for lower operating costs. Metro's goal is to maintain its current fleet of approximately 1,400 coaches as it transitions to a ZEB fleet by 2035 to align with the County's equity and social justice goals. The project is scheduled to be complete by the end of 2024.

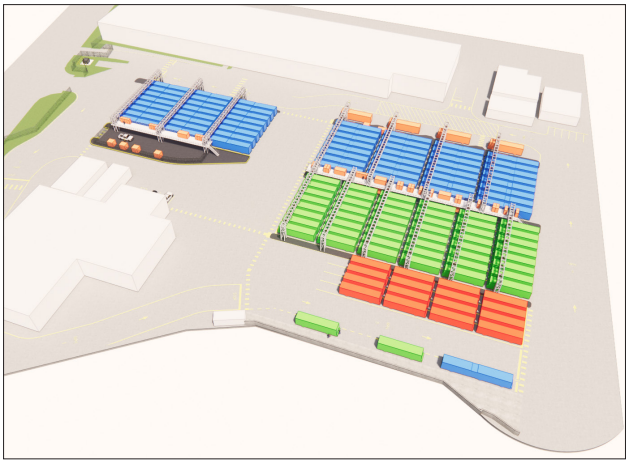
Walsh is managing all construction activities on the project, while Stantec is providing electrical engineering, transportation planning, information and communications technology design, acoustic design, charging system design, and historical archaeology.

PROJECT LOCATION
Tukwila, WA

STANTEC SERVICES
Architecture, Electrical Engineering, Predictive Energy Modeling, Lighting Design, ICT, Security, HSSE

