

**AMENDMENT NO. 1 TO THE AGREEMENT
BETWEEN
CITY/COUNTY ASSOCIATION OF GOVERNMENTS OF SAN MATEO COUNTY
AND
FEHR & PEERS**

WHEREAS, the City/County Association of Governments for San Mateo County (hereinafter referred to as “C/CAG”) and Fehr & Peers. (hereinafter referred to as “Consultant”) are parties to an Agreement originally dated November 25, 2019, for development of the Vehicle Miles Traveled (VMT) Estimation tool (the “Project”); and

WHEREAS, C/CAG and Consultant have determined that additional tasks are required to develop a fully satisfactory and comprehensive Project, and both parties desire to amend the project scope of work; and

WHEREAS, C/CAG and Consultant have determined that no additional funds are needed to complete the Project due to the additional tasks; and

WHEREAS, C/CAG and Consultant desire to amend the Agreement as set forth herein.

IT IS HEREBY AGREED by C/CAG and Consultant as follows:

1. The Scope of Work of the Agreement, as provided in Attachment B “SCOPE OF WORK”, shall be amended to add Attachment B-1 “Additional Services for C/CAG Senate Bill 743 Vehicle Miles Traveled (VMT) Regional Baseline Study and VMT Tool” to the current attachment B, attached hereto and incorporated therein.
2. Except as expressly amended herein, all other provisions of the Agreement shall remain in full force and effect.
2. This amendment shall retroactively take effect on December 1, 2020.

Signatures of parties on following page.

City/County Association of Governments (C/CAG)

Fehr & Peers



Marie Chuang, C/CAG Chair

By _____

Title: _____

Date: _____

Date: _____

Approved as to form:



Melissa Andrikopoulos

Legal Counsel for C/CAG

Exhibit B

SCOPE OF WORK

October 2, 2019
Jeffrey Lacap, Transportation Program Specialist
City/County Association of Governments of San Mateo County
555 County Center, 5th Floor
Redwood City, CA, 94063

Subject: Proposal for C/CAG Senate Bill 743 Vehicle Miles Traveled (VMT) Regional Baseline Study and VMT Tool

Dear Mr. Lacap:

We appreciate the opportunity to present our proposal to provide Senate Bill (SB) 743 implementation guidance and deliver a project generated VMT tool for land use projects that will be used by City/County Association of Governments of San Mateo County (C/CAG) and its member agencies. We understand our role is to execute the outlined approach and provide knowledge and insight along the way. This project will help C/CAG's member agencies prepare to transition to VMT as a primary CEQA transportation impact metric.

The Fehr & Peers team provides several high-value pieces of experience to this effort: 1) unparalleled expertise in SB 743 implementation and local experience, 2) technical competence, and 3) strategic thinking about future travel. Because we have already conducted extensive research into SB 743 implementation, we are intimately familiar with VMT methods options, VMT thresholds, and the latest information regarding VMT mitigation. In addition, our recent experience developing the City of San Jose's VMT tool means we are well versed with the model information and local data resources available for this project. And one final advantage is that Fehr & Peers specializes in custom model and tool building with a variety of existing tools that perform VMT estimates. In addition to our San José experience, we recently developed a VMT calculator for the City of Los Angeles that includes an automated TDM mitigation testing component and several web based VMT screening tools in El Dorado County, Nevada County and Western Riverside Council of Governments (WRCOG). As a result, we offer the right combination of research, knowledge, and experience to deliver a successful Project. We look forward to working with you.

Sincerely,

FEHR & PEERS



Matt Haynes, PE, AICP
Principal-in-Charge

P19-3644-SJ

“

Our mission is to empower every employee to develop effective and innovative transportation solutions that improve communities

C/CAG SB743 Vehicle Miles Traveled (VMT) Regional Baseline Study and VMT Tool

Prepared for:

City/County Association of Governments (C/CAG) of
San Mateo County

October 2, 2019

Proposal Number P19-3644-SJ

FEHR & PEERS

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Firm/Team Overview

About Fehr & Peers

At Fehr & Peers, we are passionate about transforming transportation consulting through innovation and creativity. We derive inspiration by partnering with communities to understand and shape local transportation futures objectively tailored to diverse needs. Clients trust us to help them overcome barriers and uncertainty by combining our advanced expertise with curiosity, humility, and initiative to deliver implementable, data-driven solutions that reinforce community values. From the most straightforward to the most complex, we actively listen to client and community needs and handle every project with diligence and focus.

We differentiate ourselves by investing in research and development to anticipate needs, explore the unknown, and collaboratively imagine a better future. Our culture of applied innovation generates an appetite for new and better ways of approaching problems, motivates us to explore emerging transportation concepts and mobility trends, and inspires us to develop new analytical tools and techniques. In the realm of VMT forecasting and analysis, we are national experts, with unparalleled expertise in performing CEQA transportation analysis and guiding cities through changes in state environmental review law.

As we grow, our commitment to inclusive, local, and long-term community relationships remains central to our philosophy. Many of our client relationships are decades long, built on years of listening, understanding, collaboration, and successful outcomes. Our clients have appreciated our long-term commitments to the communities we serve, trusting us as their objective partners in transportation since 1985. Together with our clients, we are motivated by shared success, inclusive partnerships, and the positive impact our work has on the communities we serve.

Fehr & Peers offers broad and varied experience integrating multi-modal transportation with urban development and activity patterns to promote global climate stability. For more than 20 years, Fehr & Peers has provided transportation planning and engineering services in Silicon Valley, across both San Mateo and Santa Clara Counties. We have worked on numerous projects with many of the agencies in San Mateo County, including the following towns and cities:

- Brisbane
- Burlingame
- Colma
- Daly City
- Foster City
- Menlo Park
- Millbrae
- Pacifica
- Redwood City
- San Bruno
- San Mateo
- South San Francisco

Our success is the result of the investment in learning and training we make to develop a rigorous understanding of the underlying concepts, methods, and software applications needed to implement SB 743 VMT analysis. We consistently apply our knowledge to tailor solutions for a wide variety of clients.

Proposed Project Team

The Fehr & Peers team is composed of passionate planners and engineers with the expertise and knowledge necessary to work with C/CAG, stakeholders, and the community to create a robust, policy-driven plan to assess VMT associated with new projects and plans. Our team members are specialists in travel behavior, CEQA law, travel demand forecasting, public policy, and the culture and geography of the San Francisco Peninsula.

