

Proposal to Prepare the

Culver City Travel Demand Forecast Model

RFP #1830 – TDFM Services
March 22, 2018

Submitted to

Culver
CITY

Submitted by

FEHR & PEERS

600 Wilshire Blvd, Suite 1050
Los Angeles, CA 90017
213.261.3050



March 22, 2018

Ashley Hefner, AICP, Advance Planning Manager
City of Culver City
c/o City Clerk
9770 Culver Boulevard
Culver City, CA 90232

Subject: Proposal to Prepare the Culver City Travel Demand Forecast Model

Dear Ms. Hefner:

Fehr & Peers is pleased to respond to the City of Culver City's Request for Proposal to Prepare the Culver City Travel Demand Forecast Model. Your list of requested services aligns perfectly with our firm's core service areas, and more importantly with the core passions of our dedicated staff.

You are looking for a team of outstanding individuals to help the City transition into the next era of transportation services and project level VMT review. We are recognized as a leader and an innovator in the transportation planning field and invest annually in research and development to push the practice for our clients. We greatly value the City of Culver City as a client and have been working directly with the Office of Planning and Research (OPR) to guide the transition to VMT based metrics throughout the California. We enjoy the working relationship with your staff tremendously and appreciate this continued opportunity to collaborate, innovate, and deliver outstanding products with you.

We thrive on these types of challenging assignments in controversial environments where complex problems can only be solved with state-of-the-practice analytical techniques, innovative-yet-practical solutions, and achieving consensus amid diverging views of stakeholders. By selecting Fehr & Peers, you will ensure continued access to transportation solutions for the City from a firm that is constantly striving to the best traffic engineering and transportation planning firm in the nation.

Our contact person for this contract is John Muggridge, AICP, a Principal in our Los Angeles office at 600 Wilshire Boulevard, Suite 1050, Los Angeles, California, 90017. His phone is (213) 261-3050 and his email is j.muggridge@fehrandpeers.com.

We have read and will comply with all terms and conditions of the RFP. I am authorized to execute this document on behalf of Fehr & Peers and look forward to your careful consideration of our submittal.

Sincerely,

FEHR & PEERS

A blue ink signature of Sarah Brandenburg, written in a cursive style.

Sarah Brandenburg
Principal

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Ref: RFP #1830 – TDFM Services

Prepared for:
The City of Culver City

March 22, 2018

P6400

Submitted by:

FEHR  PEERS

600 Wilshire Blvd. #1050

Los Angeles, CA 90017

(213) 261-3050

Table of Contents

EXECUTIVE SUMMARY.....	3
PROPOSER AND GENERAL INFORMATION.....	6
Fehr & Peers' Information.....	6
FEHR & PEERS' QUALIFICATIONS, EXPERIENCE AND REFERENCES.....	7
Firm Description.....	7
Firm Experience & References.....	9
TEAM MEMBERS' QUALIFICATIONS AND EXPERIENCE	18
Project Team Personnel & Organization Chart.....	18
Tom Gaul, Principal – Principal-in-Charge.....	19
John Muggridge, AICP, Principal – Project Manager.....	19
Ronald T. Milam, AICP, PTP, Principal – Technical Advisor.....	20
Jinghua Xu, PHD, PE - Travel Behavior Modeler.....	21
Brandon Haydu, AICP – Travel Behavior Modeler and SB 743/VMT Metrics.....	22
Chelsea Richer, AICP, Senior Transportation Planner – TDM Planner.....	22
PROJECT CONTROLS, METHODOLOGY AND IMPLEMENTATION.....	24
SCOPE OF SERVICES	25
Scope of Services.....	25
A. Project Management and Coordination.....	25
B. Project Initiation.....	26
C. Build TDFM.....	27
D. Technical Support for GPU Mobility Element.....	34
E. Prepare Traffic Study Guidelines.....	35
F. Hearings, Meetings, and Events.....	35
G. Assist TDM Consultant on Evaluation of Recommended Future TDM Strategies.....	35
H. Estimate for Ongoing TDFM Operations and Management.....	36