PROJECT SIZE
185 zero-emission buses

PROJECT DATES
12/2020-4/2024



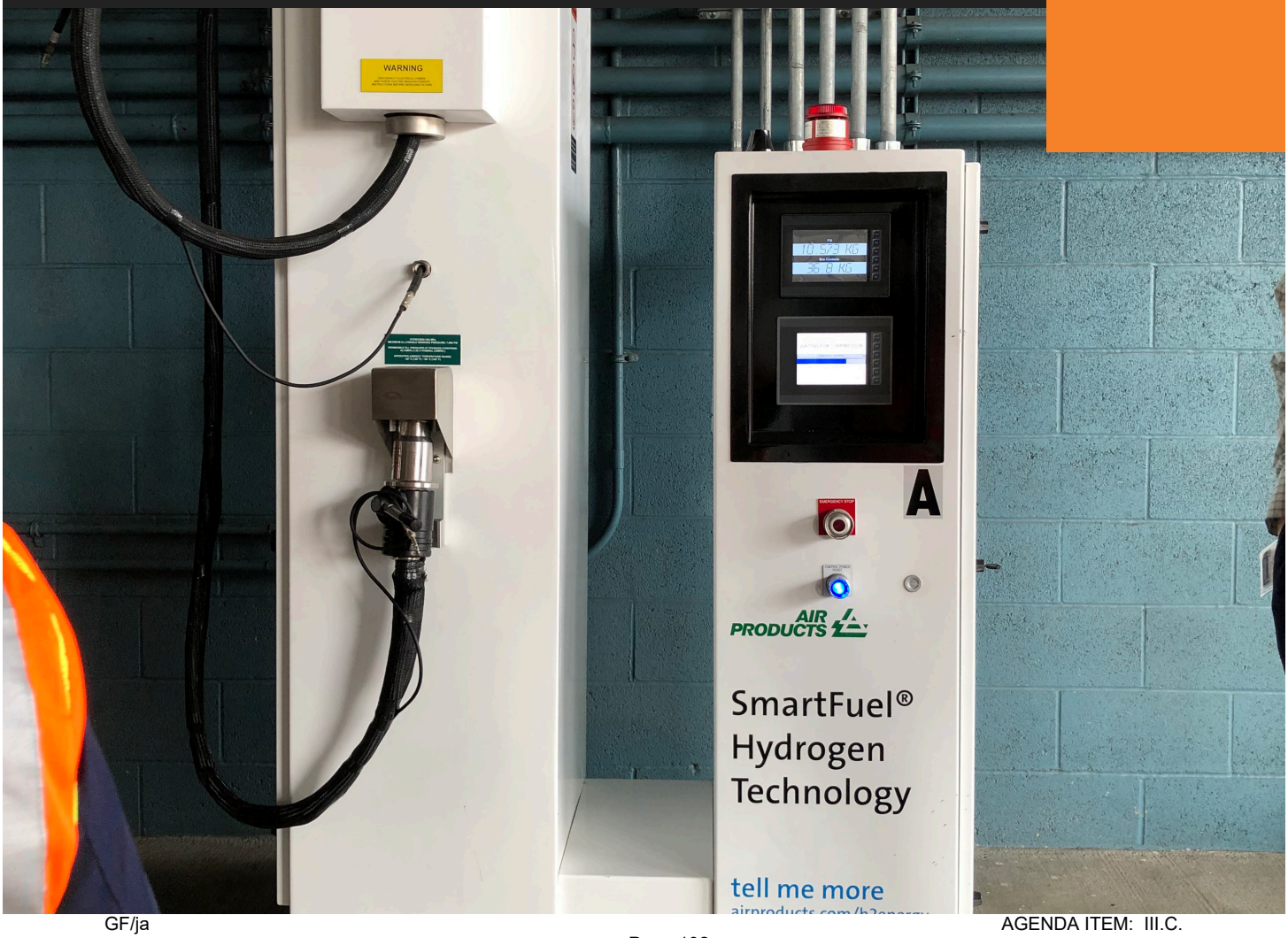
Cost Proposal

COST PROPOSAL - TTD ZEB Fleet Conversion Plan

TASK NO.								
0	1	2	3	4	5	6	7	8
Project Mgmt /Admin	**Public Outreach**	**Existing Conditions Report**	**Zero Emission Transit Options Analysis**	**System Charging Fueling Infra. Plan**	**Estimate GHG Reduction Benefits of ZEB Fleet Conversion**	**Develop Plan-Level Cost Estimates**	**Funding Sources and Next Steps**	**Draft and Final ZEB Conversion Plan**
$18,836	$54,795	$24,545	$19,772	$25,345	$6,008	$12,889	$5,921	$21,748

Project Summary	Hours	Labour	Expense	Subs	Total
Total	1,247	$130,881	$2,000	$56,976	**$189,857.00**

Disclosure


WARNING
A
AIR PRODUCTS
SmartFuel®
Hydrogen
Technology
tell me more

Disclosures

Stantec holds a current contract with Tahoe Transportation District. This project is the Development of a Short Range Transit Plan. Our TTD contacts are Carl Hasty and George Fink.

Required Forms & Contract Review

Required Forms and Contract Review

We have reviewed your proposed RFP and contract terms and believe that should we be selected for this assignment, we will be able to conclude a mutually satisfactory contract with you.

On the following pages, please see the suggested modifications to your contract.

ATTACHMENT C – DRAFT CONTRACT

AGREEMENT FOR GOODS AND SERVICES

BETWEEN

TAHOE TRANSPORTATION DISTRICT

AND

_____

This Agreement for Services ("Agreement") is entered into as of this ____ day of October 2023 by and between Tahoe Transportation District, a bi-state special purpose district created by the Tahoe Regional Planning Compact, ("District") and _____ ("Contractor"). District and Contractor are sometimes hereinafter individually referred to as "Party" and hereinafter collectively referred to as the "Parties."

RECITALS

A. District has sought, by request for quotations, the performance of the services defined and described particularly in Section 2 of this Agreement.

B. Contractor, following submission of a proposal for the performance of the services defined and described particularly in Section 2 of this Agreement, was selected by the District to perform those services.

C. District has authority to enter into this Agreement and the District's District Manager has authority to execute this Agreement.

D. The Parties desire to formalize the selection of Contractor for performance of those services defined and described particularly in Section 2 of this Agreement and desire that the terms of that performance be as particularly defined and described herein.

OPERATIVE PROVISIONS

NOW, THEREFORE, in consideration of the mutual promises and covenants made by the Parties and contained here and other consideration, the value and adequacy of which are hereby acknowledged, the Parties agree as follows:

SECTION 1. TERM OF AGREEMENT.

Subject to the provisions of Section 20 "Termination of Agreement" of this Agreement, the Term of this Agreement is for twenty-four (24) months from date of execution.

SECTION 2. SCOPE OF SERVICES & SCHEDULE OF PERFORMANCE.

(a) Scope of Services. Contractor agrees to perform the services set forth in Exhibit "A" "Scope of Services" (hereinafter, the "Services") and made a part of this Agreement by this reference.

(b) Schedule of Performance. The Services shall be completed pursuant to the schedule specified in Exhibit "A." Should the Services not be completed pursuant to that schedule, the Contractor shall be deemed to be in Default of this Agreement. The District, in its sole discretion, may choose not to enforce the Default provisions of this Agreement and may instead allow Contractor to continue performing the Services.

