Proposal

Humboldt County Association of Governments
Attn: Amy Eberwein, Administrative Services Officer
611 I Street, Suite B
Eureka, CA 95501

April 11, 2025

Subject: Rebel Team RFP Response: Siting Analysis for North State Hydrogen Fuel Station Network

Dear Ms. Eberwein,

RebelGroup Americas, Inc. (Rebel), with its partner GTI Energy (collectively, the Rebel Team), is pleased to submit this proposal in response to the RFP for Siting Analysis for North State Hydrogen Fuel Station Network. Rebel is an internationally recognized infrastructure and financial advisor focused on optimizing financing, innovative funding, and project delivery. With a depth of experience in transit, transportation, infrastructure funding and financing, transportation decarbonization and the hydrogen transition, including ongoing substantive work with many agencies within the state of California as well as a number of transit agencies in the North State Super Region, we believe our Team possesses the right blend of expertise and local knowledge to support the full suite of needs expressed by the Humboldt County Association of Governments (HCAOG).

Our depth of experience in infrastructure development and hydrogen transition includes a wide range of technical, feasibility, and financial analysis, stakeholder engagement, and the creation of actionable expert recommendations and strategic advice, demonstrating that the Team is equipped to deliver all requested services. At the same time, our commitment to serving HCAOG, North State Super Region transit agencies, and public stakeholders as a trusted advisor means that we offer a comprehensive view of the context, challenges, and opportunities that HCAOG will manage with this ambitious undertaking. Our depth of expertise enables us to navigate the unique challenges faced by both public agencies as well as private market participants, striking a balance between policy objectives and market realities to drive sustainable and impactful development.

We have assembled a team of experts who are experienced in delivering similar services. We believe the Rebel Team is uniquely qualified to support HCAOG through the course of this engagement. As supported by our project experience and qualifications in Section 2, the Rebel Team brings:

- Experience conducting complex technical analyses, including highly relevant hydrogen corridor planning analyses;
- Extensive past engagement with hydrogen transition topics in the state of California, specifically in the North State Super Region;
- Deep experience in stakeholder engagement with transit and transportation stakeholders in both the public and private sectors, including existing relationships with regional stakeholders that can be immediately leveraged to the benefit of this Project; and
- A long-standing reputation as a qualified, responsive, and valued consultant and project manager for public sector clients.

We believe we have responded accurately and in detail to all requests for information. We appreciate the opportunity to submit our qualifications and approach and look forward to the potential to collaborate with HCAOG and its regional stakeholders. We are happy to discuss our proposal and refine our offer as appropriate to ensure that it fits your objectives and meets your needs. If you have any questions, please do not hesitate to contact me at 917-579-9242 or Zachary.Karson@rebelgroup.com. This proposal is a firm offer for at least a sixty (60) day period from the RFP due date.

We appreciate having the chance to support HCAOG in this important work.

Kind regards,

Zachary Karson

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zachary.karson@rebelgroup.com

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2. Understanding of Project

Project Concept

The Rebel Team understands that HCAOG is seeking to engage a consultant team to develop a hydrogen fueling station siting analysis for the North State Super Region (NSSR) of California, with the aim of making it practical for fleets in the region—including transit fleets—to transition to hydrogen fuel cell electric vehicles (FCEVs). This aim is in larger service of the state-level goal, demonstrated by Caltrans funding for this project through the Rural Planning Assistance (RPA) Discretionary Grant, of ensuring that rural regions of California can develop and implement effective transportation plans aligned with state priorities, including sustainable transportation, improved air quality, and the ability to satisfy the distinct transportation needs and challenges of rural areas.

The underlying concept of this project is to apply a regional approach to understanding fueling network development. This idea is built on the understanding of fueling stations as nodes in a larger network; it is not only the number of available stations that is important to catalyze demand, supply, and zero-emission transition, but also the interlinking of individual stations into a functioning network. If stations are not located optimally relative to (a) fleets' needs and (b) other stations, such that vehicles can reliably fuel when needed, given the expected travel patterns and feasible vehicle ranges between fueling, it will be a major barrier to transition. In this analysis, HCAOG specifically applies the regional frame of connecting the primarily low-density and rural areas in the NSSR with the higher-density regions of Sacramento and the San Francisco Bay Area. Given the importance of economies of scale in the hydrogen economy and the dynamics of regional intra- and inter-state travel in this region, this is a logical starting place.

North State-Specific Context

Through our past intensive engagement on topics related to zero-emission transition with stakeholders in the NSSR, the Rebel Team brings a close understanding of some of the key characteristics, opportunities, and challenges specific to this area of the state that will be highly relevant to this regional analysis. The Rebel Team has collaborated with Humboldt Transit Authority, Redding Area Bus Authority. Shasta Regional Transportation Agency, other transit and transportation stakeholders in Mendocino, Lake, Del Norte, and Nevada Counties, the Redwood Coast Energy Authority, and other participants of the NSSR transit working group. This is complemented by our experience in transportation, zero-emission transition, and hydrogen outside the NSSR (in other regions of California and elsewhere), giving us insight into how the NSSR is unlike other areas where many policymakers, analysts, and consultants would seek to draw comparisons.

This fundamental understanding of the NSSR provides a value-added benefit to HCAOG in achieving the project's goals. This project will seek to build on existing momentum and past work in the region, including HCAOG's Regional Transportation Plan and ZEV transition plans for transit, municipal, and County fleets, the California Energy Commission (CEC)-funded Blueprint study for Medium- and Heavy-Duty transition in Del Norte, Humboldt, and Trinity Counties, imminent construction of a hydrogen fueling station by Humboldt Transit Authority and deployment of extended-range FCEBs, the development of a hydrogen project by the Redding Rancheria Tribe, interest in hydrogen from stakeholders in Shasta County, Lake County, and Siskiyou County, imminent expansion of the hydrogen economy in the Sacramento region, the California Transportation Commission (CTC) SB671 Clean Freight Corridor Efficiency Assessment, and multiple designated corridors intended to direct and coordinate zero-emission investment throughout the

state and region (e.g., I-5, US-101, SR-299, etc.). Critically, we recognize and applaud HCAOG's leading role in coordinating and informing the entire region's transportation and zero-emission transition path.

Stakeholders in the NSSR emphasize the region's diversity in topography, climate, politics, accessibility, economic drivers, and more. Because of these factors, the Rebel Team is aware that the Project must take into account the nature of fleet traffic in relatively remote areas, the impacts of seasonal weather and topography (e.g., mountainous terrain) on vehicle range and fuel consumption, potentially differing views of local stakeholders about fleet transition and hydrogen, and the likely timing of zero-emission transition for different sectors and areas in the region. We know that individual station projects cannot always be "copy-pasted" to another site in a very different part of this large region and that engaging local stakeholders early and often will be critical.

Because of this local familiarity, the Rebel Team has a realistic view of the current state of transition and the potential paths that it may take. Currently, hydrogen fuel users typically have fuel transported hundreds of miles from producers in Sacramento, the Bay Area, Nevada, or further afield. As of the writing of this proposal, there are very few hydrogen fuel cell vehicles—whether light-, medium- or heavy-duty—on the road in the region, but this will be changing imminently, first with transit vehicles and then likely other public fleets due to applicable state regulations. Market participants — fuel providers and producers, equipment manufacturers, station developers, and more — are interested in the potential of the region, particularly around key commercial corridors such as the I-5, North Coast Corridor or Northern Nevada Connections Corridor[1] but they see challenges in ensuring reliable staffing, service/maintenance, and supply to remote areas where they do not currently have a large footprint. Finally, many fleet users depend not only on the development of fueling infrastructure but also on the availability of appropriate vehicle types that meet their needs. We expect that the process of bringing these other hydrogen-powered vehicles — including transit cutaways, over-the-road coach buses, and further commercialization of specialized vehicle types like snowplows, school buses, and refuse vehicles — will be a key dynamic in this region, given its specific needs for long-range, durable, vehicle types for specific use cases. The combination of these factors informs our understanding of and approach to this project.

Rebel Team's Objective and Guiding Principles

Accounting for all these factors, we summarize our understanding of the project objective as *understanding the characteristics of a hydrogen fueling network that would provide reliable service to the Humboldt County/NSSR region and proposing candidate networks comprising fueling station locations that would best serve transit and freight traffic in the region.*

The principles guiding our understanding of the project include:

- **Desire for Actionable Roadmap:** HCAOG wants an actionable analysis that leads to realistic planning, decision-making, and next steps, rather than a detailed analysis for informational purposes only. Based on HCAOG's past work and mandate, we expect that HCAOG wants to use this analysis to provide accurate information to the market and policymakers, inform its planning and funding decisions, and provide coordination support to ensure public actions are efficient and impactful.
- **Importance of Phasing and Timing:** Because the hydrogen economy in the NSSR is still relatively nascent, the cost and scale of necessary development, and the need for sufficient scale

[1] See Exhibit 24 in SB671 Clean Freight Corridor Efficiency Assessment: sb671-final-clean-freight-corridor-efficiency-assessment-dor.pdf

and demand to support fueling network development, we believe that a phased view of network development will best support the ultimate Project objectives. The "minimum viable" network in the shorter term will not necessarily look like the fueling network in its final state. Furthermore, both public and private investments in fueling station development will seek to align investment with demand. We understand that the sequencing of fueling station development matters, given that demand and supply must evolve together. Therefore, we will seek to differentiate between a short-and long-term understanding of the network needed. Short-term decisions require greater detail and fidelity, while the long-term network vision will likely be more flexible and path-dependent. We believe that HCAOG will benefit from avoiding false precision and false certainty, and that developing a flexible and time-aware analysis best aligns with its goals.

- **Medium-/Heavy-Duty Focus:** HCAOG is primarily focused on medium- and heavy-duty fleets for the purposes of this network analysis, which we believe is a logical starting place given the likely timelines and commercial realities of different sectors' potential transitions to FCEVs. Within the realm of medium- and heavy-duty fleet vehicles, we believe that HCAOG's primary interest is likely to be in two sectors: Transit and freight/goods movement. While other vehicles, such as municipal or County fleets, farm equipment, and even light-duty passenger vehicles, may be relevant in the future, these sectors are likely to either experience transition further in the future or at a smaller scale than transit and freight. As such, we believe it is most appropriate and resource-efficient to focus this project on transit and freight (while avoiding extensive data collection and/or analytical costs for insights that would provide less actionable value to HCAOG).
- **Optimizing for Different Fleets:** Within the two highlighted sectors, HCAOG will benefit from opportunities that leverage synergies between the needs of transit and freight fueling networks. However, whenever these use cases have different needs and demand patterns, the Rebel Team believes that HCAOG is interested in shared infrastructure only to the extent that it can provide benefits in terms of cost, timeline, or efficiency, and not just because the concept of shared infrastructure is appealing. For example, while an optimization analysis could be conducted to identify locations that both transit and freight fleets could use, in reality, this may not be the best outcome if neither fleet is being served conveniently (e.g., freight users have to travel far from highway exits, or transit users have to undertake significant "deadhead" miles away from their routes and depots). In general, the Rebel Team understands HCAOG's priorities as best serving users' realistic needs at a reasonable cost rather than developing shared infrastructure for the sake of being shared. Because of these dynamics, the Team offers an approach that analyzes freight and fleet demand patterns and optimal fueling locations sequentially and in a manner sensitive to their unique needs. We will seek to identify shared fueling locations that are efficient and commercially reasonable but not at the expense of identifying functional networks for users.
- **Need for High-Quality Data Gathering:** As highlighted in the RFP and HCAOG's responses to Q&A, the selected contractor will be responsible for identifying and acquiring access to necessary underlying data. Given our Team's experience with very similar analyses, we believe this step will be a crucial factor in the success of this Project. Our approach will account for the realistic cost, time to gather and validate, and uncertainty in data availability from both commercial and public sources and regional stakeholders.
- **Importance of Commercial/Market Input:** Developing a successful regional fueling network to serve both public and private fleets requires a true public-private collaboration and coordination effort. While this analysis is conducted for the public benefit and will inform public actions, it can and should also inform (and be informed by) private market activity. Some fueling stations, such

as stations primarily serving transit fleets, will be developed with public funding, but our team believes that many will be developed, operated, maintained, and used mostly by private fleets. In this context, understanding private market expectations for technology and market development, requirements or barriers to development, and how commercial development happens will be important. The Rebel Team will seek to fully integrate and balance private market stakeholder input with regional stakeholders' input, informing a mutually beneficial cross-sector partnership approach to transformative regional development.

In line with our objective and principles outlined above, the Rebel Team seeks to deliver HCAOG an analysis that utilizes the best available information and techniques, explicitly recognizes uncertainty, focuses detailed analysis on nearer-term opportunities that are more likely to be actionable, and balances the goals of different fleet types in the region.

We welcome the opportunity to discuss, refine, and add to this project understanding in conversation with HCAOG and regional stakeholders throughout the negotiation, contracting, and project kickoff and development process.

3. Consultant Qualifications and Experience

3.1 About the Rebel Team

Rebel

RebelGroup Americas, Inc. (Rebel) is based in Washington, D.C and is a leader in strategic, financial, and procurement advisory services to the infrastructure sector for both public and private sector clients. Rebel helps its clients bridge the gap between infrastructure needs and financial resources through robust research analysis, stakeholder and market engagement, and exploration of innovative delivery models such as public-private partnerships (P3s). Rebel has served as lead advisor in the development of transportation projects in the US and globally, with our interdisciplinary experience at the nexus of public and private sector interests providing a unique perspective from which to address planning, contracting and procurement. We have worked with many state and local governments in the US on launching their transportation programs and projects, assessing project feasibility, addressing project risks, securing federal funding and financing, serving as financial and transaction advisors on P3s, and deploying emerging technology.

