SCOPE OF SERVICES

RFP QUESTION

Each proposer shall include a detailed scope of work and understanding of the process to undertake such projects and complete it in compliance with all applicable rules, regulations, standards and requirements. The scope of work shall indicate the tasks/actions the firm(s) expect the City to take.

Describe the methods by which the proposer will fulfill the services requested in the scope of work and subsequent sections.

Provide a statement of the service(s) that differentiate the proposal from other respondents.

SCOPE OF SERVICES

In response to the request for proposal, we have provided a detailed scope of work below for each of the key tasks.

A. PROJECT MANAGEMENT AND COORDINATION

The Fehr & Peers team will attend a kick-off meeting with Culver City staff. The intent of this meeting is to identify team communication protocol, confirm the project schedule and deliverables, and review/finalize the scope of work.

The project team plans to work collaboratively, with personalized attention given to the management, administration, and coordination of day-to-day activities for the project. Fehr & Peers will provide regular project updates to City staff, so that there is no lapse in work timing or products.

Monthly Check-Ins

Monthly conference calls will be held to present overall progress and status of tasks such as data collection, analysis results and deliverables.

Monthly progress reports will be submitted to the Culver City project manager accompanied by conference calls as needed. Each report will itemize tasks completed, percentage of budget spent and achievement of overall study objectives. They will also contain a summary of obstacles and issues, recommended solution or course of action, and a timeline for resolution.

B. PROJECT INITIATION

Fehr & Peers will apply the project management and communication protocols established in Task A.

Due to the schedule of the project, the Culver City Travel Forecasting Model will rely on the most recent Census and California Household Transportation Survey (CHTS) data and data inputs used within the 2016 SCAG Regional Transportation Plan travel demand model. Specifically, Fehr & Peers will collect existing and available traffic and travel demand data for the Culver City Model. The presumed level of available data is listed below in Table 2. The scope of work and fee assumes that the City of Culver City and SCAG will provide some of data necessary for the development and calibration/validation of the travel behavior model. It is also assumed that the City of Culver City staff will assist will the requests for both the 2016 SCAG RTP model and the City of Los Angeles model.

TABLE 2 – PRESUMED LEVEL OF AVAILABLE DATA

Data Type	Use	Status
Land Use	Model Inputs	Base & Future year land use & Socio Economic database to be provided at parcel level by Culver City. Regional Socioeconomic data provided from the 2016 SCAG RTP and City of Los Angeles model
Transportation Network	Model Inputs	To be developed by Fehr & Peers
Travel Behavior	Model – Estimation and Calibration	Available - 2012 California Household Survey, 2010 Census, and 2012 American Community Survey. Mobile device data to be collected as part of Task B.
Interregional Travel	Countywide SCAG Model – Estimation and Calibration	Available – 2016 SCAG RTP Model. Interregional Origin-Destination mobile device data to be collected as part of Task B.
Trip Generation Counts	Countywide Model – Trip Generation	To be collected by Fehr & Peers
Screenline and individual traffic counts	Model – Validation	To be collected by Fehr & Peers
Geographic Information Systems Street and Land Use Layers	Model	Culver City parcel level land use/SED and built environment data to be provided by the City (if available).
Transit Ridership	Model	Observed data available from Metro

C. BUILD TDFM

This task includes the development of a new Travel Demand/Behavior Forecasting Model for the City. This is a tool that is only useful if it is understood, used, and applied to answer specific technical questions. Furthermore, most regional travel behavior forecasting models lack the sensitivity to be of value in answering many of the technical questions that involve complex land use transportation interactions being asked today.