PROPOSED FEES/BUDGET	37
Fee Proposal	37
IMPLEMENTATION SCHEDULE	38
Proposed Schedule	38
INSURANCE, BUSINESS TAX CERTIFICATE, AND AGREEMENT	40
Insurance, Business License and Agreement	40

Appendices

Appendix A: Fehr & Peers' Owners List

Appendix B: Resumes

List of Figures

Figure 1 – Organization Chart	23
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List of Tables

Table 1 – Fehr & Peers Offices	8
Table 2 – Presumed Level of Available Data.....	26
Table 3 – Culver City Travel Demand Forecast Model Draft Schedule.....	39

EXECUTIVE SUMMARY

Fehr & Peers is pleased to respond to the City of Culver City's Request for Proposal to Prepare the Culver City Travel Demand Forecasting Model. The City is eager to develop a Travel Demand Forecasting Model (TDFM) along with revising the City's California Environmental Quality Act (CEQA) transportation review processes for development projects within the City in accordance with the implementation of Senate Bill (SB) 743. Staff at many levels in the Fehr & Peers Los Angeles office have become acutely aware of your needs through our work with the City, your partner agencies, and the private sector development community. We also know how to balance our technical abilities with the important project management aspects of cost, schedule, quality, communication, and coordination that will be needed to successfully deliver this project

Fehr & Peers has a long history working in the City of Culver City, including with our predecessor firm Kaku Associates. In addition to numerous parking and traffic studies for developments in the City, Fehr & Peers recently developed a transit ridership forecasting model for Culver CityBus as part of the Line-by-Line and Comprehensive Analysis, conducted bicycle and pedestrian safety assessments for the City as part of the ITE Berkeley Technology Transfer Program, and is currently part of the team for the Culver City Pedestrian and Bicycle Action Plan responsible for the Vision Zero component of that study.

Given the highly technical and strategic nature of this work effort, we propose a Principal led effort including project management leadership by **John Muggridge**, and Principal oversight by **Tom Gaul**, with technical support from **Ron Milam** (our national planning and CEQA transportation expert). In addition to the Principal level travel demand modeling leadership John Muggridge brings to this task, we will supplement the project team with **Jinghua Xu**, **Brandon Haydu**, and **Chelsea Richer**. Jinghua brings a seamless connection to SCAG staff and the City will benefit from our ability to leverage multiple local technical staff to meet your schedule needs. Brandon and Chelsea played keys role in the recent update of the City of Los Angeles travel demand model and development of LA's VMT tool. Each of us will provide oversight of staff, strategic advice, and frequent collaboration with the City's project management team.

The need for increased reliance on a City Travel Demand Model is being driven primarily by the changes to the CEQA guidelines, the final guidelines have been submitted to the Natural Resources Agency for the rulemaking process, and the expectation that those guidelines will be reliant Vehicle Miles Traveled (VMT) analysis as opposed to Level of Service (LOS). This need is well recognized in your RFP and consistent will likely inform the direction of the new draft General Plan Mobility Element for the City.

Forecasting future travel demand is the critical step in every major transportation planning project, providing the foundation for the following:

- Detailed operational analysis
- Design of transportation systems
- Multimodal planning
- Climate Change/Air Quality Analysis



- Environmental analysis
- Economic & Financial analysis

The City has not developed a travel demand model before and the emphasis on evaluation of land use growth is currently undertaken with an emphasis on roadway capacity and Level of Service. The recent changes in legislation (SB 743) has meant that there is now a much greater emphasis on VMT validation and calibration, and the influence of demand management strategies, active transportation modes, and changing travel behavior trends must be addressed.

This proposal is tailored to an approach that will help the City address the following critical questions:

- Which aspects of the City's model are critical inputs to the project-level VMT evaluation process?
- Which updates are legally required and which would be additionally useful to improve project-scale trip generation accuracy?
- What scale and type of project should be evaluated with the City's Travel Demand Model?

Some of the issues of which we are already aware and that will be addressed if you select the Fehr & Peers team include:

- Baseline socioeconomic data and consistency with the SCAG RTP
- Coding of recently completed, programmed, and planned transportation projects, including consistency with Metro assumptions for the region
- Integration of the California Household Travel Survey data
- Trip length validation, both static and dynamic, using a combination of household travel survey and cell phone data sources

Based on our experience, travel demand forecasting is the first and most important step in the planning, design, and construction/operation of major transportation projects. And since travel demand forecasting is never a "stand-alone product" and is used as input data for several other technical studies, it has to be completed with technical accuracy and efficiency.