Rebel was established in 2013 as a partnership between Infrastructure Management Group, founded in 1994, and RebelGroup, founded in 2002. RebelGroup is a network of over 15 companies across 8 countries and over 350 professionals, all focused on delivering project transactions and analysis that improve the lives of communities. Our global staff have been involved in 200+ projects and transactions for a total transaction value exceeding $40 billion. Rebel is a corporation owned by its shareholders. Rebel is also registered as a municipal financial advisor with the Securities and Exchange Commission (SEC) and the Municipal Securities Rulemaking Board (MSRB).

GTI Energy

GTI Energy is a 501(c)(3) not-for-profit independent technology development and training organization with 80 years of experience designing and testing tools to continuously progress energy systems. Throughout the 80 years, GTI Energy developed over 1,300 patents, 500 products, and 750 licensing agreements. With a nationwide staff of over 500 professionals, more than half are scientists and engineers. In the last decade, GTI enterprise has led and convened $1 billion in collaborative, late-stage research and development. GTI Energy conducts research across the whole energy value chain, from sourcing to end uses, working with government agencies, utilities, technology developers, industry stakeholders, national labs, and academia.

3.2 Litigation, Fraud, Eligibility, Adherence to Requirements, Corporate Interests

Rebel is not involved in or aware of any litigation; fraud convictions; debarments, suspensions, or other events causing any ineligibility to participate in public contracts for the firm.

RebelGroup Americas, Inc., a US-based company incorporated in the State of Delaware, is partially owned (52.39%) by the Dutch-based company, Rebel Advisory b.v. The remaining ownership of RebelGroup Americas, Inc. is spread amongst its US-based employee shareholders. The Dutch firm, Rebel Advisory b.v., does not exert control over the management nor operations of RebelGroup Americas, Inc. Furthermore, RebelGroup Americas, Inc. does not hold a controlling or financial interest in any other firms or organizations.

3.3 Qualifications and Experience

Rebel

Rebel has a broad portfolio of experience advising public agencies, including RTPAs, MPOs, and transit agencies, on transportation investments and leading projects in complex multi-stakeholder environments. Rebel's qualifications and experience include business case and feasibility studies, financial and economic analysis, stakeholder and market engagement, policy and planning support, risk analysis, supporting public agencies through the procurement and contracting process with private sector partners, and general project and program management. In the transportation decarbonization space, Rebel has worked on several highly relevant projects in California including with the Governor's Office of Business and Economic Development (GO-Biz) and the California Department of Transportation (Caltrans), summarized below in Section 2.5. Rebel has also worked directly with transit agencies on fleet transition strategy and planning, specifically around the deployment of zero-emission charging and refueling infrastructure, most recently with Yuba-Sutter Transit Authority, Redding Area Bus Authority and several transit agencies in Fresno County. Regarding regional efforts to procure and deploy technology for public transportation more broadly, Rebel worked closely with Humboldt Transit Authority, Lake Transit Authority, Mendocino Transit Authority and Redwood Coast Transit Authority to collaboratively launch contactless payments and continues to support Caltrans and the California Integrated Travel Project (Cal-ITP) on a wide range of efforts to help transit agencies adopt modern technology. Rebel also has a long track record of successfully conducting market engagement and market soundings with industry stakeholders in the zero-emission transportation space and with infrastructure developers and investors generally and leveraging those insights to create long-term sustainable projects and programs.

GTI Energy

GTI Energy is highly experienced as an advisor to both public and private organizations on alternative fuels, corridor analysis and infrastructure development, and has worked with federal, state, regional and local entities in the sector. GTI has worked on numerous projects involving the use of hydrogen for mobility, alternative fuel powertrains, and alternative fueling infrastructure. GTI is currently leading the Houston to Los Angeles I-10 Hydrogen Corridor (H2LA) plan, a $1.25M research project funded by the U.S. Department of Energy. In a separate effort for that same I-10 corridor from Texas to California, funded by an industry research collaborative called the Low Carbon Resources Institute, GTI developed an artificial intelligence model to analyze traffic patterns and project future fueling needs. GTI also worked on another Alternative Fuel Corridor project funded by the U.S. DOE, the Michigan to Montana (M2M) project, for which they developed the plan to deploy alternative fueling infrastructure along the I-94 route (including EV charging, propane, and natural gas). GTI provided subject matter expertise to support the Rebel Team on their recent projects with GO-Biz and Caltrans, further improving familiarity with the NSSR stakeholders and unique challenges. GTI is working with several other industry stakeholders and fleet owners across the US on their logistics network transition plans (these projects are confidential, but more information can be made available upon request).

3.4 Key Personnel

Summary biographies and expected contributions to Project objectives are included for each proposed staff member in this section. Please see Section 7 of this proposal for resumes for each individual.

3.4.1 Personnel Experience and Qualifications

Zachary Karson (Rebel) has over nine years of experience as a consultant and advisor. Zachary has experience advising both public and private clients on infrastructure projects and transactions in various sectors, including mass transit and mobility, renewable energy, broadband, water, and wastewater. Zachary has worked on zero-emission transportation advisory projects for both public and private sector clients, including advising a private consortium on an unsolicited proposal for L.A. Metro to advance its fleet electrification goals by providing 650+ electric buses, charging infrastructure and a renewable energy solution through a P3 structure, and leading recent engagements with California Department of Transportation (Caltrans) and the Governor's Office of Business and Economic Development (GO-Biz), in collaboration with Leah Foecke and GTI Energy. Zachary is supporting Yuba-Sutter Transit Authority, Redding Area Bust Authority, Shasta Regional Transportation Agency, and three transit agencies in Fresno County on zero-emission bus infrastructure projects. Additionally, over the last five years, Zachary has played a leading role on several workstreams under the California Integrated Travel Project (Cal-ITP) including supporting several North State Super Region agencies with their collaborative deployment of modern fare payment technology. Zachary focuses on financial analysis, risk analysis, procurement support, and assisting clients with key commercial and financial decisions. Zachary is also a registered Series 50 municipal financial advisor. Before working at Rebel, Zachary worked for various public and private organizations in the renewable energy sector.

Contribution to Project objectives: Zachary will serve as the core point of contact between the Rebel Team and HCAOG. In addition, Zachary will co-lead stakeholder engagement, project management and oversight, development of micrositing analysis methodology and case study materials, and development of recommendations for infrastructure deployment and actionable next steps resulting from the analysis.

Leah Foecke (Rebel) has eight years of experience as a consultant and advisor. She brings extensive expertise in transit and transportation infrastructure project delivery, analysis, and financing. Over the last two years, Leah has worked specifically on the zero-emission transition in California, particularly focused on small and rural transit agencies and opportunities for public-private collaboration, primarily supporting the California Department of Transportation (Caltrans) and the Governor's Office of Business and Economic Development (GO-Biz). Through this work, she has worked closely with the Humboldt Transit Authority conducting a business case analysis of their hydrogen fuel cell bus transition, also providing support to the Shasta Regional Transportation Agency and Redding Area Bus Authority on market outreach related to project delivery options for a potential hydrogen fueling station in Shasta County. Leah has diverse experience in financial modeling and quantitative analysis related to project finance, project feasibility, and related topics in infrastructure and financing, typically working hand-in-hand with public agencies nationwide to analyze and execute successful projects.

Contribution to Project objectives: Leah will co-lead stakeholder engagement, project management, development of micrositing analysis methodology and case study materials, and development of recommendations for infrastructure deployment and actionable next steps resulting from the analysis.

Marina Smalling (Rebel) is a Consultant at Rebel and has over three years of experience in advising public sector clients at the local, state, and national levels. She brings experience in financial modeling, economic evaluation, and public policy analysis, drawing on a background in urban development, public finance, and strategic planning. Before joining Rebel, Marina worked at Boston Consulting Group as a strategy consultant focused on the public sector.

Contribution to Project objectives: Marina will support stakeholder engagement, micrositing, and overall project organization and execution.

Bart Sowa (GTI Energy) has over 20 years of engineering and product development experience in the transportation and energy industries, with core expertise in powertrain and engine performance. He is responsible for program management and support of over $25,000,000 in large-scale deployment and demonstration projects showcasing advanced zero- and low-carbon technologies in the transportation industry. Key projects include demonstrations of: Hydrogen fuel-cell Class 8 regional and drayage trucks, hydrogen fuel-cell terminal tractors, hydrogen fuel-cell switcher locomotive, CNG-hybrid long-haul locomotive, CNG-hybrid Class 8 drayage trucks and deployment of DCFC charging and CNG infrastructure along I-94 interstate corridor across 7 states, mobile liquid hydrogen fueler, developing a blueprint for Houston-to-Los Angeles Hydrogen Corridor, and more. He brings technical expertise in transportation, powertrain and power generation technologies, and commercial industry experience. He is also pursuing new research and technology development opportunities for GTI.

Contribution to Project objectives: Bart will provide technical oversight and leverage lessons learned from relevant transportation corridor planning projects performed by GTI Energy.

Bailey Fosdick, PhD (GTI Energy) is currently an Institute Data Scientist in the Digital Innovation Group at GTI Energy, where she leads and contributes to projects using advanced statistical data analysis techniques to gain new insights from complex data. She was previously tenured faculty at the Colorado School of Public Health in the Department of Biostatistics & Informatics and at Colorado State University in the Department of Statistics, where she led a highly productive research group and published over 50 peer-reviewed manuscripts, which have amassed over 4200 citations. Her work predominantly focused on statistical methods for network analysis and Bayesian methods. She has given over a dozen invited international and national lectures and over 25 seminars at academic institutions. Fosdick's research has been funded by several state and federal organizations, including the Colorado Department of Public Health & Environment, the National Science Foundation, and the Department of Defense. Her work has received local and national media attention in outlets such as The Denver Post, National Geographic, The Washington Post, and The Guardian. In 2024, she was recognized by the American Statistical Association as an Emerging Leader in Statistics and was awarded the COVID-19 Leadership Award in 2022 by the Vice President for Research at Colorado State University.

Contribution to Project objectives: Bailey will lead the data management and data analysis required to identify optimal fueling networks, given the NSSR transportation infrastructure, stakeholder inputs and prioritized scenarios. Bailey's expertise in network analytics will be critical to producing a robust set of candidate networks that well serve both transit and freight operations.

Nico Bouwkamp (GTI Energy) has over 19 years of experience in the transportation industry during which time he contributed his extensive knowledge of hydrogen and fuel cell related issues to GTI Energy and Frontier Energy's strategic leadership, project management, stakeholder facilitation, and public education efforts. Skilled at managing cross-functional project teams, and communicating complex, technical concepts to diverse audiences, Nico works effectively with energy, automotive, trucking, government, and fuel cell technology sector clients. He also performs technical and regulatory data analysis and helps develop resources to support heavy-duty automotive and fueling industry client initiatives. Nico has 15 years of experience working at the Hydrogen Fuel Cell Partnership.

Contribution to Project objectives: Nico will lead the technical tasks and provide general subject matter expert input and support throughout the project in areas of hydrogen fueling infrastructure, vehicle

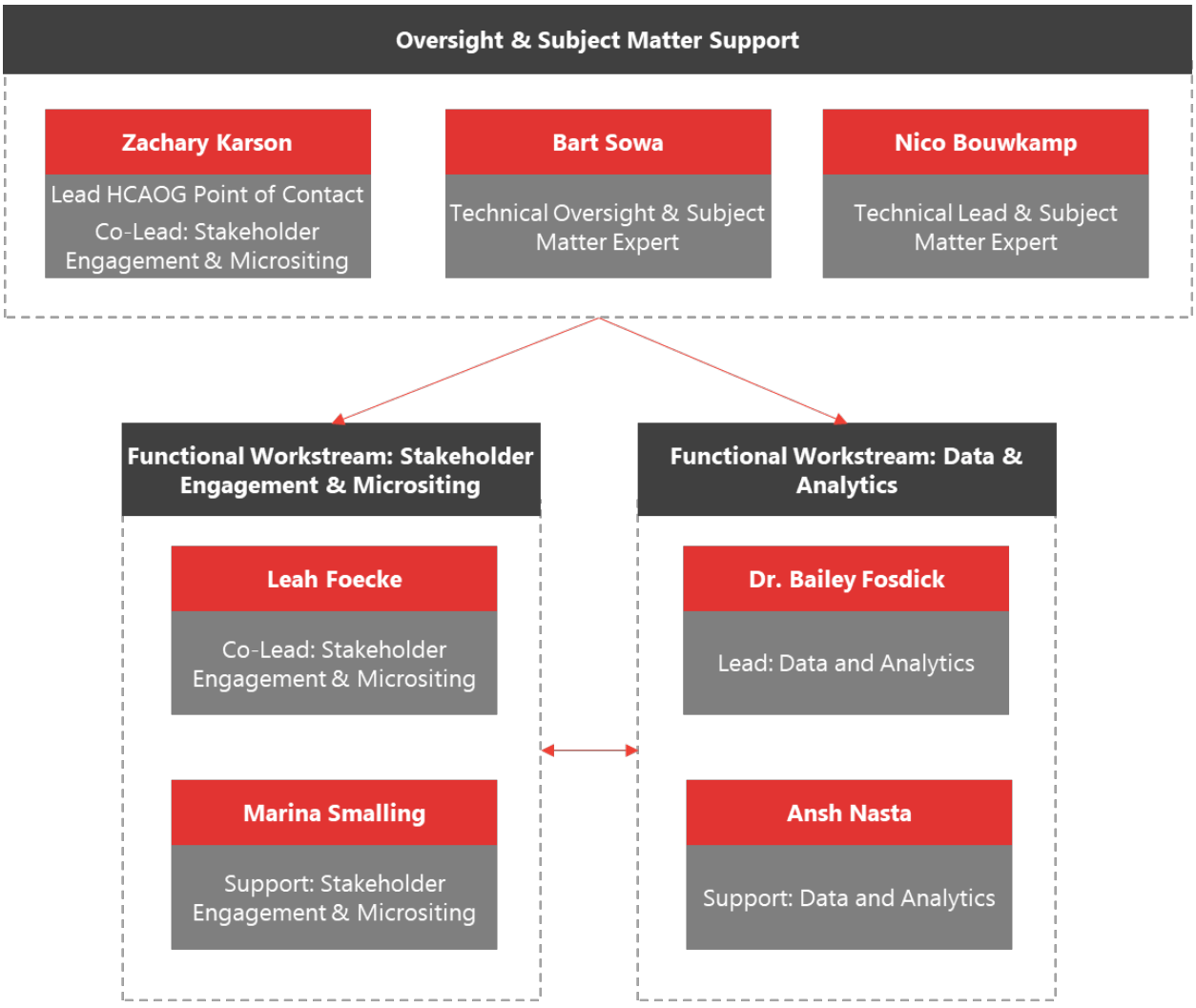
technology, and fleet stakeholders, including coordination with California initiatives, such as CTC's SB671 Assessment. He will also support the development of the micrositing approach, methodology, and applied case study.