Because of our diverse experience in both developing and applying these types of models, we have built an extensive knowledge of how these models work, their benefits, and their limitations. Our models are designed to be user friendly so that updating the model inputs, running the tool, and interpreting the results are intuitive processes. Fehr & Peers develops models with capabilities that go beyond those of traditional highway-focused travel demand models to provide enhanced capabilities in such areas as smart growth, GHG emissions, transit operations, and alternative modes such as walking and bicycling. We have developed innovative techniques that allow travel behavior models to capture the interactions between neighborhood-scale land use characteristics and travel patterns. This is based on research and tool development in the areas of state-of-the-art travel demand modeling, TDM effectiveness, VMT estimation, and mixed-use trip generation considering the effects of the built environment.

This task will rely on the use of either the 2016 SCAG RTP/SCS model and/or the City of Los Angeles Travel Demand Model if available. There are other models available such as the Metro travel demand model, but we believe the aforementioned two models will be the best starting point for a local Culver City model that balances automobile and transit travel behavior. Of these, the City of LA model would be particularly useful in that its zone system is already more disaggregated and its network more detailed in the areas surrounding Culver City than is the zone system and network in the SCAG model. Fehr & Peers developed and recently updated the City of LA model and is intimately familiar with it.[1]

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[1] SCAG also provides a Subregional Modeling Tool (SMT) utility that has been used to create models for Riverside, San Bernardino, and Ventura Counties. The SMT provides consistency with the framework of the SCAG regional model while providing more network and zonal detail in the subarea of interest. While appropriate for countywide modeling efforts, the SMT does not provide enough flexibility and customization when developing a citywide model that is intended to produce travel behavior metrics consistent with the intentions of Senate Bill 743.

Culver City's model will need to estimate changes in travel behavior and VMT in response to both network improvement projects and TDM programs and policies. While the SCAG model and SMT can reasonably forecast travel behavior changes due to improvements in the arterial and transit networks, these models are severely limited in their ability to forecast changes due to the TDM policies that Culver City will be implementing to mitigate increases in VMT. By default, the SMT includes a single TDM trip reduction factor that applies to all areas of the model and cannot be customized if different policies were to apply in different areas.

Another disadvantage of the SMT is the added complexity for the end users that will need to understand the outputs of the model when the tool is used for project review. While the runtime of a model developed from the SMT is reduced from the regional SCAG model, it still requires at least a day to run and to pull results from. A more focused model that

TAZ System Development

The Culver City Model transportation analysis zone (TAZ) system will be developed using the 2016 SCAG RTP model and/or the City of Los Angeles model as the starting point. It is expected that the TAZs be disaggregated substantially to reflect local geographical details. Fehr & Peers will recommend a TAZ system within the City and surrounding area with sufficient geographical detail for local model applications and that includes the following elements:

- Physical boundaries that influence travel patterns
- Jurisdictional boundaries (city limits, and sphere of influence)
- Existing and future development patterns (i.e., future specific plan boundaries)

Land Use and Socioeconomic Data

Base year and horizon year land use and socioeconomic data (SED) obtained from the City of Culver City and SCAG will be used as input into the Culver City model. The SED categories proposed for the Culver City model will be presented to and discussed with City staff to determine the appropriate level of detail. Fehr & Peers will coordinate directly with the City of Culver City regarding the horizon year demographic dataset (expected to be 2040 consistent with the 2016 SCAG RTP). The City staff will provide a parcel level land use/SED database consistent with the zone system and variable formats used in the model.

Network Development

To support a relatively dense TAZ structure, Fehr & Peers will develop a detailed highway network with variables for:

- Facility type
- Adjacent development
- Mixed-flow lanes
- Turn prohibitions and cul de sacs
- Transit (drive, park-n-ride, and walk/bicycle access)

Fehr & Peers will perform quality checks using geographic information system software to conduct a quality assurance/quality control (QA/QC) process on connectivity, duplicate and dead-end links to be checked for and discarded from the final network.