SECTION 3. ADDITIONAL SERVICES.

Contractor shall not be compensated for any work rendered in connection with its performance of this Agreement that are in addition to or outside of the Services unless such additional services are authorized in advance and in writing in accordance with Section 27 "Administration and Implementation" or Section 28 "Amendment" of this Agreement. If and when such additional work is authorized, such additional work shall be deemed to be part of the Services.

SECTION 4. COMPENSATION AND METHOD OF PAYMENT.

(a) Subject to any limitations set forth in this Agreement, District agrees to pay Contractor the amounts specified in Exhibit "B" "Compensation" and made a part of this Agreement by this reference. The total compensation, including reimbursement for actual expenses, shall not exceed _____ dollars and ($xxx.xx), unless additional compensation is approved in writing in accordance with Section 27 "Administration and Implementation" or Section 28 "Amendment" of this Agreement.

(b) Each month Contractor shall furnish to District an original invoice for all work performed and expenses incurred during the preceding month. The invoice shall detail charges by the following categories: labor (by sub-category), travel, materials, equipment, supplies, and subcontractor contracts. Subcontractor charges shall be detailed by the following categories: labor, travel, materials, equipment and supplies. If the compensation set forth in subsection (a) and Exhibit "B" include payment of labor on an hourly basis (as opposed to labor and materials being paid as a lump sum), the labor category in each invoice shall include detailed descriptions of task performed and the amount of time incurred for or allocated to that task. District shall independently review each invoice submitted by the Contractor to determine whether the work performed and expenses incurred are in compliance with the provisions of this Agreement. In the event that no charges or expenses are disputed, the invoice shall be approved and paid according to the terms set forth in subsection (c). In the event any charges or expenses are disputed by

District, the original invoice shall be returned by District to Contractor for correction and resubmission.

(c) Except as to any charges for work performed or expenses incurred by Contractor which are disputed by District, District will use its best efforts to cause Contractor to be paid within thirty (30) days of receipt of Contractor's correct and undisputed invoice.

(d) Payment to Contractor for work performed pursuant to this Agreement shall not be deemed to waive any defects in work performed by Contractor.

SECTION 5. PROGRESS REPORTS.

(a) Consultant shall submit progress reports to District with every invoice.

(b) Progress reports shall be sufficiently detailed for District to determine if Consultant is performing to expectations and is on schedule. Progress reports will communicate interim findings and afford occasions for airing difficulties or special circumstances encountered so that solutions can be developed. Progress reports shall include the total number of hours worked by Consultant and any subconsultants and shall include descriptions of the Services performed, including a description of any deliverables submitted during the reporting period and the anticipated tasks, work and deliverables proposed for the subsequent reporting period.

(c) Separate progress reports shall be provided for each invoice. District's review of progress reports will ensure that Consultant's work meets a level of acceptability.

SECTION 6. INSPECTION AND FINAL ACCEPTANCE.

District may inspect and accept or reject any of Contractor's work under this Agreement, either during performance or when completed. District shall reject or finally accept Contractor's work within sixty (60) days after submitted to District. District shall reject work by a timely written explanation, otherwise Contractor's work shall be deemed to have been accepted. District's acceptance shall be conclusive as to such work except with respect to latent defects, fraud and such gross mistakes as amount to fraud. Acceptance of any of Contractor's work by District shall not constitute a waiver of any of the provisions of this Agreement including, but not limited to, Section 16 "Indemnification" and Section 17 "Insurance."

SECTION 7. OWNERSHIP OF DOCUMENTS.

All original maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer files, files and other documents prepared, developed or discovered by Contractor in the course of providing ~~the Services~~ pursuant to this Agreement shall become the sole property ~~of District~~ and may be used, reused or otherwise disposed of by District without the permission of the Contractor. Upon completion, expiration or termination of this Agreement, Contractor shall turn over to District all such original maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer files, files and other documents.

If and to the extent that District utilizes for any purpose not related to this Agreement any maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer

files, files or other documents prepared, developed or discovered by Contractor in the course of providing the Services pursuant to this Agreement, Contractor's guarantees and warranties in Section 9 "Standard of Performance" of this Agreement shall not extend to such use of the maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer files, files or ~~other documents~~.

SECTION 8. CONTRACTOR'S BOOKS AND RECORDS.