Project Management



Matt Haynes PE, AICP
Principal-in-Charge



Dan Rubins PE
Associate/Project Manager

Fehr & Peers Technical Insight



Ron Milam AICP, PTP
Principal/ SB 743 & VMT
Expert



Marshall Ballard GISP
Transportation Informatics
Architect



Julie Morgan AICP
Principal/CEQA Expertise



Matt Goyne PE
Senior Associate/San Mateo
County Expertise

Fehr & Peers Key Staff



Teresa Whinery AICP
Senior Transportation Planner



Allen Wang PE
Senior Transportation Engineer



Junyu Guo
Transportation Engineer



Kevin Johnson AICP
Expert Modeling Support

Unparalleled Expertise in SB 743 and Local Experience

The Fehr & Peers team brings a level of expertise on SB 743 unparalleled by others. Fehr & Peers has consulted to the California Governor's Office of Planning and Research (OPR), Caltrans, and multiple cities and counties on the development of SB 743 guidance related to VMT analysis throughout California. As a result, we are routinely sought out by public agencies and CEQA practitioners for advice on potential outcomes associated with the use of new transportation metrics. Our website (<http://www.fehrandpeers.com/sb743/>) includes resources designed to help public agencies and CEQA practitioners understand the changes associated with SB 743 and how to address them.

Fehr & Peers authored the VMT chapter of the FHWA *Handbook for Estimating Transportation Greenhouse Gases for Integration into the Planning Process* and has worked on a variety of local agency SB 743/VMT-focused projects. These local projects include the City of South San Francisco General Plan Update, City of Palo Alto SB 743 Implementation; the City of Novato SB 743 Implementation; the City of Pasadena General Plan Update; the City of San Francisco TIS Guidelines Update; and the City of San José VMT Estimation tool. Ron Milam has led or been a key contributor to each of these projects.

The combination of SB 743 expertise and local plan implementation experience establishes Fehr & Peers with unparalleled understanding to help C/CAG and its member agencies with the transition from vehicle level of service to VMT analysis for environmental review purposes.

Environmental Planning and Impact Assessment

Fehr & Peers has prepared hundreds of transportation sections for all types of California environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents. We know the CEQA verbiage (CE, ND, MND, EIR) and NEPA lingo (FONSI, EA, EIS), but more importantly, we understand the criteria in determining the type of study that is required based on the mobility analysis. Our motivation to be the best transportation planning and engineering firm results in our extensive involvement in the development and interpretation of legal and policy thresholds that establish the defensibility of environmental documents. Unlike many firms that complete the transportation analysis and then simply hand it over to the environmental consultant, we work closely with the CEQA/NEPA experts to ensure that the analysis is based on technical rigor and clearly communicates the study findings and potential impacts to agency staff, the general public, and decision-makers.

Preparation of Transportation Impact Studies (TIS) is one of the core services provided by Fehr & Peers. Many of the parts of a transportation analysis are used for environmental review, but there are other non-environmental review components that are also needed to review a land use or transportation project. We have completed hundreds of studies in San Mateo County for public, private, and institutional clients to evaluate new land developments (e.g., an office park), redevelopment sites, changes to the street system (e.g., widening of a street), changes in circulation policies, and other actions that affect the transportation system. We thrive on challenging assignments in controversial environments. We focus on providing innovative, yet practical solutions to complex problems. We frequently draw on our expertise in travel demand forecasting, traffic operations and simulation, traffic calming, and traffic engineering design in our studies.

Proposed Project Approach

OVERALL APPROACH

The purpose of this project is to help prepare C/CAG member agencies to meet the new requirements of CEQA under SB 743. To meet this objective, Fehr & Peers will prepare and assemble curated SB 743 implementation information that includes substantial evidence to support decisions for VMT metrics, VMT calculation methods, VMT impact thresholds, and VMT actions for use by C/CAG member agencies. This project will also deliver a project generated VMT estimation tool for land use projects that will be used by C/CAG and its member agencies. The project will address the unique context of San Mateo County, including its booming economy, diversity of communities, connections to regional transit (i.e., Caltrain), and historical development patterns.

The proposed scope of work below includes the following tasks:

1. **Project Initiation / Coordination:** Fehr & Peers will work with agency staff to identify goals, finalize schedule, and ensure the right people are at the table. Fehr & Peers will attend key meetings to hear from a technical advisory group about how thresholds should be set, and what local consultants, engineers, and jurisdictions require from a VMT tool.
2. **Data Collection / VMT Baselines:** Fehr & Peers will review available model information, land use plans, local policies, and completed model runs from two models (the MTC regional model and the C/CAG-VTA bi-county model), and summarize a VMT baseline for the County, as well as identify key sub-County regions that may warrant separate thresholds and analysis.
3. **VMT Mitigation:** Fehr & Peers will prepare an overview of available strategies to mitigate potential VMT impacts, with special attention to how those strategies would operate in San Mateo County. This will be integrated into the planned VMT tool in Task 4.
4. **Development of Thresholds, Methods, and Tool:** Fehr & Peers will prepare recommendations for a VMT impact threshold, a VMT analysis method for a variety of projects, and an interactive forecasting tool for use in analyzing individual projects.
5. **Draft and Final Reports:** Fehr & Peers will fully document the analysis and process behind this project.
6. **Training:** Fehr & Peers will conduct a training session for local agencies and/or consultants on how to use the newly developed VMT screening, forecasting and mitigation tool.

In addition to the basic scope of work, several options are listed that could be added as the work proceeds:

Optional Task 2.5: Provide additional technical assistance in preparing and calibrating travel demand model for use in VMT tool.

Optional Task 4.7: Provide additional coordinating support with legal counsel, and prepare memorandum summarizing key legal questions that can be used by member agencies.

Optional Task 4.8: Fehr & Peers can continue to host the online VMT tool for an extended period of time.

Optional Task 4.9: Fehr & Peers can provide technical assistance with migration of the VMT tool to a C/CAG hosted environment.

Fehr & Peers is open to providing ongoing support or additional analysis beyond the optional tasks listed above; however, these efforts will require development of a separate scope of work.

TASK 1: PROJECT INITIATION/ COORDINATION WITH PROJECT PARTNERS

Task 1.1: Project Kick-Off Meeting

Fehr & Peers will hold and document a kick-off meeting with C/CAG staff and the Technical Advisory Group (TAG, see Task 1.2) to refine, clarify, and finalize project scope, schedule, deliverables, and expectations.