Trip Generation

The travel model will estimate Culver City specific person trip generation rates based on the SCAG/LA regional model, the California Household Travel Survey (CHTS), and local data (if available). We anticipate that calibration of the rates will focus on capturing the unique travel characteristics of Culver City and

does not include trips from Ventura or Imperial Counties that don't interact with Culver City is a more appropriate choice. The runtime will be significantly faster, the storage requirements will be smaller, and the model outputs will be easier to post-process compared with a model created from the SMT.

adjacent areas. This trip generation model will also be sensitive to built environment variables, accessibility to transit or active mode facilities, transportation system (highway, transit, walk or bicycle network), and land use/socioeconomic factors.

By developing a person trip model, it provides the City with a model that is sensitive when testing a variety of transportation policies, programs and strategies and being able to report the influence that they have on person and hence multi modal trip making. This type of tool would be particularly effective in evaluating the effect of TDM and trip reduction strategies as well as being able to determine the amount of tripmaking by mode (transit, bike, walk, carpool etc.).

Trip Distribution

The trip distribution function uses a gravity model formulation that relies on friction factors to relate the likelihood of selecting a particular destination given the distance or travel time to that destination compared to other similar destinations. The model will use friction factor curves to represent internal trip purposes and the I-X and X-I trips. The initial friction factors will be taken from the current model and tested against other friction factors developed by Fehr & Peers since 2000. A single set of factors will be selected and then adjusted for each trip purpose being modeled during trip distribution calibration to better represent each trip purpose's unique tripmaking characteristics.

The trip distribution process that will be tested for inclusion in the updated model includes the introduction of a separate external trip distribution function for different sub-areas or sub-groups. Our experience in developing traffic models for other cities has demonstrated that it could be advantageous to allow different areas of the City to distribute trips to external gateways in different proportions. Our regional linking process specifically defines and distinguishes gateway travel by trip purpose for consistency with regional estimates. We will adapt this process to the updated model.

Mode Choice

The mode choice component of the model will be derived from the SCAG model and will be calibrated to account for vehicle trips shifted to other modes of transportation (transit, bicycle and pedestrian). Vehicle trip reductions occurring during the trip generation component must be shifted to other travel modes in order to accurately account for all person trips in the model. It is anticipated that transit data from Metro and Culver City bus will be used in the calibration process. No specific modifications to the format of the mode split model are proposed.

Trip Assignment

The most common measurement of traffic model accuracy is the degree to which it can approximate actual traffic counts in the base year. Fehr & Peers will test different trip assignment algorithms to determine the one that best replicates existing behavior, but also responds appropriately to variations in the model's input variables. Potential algorithms will include methods such as capacity restrained equilibrium and multiple iteration incremental assignments.

Various speed/delay curves will also be tested to determine their role in the routing of trips from origin to destination. We have experimented in the past with more sensitive delay curves, which are consistent with the Highway Capacity Manual (HCM) rather than standard Bureau of Public Roads (BPR) curves, and have found much better success in replicating delay due to congestion with these curves.

Model Static Validation

Model validation is a critical component of the model development process where the model's ability to replicate base year conditions is measured. Fehr & Peers takes a unique approach to validation in that we perform both static and dynamic tests. As part of the static validation procedure, elements of the trip generation, trip distribution, and traffic assignment modules may be adjusted. Our goal is to meet or exceed the validation criteria published in the *2017 California Regional Transportation Guidelines for Metropolitan Planning Organizations* (California Transportation Commission, January 2017), but validation testing will be limited to 10 iterations at which point we will assess the model performance and discuss whether future testing is desired by the City to improve the test results. Examples of static tests may include evaluation of the following:

- Trip length frequency by purpose
- Interregional distribution patterns
- Average travel times by purpose
- Roadway segment model-to-count ratios
- Screenline model-to-count ratios
- Percent Root Mean Squared Error
- Model congested speed versus observed congested speed
- Spot checks of route assignment
- VMT within the county compared to the highway performance monitoring system (HPMS)

Fehr & Peers will also use cell-phone or mobile device data during the calibration and validation process. This approach has already been used successfully on other similar projects. The specific use of this data will depend on preliminary static and dynamic validation findings. Typical applications include calibration refinements related to trip tables or trip lengths.