(a) Contractor shall maintain any and all documents and records demonstrating or relating to Contractor's performance of the Services. Contractor shall maintain any and all ledgers, books of account, invoices, vouchers, canceled checks, or other documents or records evidencing or relating to work, services, expenditures and disbursements charged to District pursuant to this Agreement. Any and all such documents or records shall be maintained in accordance with generally accepted accounting principles and shall be sufficiently complete and detailed so as to permit an accurate evaluation of the services provided by Contractor pursuant to this Agreement. Any and all such documents or records shall be maintained for three (3) years from the date of execution of this Agreement and to the extent required by laws relating to audits of public agencies and their expenditures.

(b) Any and all records or documents required to be maintained pursuant to this section shall be made available for inspection, audit and copying, at any time during regular business hours, upon request by District or its designated representative. Copies of such documents or records shall be provided directly to the District for inspection, audit and copying when it is practical to do so; otherwise, unless an alternative is mutually agreed upon, such documents and records shall be made available at Contractor's address indicated for receipt of notices in ~~this Agreement~~.

(c) Where District has reason to believe that any of the documents or records required to be maintained pursuant to this section may be lost or discarded due to dissolution or termination of Contractor's business, District may, by written request, require that custody of such documents or records be given to the District. Access to such documents and records shall be granted to District, as well as to its successors in interest and authorized representatives.

SECTION 9. INDEPENDENT CONTRACTOR.

(a) Contractor is and shall at all times remain a wholly independent contractor and not an officer, employee or agent of District. Contractor shall have no authority to bind District in any manner, nor to incur any obligation, debt or liability of any kind on behalf of or against District, whether by contract or otherwise, unless such authority is expressly conferred under this Agreement or is otherwise expressly conferred in writing by District.

(b) The personnel performing the Services under this Agreement on behalf of Contractor shall at all times be under Contractor's exclusive direction and control. Neither District, nor any elected or appointed boards, officers, officials, employees or agents of District, shall have control over the conduct of Contractor or any of Contractor's officers, employees, or agents except as set forth in this Agreement. Contractor shall not at any time or in any manner represent that Contractor or any of Contractor's officers, employees, or agents are in any manner officials, officers, employees or agents of District.

(c) Neither Contractor, nor any of Contractor's officers, employees or agents, shall obtain any rights to retirement, health care or any other benefits which may otherwise accrue to District's employees. Contractor expressly waives any claim Contractor may have to any such rights.

SECTION 10. STANDARD OF PERFORMANCE.

Contractor represents and warrants that it has the qualifications, experience and facilities necessary to properly perform the Services required under this Agreement in a thorough, competent and professional manner. Contractor shall at all times ~~faithfully,~~ competently ~~and to the best of its ability, experience and talent,~~ perform all Services. In meeting its obligations under this Agreement, Contractor shall employ, at a minimum, generally accepted standards and practices utilized by persons engaged in providing services similar to the Services required of Contractor under this Agreement. In addition to the general standards of performance set forth this section, additional specific standards of performance and performance criteria may be set forth in Exhibit "A" "Scope of Work" that shall also be applicable to Contractor's work under this Agreement. Where there is a conflict between a general and a specific standard of performance or performance criteria, the specific standard or criteria shall prevail over the general.

SECTION 11. COMPLIANCE WITH APPLICABLE LAWS; PERMITS AND LICENSES.

Contractor shall keep itself informed of and comply with all applicable federal, state and local laws, statutes, codes, ordinances, regulations and rules in effect during the term of this Agreement. Contractor shall obtain any and all licenses, permits and authorizations necessary to perform the Services set forth in this Agreement. Neither District, nor any elected or appointed boards, officers, officials, employees or agents of District, shall be liable, at law or in equity, as a result of any failure of Contractor to comply with this section.

SECTION 12. PREVAILING WAGE LAWS.

Contractor understands, acknowledges and agrees to comply with any and all applicable state and federal laws requiring payment of prevailing wages for work performed in connection with publicly-funded projects. Contractor and any subcontractors shall comply with all applicable state and federal prevailing wage rates, statutes, rules and regulations then in effect if required by state or federal laws or regulations. In the event of conflict between applicable federal and state provisions, the higher prevailing wage rate will apply.

SECTION 13. NONDISCRIMINATION.

Contractor shall not discriminate, in any way, against any person on the basis of race, color, religious creed, national origin, ancestry, sex, sexual orientation, gender identity, age, physical handicap, medical condition or marital status in connection with or related to the performance of this Agreement.

SECTION 14. UNAUTHORIZED ALIENS.