Prior to the meeting, Fehr & Peers will review documents relevant to the project. Due to our participation during OPR's development of the updated CEQA Guidelines and Technical Advisory and our ongoing work on projects related to the implementation of SB 743, we are very familiar with:

- Final updated CEQA Guidelines (December 2018)
- Most recent OPR "Technical Advisory on Evaluating Transportation Impacts in CEQA" (December 2018)

We will also review the following documents and associated prior to the kick-off meeting with consideration of their impacts to the project:

- Plan Bay Area 2040 – Metropolitan Transportation Commission's (MTC) long-range Regional Transportation Plan /Sustainable Communities Strategy (RTP / SCS)
- General Plans for the County of San Mateo, and for each of the twenty incorporated towns and cities within the County

Fehr & Peers will discuss aspects of these documents important to the project and identify additional data or documents needed. Because many jurisdictions may not have land use data available in digital form, Fehr & Peers will discuss how the available data will shape future analysis, and potential barriers this poses to project analysis.

Deliverables:

- Meeting agenda and presentation
- Meeting minutes
- Refined schedule

- Project team contact list
- List of additional documents and data needed

Task 1.2: Conduct TAG Meetings

C/CAG Staff will identify key technical stakeholders, potentially including staff from Caltrans, MTC, constituent cities, and environmental consultants who will serve as the technical advisory group (TAG) for the project. Fehr & Peers will meet with the TAG during the study to solicit input on the project and its recommendations, as well as identify key user needs for the VMT tool. Content will be developed for the meetings without the presumption of prior knowledge of CEQA or VMT by those who attend the meetings. TAG meetings are planned at the following milestones:

- Project initiation (Following Task 1.1; prior to Task 2)
- Presentation of baseline VMT data and TDM strategies and review of demo of the VMT tool (Following Task 3.2)
- Presentation of draft recommendations for methods and modeling (following Task 4.4)
- Solicitation of user needs for VMT tool (following Task 4.5, prior to Task 4.6)
- Presenting draft recommendations and showcasing VMT tool (During Task 5.1)

Fehr & Peers will prepare agendas, presentations and/or other meeting materials; and prepare other meeting logistics for up to five two-hour meetings. This scope is based on C/CAG contacting attendees, securing meeting locations and covering location costs, if any. If desired, these items can be added to the scope as an additional cost. Following the meetings, Fehr & Peers will summarize outreach results including public comments received.

Deliverables

- Agendas, meeting materials, and meeting notes for each of the meetings.

Task 1.3: Monthly Teleconferences

Fehr & Peers will hold teleconferences with C/CAG staff at least once per month during the project. Meetings may be held more often as necessary during different stages of the project. These meetings will include the Fehr & Peers project manager and other staff as appropriate for the phase of the project.

Deliverables

- Monthly teleconference agendas
- Monthly teleconference minutes

TASK 2: DATA COLLECTION/ESTABLISH BASELINE VEHICLE MILES TRAVELED (VMT) DATA

Task 2.1: Collect, Review, and Incorporate Relevant Data from Planning Documents

Fehr & Peers will review the following documents and data wherein for review with C/CAG to ensure the level of quality meets the needs to be included into the VMT tool.

- Plan Bay Area 2040
- General Plans (including Circulation Elements for each of the C/CAG member agencies)
- Selected recent environmental impact reports representative of projects within or affecting the region (up to three, selected in discussions with the technical advisory group)
- CEQA Guidelines Update
- OPR Technical Advisory
- Caltrans SB 743 Interim Guidance
- Other relevant planning documents identified by Fehr & Peers

Deliverables

- List of resources reviewed and summary of relevant items

Task 2.2: Review Existing Travel Demand Models

Fehr & Peers will conduct a review of the existing Valley Transportation Authority (VTA)-C/CAG Countywide Travel Demand Model (“CCAG Model”) and MTC Travel Model One (“MTC Model”) to determine how the models may be used for estimating VMT and establishing thresholds.

Fehr & Peers will also identify portions of the County not well-represented by existing travel demand models, and recommend how to address such areas in conjunction with Task 2.3. The results of this task will be used during development of VMT methods and thresholds (Task 4). These results of Task 2.2 and Task 4 will be used together to identify potential model modifications, which may include improving accounting for trip distances across model boundaries, adjustments for tourist traffic, or changes to land use assumptions based on agency General Plans.

We have allocated 80 hours of staff time to review the two travel demand modes as-is. Model runs or calibration based on the potential modifications can be conducted as an optional task (see Optional Task 2.5 for details). Under this scope, Fehr & Peers will rely on C/CAG or VTA modeling staff to implement the proposed modifications, or to provide necessary documentation to allow for post-processing of model outputs ‘as-is’ in areas identified as potentially problematic.

Deliverables

- Draft technical memorandum #1 summarizing results of model review
- Final technical memorandum #1 incorporating one round of consolidated comments

Task 2.3: Develop Baseline VMT Data

Based on the review of the travel demand models in Task 2.2 and data collected from other sources, the consultant will estimate and summarize the baseline VMT by major trip types by jurisdiction for review by the TAG. This task will rely on C/CAG or MTC modeling staff to provide completed model runs of the C/CAG model or MTC model in a common format (i.e., Cube, TransCAD, etc) such that Fehr & Peers staff may summarize results accordingly.

Other sources of data may include:

- California Statewide Travel Demand Model (CSTDM)
- California Household Travel Survey (CHTS)

The consultant will also compare this data and make a recommendation regarding the best approach to generate baseline VMT for areas that may not be well represented by the model, in conjunction with Task 2.2.

Because there are differences in VMT generation in different parts of the County, comparison of subregions, consisting of areas with similar travel characteristics, will be included (for example, VMT per capita summarized by zones such as Coastal / Larger City / Smaller City or Town, or by areas with higher or lower levels of transit access). Fehr & Peers will develop the subregion categories with input from C/CAG Staff and the TAG.

Task 2.4: Document Jurisdictional VMT Data

Fehr & Peers will review the results of VMT data analysis with the TAG, incorporate changes to reflect comments from the TAG, and document the results in a technical memorandum.

Deliverables

- Draft technical memorandum #2 summarizing baseline VMT and jurisdictional data
- Final technical memorandum #2 incorporating one round of consolidated comments

Optional Task 2.5: Provide Technical Assistance Running and Calibrating Travel Models

For an additional fee, Fehr & Peers can provide staff assistance to run the C/CAG and MTC travel demand models that will be evaluated in Task 2.1, and exporting data in the appropriate structure for use in Task 2.3 and Task 4. Because travel modeling testing, calibration, and summarization can be a time-intensive process, the fee for this task will depend on the extent of assistance requested, and the number and type of travel models requiring our attention.

TASK 3: DEVELOPMENT OF VMT MITIGATION MEASURES

Task 3.1: Review Applicable VMT Mitigation Measures

Fehr & Peers will review available data on strategies to reduce VMT, with a focus on those most applicable to San Mateo County, including measures listed in C/CAG's Congestion Management Plan TDM requirements or in other countywide policy documents identified by the TAG. Fehr & Peers will review each individual strategy for its VMT reduction potential, and provide estimates of how each measure may affect VMT for sample projects in the area.