The following source of transportation data is proposed for use in the static validation tests. These have been accounted for as a direct cost in the overall budget. If the City has recent data that can be used, then some of this data may not be necessary:

- 24-hour roadway segment traffic counts on a typical weekday (up to 150 locations). The counts will be collected on neighborhood feeders, collectors, secondary and primary arterials.
- Big data (mobile/GPS data)
- Transit ridership data from Metro and Culver City Bus (overall system and individual lines)
- RIITS data for locations outside of Culver City such as Los Angeles
- Freeway data from PeMS

Model Dynamic Validation

The static validation tests described in the previous task ensures that the model can replicate existing traffic counts and speeds. While these tests are useful at confirming that the model can replicate existing conditions, models are generally used to forecast change, which static tests say nothing about. To determine how well the model responds to changes in land use and the transportation network, we will perform a set of dynamic validation tests. Dynamic tests may include testing the changes in the following (list to be refined):

- Add 1, 10, and 1,000 households to a TAZ
- Remove 10 and 1,000 households from a TAZ
- Add and remove 100 and 1,000 ksf of retail employment in a TAZ
- Add and remove a roadway link in the network
- Add and remove travel lanes in the network

Based on the results of the dynamic validation tests, elements of the trip generation, trip distribution, and traffic assignment modules may be adjusted. We will document and interpret the results of the dynamic validation tests in graphical and tabular form.

Model Output Data and Performance Measures

The travel demand model will be developed to output data that includes the following information listed below. Should other metrics be required, Fehr & Peers will discuss with City staff and determine the level of effort necessary to obtain the information. (For example, if LOS is required at the intersection level it would be necessary to develop a post processing methodology to obtain this data, as raw model data is not typically used to assess LOS. Developing an intersection post-processor is not included as part of this work scope.)

- Individual link/segment traffic volumes by direction (daily and peak periods)
- Origin-Destination information
- Select link analysis
- Select zone (trip distribution) analysis
- Congested speeds
- Vehicle Miles Traveled
- Vehicle Trips
- External – External (X-X) trips (pass through trips)
- Internal – Internal (I-I) trips
- Internal – External trips (I-X) , External – Internal (X-I) trips

Fehr & Peers will also work with the City to develop performance measures (qualitative and quantitative) appropriate for assessing a variety of multi modal improvement project and polices/programs. Based on our experience, the most important step is defining performance measures that address community concerns, address the goals and objectives of the study and do not conflict with goals/policies of the

General Plan. In particular, the model will be developed in order to produce metrics that will be needed to evaluate land use growth under the new SB743 guidelines.

As part of this task Fehr & Peers will facilitate a workshop with City staff where we will present the measures, and modify them based on input and feedback from the meeting. A key question that will be asked is, "What does the City want to create, avoid, and protect when it comes to mobility in Culver City?"

Fehr & Peers will then work with the Culver City staff to help define the performance measures that can be produced by the TDFM, as not all measures can be assed directly from the model. A sample list of measures is provided below:

- Vehicle Miles Traveled (VMT)
- Vehicle hours of delay (VHD)
- Vehicle Trips (VT)
- Level of Service (LOS)
- Trip Length
- Mode Split
- Origin – Destination patterns
- Accessibility to bicycle /pedestrian/transit facilities

A specific goal of the model development (as referred to in the RFP) will be the ability of the tool to assess and evaluate various TDM strategies and changes in transportation mode and/or network.

Model Documentation

Fehr & Peers will prepare a draft Model Development Report that describes the methods, data sources, and assumptions used to develop the validated Culver City TDF Model. Flow chart diagrams will be included which will illustrate the relationship of data inputs, model steps, and output. Fehr & Peers will prepare a draft and final version of the Model Development Report.