A travel demand forecasting model is a tool, like any other, that is only useful if it is understood, used, and applied to answer technical questions. Furthermore, most regional travel demand 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.

Fehr & Peers has substantial experience in the development and more importantly, the project application of travel demand forecasting models throughout the Western United States. Our development and application work includes models in Los Angeles, Pasadena, West Hollywood, Santa Monica, Burbank, Santa Barbara, San Diego, Sacramento, San Jose, and Fresno, CA, and well as in Washington, Nevada, Utah, Idaho, Colorado and Hawaii. Fehr & Peers is the only firm that has developed VMT-based travel demand models in the Los Angeles region. The relevant project experience is explained in more depth in the next chapter.



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. This better prepares us for responding to the more challenging technical questions that involve complex issues, like quantifying the benefits of changes in VMT, smart growth concepts and climate change. We have developed innovative techniques that allow travel demand models to capture the interactions between neighborhood-scale land use characteristics and travel patterns. Our approach to addressing all manner of technical questions from Culver City will include:

- Communicating with Culver City
- Identifying technical questions to be answered
- Understanding how forecasts will be used
- Outlining preferred forecasting methodology
- Documenting forecast development process
- Coordinating with end-users of forecasts

Fehr & Peers has developed models with capabilities must go beyond those of traditional highway-focused travel demand models to provide enhanced capabilities such areas as smart growth, greenhouse gas emissions, and alternative modes such as walking and bicycling.



PROPOSER AND GENERAL INFORMATION

RFP QUESTION

Provide the proposer's name and address.

Provide a letter of transmittal, signed by an individual authorized to bind the respondent, stating that the respondent has read and will comply with all terms and conditions of the RFP.

Provide general information about the primary contact who will be able to answer questions about the proposal; include a name, title, telephone number and email address.

FEHR & PEERS' INFORMATION

The proposer is Fehr & Peers, located at 600 Wilshire Boulevard, Suite 1050, Los Angeles, California, 90017.

The accompanying letter of transmittal is signed by an individual authorized to bind Fehr & Peers.

The Fehr & Peers primary contact for the proposal will be John Muggridge, who will be able to answer questions about the proposal etc. His details are:

John Muggridge, AICP, Principal
Fehr & Peers
600 Wilshire Boulevard, Suite 1050
Los Angeles, California 90017
(213) 261-3050
j.muggridge@fehrandpeers.com



FEHR & PEERS' QUALIFICATIONS, EXPERIENCE AND REFERENCES

RFP QUESTION

Describe firm history and organizational structure. Include the size of the firm, location of office, years in business, organizational chart, name(s) of owner(s) and principal parties, and number and position titles of staff.

What is the primary business of the parent company and/or affiliates?

Which office(s) of the organization will have primary responsibility for managing this account? List the members of your firm who will be responsible for providing the services and for ongoing support.

What is the firm's experience conducting the services requested? Describe comparable projects performed by your firm in the last five years, including the number of projects, scope of service, and status of projects.

Comment on other areas that may make the firm different from its competitors.

List the name, address and telephone number of references from at least three recent similar projects. Include a brief description of the work provided for each reference. California municipal or county projects are preferred. You may offer more than three recent similar projects if desired. The references should include the start date of the project and the date of completion for each project.

FIRM DESCRIPTION

Fehr & Peers has specialized in providing transportation planning and engineering services to public and private sector clients since 1985. We develop creative, cost-effective, and results-oriented solutions to planning and design problems associated with all modes of transportation. We offer our clients the right combination of leading-edge technical skills and extensive knowledge of the communities in which we work to deliver comprehensive solutions and superior client service. We are nationally-recognized experts who routinely publish original research, serve on national committees, and teach courses to others in the industry. We do this while maintaining our commitment to translating those techniques into practical solutions. At Fehr & Peers, we take a creative, data-driven approach to each of our practice areas:

- Travel behavior and forecasting
- Multimodal operations and simulation
- Transit planning
- Bicycle and pedestrian planning
- Sustainable transportation