Ansh Nasta (GTI Energy) is a Principal Energy Systems Analyst with six years of experience in low-carbon and zero-emission energy technologies, with a particular specialization in hydrogen. His experience includes geographic modeling of hydrogen production, transportation, storage, and end-use infrastructure using QGIS, technical research on quantifying hydrogen emissions, modeling net-zero emissions pathways, market-facing research and engagement, and analyzing policies, regulations, and funding opportunities related to clean energy in the United States.

Contribution to Project objectives: Ansh will support Dr. Fosdick with the data analysis required to identify optimal fueling networks and lead data visualization. Ansh's experience with hydrogen infrastructure modeling and geographic information systems (GIS) will be crucial to mapping out the fueling networks proposed by this project.

3.4.2 Organizational Chart

The Rebel Team proposes to organize itself per the organizational chart pictured below.



3.4.3 Communication Channels

As described elsewhere in this proposal, the Rebel Team is proposing to make a single, central point of contact available continuously to HCAOG in reference to this project. Our point of contact, Zachary Karson, will be available daily by email and phone for coordination, questions, and resolution of any ad hoc issues.

In support of Task 1.2 (Project Coordination), we are proposing to schedule standing check-in meetings on a minimum monthly cadence, or as frequently as biweekly depending on Project needs at any given time, between the Rebel Team and HCAOG to maintain situational awareness of project progress and efficiently manage regular project business. For each of these meetings, the Rebel Team will provide a pre-set agenda and suggest clear objectives. These regular meetings will be attended by, at a minimum, the Team's point of contact, but also other Rebel Team members as relevant to the topic(s) of discussion for the meeting. As necessary or helpful, the Rebel Team can supplement the verbal meeting with written notes and/or requests for input or follow-up.

In addition to standing check-in meetings, we expect that ad hoc meetings will be helpful and necessary at times to cover specific topics. These "one-off" meetings may focus on, for example, discussions of comments on draft materials or workshops to discuss assumptions or brainstorm solutions. Once again, the Rebel

Team will provide a pre-set agenda and objectives and manage meeting planning and facilitation. Based on the HCAOG team's communication preferences, these live meetings can be more common or minimized, if for example, the HCAOG team prefers to primarily provide written input or feedback rather than verbal discussion. This forum will support the iterative approach described in the Approach section of this proposal, where the Rebel Team intends to gather inputs, conduct analysis, discuss with HCAOG and/or stakeholders, and refine and repeat as necessary. We strongly believe that there should be no surprises at the end of an analysis or project; we will strive to keep HCAOG fully informed about project progress and results, to the extent it would like to be.

As it pertains to stakeholder communications, the Rebel Team anticipates that most day-to-day communication will happen by email. However, particularly for more involved stakeholders, we expect that phone calls or meetings may also be used for more in-depth discussions. Rebel will defer to HCAOG's preference as to whether it would like to be included in all of these communications (i.e., copied on emails and invited to meetings), or only involved in a subset of interactions when critical. The Rebel Team anticipates that updates to stakeholders will primarily be milestone-based, as opposed to a set cadence of updates to the client team.

Finally, the Rebel Team will provide brief monthly written progress updates advising HCAOG on current tasks, progress to date, any key challenges or roadblocks, and required input or questions to escalate to the client team. If any other updates are helpful or necessary on a recurring basis, the Rebel Team will be happy to discuss other reporting or communication preferences from the HCAOG team.

The Rebel Team is fully committed to the full and timely resolution of any issues related to the project content or dynamics within the client team. We will escalate any issues, unexpected outcomes, or challenging dynamics promptly to HCAOG through our key point of contact, and as necessary, will call ad hoc meetings to discuss and find an acceptable resolution. When managing any issues that may arise, the Rebel Team will always seek to provide HCAOG with suggested solutions in addition to fully understanding the dynamics and root causes of any problems. While the Rebel Team has successfully conducted dozens of assignments with comparable clients and by no means foresees any problems related to communication or otherwise, we intend to be your partner throughout this assignment and to promptly resolve all issues in order to achieve the important objectives of this assignment.

3.5 References

The project references provided in this section provide examples of recent, relevant work for clients that can speak to the Rebel Team's experience, expertise, and experience collaborating with our firms and staff members. If any further references or information about the provided references would be helpful, please do not hesitate to contact us.

Rebel

Reference 1: Business Case for Zero-Emission Hydrogen Transit in Rural Northern California

Project	Entity	Contact
Business Case for Zero-Emission Hydrogen Transit in Rural Northern California	California Governor's Office of Business and Economic Development (GO-Biz)	Gia Vacin Gia.vacin@gobiz.ca.gov (916) 319-9968 1325 J Street, Suite 1800 Sacramento, CA 95814
Dates	**Key Staff Involved**	**Relevance**
October 2023 – January 2025	• Zachary Karson • Leah Foecke • Nico Bouwkamp (GTI Energy) • Bart Sowa (GTI Energy)	• North State/Humboldt County experience • Hydrogen refueling infrastructure • Regional policy and planning • Stakeholder outreach and engagement

Project Description: Rebel was engaged to complete a thorough and implementation-oriented business case analysis for the hydrogen transition for a rural transit agency. The analysis examined the financial impact of fleet conversion to FCEBs through detailed operational and cash flow modeling over a 20-year project horizon across a range of different assumptions and scenarios. This effort was specifically focused on the particular business case and implementation challenges for smaller and rural transit agencies implementing hydrogen fuel cell bus and refueling infrastructure. To this end, the effort was grounded in the "live case study" of Humboldt Transit Authority (HTA) in the North State Super Region, a small transit operator in the rural and rugged northern region of the state that is committed to hydrogen fuel cell bus deployment. This operator is facing key challenges including the availability and price of hydrogen fuel, the prospect of significantly higher operating expenses, difficulty in optimizing the scope of infrastructure projects due to capacity and technological risks, difficulty managing the demands of resiliency in a remote region, and more.

This work involved four distinct workstreams, the first of which was the convening and facilitation of an executive-level working group to serve as a steering committee for the project, including GO-Biz, the California Department of Transportation (Caltrans), the California State Transportation Agency (CalSTA), the California Transportation Commission (CTC), the California Energy Commission (CEC), the California Air Resources Board (CARB), the California Public Utilities Commission (CPUC), the Governor's Office of Planning and Research (OPR), and the state's transit industry associations California Transit Association (CTA) and the California Association for Coordinated Transportation (CALACT). Second, the Rebel Team was responsible for developing implementable policy and programmatic intervention concepts that could realistically impact the business case for small and rural agencies deploying hydrogen buses and infrastructure. Third, the Rebel Team built a financial model to represent HTA's business case in the "base case" as well as the intervention scenarios the team defined, in order to better understand the magnitude of the impact of fleet transition on HTA's financial position and the potential business case impacts of various interventions. Finally, the team documented the business case analysis and policy interventions discussed by the working group to benefit transit agencies and policymakers statewide.

Reference 2: Caltrans Zero-Emission Bus Market Sounding and Demonstrations

Project	Entity	Contact
Caltrans Zero-Emission Bus Market Sounding and Demonstrations	Caltrans, California Integrated Mobility	Gillian Gillett Gillian.gillett@dot.ca.gov (916) 907-2182 1120 N Street MS-39 Sacramento, CA 95814
Dates	**Key Staff Involved**	**Relevance**
2023-2025	• Zachary Karson • Leah Foecke	• Zero-emission transit infrastructure • Private sector engagement • Stakeholder outreach and engagement

Project Description: In this project, the California Department of Transportation (Caltrans) sought to identify and validate potential state-led initiatives to advance and accelerate the zero-emission transition for small and rural transit agencies, particularly focused on the deployment of zero-emission buses and supporting infrastructure in the state. To that end, Rebel was engaged to conduct a wide-ranging consultation with market players across several key industries. The market sounding began with a rigorous problem definition exercise, informed by expert interviews and desk research, and a structured root cause analysis to identify underlying barriers, market failures, and sector dynamics. In the market sounding, Rebel engaged market participants including equity investors and developers, capital providers, project sponsors for precedent projects, Original Equipment Manufacturers (OEMs) for battery electric buses, hydrogen fuel cell buses, charging infrastructure, hydrogen fueling infrastructure, hydrogen fuel producers, utilities, and participants in other related transportation sectors including freight and micromobility in a series of 20+ interviews.

These market sounding interviews were summarized by sector to report key insights on market leaders' views on the optimal structure and components of a successful deployment, possible commercial arrangements, optimal risk allocation, procurement and contracting processes, and the potential roles for the state to catalyze deployment. In the second phase of this project, Rebel applied these insights to advise Caltrans on feasible and impactful demonstration concepts including regional shared zero-emission fueling facilities, charging-as-a-service and fueling-as-a-service, and potential P3 models. In this phase, Rebel worked directly with transit agencies and their stakeholders, understanding their practical deployment problems, conducting stakeholder engagement, holding participatory workshops among regional stakeholders, and translating detailed commercial, technical, and financial information into actionable takeaways.

Reference 3: Charging-as-a-Service Advisory for Yuba-Sutter Transit

Project	Entity	Contact
Charging-as-a-Service Advisory for Yuba-Sutter Transit	Yuba-Sutter Transit Authority	Matt Mauk Matt@yubasuttertransit.com (530) 634-6880 2100 B Street, Marysville, CA 95901
Dates	**Key Staff Involved**	**Relevance**
2025 - Ongoing	• Zachary Karson • Leah Foecke	• Northern California experience • Zero-emission transit infrastructure • Stakeholder outreach and engagement

Project Description:

Rebel was engaged by Yuba-Sutter Transit Authority to provide expert advisory to staff and Board members related to contracting and procurement options for the agency's greenfield development of a 19-acre site for zero-emission bus charging (and potentially hydrogen fueling). Rebel conducted research on contract structuring, scope and risk allocation options, and the benefits and drawbacks of the charging-as-a-service ("CaaS") model, which were documented in a detailed primer and presentation for Board members. In addition, Rebel conducted market outreach and engagement to understand current CaaS offerings, interest in providing service in this region of Northern California, and implications of different scoping and contracting choices. The engagement specifically considered the financial and economic considerations of alternative infrastructure delivery and contracting models, the procurement and project delivery implications of coordinating a CaaS agreement with larger facility improvements, opportunities for private sector engagement, and the ability to adapt and expand the facility project (including potentially to hydrogen fuel cell vehicles). Rebel staff are presenting an informational briefing to the Board in April 2025, which is expected to inform the agency's zero-emission transition pathway going forward.

GTI Energy

Reference 1: Houston to Los Angeles I-10 Hydrogen Corridor Plan

Project	Entity	Contact
Houston to Los Angeles I-10 Hydrogen Corridor Plan	U.S. Department of Energy	Benjamin Gould, Ph.D. Benjamin.Gould@ee.doe.gov 202.586.0088 1000 Independence Ave SW, Washington, DC 20585
Dates	**Key Staff Involved**	**Relevance**
2023 – Ongoing	• Bart Sowa • Nico Bouwkamp • Ansh Nasta	• Hydrogen fueling network modeling and planning • Hydrogen and transportation industry stakeholder outreach and management

Project Description:

GTI Energy is collaborating with a team of partners across the energy sector to leverage a $1.25 million grant from the U.S. Department of Energy for the development of a flexible and scalable blueprint for an investment ready, hydrogen fueling and heavy-duty freight truck network from Houston to Los Angeles (H2LA) along I-10, including the Texas Triangle Megaregion. Zero-emission vehicle corridors along major interstates will reduce carbon emissions, improve air quality, and expand access to zero-emission infrastructure for surrounding communities and businesses.

The H2LA project team consists of GTI Energy, Oak Ridge National Laboratory (ORNL), ExxonMobil, The University of Texas at Austin (UT), Walmart, and many other energy producers and retailers, Clean Cities Coalitions, Metropolitan Planning Organizations, truck manufacturers, and industry associations. The team is assessing how hydrogen corridors will balance the supply and demand of energy used for transportation, looking at infrastructure deployment processes, and developing hydrogen refueling infrastructure plans in the H2LA Corridor that represents a significant portion of freight movement within Texas and between three of the largest U.S. ports—Port Houston, Port of LA, and Port of Long Beach. Modeling efforts will identify hydrogen supply and demand hotspots, outline co-dependencies and economics, evaluate current technologies, and forecast technology adoption scenarios, using a purpose-built tool.

