

SCOPE OF WORK

Project Information	
Grant Category	Strategic Partnerships
Grant Fiscal Year	State Fiscal Year 2022-2023
Project Title	Northern CA Megaregion ZEV Medium/Heavy Duty Vehicle Blueprint
Organization (legal name)	Sacramento Area Council of Governments

Introduction

The Northern CA Megaregion ZEV Medium/Heavy Duty Vehicle Blueprint will identify actions and milestones to implement the electric charging and hydrogen refueling infrastructure needed to support the deployment of Medium-Duty/Heavy-Duty (MD/HD) zero-emission vehicles (ZEVs). SACOG will work closely with SJCOG, MTC, utilities, such as PG&E and Sacramento Municipal Utility District, and air districts to build on the three-state 2020 West Coast Clean Transit Corridor Initiative's recommendation for a minimum of 11 major zero emission truck charging plazas to support the Northern CA megaregion along I-5, I-80, and SR99, and add US50 to the analysis corridors.

Project Stakeholders

This study will begin to tackle right-of-way and grid capacity issues with key public and private partners such as Caltrans Districts 3, 4, and 10, MPOs and local governments, air districts, utilities, and fleet operators. Consultant support will be required to supplement utility expertise in hydrogen needs and assessment of refueling location readiness.

Overall Project Objectives

Accelerate and strategically plan for priority MD/HD ZEV electric charging and refueling infrastructure to

1. Help address Executive Order N-79-20, which requires all operations of medium- and heavy-duty vehicles to be 100 percent zero-emissions by 2045 (by 2035 for drayage trucks),
2. Reduce GHG emissions by targets set by the California Air Resources Board for SACOG, SJCOG and MTC,
3. Accelerate ZEV fleet conversion in areas that will have the most impact on health and air quality,
4. Avoid or reduce impacts of truck fleet charging/refueling traffic on disadvantaged communities while pursuing improvements to address community health and safety disparities, and
5. Build partnerships between Caltrans, MPOs, local jurisdictions, air districts, utilities and fleet operators.

Key deliverables include:

1. Estimate travel demand and station locations: Evaluate MD/HD depot locations, travel patterns, and pass-through traffic moving through the region, and solicit input from fleets to inform the locating of charging and hydrogen fueling infrastructure, both at depots and on route.

2. Forecast Grid capacity: develop a map that overlays current and anticipated locations for charging and hydrogen fueling stations with available electrical grid capacity.
3. Prioritize short-term locations and required grid improvements: Identify specific, cost-effective, and viable locations for ZEV infrastructure in terms of anticipated base-load fleet use, avoidance of grid constraints, and use of innovative technologies and approaches to mitigate deficient conditions; and,
4. Develop partnerships that lead to implementation: With a clear vision of MD/HD ZEV refueling locations and key milestones owned by specific partners, the Blueprint will strengthen government-to-government relationships which are usually siloed between different regulatory, jurisdictional, and delivery responsibilities.

Summary of Project Tasks

Project Management activities must be identified within the task they are occur.

Task 01: Project Administration

- SACOG will manage and administer the grant project according to the Grant Application Guidelines, Regional Planning Handbook, and the executed grant contract between Caltrans and SACOG.
- Hold a kick-off meeting with Caltrans staff to discuss grant procedures and project expectations including invoicing, quarterly reporting, and all other relevant project information. Meeting summary will be documented.
- Submit complete invoice packages to Caltrans District staff based on milestone completion—at least quarterly, but no more frequently than monthly.
- Submit quarterly and final reports to Caltrans District staff providing a summary of project progress and grant/local match expenditures.

Task Deliverables
<ul style="list-style-type: none"> • Kick-off meeting with Caltrans - Meeting Notes • Quarterly Invoices and progress reports • DBE Reporting

Task 02: Consultant Procurement

SACOG will procure a consultant, consistent with state and federal requirements, the Local Assistance Procedures Manual for procuring non-Architectural and Engineering consultants, the Grant Application Guide, Regional Planning Handbook, and the executed grant contract between Caltrans and the grantee.

Given the size and uniqueness of the project, a procurement would need to be open to proposers and respondents longer than a standard procurement (e.g. an estimated two months “on the street”). In-person or video consultant interviews would be desired to ensure the selected consultant has an accurate understanding of the proposed project and the needs of all three regions.