SB743 VMT Metrics and Threshold Options for Land Use Projects

Fehr & Peers will develop VMT threshold options for land use projects based on policy goals as directed by the Culver City staff and consistent with SB743 guidance from the State. The guidelines will describe where and when the selected VMT metrics should be applied. Potential metrics to be evaluated include:

- Areawide VMT
- VMT per capita
- Household VMT per capita
- VMT per service population
- Work VMT per employee

As part of this task Fehr & Peers will document how the various threshold options would meet the substantial evidence test under the California Environmental Quality Act.

Case Studies for Land Use Projects

After developing the VMT threshold options, Fehr & Peers will apply the selected metrics to up five different case studies, to be selected in consultation with Culver City staff. The sketch tool will be used to evaluate the project-level impacts for each case study as well as the potential to mitigate any impacts with potential TDM strategies/programs as provided by the City's TDM consultant.

Threshold Recommendation

Fehr & Peers will summarize the results of results of the aforementioned tasks in technical memo that demonstrates how the recommended metrics and thresholds support policy goals to increase the VMT performance of new projects, implements CEQA streamlining for infill development and "Complete Streets" projects, and meets the substantial evidence standard under CEQA. The proposed guidelines will clarify the methodology for determining significant impacts, such as projects that induce travel demand or increase VMT per capita. The most appropriate software tool (citywide travel demand model or sketch model tool) for quantifying the impacts will be identified as well.

Optional Task: Project-Level VMT Calculator

As an optional task, Fehr & Peers could develop a spreadsheet based tool that could be applied to project-level review of transportation projects in the City of Culver City. While we have already developed and used multiple spreadsheet and web-based tools that perform VMT estimates, this project provides an opportunity to refine or build new tools that incorporate recent research about VMT effects of land use and TDM actions. The tool would incorporate trip length data and demographic data from empirical sources and the citywide travel model, validated through the most recent California Statewide Travel Survey, to calculate project-level VMT impacts. The appropriate geographic scale (TAZ, Census area, or other boundary) of the model inputs would be determined during the model calibration process. The tool would account for the VMT benefits of transit proximity, mixed land uses, urban design, and TDM measures. The quantification of some of these benefits would be linked to the available data on mode share, trip generation and CAPCOA research. Through consultation with the Culver City staff, the strategies identified (by the City's TDM consultant) to reduce a project's VMT impact on the environment would be determined and incorporated into the sketch model. The cost to conduct this optional task is not included in the fee proposal but a fee could be provided if desired by the City.

District-Level Local Trip Generation Rates

The City may seek to gain a greater understanding of the different vehicle trip generation characteristics of specific business or residential districts in Culver City. As per the RFP, City staff have identified 14 business/residential districts which may be of interest, which will vary in household income, land use mix and proximity to transit. Per the City's responses to questions, this task will focus on areas or land use types where it is determined in consultation with the City that having a better understanding of local trip generation rates would be useful for model development or other City purposes. Fehr & Peers could conduct trip generation studies/surveys of either commercial or residential districts in different areas of Culver City.

In addition to the site study/survey, a combination of literature review, and coordination with NACTO trip generation efforts, travel survey data and the cell phone data that is available as part of this project may also be used to assist with the development of localized trip generation rates.

As the magnitude of this task is not currently known, we have provided an estimate of unit cost for collecting data in a single district. Depending on the size, transportation network and mix of land uses the complexity of the evaluation may increase and hence the cost may vary by +/- 20%.

Transportation Safety Initiatives

Parallel to the development of the Travel Demand Forecast Model, our team will coordinate and align with the transportation safety initiatives already underway in Culver City. Fehr & Peers is currently working with the City on the development of a Vision Zero Action Plan, as part of the Bicycle Pedestrian Master Plan Update. The Vision Zero Action Plan began with a robust collision data analysis for all modes, focusing specifically on collisions that resulted in severe injuries and fatalities, using data from the City's Crossroads system. The Fehr & Peers team then identified the High Injury Network, the 15% of Culver City streets that account for 82% of all collisions resulting in a severe injury or fatality. Forthcoming work includes the development of engineering countermeasures, education campaigns, and enforcement approaches along the High Injury Network that will reduce the collision patterns observed.