Reference 2: Sierra Northern Railway Hydrogen Switching Locomotive

Project	Entity	Contact
Sierra Northern Railway Hydrogen Switching Locomotive	California Energy Commission	Antonio Gomez Antonio.Gomez@Energy.ca.gov (916) 776-7966 715 P Street, Sacramento, CA 95814
Dates	**Key Staff Involved**	**Relevance**
2021 – Ongoing	• Bart Sowa • Nico Bouwkamp	• Northern California hydrogen fueling and supply planning • Collaboration with regional, state and federal agencies

Project Description:

GTI Energy and Sierra Northern Railway (SNR) are leading a $6 million project for the California Energy Commission to develop a hydrogen-fueled, zero-emissions locomotive that will reduce transportation air pollutants and greenhouse gas emissions. It will be demonstrated on SNR's short-line operations, which serve the railyard and seaport in West Sacramento, a designated disadvantaged community. GTI Energy is leading and administering the CEC grant and coordinating the hydrogen safety planning, hydrogen fueling infrastructure solution, and hydrogen supply. GTI also coordinates interactions with regional (SMAQMD, WestSac Fire Department), state (Caltrans, CEC, CARB, SCAQMD), and federal (DOE, Federal Railroad Administration) stakeholders.

4. Approach

The Rebel Team's approach to completing the scope of work described in the RFP is summarized by task in the below section.

Task 1.1: Kickoff Meeting

The Rebel Team will organize and facilitate a kickoff meeting as soon as practicable after contract award, focused on validating the proposed approach and project logistics. The Team will pay particular attention to ensuring all Team members have a nuanced understanding of HCAOG's specific objectives and preferences for the analysis, and will remain open to adapting our approach, project schedule, and planned deliverables as needed. The kickoff meeting will also inform our approach to successful project management and quality assurance. Specifically, the Rebel Team will confirm HCAOG's preferences for communication channels and frequency, necessary lead times for reviews of draft deliverables, and more.

Anticipated subtasks include:

- Organizing logistics for an all-hands kickoff meeting (i.e., date/time, agenda, attendees)
- Developing materials to efficiently facilitate kickoff meeting to confirm goals, scope, approach, schedule and deliverables, as necessary

Task 1.2: Project Coordination

The Rebel Team will ensure timely and efficient project coordination between the consultant team and HCAOG and its stakeholders throughout the duration of the engagement. Unlike other Tasks, project coordination is expected to be an ongoing process conducted in parallel with all other activities. The Rebel Team expects a combination of recurring touchpoints on a monthly basis, or as frequently as biweekly based on Project needs, in addition to milestone-based workshops or meetings (e.g., meetings to review preliminary results and suggest refinements) and ad hoc communication, such as around key decision points. In order to make project coordination as simple and efficient as possible, the Rebel Team proposes to have a single lead point of contact for the Team with HCAOG on all project management and contractual matters. These touchpoints and "live" forms of project coordination will be supplemented with brief written updates on a monthly basis, if desired by HCAOG, as well as submission of all drafts and project deliverables by email.

This proposed approach to coordination will be validated against HCAOG's needs and preferences in the kickoff meeting (Task 1.2).

Anticipated subtasks include:

- Validating meeting cadence and scheduling recurring project check-in meetings with HCAOG
- Organizing and facilitating all project meetings, including providing agendas, meeting materials, and follow-up items or meeting notes as necessary
- Providing written updates and deliverables by email on the agreed cadence

Task 2.1: Stakeholder Engagement Plan

The Rebel Team intends to conduct continuous stakeholder engagement throughout the duration of the project. Given the importance of stakeholder relationships both for gathering and validating locally-specific data, ensuring actionable project deliverables, and gaining stakeholder buy-in to build project momentum,

the Team views this task as critical. In early stages of engagement, the Rebel Team will focus its efforts on critical path data acquisition efforts in order to expedite the start of analysis in Task 3. We will leverage our existing relationships in the region with both public and private-sector stakeholders, utilizing the fact that our Team members are already in contact with many key stakeholders, particularly in public sector agencies focused on transportation. When possible, we will utilize existing stakeholder groups that can efficiently facilitate collaboration with multiple stakeholders in an appropriate forum, such as NSSR working groups, CALACT, the Hydrogen Fuel Cell Partnership, the California Hydrogen Business Council, and others. The draft stakeholder engagement plan – to be refined via Task 2.2 – will also differentiate outreach strategies by industry and stakeholder type, based on our pre-existing knowledge of these stakeholders' preferences and constraints. For example, in our experience, securing verbal input – not requesting formal written comment – can be much more efficient and successful for private sector stakeholders, who may be reluctant to formally provide input "on the record", but are typically willing to discuss their thoughts verbally.

Anticipated subtasks include:

- Developing stakeholder contact list and validating with HCAOG
- Developing outreach plan with milestones, outreach method, nature of input to be requested, etc.
- Developing an Excel-based outreach tracker to document outreach efforts
- Developing outreach materials to inform stakeholders about the project (e.g., template project introduction, data requests, request to participate) and validating with HCAOG
- Conducting stakeholder outreach by email and/or phone, documenting contacts, outcomes, and needed follow-up

Task 2.2: Regional Project Kickoff

The Rebel Team's approach to Task 2.2 will be consistent with our approaches to Tasks 1.2-2.1, emphasizing setting the basis for successful collaboration and launching critical data gathering efforts as early as possible. The Rebel Team is familiar with the NSSR forum, having presented to both the larger group and the transit working group in the past (and regularly attending the transit working group). The regional kickoff will be crafted to be informative but calibrated to an appropriate level of technical and methodological detail that will be accessible and helpful for the audience. Primarily, our hope is for the Regional Project Kickoff to be interactive and dynamic. Depending on feedback from HCAOG and meeting organizers, we will consider different formats or techniques for encouraging stakeholder engagement (e.g., live polls or feedback, brainstorming exercises, etc.). The Rebel Team also proposes to consider, in collaboration with the HCAOG team, conducting kickoff outreach to private sector stakeholders who may be interested in the project, such as through a brief presentation to one or more groups for members of the business community involved in the hydrogen economy.

Anticipated subtasks include:

- Providing necessary inputs on meeting planning (e.g., attendees, time required, topics, etc.) to allow HCAOG to arrange meeting logistics
- Developing meeting materials, including a project description, methodology overview, project schedule and deliverables
- Facilitating meetings at the NSSR and North Coast Tribal Transportation Commission, as well as potentially at private sector-focused stakeholder groups
- Documenting meeting outcomes (stakeholder feedback, questions and answers, etc.)

Task 2.3: Post-Regional Project Kickoff Revisions

Based on the outcomes of meetings and early engagement in Task 2.2, the Rebel Team will propose appropriate refinements to the project approach, stakeholder engagement strategy, and/or other elements of the project plan. These refinements will be subject to HCAOG's review and agreement.

Anticipated subtasks include:

- Updated Project plan materials (approach, stakeholder engagement plan, project schedule and milestones, etc.) as relevant

Task 3.1: Use Case and Station Size – Input Definition

This task will proceed in two phases. The first phase will be focused on understanding the requirements for a hydrogen fueling network to support transit fleets, with a subsequent phase focused on identifying additional requirements necessary for a network to also serve freight traffic. This phased design will ensure that final fueling network recommendations are well suited for transit fueling and opportunistically aligned with potential freight fueling needs. As discussed earlier in this proposal, the Rebel Team's approach will focus specifically on medium-heavy duty transit and freight fleets. As time and budget allows, the Team will look for efficient ways to account for some other likely medium-heavy duty uses in the region, such as municipal or other public fleets. This analysis will not, however, account for light-duty passenger car traffic.

The Rebel Team expects that many inputs will have some degree of uncertainty. As of now, for example, transit agencies cannot say precisely how their ridership and fleet size will grow over the long term, and freight fleets may not know exactly how many hydrogen trucks they will have on the road and when. In addition, as with all stakeholder exercises, we expect that there will be variation between different stakeholders' views. For example, while one stakeholder may be willing to drive one mile off their intended route to fuel, another may be willing to drive five miles or more. Due to both this uncertainty and real diversity between stakeholders, the Rebel Team is proposing a scenario-based approach to analysis, which will result in multiple possible optimal results. To assess these results, the Rebel Team proposes to explicitly define, in collaboration with HCAOG and stakeholders, measurable metrics that will be used to compare networks. In past similar analyses, these metrics have included, for example, the share of vehicles that can complete their current routes without running out of fuel. Using this approach, the analysis can systematically down-select among possible network designs to more optimal network designs based on different assumptions.

Anticipated subtasks include:

Phase 1: Transit Stakeholder Group

These subtasks will define the characteristics of optimal hydrogen fueling station networks to serve transit vehicles.

- Reviewing results from Schatz Energy Research Energy Research Center Report on possible locations of hydrogen fueling stations for Humboldt County
- Developing data requests to determine transit stakeholder minimum requirements for hydrogen fueling stations (e.g., fuel storage, bus dwell times, resource sharing opportunities, fueling pressure, geographic span of stations, feasible re-routing distances, etc.)
- Developing data requests to inform transit vehicle traffic scenarios (e.g., numbers of vehicles, route information, transition plans, etc.)

- Collecting data on transit vehicle traffic and minimum station requirements
- Validating data collected and conducting follow-up for clarification, as necessary
- Conducting data cleaning and integrating data across sources, as necessary
- Developing key assumptions and scenarios (e.g., number of vehicles transitioning to hydrogen on what timeline, vehicle sizes or types transitioning, vehicle range and efficiency under different conditions, etc.)
- Developing metrics used to compare optimal fueling networks and validation with HCAOG and stakeholders, as necessary

Phase 2: Freight Stakeholder Group

These subtasks will define the characteristics of optimal hydrogen fueling station networks to serve freight vehicles.

- Developing data requests to determine transit stakeholder minimum requirements for hydrogen fueling stations (e.g., fuel storage, resource sharing opportunities, geographic span of stations, feasible re-routing distances, etc.)
- Developing data requests to inform freight vehicle traffic scenarios (e.g., numbers of vehicles, route information, plans to transition to hydrogen, etc.)
- Collecting data on freight vehicle traffic and minimum station requirements
- Validating data collected and conducting follow-up for clarification, as necessary
- Conducting data cleaning and integrating data across sources, as necessary
- Developing key assumptions and scenarios (e.g., number of vehicles transitioning to hydrogen on what timeline, vehicle sizes or types transitioning, vehicle range and efficiency under different conditions, etc.)
- Developing metrics used to compare optimal fueling networks and validation with HCAOG and stakeholders, as necessary

Task 3.2: Number and Placement of Stations

Similar to Task 3.1, this task will proceed in two phases, first identifying possible hydrogen fueling networks to support transit fleets and subsequently identifying which of these networks would best support freight traffic. The Rebel Team will also consider adjustments or enhancements to candidate transit networks that would allow the candidate fueling station networks to better meet the needs of freight traffic. As discussed above, the Rebel Team's approach will not be fixed or deterministic, identifying a single network (i.e., precise number and location of fueling stations) as the single option to serve the region's needs. Instead, we are suggesting an iterative approach that will prioritize relatively rapid development of draft results. These results can then be examined, discussed, and refined to gradually move closer to a recommendation, involving at least three final candidate networks that best meet HCAOG and the region's objectives. These iterative stakeholder discussions will examine, for example, what different groups view as "adequate" coverage or connectivity, what factors may influence the cost or practicality of building in certain locations, the pros and cons of selecting certain types of locations over others, and much more. The final set of recommended networks will afford HCAOG flexibility moving forward even if priorities or pressures shift.

Anticipated subtasks include:

Phase 1: Transit Network Development

These subtasks will identify sets of viable hydrogen fueling station networks to serve transit vehicles.

- Identifying possible solution sets of fueling networks using computer optimization techniques (and inputs from Task 3.1)
- Assessing candidate fueling networks against established metrics from Task 3.1
- Developing a proposed set of stakeholders with which to discuss and vet draft results
- Presenting initial sets of fueling stations to stakeholder groups to elicit their feedback and understand what additional considerations may be worthwhile (e.g., real estate costs, distance from key locations)
- Refining and reporting results

Phase 2: Combined Freight & Transit Network Development

These subtasks will identify which candidate networks for transit vehicles would also best serve freight, and augment candidate networks with additional stations, as needed, to support freight.

- Performing qualitative and quantitative evaluation of networks identified for transit in terms of their suitability for freight traffic based on established metrics in Task 3.1
- Considering potential augmentation of candidate networks with additional stations to better serve freight traffic in alignment with assumptions made for CTC's SB671 Assessment.
- Considering other fleet/vehicle types (e.g., municipal vehicles) and the suitability of proposed networks for these fleets (if time and budget permit and it is deemed useful)
- Developing a proposed set of stakeholders with which to discuss and vet draft results
- Presenting initial sets of fueling stations to stakeholder groups to elicit their feedback and understand what additional considerations may be beneficial (e.g., real estate costs, distance from key locations)
- Producing a final set of recommended fueling station networks

Task 3.3: Micrositing Analysis

The Rebel Team is proposing an approach to micrositing that addresses all of HCAOG's requirements but differs somewhat from the approach outlined in the RFP, based on the Team's experience that selecting specific geographic sites is, in most cases, best performed close to the time of development. Real estate ownership, neighboring development, applicable regulations, and commercial activity are all highly dynamic. If a specific site were not to be developed for eight years, for example, a site identified through the micrositing analysis might change hands, change from industrial to commercial zoning, or no longer be adjacent to a major commercial route; these changes may render a point-in-time micrositing analysis much less useful to HCAOG. Furthermore, we believe that micrositing should be conducted in close consultation with the parties who will be involved in that station's development (including, but not limited to, zoning and building officials, architectural and engineering professionals, vendors and private market participants, funders, community members, and more). While this level of engagement for multiple candidate sites within each general area identified for a network in the NSSR is likely not practicable within the time and budget of this scope, we strongly support the idea of focusing on tangible, specific projects to advance this project from concept to action.