Contractor hereby promises and agrees to comply with all of the provisions of the Federal Immigration and Nationality Act, 8 U.S.C.A. §§ 1101, et seq., as amended, and in connection

therewith, shall not employ unauthorized aliens as defined therein. Should Contractor so employ such unauthorized aliens for the performance of the Services, and should the any liability or sanctions be imposed against District for such use of unauthorized aliens, Contractor hereby agrees to and shall reimburse District for the cost of all such liabilities or sanctions imposed, together with any and all costs, including attorneys' fees, incurred by District.

SECTION 15. CONFLICTS OF INTEREST.

(a) Contractor covenants that neither it, nor any officer or principal of its firm, has or shall acquire any interest, directly or indirectly, which would conflict in any manner with the interests of District or which would in any way hinder Contractor's performance of the Services. Contractor further covenants that in the performance of this Agreement, no person having any such interest shall be employed by it as an officer, employee, agent or subcontractor without the express written consent of the District Manager. Contractor agrees to at all times avoid conflicts of interest or the appearance of any conflicts of interest with the interests of District in the performance of this Agreement.

(b) District understands and acknowledges that Contractor is, as of the date of execution of this Agreement, independently involved in the performance of non-related services for other governmental agencies and private parties. Contractor is unaware of any stated position of District relative to such projects. Any future position of District on such projects shall not be considered a conflict of interest for purposes of this section.

(c) District understands and acknowledges that Contractor will perform non-related services for other governmental agencies and private Parties following the completion of the Services under this Agreement. Any such future service shall not be considered a conflict of interest for purposes of this section.

SECTION 16. CONFIDENTIAL INFORMATION; RELEASE OF INFORMATION.

(a) All information gained or work product produced by Contractor in performance of this Agreement shall be considered confidential, unless such information is in the public domain or already known to Contractor. Contractor shall not release or disclose any such information or work product to persons or entities other than District without prior written authorization from the District Manager, except as may be required by law.

(b) Contractor, its officers, employees, agents or subcontractors, shall not, without prior written authorization from the District Manager or unless requested by the District Attorney of District, voluntarily provide declarations, letters of support, testimony at depositions, response to interrogatories or other information concerning the work performed under this Agreement. Response to a subpoena or court order shall not be considered "voluntary" ~~provided Contractor~~ gives District notice of such court order or subpoena.

(c) If Contractor, or any officer, employee, agent or subcontractor of Contractor, provides any information or work product in violation of this Agreement, then District shall have the right to reimbursement and indemnity from Contractor for any damages, costs and fees, ~~including~~ attorney's fees, caused by or incurred as a result of Contractor's conduct.

(d) ~~Contractor shall~~ promptly notify District should Contractor, its officers, employees, agents or subcontractors, be served with any summons, complaint, subpoena, notice of deposition, request for documents, interrogatories, request for admissions or other discovery request, court order or subpoena from any party regarding this Agreement and the work performed thereunder. District retains the right, but has no obligation, to represent Contractor or be present at any deposition, hearing or similar proceeding. Contractor agrees to cooperate fully with District and to provide District with the opportunity to review any response to discovery requests provided by Contractor. However, this right to review any such response does not imply or mean the right by District to control, direct, or rewrite said response.

SECTION 17. INDEMNIFICATION.

(a) Indemnification for Professional Liability. Where the law establishes a professional standard of care for Contractor's services, to the fullest extent permitted by law, Contractor shall indemnify, ~~protect, defend~~ and hold ~~harmless~~ District and any and all of its ~~officials,~~ employees ~~and agents~~ ("Indemnified Parties") from and against any and all liability (including liability for ~~claims, suits~~, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs ~~of any kind, whether actual, alleged or threatened, including~~ attorney's fees and costs, court costs, interest, ~~defense costs,~~ and expert witness fees) ~~arise out of, are a consequence of, or are in any way attributable to, in whole or in part,~~ any negligent or ~~wrongful~~ act, error or omission of Contractor, or by any individual or entity for which Contractor is legally liable, including but not limited to officers, agents, employees or sub-contractors of Contractor, in the performance of professional services under this Agreement.

(b) Indemnification for Other than Professional Liability. Other than in the performance of professional services and to the full extent permitted by law, Contractor shall indemnify, ~~protect, defend~~ and hold ~~harmless~~ District, and any and all of its employees~~,~~ officials ~~and agents~~ from and against any liability (including liability for ~~claims, suits,~~ actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs ~~of any kind, whether actual, alleged or threatened,~~ ~~including~~ attorney's fees and costs, court costs, interest, defense costs, and expert witness fees), ~~where the same arise out of, are a consequence of, or are in any way attributable to, in whole or in part, the~~ performance of this Agreement by Contractor, or by any individual or entity for which Contractor is legally liable, including but not limited to officers, agents, employees or sub-contractors of Contractor.