Some of these countermeasures, actions, and other elements proposed along the High Injury Network may be relevant for coordination with the TDFM effort. These elements could include signal-timing changes, operational changes to the roadway network, and speed limit adjustments. As part of this task, Fehr & Peers staff leading the Vision Zero Action Plan will ensure the development of the TDFM aligns with the projects and actions included in the Vision Zero Action Plan. Fehr & Peers can also ensure close coordination around issues like evaluation, ongoing collision analysis, and performance metrics.

D. TECHNICAL SUPPORT FOR GPU MOBILITY ELEMENT

Fehr & Peers will provide technical support to the team selected for the General Plan Update (GPU) project. This task may involve coding of the travel demand model to ensure its accuracy for use in the future year general plan scenarios. As per the RFP, this could include the following tasks but is not limited to:

- Modifying land use/SED model input files
- Roadway network system modifications
- Transit system coding, including, but not limited to, micro-transit
- TDM/TSM program elements
- Bicycle network and pedestrian circulation system master plans

As the extent to which assistance required by the GPU project is not currently known, the fee proposal includes an allowance of 80 hours for this task.

E. PREPARE TRAFFIC STUDY GUIDELINES

Fehr & Peers will revise the City's existing *Traffic Study Guidelines* to incorporate all the new procedures necessary to conduct a project-level VMT-based analysis. This update will also include any pertinent evaluation protocols that result from the revised State CEQA Guidelines pursuant to SB 743. This task will include an evaluation of the City's current traffic study guidelines, and in consultation with City staff, determine which elements should be carried over. In addition, the revised guidelines will include project components that are critical to Culver City when evaluating a proposed development project, such as site access, queuing at project driveways, queue spillback to the immediate adjacent intersections and roadway operations. After presenting the updated draft procedures to city staff, Fehr & Peers will respond to one round of comments before submitting a final draft.

F. HEARINGS, MEETINGS, AND EVENTS

Fehr & Peers staff will prepare for and attend the following meetings with City staff:

- One internal kick-off meeting with City staff (included in Task A)
- 12 internal meetings with City staff (monthly), can be mix of in-person and conference as warranted

Fehr & Peers staff will prepare for, attend and support City staff at the following public meetings, events, or hearings

- Four community meetings/events
- Two Planning Commission meetings
- One Planning Commission hearings
- Four City Council meetings
- Two City Council hearings

The budget estimate includes all the meetings listed above. Should the City require Fehr & Peers' attendance at additional meeting not listed above, such as the GPU transportation TAC meetings, these will be billed on a time-and-materials basis using our standard billing rates.

G. ASSIST TDM CONSULTANT ON EVALUATION OF RECOMMENDED FUTURE TDM STRATEGIES

Fehr & Peers will support the City's TDM consultant on an as-needed basis. As part of Task C, the model will be developed so that it is sensitive to certain TDM strategies. The Fehr & Peers team will be available to the City staff and the TDM consultant on an as-needed, time-and-materials basis to assist with the analysis and evaluation of TDM strategies and programs. The fee proposal includes an allowance of 80 hours for this task.

H. ESTIMATE FOR ONGOING TDFM OPERATIONS AND MANAGEMENT

Fehr & Peers will develop a user guide and training materials for Culver City staff to perform the analytic framework of project-level VMT analysis of both land use and transportation projects. The information will be presented at two half-day workshops with city staff. The training materials and course format will be based on the case studies developed under Task C. The training will cover the following topics:

- How to run the Travel Demand Model
- Most common travel model tasks
- Use of the sketch model to apply unique trip generation rates and TDM reduction benefits
- Use of VMT-based thresholds for project analysis
- Decision criteria in applying mitigation measures

The training materials will also document the when and how the citywide travel model should be updated to derive the necessary inputs for project-level review.

Additional training beyond the elements listed above can be conducted on a time-and-materials as-needed basis.