We believe our recommended approach will serve HCAOG's goals of an actionable, planning-focused analysis while avoiding spending resources on analysis that would likely need to be repeated and updated before potential development. Specifically, our approach will first focus on defining the audience(s) and use(s) for this analysis, whether it is focused on regional planning, the potential provision of technical

assistance or grant funding, specific property acquisition efforts, or otherwise. We will also clearly differentiate between publicly and privately developed hydrogen refueling stations, as the process for private station development follows a very different process than for public stations, based on our past conversations with station developers and market participants. Within this framework, the Rebel Team will focus on developing a replicable micrositing methodology that can be applied to any area in the future. This methodology will account for key site characteristics, identify necessary data sources and steps to verify if a given site is appropriate, and suggest a common template for conducting this analysis that can be customized for a particular area. The Team will then work with HCAOG to select one general site area to demonstrate this approach and methodology as a case study, refining the process as necessary. While this approach will not identify dozens of specific sites or land parcels as candidates for development, it will offer HCAOG and its stakeholders an evergreen tool that can be utilized many times over and during the long-term process of building out a regional fueling network.

Anticipated subtasks include:

- Developing a draft micrositing methodology, focusing on the necessary characteristics and considerations as well as the process for identifying specific sites that could be followed throughout the region
- Identifying one general station location, in consultation with HCAOG and stakeholders, to demonstrate micrositing methodology as a case study
- Conducting example micrositing case study for selected site, including collecting or accessing necessary data and analyzing potential sites against the set criteria
- Presenting draft findings and validating the draft methodology with HCAOG and stakeholders
- Refining analysis as needed and finalizing replicable micrositing methodology and example case study results

Task 4.1: Administrative Draft of the Technical Memorandum

Based on the work conducted in Tasks 2 and 3, the Rebel Team will prepare an administrative draft of the analysis methodology and results. This draft will include a detailed methodology, summarized outputs, including visual maps, and supporting materials (e.g., records of stakeholder input). The draft will also include a "roadmap" that contextualizes the analytical results in terms of needed next steps in the short, medium, and long terms, supportive policy and coordination that is needed in order to realize the network, and accessible explanatory materials that can be used to discuss the results and concept with outside entities. The administrative draft will be completed in a format/template to be agreed with HCAOG, and all drafts will be delivered electronically.

Anticipated subtasks include:

- Developing Administrative Draft
- Refining Administrative Draft based on HCAOG feedback

Task 4.2: Draft Technical Memorandum

The Rebel Team will refine the Administrative Draft, as needed, to create a public Draft Technical Memorandum. This public draft will be reviewed by HCAOG and Caltrans staff, at a minimum, and refined as necessary, before presenting to the NSSR for comment. All stakeholder comments will be considered and addressed in this draft, as appropriate.

Anticipated subtasks include:

- Refining Administrative Draft into Draft Technical Memorandum
- Developing public-facing summary presentation of results
- Presenting Administrative Draft to NSSR
- Refining draft based on stakeholder input

Task 4.3: Final Technical Memorandum

The Rebel Team will finalize the Draft Technical Memorandum into a Final Technical Memorandum in a professional, engaging format acceptable to HCAOG.

Anticipated subtasks include:

- Developing Final Technical Memorandum

Task 5: Regional Presentations

The Rebel Team will facilitate up to six virtual presentations of analytical findings in forums decided in collaboration with HCAOG. The Rebel Team will gladly include an in-person presentation at the Far North Transit Symposium, an event that Team members have previously attended and presented at. Based on stakeholder engagement to this point, the Rebel Team will also recommend venues at which to reach private sector/freight stakeholders interested in the results and implementation of this project.

Anticipated subtasks include:

- Developing regional presentation plan (venues and timing) in collaboration with HCAOG
- Developing presentation materials
- Delivering regional presentations

Challenges

The Rebel Team has considered a variety of potential challenges that this project may encounter, as well as our responses and potential mitigants that we can offer. While consideration of these challenges is imbued throughout our approach earlier in this section, several potential challenges are also worth explicitly addressing. Although not necessarily comprehensive, key anticipated challenges include:

- **Limited data availability and quality:** High-quality analysis requires sufficient and reliable data, which can be challenging particularly for highly local, disaggregated sources of information like that coming from individual transit agencies and freight fleets. In the Rebel Team's experience, necessary data about vehicle travel patterns – particularly origin and destination pairs and fleet information – can suffer from problems of poor spatial resolution, outdated data, and a lack of data availability for private fleets. In order to mitigate these challenges, the Rebel Team will maintain openness to using a variety of different data sources to compensate for shortcomings in available data. Our team has already considered multiple options for different data sources that could be leveraged, if needed, rather than relying on a singular source. We will also seek to craft methodologies that can give helpful insights, even if the level of resolution based on available data is lower than might have been hoped. In recognition of the difficulty that limited data availability and quality can cause, the Rebel Team will always appropriately contextualize analytical results based on their level of certainty.
- **Potentially limited engagement of freight stakeholders:** Based on past experience, the Rebel Team believes that freight stakeholders are likely to be more challenging to successfully engage than transit and other public organizations. These entities tend to be less willing to share information and collaborate than public sector entities, whether due to competing demands on their time, concerns about revealing competitive information, or simply being difficult to identify and engage with. The Rebel Team believes that successful freight stakeholder engagement will require leveraging our existing relationships with firms, developers, regional actors, and convening bodies (e.g., ARCHES, the California Hydrogen Business Council, etc.). Furthermore, through extensive work in market engagement and public-private partnerships, we have learned that successful private sector engagement often depends on making requests as low-lift and straightforward as possible, clearly describing the benefits of participation, and being flexible about the channels through which stakeholders can participate, based on their level of comfort.
- **Managing uncertainty:** The Rebel Team clearly understands that the transition to zero-emission vehicles, including hydrogen-powered vehicles, has elements of uncertainty in timing, scale, and characteristics of the transition. Whether a major freight fleet chooses to transition in 2030 or 2035, the range of the next generation of vehicles, and the changes in future population in the NSSR are all uncertain today, among many other factors. This uncertainty means that the results of this analysis must be able to account for different possible transition paths, and also that the analysis must balance actionable detail with a certain amount of flexibility. The Team recognizes that we must create an analytical product that is not perceived as a specific "prediction" of the future, but rather a flexible tool to inform future action as the transition unfolds. This fact informs our iterative, scenario-based approach to analysis as reporting, as well as our commitment to avoid false precision and false certainty in reporting and discussions with stakeholders.
- **Potential "scope creep":** The prospect of future hydrogen fueling networks across a vast geographic region like the NSSR is both a complex and multifaceted problem. The Rebel Team expects that all stakeholders – as well as our team as consultants – will encounter many fascinating questions and different ways to examine this topic. The Rebel Team recognizes that it must strike a balance between

pursuing new lines of inquiry and being responsive to stakeholder questions, while also remaining faithful to the original scope – as well as ensuring our ability to perform on time and within budget. In order to strike this balance, the Rebel Team will strive to be clear about our team's objectives, scope, and outputs in all stakeholder discussions, and continually refer back to the original project scope and schedule in internal and external discussions. The Team can also maintain a running "parking lot" for related questions and ideas that are not within scope but may be relevant for future research or HCAOG's consideration; this inventory could be periodically shared and discussed with HCAOG for its use outside this specific project scope.

- **Need to explicitly consider difficult tradeoffs:** The Rebel Team has presented what it believes is a clear understanding of HCAOG's objectives in this proposal. However, the Team also understands that the requested analysis necessarily requires a number of detailed determinations about priorities, needs, and values. This is true of almost all policy and planning exercises but it requires careful treatment in the context of the analysis. For example, in determining what an optimal network will look like, tough tradeoffs – for example, between the potential cost versus level of resilience of a fueling network – may arise. The Rebel Team will create space and time to consider these topics, ensuring these assumptions are intentional inputs into the analysis. When disagreement about how to consider these tradeoffs arises, the Team will work to facilitate productive, respectful discussion among stakeholders.

Process for Quality Assurance and Timely Delivery

The Rebel Team's approach to project management and quality assurance is based on the principles of transparency, open communication, and proactive engagement with our clients' stakeholders relevant to our clients' work. This is the approach we have taken throughout our past work with the transit agencies, regional planning bodies, and state and federal clients ranging from Caltrans to USDOT and USDOE. Our approach is based on years of experience assisting our clients as consultants, subject matter experts, and advisors. The Rebel Team's internal procedures, as well as the Team's effective communication to understand clients' needs and constraints, ensure quality and timely delivery of services and assignments with clients.

The Team's proposed point of contact, Zachary Karson, will be responsible for leading and managing the team staffed to carry out the task order, ensuring all HCAOG's objectives are achieved, and meeting schedule and budget requirements. The project manager will serve as the key point of contact for the contract, reporting on a regular basis to the HCAOG project manager. The project manager will monitor the approved schedule and budget on a periodic basis and inform the HCAOG project manager in a timely manner if they anticipate schedule and/or budget issues and offer solutions to address these as necessary. Having a single key point of contact is important in our Team's approach to delivery, minimizing the likelihood of miscommunications, inefficiency in coordination, and lack of visibility into work across multiple workstreams. Zachary is a seasoned project manager with extensive experience managing the cost, quality, staffing, and schedule of complex projects. He has effectively managed projects of various sizes and durations, including engagements specifically collaborating with GTI Energy as a subcontractor.

The Rebel Team understands the importance of this project to HCAOG and is fully committed to providing all agreed services to the highest standard. Upon HCAOG's agreement with the project schedule and deliverables at the kick-off meeting, the Team will commence work immediately following the agreed project schedule. At an individual level, Team members commit to prioritizing these assignments above other work when necessary to meet agreed timelines and being available to meet all commitments agreed

to with the HCAOG. As noted above, the Rebel Team is accustomed to managing its work to be able to meet the challenges of complex project and stakeholder dynamics, and the Team is aware of the time commitment required based on our experience with past projects. Importantly, the Team has carefully considered the time and resources required and, throughout this proposal, has sought to emphasize a realistic, efficient project plan informed by the Team's experience completing similar projects and the hours, data, and coordination required to achieve the high standard of results HCAOG expects and deserves.

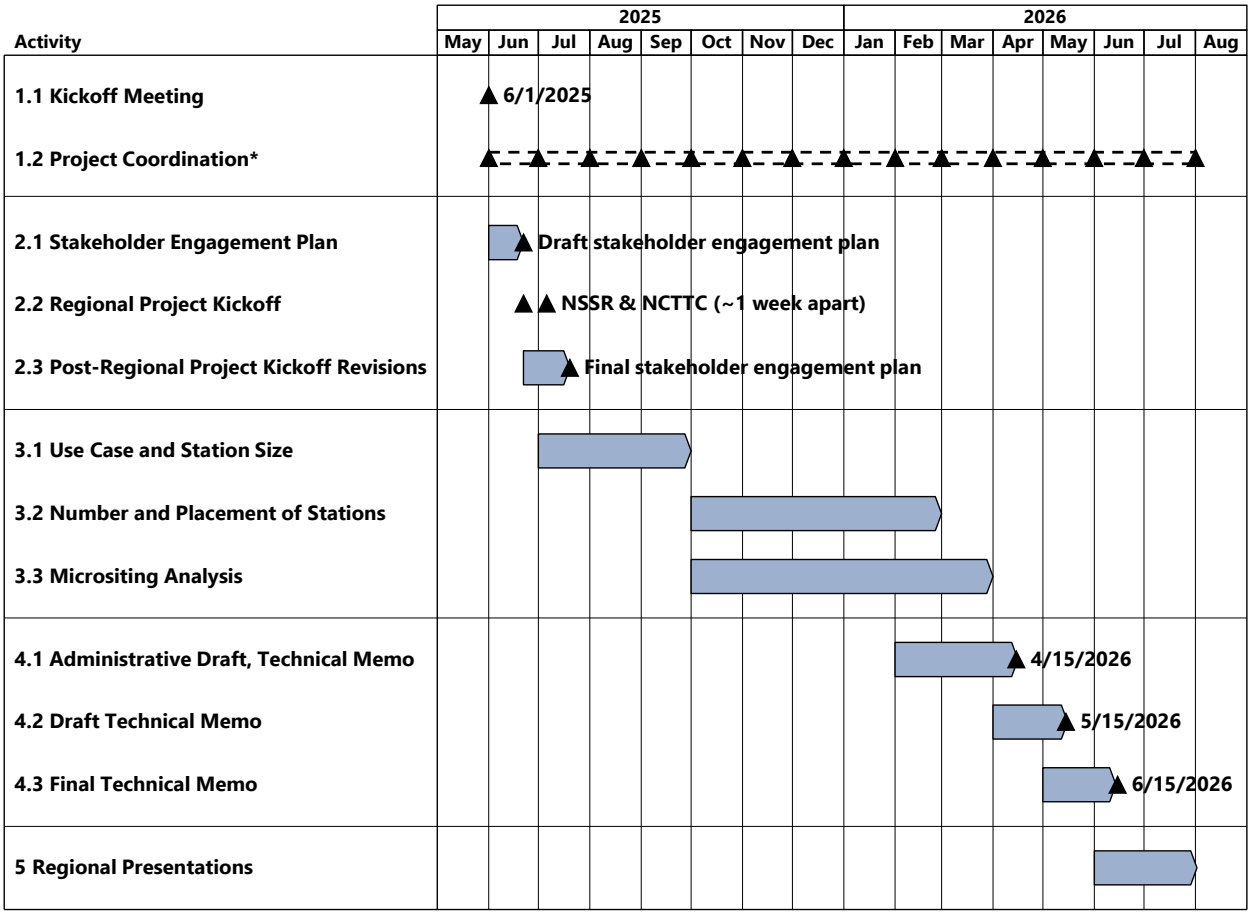
Rebel applies the highest standards of professional conduct in all of its operations and activities and expects such performance from all partner firms and sub-contractors. Our team believes in true partnerships with its clients and other partners, where decisions are made transparently, analyses are openly shared, carefully reviewed and fairly discussed. We feel that this is the most effective way to obtain consensus and long-term client participation in the work provided by consultants. Throughout the assignment, we will seek to clearly understand HCAOG's and other partners' goals, constraints, and context to facilitate Rebel's ability to effectively prioritize, manage any conflicts or tradeoffs, and deliver work that optimally meets HCAOG's needs. Furthermore, the Team will follow a comprehensive quality assurance process for all analyses and deliverables, ensuring presentations and graphics are clear, attractive, and user-friendly, analyses are valid and clearly documented, and communication is always clear and professional. We will always ensure sufficient time for review and revisions – both internally to the Rebel Team and with HCAOG and any external reviewers – by building in these iterative checkpoints into project plans and schedules and providing draft content as quickly as is feasible.