Fehr & Peers has conducted a recent overhaul of VMT reduction strategies contained in the widely used California Air Pollution Control Officers Association (CAPCOA) document entitled "Quantifying Greenhouse Gas Mitigation Measures." The latest research from this overhaul will be included in the Air Resources Board (ARB) Zero Carbon Buildings / Zero Carbon Communities project, but Fehr & Peers has already mapped the old and new strategies and identified key differences in strategy effectiveness. We will use this information to identify the most effective strategies for jurisdictions in San Mateo County, with the goal of allowing individual member agencies to integrate the analysis with localized policy goals.

Task 3.2 Develop Localized Quantification Method for High Priority Mitigation Measures

Fehr & Peers will identify methods and approaches to quantify VMT reductions associated with the mitigation measures identified in Task 3.1. Fehr & Peers will also include a "crosswalk" for measures that overlap with the existing countywide TDM requirements in the congestion management plan, and resources showing documentation of the reductions associated with each measure.

Deliverables

- Draft technical memorandum #3 summarizing VMT mitigation measures
- Final technical memorandum #3 incorporating one round of consolidated comments

TASK 4: DEVELOPMENT OF POTENTIAL VMT THRESHOLDS, METHODS & VMT TOOL

Task 4.1: Review and Analyze Potential VMT Thresholds

Fehr & Peers will review examples of VMT thresholds for consideration, including previously adopted thresholds and those outlined in the OPR and ARB guidance documents on the implementation of VMT thresholds. The results of Tasks 2 and 3 will be included in this process. Fehr & Peers will identify potential thresholds for use with projects of varying sizes, locations, types of uses, and other considerations. We will also develop recommended thresholds and methods for transportation projects and program-level planning documents (i.e. General Plans and Specific Plans). As part of this task, Fehr & Peers will consider screening criteria that may limit the need for detailed analysis on projects that meet specific criteria, keeping in mind the need to meet the substantial evidence criterion.

The following land use project and land use plan VMT thresholds will be included in this analysis:

- Project level thresholds by jurisdiction or sub-region
- Cumulative thresholds, especially related to land use and transportation planning documents (such as Plan Bay Area-based projections)

For transportation projects, OPR guidance allows lead agencies to presume that transit and active transportation projects would have a less than significant impact on transportation because they do not increase VMT. For roadway capacity expansion projects that may increase VMT, the lead agency has the discretion to select its preferred metric and threshold. As such, current practices in the county may continue.

However, the legislative intent of SB 743 will need to be considered when applying these practices. Fehr & Peers will confirm the preferred impact analysis approach for transportation projects with the TAG and include recommendations for specific metrics and thresholds. Potential thresholds will need to consider both project and cumulative impacts.

“Where those VMT effects will grow over time, analyses should consider both a project’s short-term and long-term effects on VMT.” – (P.30 – Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018)

The OPR Technical Advisory only includes project threshold recommendations but recommends the inclusion of both short-term and long-term project effects on VMT. Further, CEQA does not limit VMT impact analysis to project impacts only. Another important aspect of the threshold evaluation is the OPR Technical Advisory specification below:

“When using models and tools for those various purposes, agencies should use comparable data and methods, in order to set up an “apples-to-apples” comparison between thresholds, VMT estimates, and VMT mitigation estimates.” – (P. 30 – Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018)

This specification means that the method used to establish the threshold needs to be consistent with the method used to perform project analysis. For this reason, Fehr & Peers proposes to perform Tasks 4.1, 4.2, and 4.3 simultaneously. As noted in Task 2, sub-regional evaluation may be appropriate. Fehr & Peers will consider and evaluate this approach throughout Task 4. Potential thresholds will be shared with the TAG as discussed in Task 1.

Task 4.2: Develop, Evaluate & Recommend Threshold Alternatives

After receiving feedback in the stakeholder meetings, Fehr & Peers will identify up to three potential thresholds for each subregion that could be used for projects of varying sizes, types of uses, and other considerations, contingent on adoption by lead agencies. The VMT tool (a screening tool) will allow individuals to screen out potential development projects that fall within either Transit Priority Areas (TPA) or a low VMT generating TAZ.

We will include at least one potential threshold each for land use projects, land use plans, and transportation projects, with the potential for up to three thresholds that vary by subregion. Thresholds will likely be presented in

terms of percentage of a “baseline” VMT per resident or employee, for flexibility in applying to multiple land uses; an illustrative example is shown below.

| Sub-Region | Land Use Projects | Land Use Plans | Transportation Projects |
|---|--|---|--|
| Sub-Region A (Coast) | Average daily VMT per service population below X.X | Plan results in average daily VMT below existing conditions for Plan area | No net increase in total VMT on local roadways |
| Sub-Region B (Caltrain Corridor) | Average daily VMT per service population below Y.Y, or location within half mile of Caltrain | Plan results in average daily VMT below existing conditions for Plan area | No net increase in total VMT on local roadways |
| Sub-Region C (Other Locations) | Average daily VMT per service population below Z.Z | Plan results in average daily VMT below existing conditions for Plan area | No net increase in total VMT on local roadways |

We will test the thresholds with case studies representative of local projects and plans to ensure they can be applied without creating unintended consequences.

Task 4.3: Identify, Review & Recommend Potential VMT Calculation Methods

Fehr & Peers will identify a minimum of three and up to five potential VMT calculation methods for use in the county. These methods will consider projects of varying size and scale while also considering current methods used to estimate and forecast VMT for energy, air quality, and greenhouse gas (GHG) impact analysis.

Evaluating the methods will include consideration of the following questions:

- What form of the VMT metric (VMT per capita, per employee, etc.) should be calculated?
- How to estimate and forecast the metric for specific land use types (i.e., residential, retail, office, industrial, recreational, etc.)?
- What trip purposes to include?
- What types of vehicle trips to include (i.e., automobile only or autos and commercial vehicles)?
- Should the analysis include both "project generated VMT" and "project effect on VMT"?

These methods will consider projects of varying size and scale while also considering current models and methods used to estimate and forecast VMT for energy, air quality, and greenhouse gas (GHG) impact analysis, and the level of effort needed for each method. Examples of VMT analysis methods include conducting regional travel demand model runs that show changes associated with new projects, simple calculations of trip length and average daily trips, or qualitative assessments.