- Freight systems and airports
- Integrated land use and transportation plans
- Conceptual street and trail design
- Transportation engineering and ITS design

Clients hire Fehr & Peers because of our commitment to being the best at what we do. We live out this commitment in three distinct ways. First, we invest heavily in our culture to ensure that we are attracting and retaining the best and brightest staff in the industry. Second, we have a robust, internally-funded research and development program that enables us to develop new analytical methods and advance the state of the practice. And third, we survey every client at the completion of every project to assess their satisfaction and to identify areas for improvement. We are very proud of the impact this commitment has had on the communities we have been fortunate to serve.

Fehr & Peers was founded in 1985. The company has offices across California, Washington, Oregon, Colorado, and Utah, and in Washington, DC. Fehr & Peers currently employs approximately 260 people, as shown in Table 1. The Southern California offices are located in Los Angeles, Anaheim, San Diego and Riverside. Fehr & Peers is a California Sub S Corporation.

Our company purposely does not have an organizational chart. We are owned by a group of current employees, as shown in Appendix A. The Los Angeles office would be responsible for handling this project, including Tom Gaul and John Muggridge, whose biographies are provided in the next chapter.

TABLE 1 – FEHR & PEERS OFFICES	
Office Location	Number of Employees
Irvine, CA	14
San Diego, CA	10
Riverside, CA	1
Los Angeles, CA	38
Roseville, CA	34
Oakland, CA	15
San Francisco, CA	21
Portland, OR	3
San Jose, CA	20
Walnut Creek, CA	27
Corporate Office (Walnut Creek, CA)	32



Denver, CO	10
Salt Lake City, UT	11
Seattle, WA	22
Washington, DC	6
Total	264

FIRM EXPERIENCE & REFERENCES

Since our inception in 1985, we have consistently sought better ways of solving our clients' most complex transportation problems. Our **MainStreet** Initiative, as an example, is the latest in a long line of innovations designed to accomplish that goal.

We view the potential to assist the City of Culver City with development of new procedures to evaluate VMT impacts in light of the upcoming CEQA changes pursuant to SB 743 as an opportunity to bring to bear much of the ground-breaking research we have conducted in recent years. This includes research and tool development in the areas of state-of-the-art travel demand modeling, travel demand management effectiveness, VMT estimation, and mixed-use trip generation considering the effects of the built environment (commonly known as the Ds, including development density, diversity of uses, design and walkability, destination accessibility, distance from transit, demographics, development scale, and demand management).

Fehr & Peers has been involved at all levels of industry-leading investigation of new transportation metrics and factors influencing trip generation in urban environments, from research at the national, state and regional levels to development of tools to integrate the research into effective procedures to implementation in local plans and policies.

We have been involved in important research studies at the national, state, and regional level which have given us an extensive knowledge of the emerging issues and transportation best practices, including:

- US EPA Mixed-Use Trip Generation – We investigated trip generation characteristics of 240 mixed-use developments nationwide and developed and validated statistical methods to estimate trip generation based on 7Ds, in order to improve estimation of trip generation for mixed-use developments in urban settings.
- US EPA Smart Location Performance Indicator – We developed “smart location” performance indicators to measure the effect of workplace-location characteristics on vehicle miles traveled per worker.
- Quantifying the Effect of Greenhouse Gas Mitigation Measures – For the California Air Pollution Control Officers Association (CAPCOA), we developed groundbreaking and comprehensive set of guidelines for assessing and quantifying reductions in vehicle miles travelled (VMT) and greenhouse



gas (GHG) emissions associated with more than 50 TDM strategies, both individually and in combination.

- Effect of Smart Growth Policies on Travel Demand (SHRP 2 C16) – For AASHTO, FHWA, and the National Research Council, we developed smart growth performance metrics and tools for applicability to MPOs and state DOTs nationwide.
- SANDAG Smart Growth Study – We investigated trip and parking generation rates for smart growth development considering 8Ds.
- OPR SB 743 Implementation – We advised OPR staff in regards to SB 743 implementation and participated in close to 20 presentations statewide and nationally as well as numerous meetings with various agencies and other stakeholders.