5. Work Plan & Schedule

The Rebel Team's view of the overall project schedule, the component tasks, and key deliverables is included in the schedule below. Please note that Tasks 3.1-3.3 have a secondary table below to show greater detail for these tasks. While not all deliverables discussed in the RFP are explicitly shown in this chart (e.g., the submission of monthly status updates as part of Task 3) for the sake of visual clarity, the Rebel Team commits to providing all deliverables listed in the RFP.

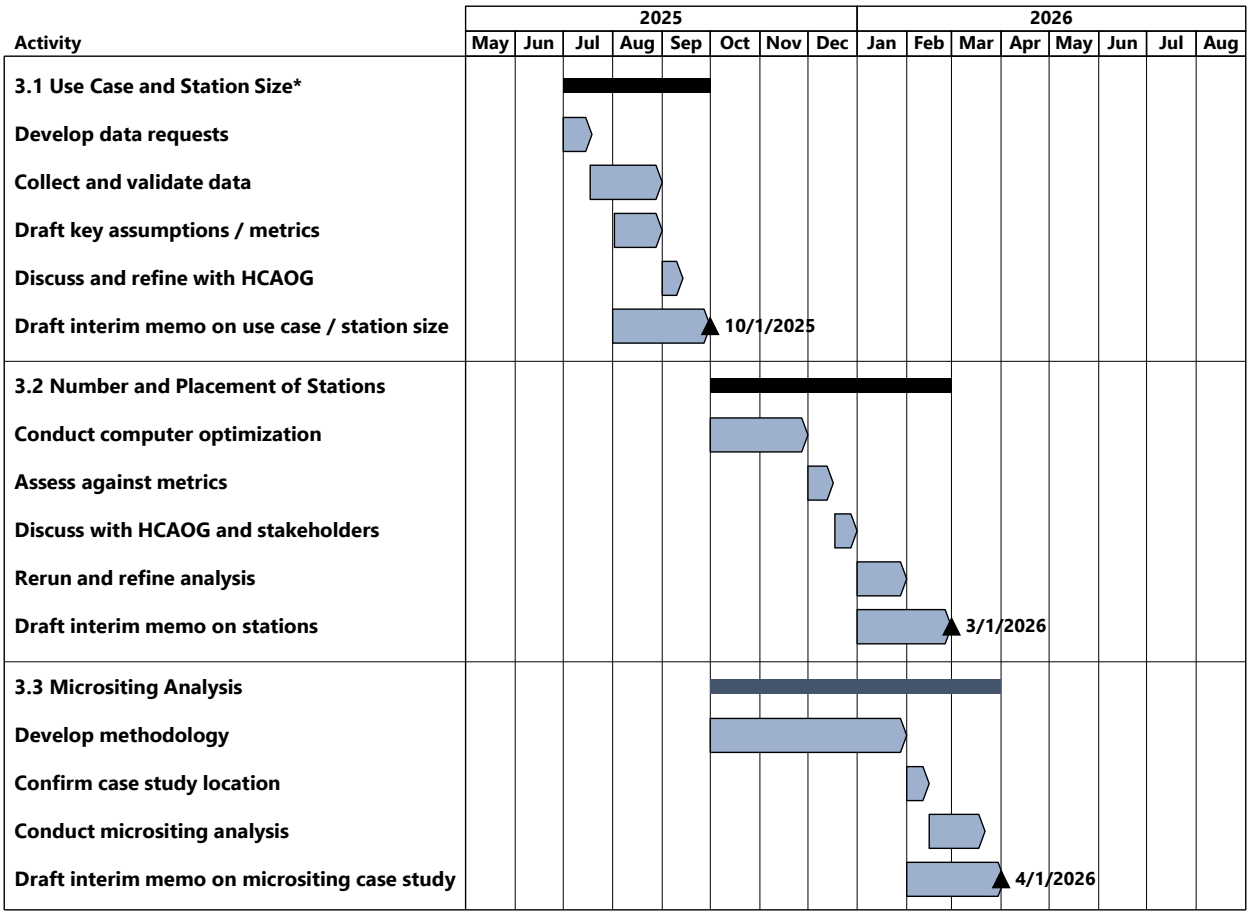
The Rebel Team has crafted this project schedule around HCAOG's expectation and goal of a 14-month total project duration, which we view as broadly reasonable. Risks to this project schedule are largely concentrated around delays in data submissions, comments, or reviews from stakeholders, which we will seek to minimize. All Team members included in this project plan have verified that they will be available during this period with sufficient capacity to take on the indicated workload. Estimated staff and hours to accomplish each activity and deliverable are shown in the table below the project schedule and additional notes, and also reflected in the Cost Proposal.

Overall schedule



**Project coordination meetings will be, at minimum, monthly and may be up to bi-weekly depending on specific needs at various phases of the project*

Detailed schedule for Task 3



**Analysis for transit and freight networks will be performed concurrently during this 4-month period*

Additional notes on workplan and schedule

- **Task 1.1:** The Rebel Team expects the project to commence with Task 1.1 shortly after proposer selection, negotiation and contracting, and arrangement of an agreeable kickoff meeting date. Given the extension to the proposal submission timeline and the time required to schedule a kickoff meeting, we have listed the start date for Task 1.1 as June 1, 2025 (though we recognize the RFP originally listed a date of April 21, 2025). If possible, we will launch the project earlier than June 1, and the project schedule will shift ahead accordingly. The Rebel Team will provide a kickoff meeting deliverable package include meeting notes with action items and a detailed project timeline and budget, as well as arranging and facilitating the meeting.
- **Task 1.2:** As noted in the note below the chart, project coordination meetings will be, at a minimum, monthly, and may be as frequently as bi-weekly depending on specific needs at various phases of the project. Any ad hoc meetings outside this cadence are not defined at this time. The Rebel Team will provide a deliverable package for each coordination meeting including meeting notices, agendas, and meeting minutes.

- **Task 2.2:** Precise scheduling for NSSR and NCTTC meetings will depend on these groups' schedules and availability. The Rebel Team will provide a deliverable package for this task including stakeholder outreach documentation (to be delivered at the conclusion of the project in final form, and in draft form anytime at HCAOG's request), slide decks for meetings, and any slide decks or meeting notes from stakeholder update meetings.
- **Task 3.1**: As indicated in the Project approach, the Rebel Team intends to conduct this task in two phases, one focused on transit and the other focused on freight. For the purposes of this project schedule, these phases are merged into one task and will happen largely in parallel. Please note that depending on HCAOG and stakeholder preferences and project needs, this schedule may include additional rounds of iteration on draft outputs with HCAOG and/or stakeholders, potentially including public stakeholder meetings which will be scheduled at this time. Along with the required deliverable of monthly status updates, the Rebel Team will deliver an interim memo summarizing the outputs of this task at its conclusion, as shown in the schedule.
- **Task 3.2**: As indicated in the Project approach, the Rebel Team intends to conduct this task in two phases, one focused on transit and the other focused on freight. For the purposes of this project schedule, these phases are merged into one task. Please note that depending on HCAOG and stakeholder preferences and project needs, this schedule may include additional rounds of iteration on draft outputs with HCAOG and/or stakeholders, potentially including public stakeholder meetings which will be scheduled at this time. Along with the required deliverable of monthly status updates, the Rebel Team will deliver an interim memo summarizing the outputs of this task at its conclusion, as shown in the schedule.
- **Task 3.3**: The Rebel Team expects to begin the micrositing analysis – specifically, crafting the micrositing methodology – in parallel with Task 3.2. The selection of a case study area and demonstration of the methodology, as discussed in the project approach, will occur after Task 3.2 concludes. Along with the required deliverable of monthly status updates, the Rebel Team will deliver an interim memo summarizing the outputs of this task at its conclusion, as shown in the schedule.
- **Tasks 4.1-4.3**: The dates shown in this schedule are pending discussion with HCAOG and other reviewers and stakeholders about their required timelines for review and comment; timelines can be adjusted as necessary.
- **Task 5**: The exact number of presentations and dates of these presentations will be determined based on stakeholder availability, interest, and discussion with HCAOG. In addition to arranging and facilitating these meetings, the Rebel Team will provide a deliverable package including meeting agendas and presentation materials.

Expected hours by task and staff member are included in the table below.

		TASK											
Name	Title	1.1	1.2	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2	4.3	5
Zachary Karson	Lead HCAOG POC	4	12	4	4		8	8	12	4	4	4	8
Leah Foecke	Co-Lead, SE and Micrositing	4	16	4	4	4	12	8	12	8	4	4	8
Marina Smalling	Support, SE and Micrositing		16	4		4	20	8	22	8	8	8	
Bart Sowa	Technical Oversight & SME	4	3							8			
Nico Bouwkamp	Technical Lead & SME	4	58	28			8	28	6	16			
Bailey Fosdick	Lead, Data and Analytics						28	61		21			
Ansh Nasta	Support, Data and Analytics						44	147		25			
		16	**105**	**40**	**8**	**8**	**120**	**260**	**52**	**90**	**16**	**16**	**16**

Proposal

6. Cost Proposal

The Rebel Team provides the following cost proposal for performing all the services outlined in its response to HCAOG's RFP.

			TASK														
Name	Title	Sub?	1.1	1.2	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2	4.3	5	Hourly Rate ($)	Total Hours	Cost ($)
Zachary Karson	Lead HCAOG POC	N	4	12	4	4		8	8	12	4	4	4	8	$350	72	$25,200
Leah Foecke	Co-Lead, SE and Micrositing	N	4	16	4	4	4	12	8	12	8	4	4	8	$310	88	$27,280
Marina Smalling	Support, SE and Micrositing	N		16	4		4	20	8	22	8	8	8		$270	98	$26,460
Bart Sowa	Technical Oversight & SME	Y	4	3							8				$449	15	$6,730
Nico Bouwkamp	Technical Lead & SME	Y	4	58	28			8	28	6	16				$308	148	$45,612
Bailey Fosdick	Lead, Data and Analytics	Y						28	61		21				$360	110	$39,606
Ansh Nasta	Support, Data and Analytics	Y						44	147		25				$236	216	$51,003
		TOTALS:	16	105	40	8	8	120	260	52	90	16	16	16	TOTALS:	747	$221,891
		TOTALS:	$5,667	$32,701	$12,349	$2,640	$2,320	$34,857	$72,743	$15,709	$28,025	$4,800	$4,800	$5,280			

Contractor Total Cost	$78,940
Subcontractor Total Cost	$142,951
Anticipated Travel Cost	$0
Grand Total	**$221,891**

Notes on Cost Proposal

- Costs for additional services beyond the scope of the RFP (i.e., attendance at additional meetings) may be negotiated with the contractor based on the provided hourly rates.
- Hourly rates for GTI Energy staff are given as a weighted average/blended rate between the current year's and next year's rates; hourly rates will escalate in May 2026. This fact is already accounted for in the Rebel Team's provided budget. If any further information is required on this point, please feel free to reach out to the Rebel Team for clarification.
- No direct costs are provided for Team Member travel for in-person meetings; the Rebel Team will cover expenses for one or more representatives to attend the 2026 North State Transit Symposium and will seek to identify additional opportunities for in-person engagement when travel costs would be minimal (e.g., when Team members will be local and do not need to travel to a meeting). Otherwise, meetings will be assumed to be virtual. No other costs will be billed directly to the client.

Proposal

7. Attachments

7.1 Subconsultant List Form

SUBCONSULTANT LIST – RFP EXHIBIT C

The proposal shall include a complete list of all proposed subconsultants. All subconsultants listed must be provided a meaningful element of work within the defined scope of work. Changes to this Subconsultant List will not be allowed without prior written approval from RTPA.

Proposed Subconsultants

Subconsultant Firm Name and Address	Scope of Work	Dollar Amount of Work
Name GTI Energy Address 700 South Mount Prospect Road, Des Plaines, IL 60018	Lead tasks 3.1, 3.2, 3.3 and support all other tasks	$ 142,951
Name Address		$
Name Address		$
Name Address		$
Name Address		$
Name Address		$

RebelGroup Americas, Inc.

Name of Lead Firm

Zachary Karson

Printed Name and Title of Signatory

Signature

4/11/2025

Date

7.2 Resumes

Zachary Karson

Project Position
Co-Lead: Stakeholder Engagement & Micrositing

Key Skills Areas
Financial Analysis
Financial Modeling
Public-Private Partnerships
Project Finance
Public Policy

Education
New York University
MBA/MPA, 2019
Kenyon College
BA, 2013

Professional History
Rebel, 2019 - present
Manager
Solar Landscape, 2018
Financial Analyst
NYSERDA, 2017 - 2018
Clean Heating and Cooling Consultant
Fenix International, 2017
Business Development Fellow
Jeffries for Congress, 2013 – 2016
Treasurer and Senior Aide

Language
English, native
Spanish, fluent

Years of Experience
9 Years

Executive summary
Zachary Karson is a senior manager on the Rebel Team with experience advising both public and private clients on infrastructure projects and transactions in various sectors, including mass transit and mobility, renewable energy, broadband, water, and wastewater. Zachary focuses on financial analysis, risk analysis, procurement support, and assisting clients with key commercial and financial decisions. Zachary is also a registered Series 50 municipal financial advisor. Before working at Rebel, Zachary worked for various public and private organizations in the renewable energy sector.