(c) Indemnification from Subcontractors. Contractor agrees to obtain executed indemnity agreements with provisions identical to those set forth in this section from each and every subcontractor or any other person or entity involved by, for, with or on behalf of Contractor in the performance of this Agreement naming the Indemnified Parties as additional indemnitees. In the event Contractor fails to obtain such indemnity obligations from others as required herein, Contractor agrees to be ~~fully responsible~~ according to the terms of this section. Failure of District to monitor compliance with these requirements imposes no additional obligations on District and will in no way act as a waiver of any rights hereunder. This obligation to indemnify ~~and defend~~ District as set forth herein is binding on the successors, assigns or heirs of Contractor and shall survive the termination of this Agreement or this section.

(d) Limitation of Indemnification. Notwithstanding any provision of this section to the contrary, in California design professionals are required to ~~defend and~~ indemnify the District only

to the extent permitted by California Civil Code Section 2782.8, which limits the liability of a design professional to ~~claims, suits,~~ actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs ~~that arise out of, pertain to, or relate to~~ the negligence, ~~recklessness,~~ or willful misconduct of the design professional. The term "design professional," as defined in Section 2782.8, is limited to licensed architects, licensed landscape architects, registered professional engineers, professional land surveyors, and the business entities that offer such services in accordance with the applicable provisions of the California Business and Professions Code. To the extent that California Civil Code Section 2782.8 applies to this Agreement, the indemnification obligations of Contractor shall be limited in accordance with that section.

(e) District's Negligence. The provisions of this section do not apply to claims occurring as a result of District's ~~sole~~ negligence. The provisions of this section shall not release District from liability arising from gross negligence or willful acts or omissions of District or any and all of its officials, employees and agents.

SECTION 18. INSURANCE.

Contractor agrees to obtain and maintain in full force and effect during the term of this Agreement the insurance policies set forth in Exhibit "C" "Insurance" and made a part of this Agreement. All insurance policies shall be subject to approval by District as to form and content. These requirements are subject to amendment or waiver if so approved in writing by the District Manager. Contractor agrees to provide District with copies of ~~required policies~~ upon request.

SECTION 19. ASSIGNMENT.

The expertise and experience of Contractor are material considerations for this Agreement. District has an interest in the qualifications and capability of the persons and entities who will fulfill the duties and obligations imposed upon Contractor under this Agreement. In recognition of that interest, Contractor shall not assign or transfer this Agreement or any portion of this Agreement or the performance of any of Contractor's duties or obligations under this Agreement without the prior written consent of the District. Any attempted assignment shall be ineffective, null and void, and shall constitute a material breach of this Agreement entitling District to any and all remedies at law or in equity, including termination of this Agreement pursuant to Section 20 "Termination of Agreement." District acknowledges, however, that Contractor, in the performance of its duties pursuant to this Agreement, may utilize sub-contractors.

SECTION 20. PROJECT MANAGER AND CONTINUITY OF PERSONNEL.

Contractor designates _____ as its Project Manager for this Agreement. The Project Manager, or a District approved designee, shall be accessible to District during normal District working hours and shall respond within twenty-four (24) hours to District inquiries or requests. The Project Manager shall be responsible for all matters related to Consultant's personnel, operations and any subconsultants including, but not limited to (1) assigning qualified personnel to perform the work and prepare deliverables; and (2) reviewing, monitoring, training and directing Consultant's personnel and any subconsultants. There shall be no change in the person designated as the Project Manager without prior written approval by District.

Contractor shall make every reasonable effort to maintain the stability and continuity of Contractor's staff and subcontractors, if any, assigned to perform the Services. Contractor shall notify District of any changes in Contractor's staff and subcontractors, if any, assigned to perform the Services prior to and during any such performance.

SECTION 21. TERMINATION OF AGREEMENT.

(a) Termination for Convenience. District may terminate this Agreement, in whole or in part, at any time by ~~giving~~ written notice of termination to Contractor if District determines that termination is in its best interest. In the event such notice is given, Contractor shall cease immediately all work in progress. Contractor shall be paid its costs, including contract close-out costs, on work performed up to the time of termination.