SACOG will collaborate with project partners to establish roles and expectations for the project. SACOG will execute and manage the contract with the selected Consultant. It is anticipated that key partners will need to be part of the consultant selection process, such as representatives from utilities.

Task Deliverables

- Grantees current procurement procedures,
- copy of the Request for Proposal/Qualifications,
- copy of the contract between consultant and grantee,
- copies of all amendments to the consultant contract
- meeting notes from project kick-off with consultant

Task 1: Assess Study Location Challenges and Opportunities

The goal of this task is to join data on truck travel, fleet inventory, and parking demand with existing and forecasted utility information. The selected consultant will lead a multidisciplinary body of partner organization staff to consider the data and assess existing challenges and opportunities with initial sites studied by the West Coast Clean Transit Initiative, Cal ETC, and other utilities on the I-5, I-80, SR99 corridors and the US50 and I-205/505 corridors.

It is expected that the consultant will perform the following tasks:

Estimate travel demand and understand station location context: Evaluate MD/HD depot location context, Disadvantaged Community (DAC) challenges specific to freight travel and emissions impacts, travel patterns, and pass-through traffic moving through the region, and solicit input from fleets to inform the locating of charging and hydrogen fueling infrastructure, both at fleet depots and along corridors.

- Form and convene a multidisciplinary Northern CA Megaregion MD/HD ZEV working group of local, regional, and Caltrans district 3, 4, and 10 planning and goods movement staff to partner with utility and fleet operators.
 - Solicit members of existing partnerships and Community-based organizations, such as SMUD's ZEV Blueprint planning TAC, Sacramento's Plug-in Electric Vehicle Collaborative, SacPEV's Disadvantaged Community subcommittee and Greentech.
- Work with the working group to verify initial study sites and access routes for assessment and suggest additional locations if warranted by collected data.
 - Specifically leverage tools to identify additional locations beyond WCCTI initial sites that could benefit from fleet turnover or EV charging investments, such as SACOG's Environmental Justice areas, SACOG's truck travel volumes, AB 617 community assessments and Calenviroscreen 4.0 indicators.
- Provide an inventory of the largest fleet operators cataloging the size, mix and duty cycles of MD/HD vehicles by vehicle class and by census tract and/or physical site within the megaregion.
 - Specifically include long-range transit operator fleet needs, including maintenance pads, garages, yards and hubs.
- Conduct interviews with operators to gain refined operational insights representative of the megaregion's fleet conversion opportunities.
- Leverage data available from the Caltrans Statewide Truck Parking Study to understand existing truck parking supply issues, both in public facilities and undesignated parking.
 - Additionally, review safety data from the parking study and compare to available SACOG or local agency collision data to add to location context.
- Leverage data readily available from MPOs and Caltrans on forecasted freight travel demand to 2035.
 - Specifically, review land use forecasts that could result in increased truck travel demand, such as distribution hubs, if available from RTP/SCS documents and travel demand models.
 - Optionally: Calibrate the travel demand model to forecast freight demand using available truck volume data available from SACOG.

- Research and compile information on existing efforts to plan and implement MD/HD ZEV charging and refueling sites within the study area, such as SMUD's ZEV Blueprint planning efforts or other California Energy Commission grant funded efforts.
 - Review AB 671 Draft or final report information.
 - Review and recent updates to WCCTI, CalETC or other freight EV and refueling efforts.

Forecast Grid capacity: develop a map that overlays current and anticipated locations for charging and hydrogen fueling stations with available electrical grid capacity.

- Provide preliminary analysis of existing site capacity for commercial fleets that are most likely to impact the grid for EV charging, hydrogen dispensing, and/or hydrogen production by 2035.
- Conduct preliminary analysis and assessment of needs to upgrade transmission substations and associated modifications.
- Identify analytical tools, software applications, and data needed to improve future MD/HD ZEV infrastructure planning activities.

Task Deliverables
<ul style="list-style-type: none"> • Data collection methodology for station locations • Station context for initial and additional locations • Truck parking and travel demand estimates • Forecasted grid capacity • Draft assessment of existing challenges and opportunities, labeled by stakeholder and clearly noting DAC relevant data, for specific MD/HD ZEV Charging and Refueling sites

Task 2: Partnership and Prioritization

Using the completed site assessment, the consultant will lead the working group in a prioritization exercise to focus on short-term priority locations.