Relevant Experience

Bus Electrification P3 Unsolicited Proposal: A private bidding consortium comprised of an electric bus company and infrastructure investor prepared an unsolicited proposal for L.A. Metro to advance its fleet electrification goals by providing 650+ electric buses, charging infrastructure and a renewable energy solution through a P3 structure. Served as financial advisor to the consortium, responsible for developing bid financial model, advising on financial and economic elements of the proposal and other bid documents.

Fuel Cell Electric Bus Business Case Analysis, California Governor's Office of Business and Economic Development (GO-Biz): Rebel supported GO-Biz in an effort to further advance California's zero-emission transition by examining the business case of potential state-led initiatives to support small and rural transit agencies in their goal of deploying fuel cell electric buses and fueling infrastructure. Conducted a detailed financial business case study analyzing operating budget impacts of fleet transition including scenario analysis to inform marketable, sustainable initiatives for state action, and facilitated a working group of senior state agency leaders to steer the effort.

Caltrans Zero-Emission Bus Transition Market Sounding: Rebel conducted a market sounding of key stakeholders and market participants to identify approaches to accelerate the zero-emission bus transition in California. Rebel developed preliminary demonstration project concepts, conducted market sounding interviews, synthesized results, and advised Caltrans and its partners on feasible and impactful demonstrations to be developed further, including regional development of shared zero-emission fueling facilities, "as-a-service" project structures, and potential P3 models.

Zero-Emission Bus Market Assessment (Mineta Transportation Institute): Rebel published a market analysis and report focused on the U.S. zero-emission bus market. The report presents a practitioner's view focused on the transit agency perspective and analyzes progress towards the current zero-emission transition and challenges in accelerating that progress, market dynamics, relevant context in policy, regulation, and procurement, and introduces potential solutions to these challenges.

Caltrans Roadway Pricing Strategic Advisory: Rebel served as a strategic advisor to Caltrans Department of Planning and Modal Programs, working to support Caltrans's statewide development of managed lanes in a number of capacities, including support on the development and prioritization for state-led managed lane policy and initiatives and stakeholder engagement with local tolling authorities to ensure alignment and minimize friction on key issues and programs.

Maryland DOT Public-Private Partnership Opportunities: Advised the Maryland Department of Transportation (MDOT) on an asset monetization initiative, in which Rebel analyzed the potential of MDOT's toll roads and various other assets for public-private partnerships or other asset monetization models. Responsible for performing financial analysis and qualitative research to support recommendations to MDOT.

EV Charging Infrastructure Alternative Project Delivery Needs Assessment and P3 Structuring Peer Review: On behalf of FHWA, Rebel researched State government contracting approaches for deploying their National Electric Vehicle Infrastructure (NEVI) Formula funds, focusing on the extent to which State DOTs are pursuing alternative contracting mechanisms such as P3s. Rebel conducted a peer review of the procurement strategy and contracting approach for a State DOT that is pursuing a first-of-its-kind public-private partnership (P3) to deploy DCFC fast charging stations with funding from the NEVI program.

California Statewide Middle-Mile Network Project: As lead financial and transaction advisor, advised the California Department of Technology on the structuring and procurement of a long-term partnership with a private developer/operator to operate, maintain, and commercialize its newly-built 10,000-mile middle-mile fiber network. Analyzed revenue potential, developed business case, evaluated business and delivery models, led market sounding efforts to solicit feedback, confirm marketability, and identify qualified potential bidders, supported drafting of procurement documentation and concession agreement, and led advisory team throughout project structuring and procurement process.

Cal-ITP Contactless Payments and GTFS-Realtime Procurements: On behalf of the California Integrated Travel Project (Cal-ITP), served as subject matter expert for the Department of General Services (DGS) Master Service Agreement (MSA) procurements for contactless payment acceptance devices and transit processing software, as well as GTFS-Realtime hardware and software services. Responsible for developing procurement strategy, drafting scope of work and submission requirements, participating in vendor evaluations, and supporting transit agencies with using resulting contracts.

USDOT CTA Red and Purple Modernization TIFIA Loan, IL: Financial advisor to USDOT for a proposed $427M loan to the Chicago Transportation Authority (IL) for ongoing Red and Purple Modernization Project. Conducting credit analysis, due diligence, and evaluation of proposed financial structures and underlying financial strength and creditworthiness, including both value capture-based tax increment financing and farebox revenues.

Funding and Financing Strategy for Flood Mitigation Program: Rebel's engagement as financial advisor to Howard County, with respect to its stormwater protection plans, began in 2019 with a funding & financing analysis. In 2021, Rebel assisted the County in submitting its $75M WIFIA loan application. The team developed the project financial proforma, drafted the financial sections of the WIFIA application. performed due diligence on application materials and project managed the application process.

Leah Foecke

Project Position
Co-Lead: Stakeholder Engagement & Micrositing

Key Skills Areas
Public-Private Partnerships
Financial Analysis
Zero-Emission Transportation Redevelopment
Public Policy

Education
Harvard Kennedy School of Government
Master of Public Policy, 2021
University of Wisconsin-Madison
B.S. Economics, B.S. Biology 2015

Professional History
Rebel, 2021 - present
Manager
City of Boston, 2021, Citywide Resilience Fellow
Massachusetts Executive Office of Energy and Environmental Affairs, 2020, Graduate Fellow
Keybridge Public Policy Economics, 2015-19
Senior Analyst

Years of Experience
8 Years

Executive summary
Leah is a manager at Rebel with eight years of experience as an economic consultant and policy advisor. She brings experience advising clients at the national, state, and local level, with particular expertise in transit and transportation, the zero-emission transition, and public-private infrastructure delivery. Prior to Rebel, Leah provided economic analysis, strategic advisory services, and monitoring and evaluation support to public and private sector clients as an economic consultant, and held fellowships focused on climate and infrastructure with the City of Boston and the State of Massachusetts. She holds a master's degree in public policy from Harvard University's John F. Kennedy School of Public Policy, and a bachelor's degree in economics and biology from the University of Wisconsin-Madison.

Relevant Experience
Fuel Cell Electric Bus Business Case Analysis, California Governor's Office of Business and Economic Development (GO-Biz), CA: Rebel supported GO-Biz in an effort to further advance California's zero-emission transition by examining the business case of potential state-led initiatives to support small and rural transit agencies in their goal of deploying fuel cell electric buses and fueling infrastructure. Conducted a detailed financial business case study analyzing operating budget impacts of fleet transition including scenario analysis to inform marketable, sustainable initiatives for state action, and facilitated a working group of senior state agency leaders to steer the effort.
Zero-Emission Bus Transition Market Sounding, Caltrans: Rebel conducted a market sounding of key stakeholders and market participants to identify and refine potential alternatives for accelerating the zero-emission bus transition in California. Conducted market sounding interviews, synthesized results, and advised Caltrans on feasible and impactful demonstration concepts including regional shared zero-emission fueling facilities, charging-as-a-service and fueling-as-a-service, and potential P3 models.
Zero-Emission Bus Market Assessment (Mineta Transportation Institute): Rebel published a market analysis focused on the U.S. zero-emission bus market. The report presents a practitioner's view challenges in accelerating progress towards the transition, market dynamics, relevant context in policy, regulation, and procurement, and introduces potential solutions to these challenges.
Financial and Procurement Advisory for Transit-Oriented Development Projects, Maryland Department of Transportation (MDOT) Office of Real Estate Development: Providing advisory services to MDOT to advance successful TOD projects on public

land around transit stations. Projects include both market-rate and affordable housing, commercial development, and transit and infrastructure improvements. Advising on structure of key terms for contracting and negotiations, analyzing financial feasibility, and recommending processes and key improvements to previous Development Agreements and ancillary contractual documents.

Virginia Department of Transportation I-81 Project Delivery Options Evaluation: As part of the financial advisory team to the Virginia Department of Transportation Office of Public-Private Partnerships, Rebel was a leading advisor for the Department's market sounding, options analysis, and financial modeling of potential alternatives for accelerating the improvement of a key transportation corridor.

Advisory Services for the Rickenbacker Causeway Improvements, Miami-Dade County, FL: The Rebel Team acted as financial advisor to the County, developing a Value for Money assessment and advising the County in its P3 procurement of a climate-resilient multi-modal transportation and recreation project on an existing Causeway, a project initiated via an unsolicited proposal prior to Rebel's involvement.

USDOT West Lake and Double Track RRIF Loans, IN: Financial advisor to USDOT for two loans (>$230M total) to extend and improve two segments of commuter rail line in greater Chicago, including evaluating proposed commercial and financial structures, conducting due diligence on revenue sources and financial modeling, and documenting recommendations. Loans closed in June and December 2022.

USDOT CTA Red and Purple Modernization TIFIA Loan, IL: Financial advisor to USDOT for a proposed $427M loan to the Chicago Transportation Authority (IL) for ongoing Project. Conducting credit analysis, due diligence, and evaluation of proposed financial structures and underlying financial strength and creditworthiness, including both value capture-based tax increment financing and farebox revenues.

USDOT Port of Longview TIFIA Loan, WA: Financial advisor to USDOT for proposed $34M loan to the Port for the expansion of an intermodal rail link. Conducting credit and scenario analysis of the proposed net revenue pledge, due diligence, analysis of credit enhancements, and supporting Borrower negotiations.

Advisory Services for Southwest Neighborhood Redevelopment, Homestead, FL: Provided financial advisory, procurement, and project management support for the Community Redevelopment Agency in Homestead, Florida to redevelop an underutilized ~2 acres of publicly-owned land with the goal of spurring transit-oriented economic development in the community. Provided support in strategizing and securing resources for redevelopment, including for multiple FTA and EPA funding programs.

Applying Value Capture Finance to Transit Corridors, Miami Citizens Independent Transportation Trust, FL: Supporting data collection, methodology development, and financial modeling to estimate the financial capacity of real estate value capture in transit corridors for Miami-Dade County's SMART plan.

Financial and Real Estate Advisory Services for Government Center Public-Private Redevelopment, Miami-Dade County, FL: Acting as financial and strategic advisor to inform the County's procurement and land development strategy for the major public-private redevelopment of County-owned land in downtown Miami. Rebel's initial mandate included risk assessment, pro forma analysis, and structured comparison of development and delivery models in the context of the County's goals. Currently, the Rebel Team is advising on the real estate and financial aspects of the Project and solicitation, including funding and financing, delivery of Improvements for County Use, and the structure of key contractual documents, supporting the County in its negotiation with short-listed bidders, and facilitating proposal evaluation.

Marina Smalling

Project Position
Project Support

Key Skills Areas
Transit and Rail
Value Capture & Real Estate
Financial and Economic Analysis
Public Policy Analysis

Education
University of Chicago
MPP/MBA, 2025 (expected)
Duke University
B.S.E. in Civil Engineering, 2019

Professional History
Rebel, 2024 - present
Consultant
University of Chicago, 2023-2024
Research and Graduate Intern
City of Chicago, 2023
Graduate Intern
Boston Consulting Group, 2019 - 2022
Consultant

Language
English, Native Proficiency
Spanish, Intermediate

Years of Experience
4 Years + graduate school (2 years)

Executive Summary
Marina is a Consultant at Rebel and has over three years of experience in advising public sector clients at the local, state, and national levels. She brings experience in financial modeling, economic evaluation, and public policy analysis, drawing on a background in urban development, public finance, and strategic planning. Before joining Rebel, Marina worked at Boston Consulting Group as a strategy consultant focused on the public sector.

Relevant Experience

USDOT CTA Red and Purple Modernization TIFIA Loan, IL: Financial advisor to USDOT for a proposed $427M loan to the Chicago Transportation Authority (IL) for ongoing Project. Conducting credit analysis, due diligence, and evaluation of proposed financial structures and underlying financial strength and creditworthiness, including both value capture-based tax increment financing and farebox revenues.

Management and Performance Audit of Bi-State Development Agency of Missouri-Illinois Metropolitan District (MO): Conducted an audit of light rail, bus, and paratransit services and infrastructure, including analyzing agency financials and performance metrics.

Community redevelopment support for the City of Homestead (FL): Supporting community redevelopment and climate resilience efforts in South Florida, including developing community engagement plans and evaluating economic benefits of proposed infrastructure improvements.

Real estate market study and housing programs analysis for institutional investors (IL): Completed a real estate market analysis of Washington Park neighborhood on Chicago's South Side, including review of property taxes, zoning, and market demand. Evaluated options for real estate investment and housing program expansion.

Financial and Procurement Advisory for Transit-Oriented Development Projects, Maryland Department of Transportation (MDOT) Office of Real Estate Development: Providing advisory services to MDOT to advance successful TOD projects on public land around transit stations. Projects include both market-rate and affordable housing, commercial development, and transit and infrastructure improvements. Advising on structure of key terms for contracting and negotiations, analyzing financial feasibility, and recommending processes and key improvements to previous Development Agreements and ancillary contractual documents.

Bart Sowa

Project Position
Technical Oversight & Subject Matter Expert

Key Skills Areas
Zero-Emission Transportation Technologies
Vehicle Data Acquisition & Analytics
Contract & Grant Management
Energy Financial Modeling

Education
AGH University of Science and Technology – Illinois Institute of Technology Joint Program
Bsc, 2001

Professional History
GTI Energy, 2019 - present
Program Director, Mobility R&D
Mitsubishi Heavy Industries, 2013-2019, *Engineering Manager*
Navistar, 2004-2013, *Senior Application Engineering Manager*

Years of Experience
20+ Years

Executive summary
Mr. Sowa has over 20 years of engineering and product development experience in the transportation and energy industries, with core expertise in powertrain and engine performance. is responsible for program management and support of over $25,000,000 in large-scale deployment and demonstration projects showcasing advanced zero- and low-carbon technologies in the transportation industry.