(b) Termination for Cause. If District notifies Contractor of a default under Section 21 "Default" and Contractor fails to cure the default within the time frame provided, District may terminate this Agreement immediately. Contractor will only be paid for Services performed in accordance with the manner of performance set forth in this ~~Agreement.~~

(c) Property of District. Upon termination of this Agreement by either Contractor or District, all property belonging exclusively to District which is in Contractor's possession shall be returned to District. Contractor shall furnish to District a final invoice for work performed and expenses incurred by Contractor, prepared as set forth in Section 4 "Compensation and Method of Payment" of this Agreement. This final invoice shall be reviewed and paid in the same manner as set forth in Section 4 "Compensation and Method of Payment" of this Agreement.

SECTION 22. DEFAULT.

In the event that Contractor is in default under the terms of this Agreement, the District may ~~give~~ notice to Contractor specifying the nature of the default and providing the Contractor a timeframe to cure the default. The District may hold all invoices until the default is cured. If Contractor does not cure the default to ~~District's satisfaction~~ in the timeframe given, the District may take necessary steps to terminate this Agreement under Section 20 "Termination of Agreement." Any failure on the part of the District to give notice of the Contractor's default shall not be deemed to result in a waiver of the District's legal rights or any rights arising out of any provision of this Agreement.

SECTION 23. EXCUSABLE DELAYS.

Contractor shall not be liable for damages, including liquidated damages, if any, caused by delay in performance or failure to perform due to causes beyond the control of Contractor. Such causes include, but are not limited to, acts of God, acts of the public enemy, acts of federal, state or local governments, acts of District, court orders, fires, floods, epidemics, strikes, embargoes, and unusually severe weather. The term and price of this Agreement shall be equitably adjusted for any delays due to such causes.

SECTION 24. COOPERATION BY DISTRICT.

All public information, data, reports, records, and maps as are existing and available to District as public records, and which are necessary for carrying out the Services shall be furnished to Contractor in every reasonable way to facilitate, without undue delay, the Services to be performed under this Agreement.

SECTION 25. NOTICES.

All notices required or permitted to be given under this Agreement shall be in writing and shall be personally delivered, or sent by electronic mail or certified mail, postage prepaid and return receipt requested, addressed as follows:

To District: Tahoe Transportation District
Attn: George Fink, Transportation Services Director
P.O. Box 499
Zephyr Cove, NV 89448
gfink@tahoetransportation.org

To Contractor: _____
Attn.: _____
_____
_____

Notice shall be deemed effective on the date personally delivered or transmitted by facsimile or, if mailed, three (3) days after deposit of the same in the custody of the United States Postal Service.

SECTION 26. AUTHORITY TO EXECUTE.

The person or persons executing this Agreement on behalf of Contractor represents and warrants that he/she/they has/have the authority to so execute this Agreement and to bind Contractor to the performance of its obligations hereunder.

SECTION 27. ADMINISTRATION AND IMPLEMENTATION.

This Agreement shall be administered and executed by the District Manager or his or her designated representative. The District Manager shall have the authority to issue interpretations and to make amendments to this Agreement, including amendments that commit additional funds, consistent with Section 28 “Amendment” and the District Manager’s contracting authority under District’s ordinances, rules and regulations.

SECTION 28. AMENDMENT.

No amendment to or modification of this Agreement shall be valid unless made in writing and approved by the Contractor and by the District. The District Manager shall have the authority to approve any amendment to this Agreement if the total compensation under this Agreement, as amended, would not exceed the District Manager’s contracting authority under the District’s

ordinances, rules and regulations. All other amendments shall be approved by the District's Board. The Parties agree that the requirement for written modifications cannot be waived and that any attempted waiver shall be void.

By written notice or order, District may, from time to time, order work suspension or make changes to the Services to be provided by Contractor. If any such work suspension or change causes an increase or decrease in the price of this Agreement or in the time required for its performance, or otherwise necessitates an amendment to this Agreement, Contractor shall promptly notify District thereof within ten (10) days after the change or work suspension is ordered, and an amendment to this Agreement shall be negotiated. However, nothing in this clause shall excuse Contractor from complying immediately with the notice or order issued by District.

SECTION 29. BINDING EFFECT.

This Agreement shall be binding upon the heirs, executors, administrators, successors and assigns of the Parties.

SECTION 30. FEDERAL PROVISIONS.