Fehr & Peers response to follow up questions in City email of 4/9/2018

1. The City does not have any up-to-date traffic counts. All proposals must assume that the consultant will take new traffic counts for the base condition to validate and calibrate the model. If counts are already included in your proposal, please note how many counts are budgeted for. If counts are not currently included in your proposal, please provide a scope and cost for providing this service and indicate how many counts are budgeted for.

The Fehr & Peers proposal includes a budget for up to 150 count locations (24-hour segment counts on a typical weekday).

2. Culver City has a strategic goal of no overall growth in citywide ADT while enhancing traffic safety. To enable analysis of overall citywide ADT, the model must be able to track trips with an origin in the city, a destination in the city, trips contained within the city, as well as by-pass traffic. Please confirm that your proposed approach includes these trip types.

Our proposed approach includes the ability to track these trip types.

3. Are TDM measures, bicycle facilities, transit, and pedestrian travel factored into the model to arrive at VMT? Can the model evaluate the effectiveness of specific TDM and TSM measures? If the existing scope and cost includes these functions, please describe how it does so. If a separate sketch model/VMT calculator is required, please provide a scope and cost.

The existing scope and cost includes the incorporation of TDM/TSM. The model framework proposed will account for automobile, transit, bicycle and pedestrian travel when determining VMT. Regarding the TDM/TSM measures, this will depend on the measures the City decides to test and apply. Some TDM measures can be applied in line within the TDFM framework through the use of elasticities (e.g., parking policy, trip reduction strategies, and transit strategies) while others may have to be applied off line and evaluated outside of the model. To the extent that these affect person or vehicle trip making, the model inputs can be modified to accommodate TDM measures.

TSM measures, ATSAC, ATCS and cameras could be factored into the model by adjusting capacity. Recognize that these types of measures could increase, not decrease, VMT.

We have incorporated these types of measures in citywide models for the Cities of Los Angeles, Pasadena, West Hollywood, Santa Monica and Glendale.

A separate sketch model is not required for this purpose.

4. One of the tasks is to prepare new traffic study guidelines for the City. The work shall include a development review fee structure for City staff review time, maintaining and updating the model, and to access big data. If the existing scope and costs accounts for this, please describe how it does so. If not, please add this service and provide an updated scope and cost.

The new traffic study guidelines task was included as part of our proposed scope of work, but developing a new review fee structure was not. We are currently in the process of assisting the City of Los Angeles with updating their development review fee structure as part of their traffic study update process.

The following scope of work and fee is proposed to address this task for the Culver City:

Fehr & Peers will develop a transportation review fee to recover the staff costs for project-level review and TDM monitoring and enforcement. The fee will also be set to account for periodic updates to the City's travel demand model, acquisition of additional mobile device ("big") data, or other elements of the transportation review procedures that are necessary to perform adequate project-level VMT impact analysis.

Cost Estimate: $7,470

5. Culver City participated in Metro's Countywide Arterial Performance Baseline Conditions Analysis; an effort to collect speed and volume data throughout the county that will feed into the performance measurement of an analytical tool that is being evaluated by Metro. All the key arterials in Culver City were included in this analysis. Please confirm if this information is or should be included in the model approach and if it allows for any cost savings.

Fehr & Peers will review the Metro study and determine whether any of the data can be used in the model calibration/validation. If the data is appropriate for use, this may reduce the number of count locations required. If the number of locations are reduced then there would be proportionate cost savings.

6. The model must be easy enough for traffic and transportation consultants and City staff conducting traffic impact analysis studies for development projects to assess VMT impacts. If not already included, please identify how the proposed model interface would allow for this level of functionality.

The model can be used to assess VMT for development projects. However, this is size dependent. For example, the model can be used to assess the VMT impacts of larger land uses such as shopping malls or studios. Travel demand forecasting models such as the proposed citywide model are less sensitive to smaller land uses and are not recommended for these types of projects. In terms of functionality for City staff or other transportation consultants, the TDFM will employ a Graphical User Interface (GUI) to run the various steps in the model. The model will then output data, some of which can be used directly and other data that requires post processing (typically in Excel).