As noted in Task 4.1, Review and Analyze Potential VMT Thresholds, the method used to establish the VMT threshold must be consistent with the method used to perform project analysis. Therefore, Fehr & Peers will conduct this task in parallel with Task 4.1 so that method and thresholds are considered in tandem for land use projects and land use plans. Further, methods will consider both "project" and "cumulative" impact analysis.

Fehr & Peers will evaluate a minimum of three and up to five sample projects to verify these methods are appropriate to use in San Mateo County. We will then recommend the best methods for use by jurisdictions in San Mateo County.

Deliverables

- Draft technical memorandum #4 summarizing VMT Thresholds, Alternatives, and Methods
- Final technical memorandum #4 incorporating one round of consolidated comments

Task 4.4: Prepare VMT Threshold Guidance Documents

After completion of Tasks 4.1, 4.2, and 4.3, Fehr & Peers will prepare a model guidance document that can be incorporated into each jurisdiction's planning guidelines. This task will be integrated with Task 4.5, Prepare Updated Guidance Documents for VMT Calculations.

Task 4.5: Prepare Updated Guidance Documents for VMT Calculations

After completion of Tasks 4.1, 4.2, and 4.3, Fehr & Peers will prepare a model guidance document that can be incorporated into each jurisdiction's planning guidelines. This task will be integrated with Task 4.4, Prepare VMT Threshold Guidance Documents. We will work with the TAG to obtain current traffic study guidelines used by each jurisdiction and identify changes that can be readily incorporated.

Fehr & Peers will provide updated guidance that considers the latest OPR Technical Advisory plus additional suggested practices based on expectations established by the CEQA statute, guidelines, and case law.

Deliverables

- Draft technical memorandum #5 with model guidance document
- Final technical memorandum #5 incorporating one round of consolidated comments

Task 4.6: Develop VMT Tool & User Manual

Fehr & Peers will review available quick response VMT screening and forecasting tools that could be modified for use in San Mateo County, considering the particular needs of small and medium sized projects (including Fehr & Peers existing baseline VMT screening tool, the tool in development for VTA, and others as appropriate). This tool will be web-based, and will be hosted by Fehr & Peers for up to one year after delivery of the final VMT tool.

Fehr & Peers has already completed multiple VMT tool reviews for other projects. These are largely designed for small to medium-sized projects, and similar reviews have been conducted in research projects by UC Berkeley and UC Davis. We will include this research as part of the review.

We have found in practice through work with previous clients that most want a summary VMT tool, and want to use the local travel demand model for forecasting. Fehr & Peers will work with C/CAG or MTC modeling staff (depends on the model selected for the C/CAG VMT tool) to visualize and develop a user interface that shows key metrics from the

C/CAG VMT tool, including estimates of VMT per capita, trip lengths, and other elements, to estimate VMT per capita for individual land uses at different locations throughout the County. The goal would be to quickly assess whether 1) an individual project is suitable for VMT analysis screening, and, if not, 2) what average trip length and VMT per resident or per worker can be expected from the project, with the ability to test VMT reductions based on the measures identified in Task 3. Information on user needs from TAG meetings will also be incorporated into the development of the VMT tool.

VMT Tool Jumpstart

We offer the opportunity to “Jumpstart” the VMT tool development by using a flat fee for Fehr & Peers’ intellectual property specifically developed for SB 743 VMT applications. This will spring-board the tool development process forward much quicker at a much lower entrance cost while also removing much of the uncertainty associated with developing new tools. The development of custom web tools becomes expensive, especially understanding how to implement geoprocessing with regional travel demand and land use model data. Our proposed approach includes a one-time fee of \$10,000 for licensing the VMT tool that will be applied to leverage past work completed by F&P, with future maintenance and support billed at a Time and Materials basis. Much of our past tool development was completed in coordination with one of our GIS programming partners, Blue Raster. As a Fehr & Peers partner, Blue Raster can assist and advise on various web tool enhancements. If the “Jumpstart” is not exercised, Blue Raster will likely be required to join the development team and the costs of development from scratch will need to be added into the existing budget and schedule. Blue Raster was not included as a subconsultant due to the potential of “Jumpstarting” and our working relationship that allows us to consult with Blue Raster on specific web development troubleshooting either by licensing current intellectual property or developing something from scratch at no additional project cost.

With our combined expertise from the SB 743 implementation and GIS workflow and interactive web tools, we have developed a holistic tool development approach. We envision this as a dynamic and collaborative discussion with C/CAG staff and select C/CAG member agency staff to help C/CAG achieve its desired outcomes:

- Estimate VMT generated by land use projects per person per weekday anywhere in San Mateo County
- Provide reduction estimations for analyzed project by project characteristics, multimodal infrastructure, parking measures, and Transportation Demand Management measures.
- Web-based GIS tool for project estimation and report generation, intended for use by local jurisdictions and environmental consultants.
- Outputs available of pre-defined reports, charts and maps.

The web tool will be provided as static code, meaning no updates will be made after the final launch of the tool. For the year of hosting, Fehr & Peers will provide a Service Level Agreement (SLA) which will provide full tool functionality and availability as is included in the jumpstart. Fehr & Peers will address any system failures in the tool within five business days of notification of the failure. A system failure is defined as an error in the process of the web tool itself not an error of the input data used as identified in detail in Task 2.

Web Tool Launch Approach

Development of a geographic information system (“GIS”) to support and operate a web-based VMT tool to estimate land use project generated vehicle miles traveled (“VMT”) begins with the preparation of a few core elements: Data, User Interface, Workflows, Reporting, and Tool Sustainability. The one month launch period to evaluate the web tool will end after the initial month of service thus commencing the first year SLA as mentioned in Task 4.6. **Data**

The underlying data is of utmost importance to establish the core functionality of the VMT tool. How this data is stored, maintained and hosted for the VMT tool to utilize will be examined and discussed in detail with C/CAG and its member agencies. Countywide data will be used; however, it is important to recognize jurisdictional specific data may be incorporated into the creation of the VMT tool dependent on specific trip caps, or VMT preferences.

User Interface

Leveraging our geospatial expertise to deliver the solutions and technical expertise on SB 743 will create an innovative web-based VMT tool. The VMT tool is a tool designed with a holistic sustainable approach that enables it to be used and updated by the owner as new data and or improved workflows are created.