Projects in which we have developed new tools to operationalize the results of this and related research include:

- Improved Tools for Integrated Land Use-Transportation Planning in California – We developed analytical tools for use by California MPOs to address sustainable communities strategies such as urban infill, mixed-use and transit-oriented development.
- Bay Area Air Quality Management District (BAAQMD) – We developed an Excel-based model for measuring the effectiveness of individual and grouped TDM strategies in reducing GHGs.
- OCTA 4D Post-Processor and Sacmet (Sacramento Blueprint) 4Ds – We developed techniques to incorporate the effect of Smart Growth on travel behavior through the 4Ds.
- Internal Tools – In order to provide more effective and efficient service to our clients, we have developed numerous tools as part of our Main Street/ASAP suite, including MXD+, TDM+ and VMT+.

Studies where we are currently or have recently assisted local jurisdictions with development and implementation of new travel demand modeling and metric estimation techniques include:

- Los Angeles Infill & Complete Streets: Capturing VMT Impacts & Benefits to CEQA – We developed the current Los Angeles citywide travel demand model and VMT calculator. This also included specific trip generation studies, development of CEQA SB743 metrics and thresholds, and new traffic study guidelines.
- Pasadena General Plan and SB 743 VMT Thresholds – Pasadena recently adopted new VMT thresholds for CEQA review, becoming one of the first cities to do so.
- Los Angeles Mobility Element – We assisted the City of Los Angeles with Implementation of a complete streets approach throughout the City.



- San Francisco Transportation Sustainability Program – We are assisting the City of San Francisco with implementation of new CEQA metrics in response to SB 743, including estimating the effectiveness of TDM measures on reducing automobile mode shares.
- Westside Mobility Plan – We conducted a groundbreaking nexus study as part of the Westside Mobility Plan, basing trip fees on VMT rather than trip generation and incorporating cell phone data into estimation of local trip lengths.

Through this work and others, we have extensive experience with developing visual and other materials to effectively convey complex technical information to stakeholders, the public, and decision-makers through meetings and social media.

The projects described below are just a few of Fehr & Peers' recent travel demand models and describe our experience conducting this type of work, all led out of the Los Angeles office.

Infill and Complete Streets - Capturing VMT Impacts and Benefits to CEQA, City of Los Angeles, CA



The City of Los Angeles is shifting from an auto-oriented metropolis to a city built around transit, compact transit-oriented development, and multi-modal "Complete Streets" which emphasize all travel modes. However, these dynamic policy shifts have been significantly impeded by requirements under CEQA to mitigate automobile delay. The City wants to seize the historic opportunity, mandated by SB 743, to realign the environmental review processes with policies that support infill development and Complete Streets transportation projects. Fehr & Peers was

selected to work closely with the LADCP and LADOT to develop new VMT-based CEQA thresholds and to update the tools necessary to implement the new procedures. In addition to developing the new thresholds, Fehr & Peers is updating the City's travel demand model and developing a sketch model tool to perform project-level VMT analysis; quantifying the parking demand and vehicle trip reduction benefits for mixed-use projects, creative office buildings, market rate housing, and affordable housing, and Transportation Demand Management (TDM) strategies. The affordable housing sites are broken down based on population (senior, family, special needs, permanent supportive) and location (inside or outside a transit priority area). Fehr & Peers is educating city staff, private developers, and the community about the new impact review methodology through an engaging public outreach program.

The update to the City's model provided an opportunity to calibrate and validate specific components of the model integral to the Infill and Complete Streets Project. The following were the major focus areas during the model update process:

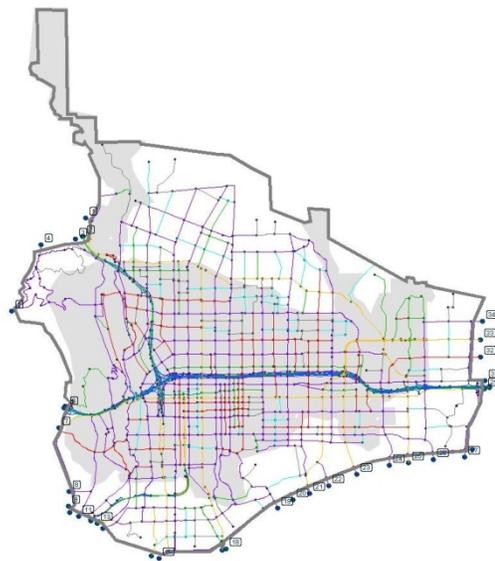


1. Maintain vertical consistency with the 2016 SCAG RTP/SCS model
2. Increase zonal detail across the City of Los Angeles
3. Incorporate Big Data (such as cell phone and GPS data) into the trip distribution validation to improve VMT estimation at smaller geographic analysis zones
4. Rebuild a majority of the transit route system using General Transit Feed Specification (GTFS) data from major transit operators
5. Update the highway network to reflect major arterial and freeway construction projects
6. Use Automated Traffic Surveillance and Control (ATSAC) loop volume data to collect traffic counts from several months for validation
7. Include transit performance validation statistics including system ridership by mode and carrier

Dates: Commenced in 2015, ongoing
Client Reference: David Somers
City of Los Angeles Department of Transportation
100 North Main Street
Los Angeles, CA 90012
(213) 972-5966
David.Somers@lacity.org

Pasadena Travel Demand Forecasting Model, Performance Measures & Mobility Element Update

Fehr & Peers developed a travel demand model for the City of Pasadena to be used as a tool in the evaluation of Land Use and Mobility Element land use scenarios and transportation system alternatives. The model provides the ability to evaluate transportation system network and modal alternatives, to assess various performance indicators for land use and transportation alternatives, to provide information regarding regional pass-through versus locally-generated traffic on City streets, and to produce various graphical displays of results. The travel forecasts will be used to estimate the effectiveness of the proposed Land Use and Mobility Element policies on the transportation system. As envisioned, the model would also be sensitive enough for traffic impact analysis purposes for project and cumulative impacts.



In addition to the model, Fehr & Peers assisted with the City of Pasadena General Plan Update. Our area of responsibility was the Mobility Element, development of transportation performance measures and the transportation analysis for the General Plan EIR.

Fehr & Peers provided technical support during formulation of horizon-year alternatives. Based on the selected capabilities of the model forecasting tool, we contributed to discussions that formulate:



- Built environment and the transportation system
- Policy-based trip reduction strategy assumptions for testing and subsequent documentation

Fehr & Peers, based on technical findings developed in the analytical modeling process, assisted with the analysis of the Mobility Element. Building on results of the travel forecasting process, Fehr & Peers prepared a traffic impact report that documents the impacts and mitigation measures attributable to the preferred plan and its alternatives.

Dates: 2009 to 2015 (various tasks)
Client Reference: Fred Dock
City of Pasadena Department of Transportation
221 E. Walnut Street, Suite 210
Pasadena, CA 91101
(626) 744-6450
fdock@cityofpasadena.net

Burbank Travel Demand Model and General Plan Transportation Analysis Support

Fehr & Peers recently developed a travel forecasting model for the City of Burbank that is being used as a tool in the evaluation of land use scenarios and transportation system alternatives. The model provides the ability to evaluate transportation system network changes; to assess various performance indicators for land use and transportation alternatives; to provide information regarding regional pass-through versus locally-generated traffic on City streets; and to produce various graphical displays of results. The travel forecasts have been used to estimate the effectiveness of the land use scenarios on the transportation system. In addition, the model includes various special generators, such as the Bob Hope Airport and large entertainment studios. A detail analyses on special generators was conducted to help the City assess current and future traffic conditions. The model was made more sensitive for traffic impact analysis purposes. The model produces vehicle trips based on a comprehensive land use database the City of Burbank maintains; the SCAG regional travel demand model is used to model areas outside the City of Burbank. The model was developed to produce AM and PM peak hour, and daily travel forecasts. The model can provide measures such as VMT, vehicle hours traveled (VHT), and other performance measures for any alternative modeled. The model was built in the latest version of the TransCAD software, and underwent a robust static and dynamic validation of the base year conditions. Fehr & Peers ensured the model exceeded all fundamental validation tests required by Caltrans and FHWA.