District will be using money received from the federal government to pay all or a part of the compensation to Contractor for the Services. The federal government requires certain clauses to be included in contracts where federal money will be used in the contract. Contractor agrees to adhere to the federally-required provisions included in Exhibit "D" hereto and incorporated herein by reference. If there is a conflict between any provision in Exhibit "D" and the body of this Agreement, Exhibit "D" shall control. In addition, the Federal Highway Administration's Required Contract Clauses for Federal Aid Construction Projects (FHWA Form 1273, revised May 1, 2012; https://www.fhwa.dot.gov/programadmin/contracts/1273/1273.pdf) is incorporated by reference herein.

SECTION 31. WAIVER.

Waiver by any Party to this Agreement of any term, condition, or covenant of this Agreement shall not constitute a waiver of any other term, condition, or covenant. Waiver by any Party of any breach of the provisions of this Agreement shall not constitute a waiver of any other provision nor a waiver of any subsequent breach or violation of any provision of this Agreement. Acceptance by District of any work or services by Contractor shall not constitute a waiver of any of the provisions of this Agreement.

SECTION 32. LAW TO GOVERN; VENUE.

In the event of litigation between the Parties, venue in state trial courts shall lie exclusively in the County of El Dorado, California where the dispute arises from Services performed in California, or shall lie exclusively in the County of Douglas, Nevada where the dispute arises from Services performed in Nevada. In the event of litigation in a U.S. District Court, venue shall lie exclusively in the Eastern District of California for Services performed in California, or in the District of Nevada for Services performed in Nevada.

SECTION 33. ATTORNEYS FEES, COSTS AND EXPENSES.

In the event litigation or other proceeding is required to enforce or interpret any provision of this Agreement, the prevailing Party in such litigation or other proceeding shall be entitled to an award of reasonable attorney's fees, costs and expenses, in addition to any other relief to which it may be entitled.

SECTION 34. ENTIRE AGREEMENT.

This Agreement, including the attached Exhibits, is the entire, complete, final and exclusive expression of the Parties with respect to the matters addressed therein and supersedes all other agreements or understandings, whether oral or written, or entered into between Contractor and District prior to the execution of this Agreement. No statements, representations or other agreements, whether oral or written, made by any Party which are not embodied herein shall be valid and binding.

SECTION 35. SEVERABILITY.

If any term, condition or covenant of this Agreement is declared or determined by any court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions of this Agreement shall not be affected thereby and the Agreement shall be read and construed without the invalid, void or unenforceable provision(s).

SECTION 36. CONFLICTING TERMS.

Except as otherwise stated herein, if the terms of this Agreement conflict with the terms of any Exhibit hereto, or with the terms of any document incorporated by reference into this Agreement, the terms of this Agreement ~~shall control.~~

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the date and year first-above written.

TAHOE TRANSPORTATION DISTRICT

_____
Carl Hasty
District Manager

ATTEST:

_____
Judi Allen
Clerk of the Board

By: _____ By: _____

Its: _____ Its: _____

ATTACHMENT D

Certification regarding Debarment and Suspension

The undersigned bidder or proposer certifies that its principals, affiliates, and subcontractors (if any) are eligible to participate in this federally funded contract and are not presently declared by any Federal department or agency to be:

1. Debarred from participation in any federally assisted Award;
2. Suspended from participation in any federally assisted Award;
3. Proposed for debarment from participation in any federally assisted Award;
4. Declared ineligible to participate in any federally assisted Award;
5. Voluntarily excluded from participation in any federally assisted Award; or
6. Disqualified from participation in any federally assisted Award.

This certification is a material representation of fact relied upon by TTD. If it is later determined by TTD that the undersigned knowingly rendered an erroneous certification, in addition to remedies available to TTD, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The undersigned agrees to comply with the requirements of 2 C.F.R. part 180, subpart C, as supplemented by 2 C.F.R. part 1200, while this bid or offer is valid and throughout the period of any contract that may arise from this bid or offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

P Bailey-Campbell — Signature of Authorized Official

Pamela Bailey-Campbell — Name and Title of Authorized Official

8/10/2023 — Date

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned Contractor certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an 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 contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any 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 its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq* .)]
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such expenditure or failure.]

The Contractor, Stantec Consulting Services Inc., certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq., apply* to this certification and disclosure, if any.

P Bailey-Campbell

Signature of Contractor's Authorized Official

Pamela Bailey-Campbell, Senior Principal

Name and Title of Contractor's Authorized Official

8/10/2023

Date

Stantec

REQUEST FOR PROPOSALS FOR

Zero-Emission Fleet Conversion Plan

AUGUST 11, 2023