Workflows

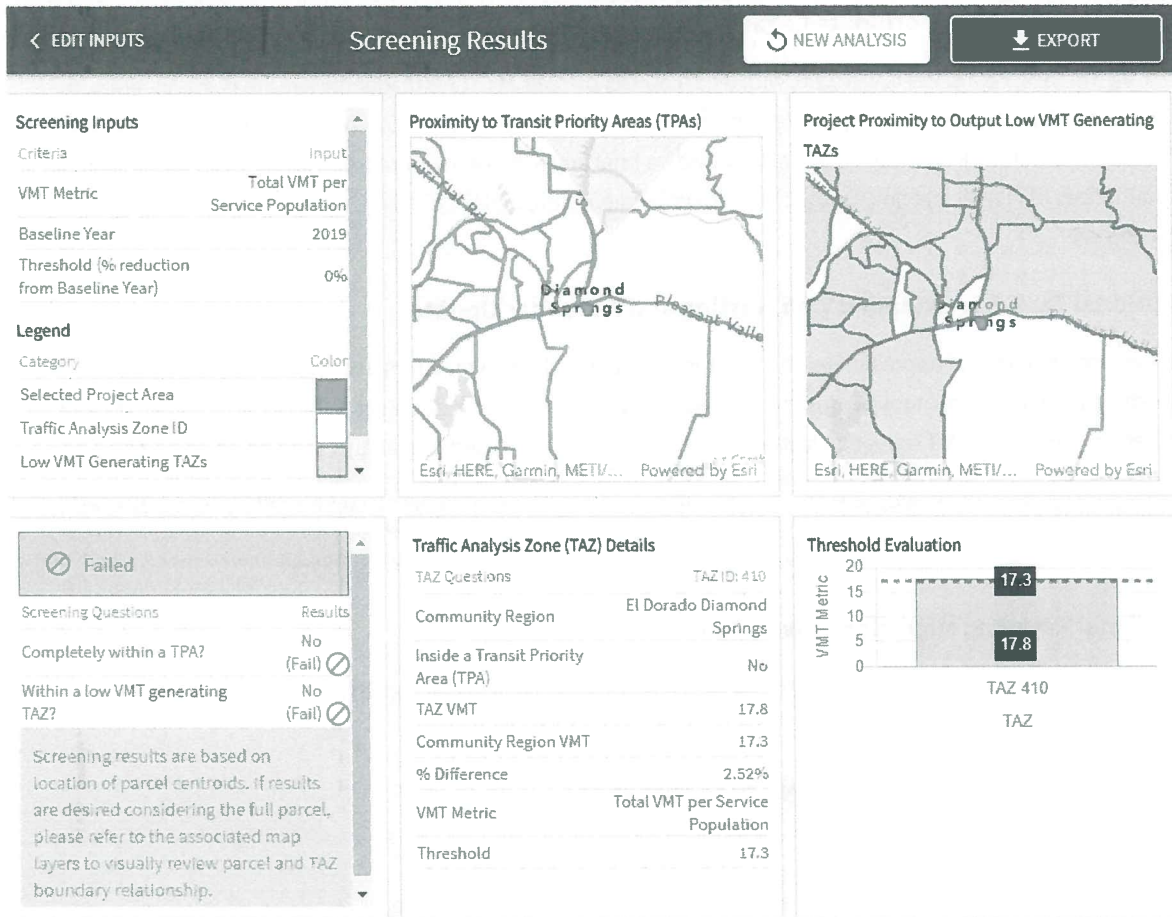
The underlying workflow is rooted in GIS geoprocessing functions to analyze data and calculate results from the specified criteria. The applicable workflows will be designed specifically for the vetted data.

Reporting

Throughout meetings with C/CAG and the TAG, reporting will be discussed. Which data resources need to be reported, what reductions can be made to mitigate project generated VMT and how best to achieve these.

Tool Sustainability

It is very pertinent to establish a data schema to follow for all future enhancements of the VMT tool. Maintaining specific data schemas to allow updates and republishing of the applicable data services. As data is updated, maintaining the existing schema will allow updates to the underlying GIS web services which power the VMT tool.



Pictured above: Sample map-based VMT screening report

We have already produced regional/ sub area tools for this purpose, including for the City of Los Angeles and City of San José, and will develop a tool that best fits the needs of jurisdictions in San Mateo County. Our recent tools have provided a map interface that allows the user to easily select parcels to be analyzed and quickly perform analysis. Fehr & Peers has scoped this task under the presumption that model run results by parcel or zone will be provided by C/CAG staff; additional model calibration, model runs, or changes to model land use inputs may be incorporated under Optional Task 2.5.

Deliverables

- Web-based VMT Screening, Forecasting, and Mitigation tool, with one year of hosting on Fehr & Peers servers
- Draft VMT user manual
- Final VMT user manual incorporating one round of consolidated comments

Optional Task 4.7: Coordinate Legal Review

During this task, Fehr & Peers will work with legal counsel on staff at C/CAG to identify key areas of concern with regards to CEQA law, defensibility, and establishment of substantial evidence for the new recommended thresholds. Fehr & Peers will work with legal counsel to provide a brief appendix or memorandum for member agencies that summarizes key legal questions associated with implementation of the C/CAG recommendations developed in tasks 4.4 and 4.5.

Optional Task 4.8: Extended Web Hosting and First-Year Updates

For an additional fee of approximately \$5,000 annually (depending on maintenance needs), Fehr & Peers can continue to host the VMT tool beyond the first year of operation. Additionally, Fehr & Peers can update data and variables used in the VMT reduction factors, based on land use or revised model runs provided by City staff. The development of an update plan will be shared in a draft version and finalized upon receiving C/CAG coordinated consolidated comments. The final plan will identify any input data and web tool updates. Fehr & Peers will prefer to review a new SLA for the specific guidelines in maintenance and support for a second year.

Optional Task 4.9: Migration of Web Tool

On request, Fehr & Peers technical staff can assist with migration of the VMT tool to a C/CAG hosted environment following the first year of web hosting.

SUMMARY OF TASK 4 CONSULTANT DELIVERABLES

TASKS 4.1, 4.2, 4.3

- Draft technical memorandum #4 summarizing VMT Thresholds, Alternatives, and Methods
- Final technical memorandum #4 incorporating one round of consolidated comments

TASK 4.4, 4.5

- Draft technical memorandum #5 with model guidance document
- Final technical memorandum #5 incorporating one round of consolidated comments

TASK 4.6

- VMT tool
- Draft VMT forecasting user manual
- Final VMT forecasting user manual incorporating one round of consolidated comments

TASK 5: DRAFT & FINAL REPORTS

Task 5.1: Prepare and Present Draft Report

Fehr & Peers will prepare a draft report for review and comment by the TAG. The report will summarize the results of each of the previous tasks and memoranda.

Deliverables

- Draft Report – Eight (8) print copies, plus one digital copy (Microsoft Word format)

Task 5.2: Prepare and Present Final Report

Fehr & Peers will incorporate one round of comments received on the draft report into the final report, as appropriate. We will also present the report at a public meeting of C/CAG.