- Set prioritization criteria with the working group to help identify short-term and long term MD/HD ZEV charging and refueling locations. Criteria could include but not be limited to
 - Demand: Anticipated base-load fleet use, forecasted freight movement, truck parking deficiencies,
 - Constraints and costs: electrical grid constraints, availability of right-of-way or property ownership, fleet access from distribution centers and highway corridors, future truck volumes in DACs or AB 617 communities, multimodal planning conflicts with station access
 - Targeted Benefits and planning synergies: multimodal route access improvements and pavement rehabilitation, fleet conversion in DACs and/or AB 617 communities to improve health, air quality and reduce GHGs, relation to MPO planning for other EV charging mobility/transit hub needs and mix of land uses.
- Develop a prioritized list of MD/HD sites and route improvements with quantified goals and specific, achievable timelines for installation and deployment of MD/HD ZEV infrastructure, including the mix of electricity, hydrogen, and multimodal improvement.
- For top priority locations,
 - Draft conceptual drawings, including phasing and integration into other facilities (note: grant funding source limits design to no more than 30% or conceptual drawings)
 - Note all improvements recommended for the station and surrounding area, specifically those that address DAC challenges and opportunities.
 - develop key milestones and identify lead partners for planning, finance, ownership, operations, maintenance and regulatory approval for site development.
 - Consider Public/Private Partnership tools developed by Caltrans Statewide Truck Parking Study to identify private partners and alternative business models to explore further.
 - Identify specific neighborhoods and community-based organizations recommended for targeted equitable engagement in future project design stages.

Task Deliverables
<ul style="list-style-type: none">• Prioritization criteria, including data compiling methodology, for priority locations for MD/HD ZEV charging/refueling investments• Conceptual drawings for top priority stations and station area improvements• Structured partnerships for priority location ZEV Freight area investments, including operations and maintenance costs and responsibilities.• Specific neighborhoods and community-based organizations recommended for targeted equitable engagement during future project design stages

Task 3: Draft and Final Plan

Having completed a set of priority areas with recommended development steps and identified key partners, the consultant will help create materials to secure planning support and help lead agency staff compete for funding opportunities.

- Draft specific recommendations that can be folded into each partner's planning processes for consideration, such as amendments to Climate Action Plans, Capital Improvement Programs, Transportation Plans, DAC engagement processes,

Memorandums of Understanding, Public/Private Partnership business models and grid improvement strategies.

- Draft specific factsheets on priority short-term projects for use in funding program applications, describing various benefits to Criteria pollutant and GHG emission reductions, goods movement travel time reliability, ZEV Fleet conversion numbers, multimodal route improvements, benefits to disadvantaged communities and specific community groups for further engagement during project design phases.
- Compile Task 1, 2 and 3 documents and memos into a Draft plan for working group review and comment.
- Suggest additional avenues of research and future planning, such as evaluating developing technology that could resolve study location constraints including but not limited to:
 - wireless charging, high-powered charging, overhead catenary systems, solar chargers, robotic chargers, mobile chargers/refuelers, curbside, streetlamp, and intersection chargers, or autonomous garages.
- Compiled appendices, spreadsheets and Geographic Information System (GIS) files of all collected raw information.
- Final Study document formatted for webpage hosting and submission to Caltrans.

Task Deliverables
<ul style="list-style-type: none">● Specific recommendations, such as agreements and MOUs, to fold into partner organization planning processes and documents, specifically including the role of local governments and community based organizations in design review and approval.● Factsheets on top priority study locations● Draft and Final Northern CA Megaregion ZEV Medium/Heavy Duty Vehicle Blueprint, including appendices of all raw and compiled data

Task 4: Study Circulation and Endorsement

Engaging identified lead partners will be a key step toward activating the completed study's findings.

- Support working group staff with materials and consultant-led presentations to local boards and committees on the study's results and recommendations.

Task Deliverables
<ul style="list-style-type: none">● Consultant-led presentations to partner agencies and identified lead partners for priority locations● Presentations and materials for partner organization use.