Based on the fact that there are a variety of land uses (and sizes) that are not recommended for VMT impact assessment in the model, we included an optional task (see page 33 of the proposal) for a project level VMT calculator. We are currently in the process of finalizing a similar VMT calculator for the City of Los Angeles and also recently developed one for the City of San Jose.

Here is the scope language we included in our proposal (page 33):

Optional Task: Project-Level VMT Calculator

As an optional task, Fehr & Peers could develop a spreadsheet based tool that could be applied to project level review of transportation projects in the City of Culver City. While we have already developed and used multiple spreadsheet and web-based tools that perform VMT estimates, this project provides an opportunity to refine or build new tools that incorporate recent research about VMT effects of land use and TDM actions. The tool would incorporate trip length data and demographic data from empirical sources and the citywide travel model, validated through the most recent California Statewide Travel Survey, to calculate project-level VMT impacts. The appropriate geographic scale (TAZ, Census area, or other boundary) of the model inputs would be determined during the model calibration process. The tool would account for the VMT benefits of transit

proximity, mixed land uses, urban design, and TDM measures. The quantification of some of these benefits would be linked to the available data on mode share, trip generation and CAPCOA research. Through consultation with the Culver City staff, the strategies identified (by the City's TDM consultant) to reduce a project's VMT impact on the environment would be determined and incorporated into the sketch model. The cost to conduct this optional task is not included in the fee proposal but a fee could be provided if desired by the City.

Cost Estimate: $49,800

7. The availability and pricing of parking is an important factor in determining development projects' VMT. If in the future the City decides to modify its parking strategies, how will this be reflected in the model's and/or sketch/VMT calculator VMT projections?

There are a variety of options available to the City regarding the evaluation of parking strategies. Research has shown that one of the greatest influences on development project VMT is how parking is treated. This is both on the supply side and how it is priced. The types of strategies that have proven to be very effective at reducing VMT and GHG are:

- Limiting Parking Supply
- Unbundling Parking
- Workplace parking
- On Street Pricing Policies
- Preferential Parking Permits

Both the travel model (and the optional VMT calculator) can apply research results and parameters from the California Air Pollution Control Officers Association (CAPCOA) study within their frameworks. The main difference in application of the TDM measures in the model versus the VMT calculator is the scale of application. The model allows application at a TAZ, group of TAZs or City level. The VMT calculator applies the measures at a project or parcel level.

The CAPCOA data is the most robust and legally defensible information available at this time.

8. The City is interested in establishing project-level VMT impact fees. The timing of this optional task likely would be dependent on the General Plan Update and land use element alternative scenarios analysis, which is anticipate to begin around 2020. Please provide a separate scope and cost memorandum for the preparation of a VMT-based nexus study as a follow up task to modeling services."

Fehr & Peers has recently been involved in the preparation of two local trip fee programs in adjacent sections of the City of Los Angeles: the Coastal Transportation Corridor Fee Program and the West Los Angeles Fee Program. Both are VMT-based fee programs and were recently approved by the Los Angeles City Planning Commission. A typical scope of work for this would include the following tasks:

- Community engagement/outreach
- State of the practice review of VMT fee programs
- Development of a project list
- Conceptual planning level cost estimates
- Nexus analysis and travel forecasting (existing deficiencies, through traffic, new trips/VMT generated in Culver City)

- Impact fee calculations
- Economic review (prepared by an economist)
- Documentation and fee ordinance
- Impact fee adoption

Depending on the level of detail of the aforementioned tasks, the cost to complete a VMT nexus analysis is typically in the range of $70,000 to $100,000.

As part of our scope and fee estimate, we are happy to advise the City in regards to the technical content and legal considerations around a citywide VMT based traffic impact fee.