Deliverables

- Final Report – Eight (8) print copies, plus one digital copy (PDF)
- Presentation to a public meeting of C/CAG

TASK 6: TRAINING

Task 6.1: Conduct Local Agency Training

Fehr & Peers will schedule and conduct a half-day training session for local agency staff on the use and application of the tools, procedures, and “user manual” developed under Tasks 2, 3, and 4. A facility for the training and attendee list will be provided by C/CAG or local agencies. This will include recording of the training as a webinar for reference by future agency staff unable to attend the training.

Deliverables

- Training material presentation
- Recorded video training for use by future agency staff
- Presentation to local agency staff

Proposed Project Budget

| Tasks | Project Manager Rubins | Principal-in-Charge Haynes | F&P Technical Insight | Senior Planner Whinery | Data Architect Ballard | Senior Travel Modeler | Transp. Planner | Graphics and Mapping | Admin | Labor Hours | Direct Costs | Total |
|--|------------------------|----------------------------|-----------------------|------------------------|------------------------|-----------------------|-----------------|----------------------|-----------|-------------|-----------------|----------------------|
| Task 1 - Project Initiation / Coordination with Project Partners | | | | | | | | | | | | |
| | \$240 | \$310 | \$335 | \$180 | \$205 | \$220 | \$155 | \$145 | \$120 | | | |
| 1.1 Project Kick-Off | 12 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 2 | 26 | \$480 | \$6,900 |
| 1.2 Hold TAG Meetings | 38 | 10 | 10 | 26 | 6 | 0 | 6 | 0 | 6 | 102 | \$1,670 | \$24,800 |
| 1.3 Monthly Teleconferences | 12 | 2 | 2 | 12 | 0 | 0 | 2 | 0 | 2 | 32 | \$520 | \$7,400 |
| Task 2 - Data Collection / Establish Baseline Vehicle Miles Traveled Data | | | | | | | | | | | | |
| 2.1 Planning Document Review | 2 | 0 | 2 | 4 | 0 | 0 | 4 | 0 | 2 | 14 | \$170 | \$2,900 |
| 2.2 Travel Model Review | 4 | 0 | 2 | 8 | 0 | 16 | 24 | 0 | 4 | 58 | \$810 | \$11,600 |
| 2.3 Baseline VMT Data | 2 | 0 | 4 | 4 | 0 | 16 | 16 | 0 | 4 | 46 | \$680 | \$9,700 |
| 2.4 Documentation | 4 | 0 | 2 | 8 | 0 | 0 | 16 | 0 | 2 | 32 | \$410 | \$6,200 |
| Task 3 - Development of VMT Mitigation Measures | | | | | | | | | | | | |
| 3.1 Review VMT Mitigation Measures | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | \$100 | \$1,300 |
| 3.2 Localized Mitigation Guidance | 6 | 2 | 4 | 12 | 0 | 0 | 0 | 0 | 2 | 26 | \$400 | \$6,200 |
| Task 4 - Development of Potential VMT Thresholds, Methods & VMT Tool | | | | | | | | | | | | |
| 4.1 Threshold Review | 2 | 0 | 2 | 2 | 0 | 0 | 2 | 0 | 2 | 10 | \$140 | \$2,200 |
| 4.2 Evaluate Threshold Alternatives | 8 | 0 | 2 | 16 | 0 | 0 | 24 | 4 | 4 | 58 | \$750 | \$11,000 |
| 4.3 VMT Calculation Methods | 8 | 0 | 2 | 16 | 16 | 0 | 24 | 8 | 6 | 80 | \$1,050 | \$15,400 |
| 4.4 VMT Threshold Guidance | 8 | 0 | 2 | 16 | 0 | 0 | 0 | 0 | 2 | 28 | \$390 | \$6,100 |
| 4.5 Guidance Documentation | 4 | 2 | 2 | 12 | 0 | 0 | 16 | 0 | 2 | 38 | \$470 | \$7,600 |
| 4.6 VMT Tool and User's Manual | 12 | 2 | 2 | 8 | 80 | 0 | 20 | 16 | 10 | 150 | \$1,190 | \$40,700 |
| Task 5 - Draft and Final Reports | | | | | | | | | | | | |
| 5.1 Draft Report | 16 | 4 | 4 | 16 | 0 | 0 | 32 | 8 | 6 | 86 | \$1,160 | \$17,300 |
| 5.2 Final Report and Presentations | 12 | 2 | 2 | 16 | 0 | 0 | 12 | 4 | 4 | 52 | \$730 | \$10,700 |
| Task 6 - Training | | | | | | | | | | | | |
| 6.1 Local Agency Training Sessions | 12 | 4 | 4 | 8 | 16 | 0 | 0 | 4 | 4 | 52 | \$760 | \$12,000 |
| Total for all Tasks | 164 | 32 | 52 | 192 | 118 | 32 | 198 | 44 | 64 | 896 | \$22,680 | \$200,000 |
| Optional Tasks | | | | | | | | | | | | |
| Task 2.5 Model Calibration & Support | | | | | | | | | | | | \$15,000 to \$50,000 |
| Task 4.7 Coordinate Legal Review | 8 | 4 | 2 | 8 | 0 | 0 | 4 | 0 | 2 | 28 | \$470 | \$6,600 |
| Task 4.8 Extended Web Hosting | 2 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | 2 | 36 | \$5,480 | \$11,800 |
| Task 4.9 Support Migrating Webtool | 2 | 0 | 0 | 0 | 20 | 0 | 0 | 16 | 4 | 46 | \$540 | \$8,500 |

Notes:

This fee proposal is valid for a period of 90 days from the proposal submittal date.

Actual billing rate at the time of service may vary depending on the final staffing plan at the time the project starts; the overall fee will not be exceeded.

Mileage is billed at the IRS rate plus 10% handling fee.

All other direct and consultant expenses are billed with 10% handling fee.

Other direct costs include computer, communications, and reproduction charges are billed as a percentage of labor.

Rates and staff are subject to change at any time, without notice, and within the total budget shown.

VMT webtool jumpstart Intellectual Property fee is \$10,000.

Optional: Additional annual hosting and updates \$5,000 each.

Optional: Web tool hosting transition \$5,000.

November 13, 2020

Jeff Lacap, Transportation Program Specialist
City/County Association of Governments of San Mateo County
555 County Center, 5th Floor
Redwood City, CA 94063

Subject: Additional Services for C/CAG Senate Bill 743 Vehicle Miles Traveled (VMT) Regional Baseline Study and VMT Tool

Dear Mr. Lacap:

We are looking forward to the successful completion of the C/CAG SB 743 VMT Regional Baseline Study and VMT Estimation Tool (VMT Estimation Tool). You have requested that we prepare the baseline and cumulative VMT data for the *SB 743 Implementation Decisions* white paper and the San Mateo Countywide VMT Estimation Tool. VTA began this work and will transfer the VTA travel model files for the 2015 and 2040 model years and the VMT data that they have already prepared.