Relevant Experience
Houston-to-Los Angeles Hydrogen Corridor Analysis: GTI Energy is collaborating with a team of partners across the energy sector to leverage a $1.25 million grant from the U.S. Department of Energy for the development of a flexible and scalable blueprint for an investment ready, hydrogen fueling and heavy-duty freight truck network from Houston to Los Angeles (H2LA) along I-10, including the Texas Triangle Megaregion. The H2LA project team consists of GTI Energy, Oak Ridge National Laboratory (ORNL), ExxonMobil, The University of Texas at Austin (UT), Walmart, and many other energy producers and retailers, Clean Cities Coalitions, Metropolitan Planning Organizations, truck manufacturers, and industry associations. The team is assessing how hydrogen corridors will balance the supply and demand of energy used for transportation. Modeling efforts will identify hydrogen supply and demand hotspots, outline co-dependencies and economics, evaluate current technologies, and forecast technology adoption scenarios, using a purpose-built tool.
Sierra Northern Railway Hydrogen Switching Locomotive: GTI Energy and Sierra Northern Railway (SNR) are leading a $6 million project for the California Energy Commission to develop a hydrogen-fueled, zero-emissions locomotive that will reduce transportation air pollutants and greenhouse gas emissions. It will be demonstrated on SNR's short-line operations, which serve the railyard and seaport in West Sacramento, a designated disadvantaged community. GTI Energy is leading and administering the CEC grant and coordinating the hydrogen safety planning, hydrogen fueling infrastructure solution, and hydrogen supply. GTI also coordinates interactions with regional (SMAQMD, WestSac Fire Department), state (Caltrans, CEC, CARB, SCAQMD), and federal (DOE, Federal Railroad Administration) stakeholders.
Fuel Cell Electric Bus Business Case Analysis, California Governor's Office of Business and Economic Development (GO-Biz), CA: As part of the Rebel Team, GTI supported GO-Biz in an effort to further advance California's zero-emission transition by examining the business case of potential state-led initiatives to support small and

rural transit agencies in their goal of deploying fuel cell electric buses and fueling infrastructure. GTI provided subject matter expertise and support in facilitating stakeholder conversations throughout this effort.

Hydrogen Technology Demonstrations: Participated in demonstrations of: Hydrogen fuel-cell Class 8 regional and drayage trucks, hydrogen fuel-cell terminal tractors, hydrogen fuel-cell switcher locomotive, CNG-hybrid long-haul locomotive, CNG-hybrid Class 8 drayage trucks and deployment of DCFC charging and CNG infrastructure along I-94 interstate corridor across 7 states, mobile liquid hydrogen fueler.

Nico Bouwkamp

Project Position
Technical Lead & Subject Matter Expert

Key Skills Areas
Zero-Emission Transportation Technologies
Hydrogen & LCES Mobility
Stakeholder Facilitation
Project Management

Education
Erasmus University Rotterdam
M.S. Business Management, 2005

Professional History
GTI Energy, 2021 - present
Business Development Manager H2 – Research Operations and LCES Mobility
Frontier Energy Inc., 2005-2021,
Technical Program Manager

Years of Experience
19 Years

Executive summary
Mr. Bouwkamp has over nineteen (19) years of experience in the transportation industry during which time he contributed his extensive knowledge of hydrogen and fuel cell related issues to GTI Energy and Frontier Energy's strategic leadership, project management, stakeholder facilitation, and public education efforts. Skilled at managing cross-functional project teams, and communicating complex, technical concepts to diverse audiences, Nico works effectively with energy, automotive, trucking, government, and fuel cell technology sector clients. He also performs technical and regulatory data analysis and helps develop resources to support HD automotive and fueling industry client initiatives.

Relevant Experience
California Fuel Cell Partnership, CA: Mr. Bouwkamp led and facilitated the project teams that created and agreed on the rollout strategies and visions for light-, medium-, and heavy-duty fuel cell vehicles, fuel cell buses, heavy-duty fuel cell trucks and hydrogen stations in California. Resulting documents are used by industry and government for the implementation of California's hydrogen fueling infrastructure. He facilitated the implementation of fuel cell vehicle (FCEV) and fuel cell bus (FCEB) fleet programs through interfacing and advising with stakeholders, vehicle and station operators, and regulatory agencies such as CARB, CEC, US EPA, US DOE, US DOT FTA, and relevant codes and standards community. He led, analyzed, and developed, as chair of SAE task force, TIR J2601/2 Heavy duty gaseous hydrogen vehicle fueling protocol, published by SAE International in September 2014. He contributed as an industry expert to the USDRIVE Hydrogen Storage and Delivery Tech Team in assessment and peer review of US DOE EERE HFTO funded hydrogen storage and delivery research projects.
H2@Scale Texas, TX: Mr. Bouwkamp led project management as Principal Investigator for $10.8M US DOE cost-share funded H2@Scale project's industry and utility industry team activities. In this role he facilitated project team industry partners collaboration to implement hydrogen generation, storage and use equipment at University of Texas, Austin. He supported and contributed expertise for execution of Port of Houston Framework study and workshops to develop initial 5-year strategy for future H2@Scale hydrogen business opportunities in the Gulf Coast region and elsewhere in Texas.
Sacramento Metro AQMD, CA: Mr. Bouwkamp led and managed a diverse group of stakeholders in the ZEV Readiness for Sacramento Region project, identifying priorities and recommending next steps

for H2 and DCFC infrastructure stakeholders in Sacramento region. He facilitated regional electric- and gas utilities (PG&E, SMUD, NCPA, Roseville Electric), 6 counties and air districts meetings to assess the shared responsibility for providing sufficient fueling infrastructure to achieve the regional ZEV goals. He supported Sacramento Area Council of Governments Transportation Committee to learn from bus manufacturers about fuel cell electric buses to aid regional transit agencies' understanding of all options to meet CARB's Innovative Clean Transit regulatory mandate.

Fuel Cell Electric Bus Business Case Analysis, California Governor's Office of Business and Economic Development (GO-Biz), CA: As part of the Rebel Team, GTI supported GO-Biz in an effort to further advance California's zero-emission transition by examining the business case of potential state-led initiatives to support small and rural transit agencies in their goal of deploying fuel cell electric buses and fueling infrastructure. GTI provided subject matter expertise and support in facilitating stakeholder conversations throughout this effort.

Publications

- Staff lead & co-author. Fuel Cell Electric Trucks. A Vision for Freight Movement in California - and Beyond. July 2021.
- Staff lead & co-author. Fuel Cell Electric Buses Enable 100% Zero Emission Bus Procurement by 2029. September 2019.
- Co-author. MD & HD Fuel Cell Electric Truck Action Plan for California. October 2016.
- Sponsor & co-author. SAE International Surface Vehicle Technical Information Report J2601/2. Fueling Protocol for Gaseous Hydrogen Powered Heavy Duty Vehicles. September 2014.
- Co-author. A California Road Map. The Commercialization of Hydrogen Fuel Cell Vehicles. 2014 Update: Hydrogen Progress, Priorities and Opportunities (HyPPO) Report. July 2014.
- Co-author. A Road Map for Fuel Cell Electric Buses in California. A zero-emission solution for public transit. March 2013.

Bailey Fosdick, PhD

Project Position
Lead: Data & Analytics

Key Skills Areas
Statistical Data Analysis
Network Analysis
Research
Bayesian Methods

Education
Statistics and Applied Mathematics Institute, *Postdoc, Statistics, 2014*
University of Washington *Ph.D., Statistics, 2013*
Colorado State University *B.S., Mathematics, Computer Science, 2008*

Professional History
GTI Energy, 2024 - present *Institute Data Scientist*
Colorado School of Public Health, 2022-2024, *Associate Professor, Department of Biostatistics & Informatics*
Colorado State University, 2014-2022, *Associate Professor, Department of Statistics*

Years of Experience
10+ Years

Executive summary
Dr. Fosdick is currently an Institute Data Scientist in the Digital Innovation Group at GTI Energy, where she leads and contributes to projects using advanced statistical data analysis techniques to gain new insights from complex data. She was previously tenured faculty at the Colorado School of Public Health in the Department of Biostatistics & Informatics and at Colorado State University in the Department of Statistics, where she led a highly productive research group and published over 50 peer-reviewed manuscripts, which have amassed over 4200 citations. Her work predominantly focused on statistical methods for network analysis and Bayesian methods. She has given over a dozen invited international and national lectures and over 25 seminars at academic institutions.

Fosdick's research has been funded by several state and federal organizations, including the Colorado Department of Public Health & Environment, the National Science Foundation, and the Department of Defense. Her work has received local and national media attention in outlets such as The Denver Post, National Geographic, The Washington Post, and The Guardian. In 2024, she was recognized by the American Statistical Association as an Emerging Leader in Statistics and was awarded the COVID-19 Leadership Award in 2022 by the Vice President for Research at Colorado State University.

Relevant Experience
Colorado State University: Developed nationally and internationally recognized research program; taught advanced statistics courses to undergraduate and graduate students; provided leadership and service to department, university and broader statistics community. Responsibilities: Responsibilities included framing, structuring, leading, managing and co-authoring collaborative research studies, predominately focused on novel statistical techniques for analyzing network data and applications of data analytics. Taught nine different undergraduate and graduate statistics courses, including design of experiments, advanced probability, multivariate analysis and Bayesian statistics. Served as ad hoc reviewer for over twenty scientific journals and an Associate Editor for Journal of Computational and Graphical Statistics, Bayesian Analysis, and Biometrics.

Publications (selected)
- von Fischer, J.C., Rhew, R.C., Ames, G.M., Fosdick, B.K., and von Fischer, P. E. (2010) Vegetation Height and Other Controls of Spatial Variability in Methane Emissions from the Arctic Coastal Tundra at Barrow, Alaska. Journal of Geophysical Research. 115, G00103.

- Fosdick, B.K. and Hoff, P.D., (2015) Testing and Jointly Modeling Dependencies Between a Network and Nodal Attributes. Journal of the American Statistical Association. 110(511):1047-1056.
- Fosdick, B.K., McCormick, T.H., Murphy, T.B., Ng, T.L.J., and Westling, T. (2019) Multiresolution Network Models. Journal of Computational and Graphical Statistics. 28(1):185-196.
- Fosdick, B.K., Larremore, D.B., Nishimura, J., and Ugander, J., (2018) Configuring Random Graph Models with Fixed Degree Sequences. SIAM Review. 60(2):315-355.
- Gibbs, C., Elmore, R., and Fosdick, B.K. (2020) The Causal Effect of a Timeout at Stopping an Opposing Run in the NBA. Annals of Applied Statistics. 16(3):1359-1379.

Ansh Nasta

Project Position
Support: Data & Analytics

Key Skills Areas
Geospatial Analysis
Network Analysis
Low-Carbon Technologies
Zero-Emission Transition Research

Education
Carnegie Mellon University, *MS, Energy Science, Technology, & Policy, 2019*
Hong Kong University of Science and Technology
B.S., Engineering and Mechanical Engineering, 2018

Professional History
GTI Energy, 2022 - present
Principal Energy Systems Analyst
Energy Futures Initiative, 2021-2022, *Analyst*
Smart Wires, Inc., 2020-2021, *Marketing Analyst*
Environmental Defense Fund, 2019, *School Bus Electrification Intern*

Years of Experience
6 Years

Executive summary
Mr. Nasta is a Principal Energy Systems Analyst with six years of experience in low-carbon and zero-emission energy technologies, with a particular specialization in hydrogen. His experience includes geographic modeling of hydrogen production, transportation, storage, and end-use infrastructure using QGIS, technical research on quantifying hydrogen emissions, modeling net-zero emissions pathways, market-facing research and engagement, and analyzing policies, regulations, and funding opportunities related to clean energy in the United States.

Relevant Experience
HyRes: As Deputy Director for HyRes, founded an industrial collaborative to measure and mitigate hydrogen emissions and raised $250,000 to fund the work. Led technical research on quantifying hydrogen emissions and contextualizing their climate impacts in net-zero systems.
Hydrogen Emissions eXchange: Organized the first Hydrogen Emissions eXchange (HEX@TEX), bringing together 60+ hydrogen emissions experts.
Low-Carbon Resources Initiative: As Principal Energy Systems Analyst, provided analytical support to the Low-Carbon Resources Initiative for modeling pathways for the United State to achieve net-zero emissions by 2050.
QGIS Infrastructure Analysis: Modeled the infrastructure needed to move molecules such as hydrogen, pipeline gas, and carbon dioxide in the net-zero U.S. economy using QGIS.
Net-Zero Meta-Analysis: Conducted a meta-analysis of U.S. economy-wide net-zero studies, exploring the similarities and differences among the model assumptions and results of these analyses.
Energy Futures Initiative: Calculated costs and emissions of different methods of hydrogen production and interviewed hydrogen producers to better understand the business case for clean hydrogen in the United States, and conducted a workshop on wholesale market design solutions for an electric utility, focusing on potential reforms for the PJM market, and published a white paper summarizing the reforms that performed well across criteria.
School Bus Electrification: Conducted a landscape assessment of school bus electrification efforts through online research and interviews. Analyzed policies and funding opportunities for electric school buses (ESBs) at federal and state level, researched and developed alternate finance models in Excel to help spread out and reduce the upfront cost of ESBs, and provided specific policy recommendations to the Environmental Defense Fund regarding

their school bus electrification efforts and for transportation electrification clauses in New Jersey's Energy Master Plan.

Modeling the impact of wind power curtailment on the electricity market: Web scraped and analyzed wind power curtailment data from the Southwest Power Pool (SPP) using R, extracted data and spatially analyzed wind farms in SPP and weather stations near them using ArcGIS, and developed a regression model to investigate the impact of locational marginal pricing on congestion and curtailment.

Assessing the potential of offshore wind power in Hawaii: Identified suitable regions for wind farms around the four major islands based on wind speed, distance-to-shore and seismicity using ArcGIS, and computed the optimal locations and number of floating turbines based on costs and electricity demand on the islands.