Baseline and Cumulative VMT Data for White Paper

Fehr & Peers will use the VTA travel model to prepare baseline (2015) and cumulative (2040) VMT estimates for the following VMT metrics for three geographic areas (e.g., City-level, County-level, and Region-level):

- Total Project Generated VMT – Daily VMT of all vehicle trips, vehicle types, and trip purposes for all project land uses, presented as a total project generated VMT.
- Total Project Generated VMT per Service Population – Daily VMT of all vehicle trips, vehicle types, and trip purposes for all project land uses, divided by the sum of residents plus employees in the analysis area generating the VMT.
- Home-Based VMT per Resident – VMT generated by light-duty vehicles (i.e., private cars and trucks) for all trips that begin or end at a residential land use, divided by residents.
- Home-Based Work VMT per Employee – VMT by light-duty vehicles only for work trips (that is, trips that have one end at a workplace and one end at a residence), divided by number of employees.
- Boundary VMT – VMT that occurs within a selected geographic boundary (e.g., City, County, or region) by any type of vehicle. This captures all on-road vehicle travel on a roadway network for any purpose, and includes local trips as well as trips that pass through the area without stopping.



For the total project generated VMT, home-based VMT, and home-based work VMT will be adjusted to include the travel outside the model area. This adjustment is consistent with the recommendations in the California Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018). The adjusted distances outside of the model area will be based on travel data from the California statewide travel model will be incorporated into the VMT data. Fehr & Peers will prepare the following VMT data for the *SB 743 Implementation Decisions* white paper.

Baseline and Cumulative VMT Data for the VMT Tool

Fehr & Peers will also prepare the baseline (2015) and cumulative (2040) VMT data for the San Mateo Countywide VMT Tool including the following data fields to be extracted from the travel mode and GIS analysis methods:

- Transportation Analysis Zone
- Residential Acreage
- Commercial Industrial Acreage
- Total Population
- Total Households
- Single-Family Households
- Multi-Family Households
- Total Employment
- Retail Employment
- Service Employment
- Other Employment
- Agricultural Employment
- Manufacturing Employment
- Wholesale Employment
- Transient Employment
- Total Service Population
- Elementary School Enrollment
- High School Enrollment
- College Enrollment
- College Fulltime Enrollment
- College Part Time Enrollment
- Drove Alone Productions
- Drove Alone Attractions
- Carpool 2 Productions
- Carpool 2 Attractions
- Carpool 3 Productions
- Carpool 3 Attractions
- Transit Productions
- Transit Attractions
- Bike Productions
- Bike Attractions
- Walk Productions
- Walk Attractions
- Total Project Generated VMT
- Total Project Generated VMT per Service Population
- HBW VMT Attractions
- HBW VMT Productions
- HB VMT Productions
- HB VMT Attractions
- HBW VMT per Job
- Total VMT per Capita
- Indicated if the jurisdiction has a screening override



Fehr & Peers and C/CAG will meet to select the ESRI basemap to use. Fehr & Peers will use available layers from C/CAG or MTC for the San Mateo Countywide VMT travel model:

- Parcels*
- Transportation Analysis Zone*
- Transportation Priority Area (TPA) / High Quality Transit Corridor (HQTC)**
- Jurisdiction Boundaries*
- Jurisdiction Sphere of Influence*

*Use C/CAG provided layers; **Use MTC layer.

Fehr & Peers will provide meta data for each layer and incorporate into the VMT tool. These layers can be refined or enhanced as an additional effort.

The total fee to conduct the tasks described above is \$20,000, (see Attachment A). This fee includes all professional and support staff time, as well as direct expenses, to conduct the proposed scope of services. Invoices will be submitted monthly and are due upon receipt.

Schedule

We will prepare the VMT data for the white paper and the VMT tool within 6 weeks of receipt of the travel model runs and documentation from VTA staff. We will schedule the delivery of the San Mateo Countywide VMT Estimation Tool for the TAG review once the VMT data has been completed. This schedule duration is dependent upon when we get started on the model

We appreciate the opportunity to work with C/CAG in this important project, and we look forward to its successful completion.

Sincerely,

FEHR & PEERS


Daniel Rubins
Senior Associate


Matt Haynes
Principal

SJ19-1990

Attachment A: Fehr & Peers' Fee Proposal for C/CAG SB 743 VMT Regional Baseline Study and VMT Tool
Additional Services #1

Attachment A: Fehr & Peers' Fee Proposal for C/CAG SB 743 VMT Regional Baseline Study and VMT Tool Additional Services #1

| Tasks | Fehr & Peers | | | | | | | | | Labor Hours | Direct Costs | Total |
|--|-------------------------------|------------------------------------|--------------------------|----------------------------------|------------------------------------|----------------------------------|-----------------|----------------------|----------|-------------|----------------|-----------------|
| | Project Manager Dan Rubins | Principal-in-Charge Matt Haynes | F&P Technical Insight | Senior Planner Teresa Whinery | Data Architect Marshall Ballard | Senior Travel Modeler Support | Transp. Planner | Graphics and Mapping | Admin | | | |
| | \$250 | \$310 | \$335 | \$180 | \$215 | \$220 | \$165 | \$145 | \$135 | | | |
| Baseline and Cumulative Data for White Paper | | | | | | | | | | | | |
| VMT Data for White Paper | 8 | 2 | 2 | 4 | 0 | 2 | 40 | 4 | 4 | 66 | \$830 | \$13,000 |
| Baseline and Cumulative Data for the VMT Tool | | | | | | | | | | | | |
| VMT Data for the VMT Tool | 4 | 0 | 0 | 4 | 4 | 0 | 8 | 16 | 2 | 38 | \$510 | \$7,000 |
| Total for all Tasks | 12 | 2 | 2 | 8 | 4 | 2 | 48 | 20 | 6 | 104 | \$1,340 | \$20,000 |

Notes:

This fee proposal is valid for a period of 90 days from the proposal submittal date.

Actual billing rate at the time of service may vary depending on the final staffing plan at the time the project starts; the overall fee will not be exceeded.

Mileage is billed at the IRS rate plus 10% handling fee

All other direct and subconsultant expenses are billed with 10% handling fee

Other direct costs include computer, communications, and reproduction charges are billed as a percentage of labor

Rates and staff are subject to change at any time, without notice, and within the total budget shown