Key features of the TDF model include:

- Fine-grained traffic analysis zone (TAZ) geography nested in the SCAG TDF model TAZs
- Detailed roadway network including arterial, collector and local roadways
- Non-residential land uses based on building area in the City and socioeconomic inputs for the area outside of the City consistent with SCAG TDF model inputs
- Daily, AM peak hour, Mid-day, PM peak hour, and Night off-peak assignments



- Customized vehicle assignment to capture special intersection turn prohibitions and parking restrictions, like peak period parking lane closures, to better model the effect of travel demand management strategies on vehicle flow
- Calibration of roadway capacities
- The model was refined to the account for how travel behavior is affected by the 4Ds of the built environment, namely residential and employment density, diversity of land uses, walkable design, and proximity to regional destinations, which are necessary for evaluating the change in vehicle trips and vehicle miles of travel associated with infill and smart growth developments

While this model was built to forecast various land use scenarios for the General Plan Update, it was developed in such a way that it can be transferred to the City at the completion of this process for use on local development review. Fehr & Peers trained city staff to use the model for development review process, which will provide an ongoing return from their investment in this tool.

Supplementing the model development and forecasting work, Fehr & Peers is currently assisting the City with preparation of a Transportation Analysis Report to be incorporated in the Draft General Plan Environmental documentation. Fehr & Peers is providing technical support in the formulation of horizon-year alternatives. In addition, Fehr & Peers is contributing to discussions that formulate the proper integration of General Plan policies into the Transportation Analysis, and is assisting the City in analyzing their Mobility Element policies, and in formulating their appropriate implementation.

Fehr & Peers is working with the City and EIR consultant to align the transportation analysis conclusions, including potential transportation mitigations, to the goals, policies, and objectives that the Mobility Element identified. In concert with the City and its General Plan team, Fehr & Peers is assisting in the development of transportation actions that will help meet the City's transportation goals.

Dates: 2011 to 2013 (various tasks)
Client Reference: David L. Kriske, AICP, Deputy City Planner for Transportation
City of Burbank Community Development Department
150 North Third Street, 2nd Floor
Burbank, CA 91502
(818) 238-5269
DKriske@ci.burbank.ca.us



City of West Hollywood Traffic and Mobility Study

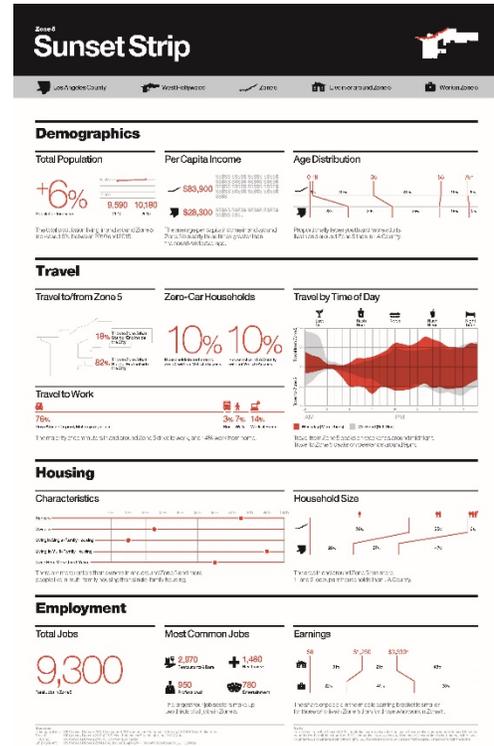
Fehr & Peers is leading a team to assist the City of West Hollywood. Key tasks include the Transportation Demand Management (TDM) Program, Physical Roadway Improvements, and Traffic Impact Fee Program, which all have unique challenges. The Fehr & Peers team is helping the City navigate through this process to emerge with solutions serve the City's goals and the changing needs of land use development and people traveling in the City. For the TDM program, the Fehr & Peers-led team is using extensive team expertise along with the best available data and input from stakeholders to tailor strategies and solutions that are likely to be most effective in West Hollywood. The use of "Big Data" in evaluating the travel markets for each of the five commercial districts is a critical element in understanding the needs of the districts.

Fehr & Peers is developing a model that goes beyond the 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, travel demand management effectiveness, VMT estimation, and mixed-use trip generation considering the effects of the built environment.

The study also includes a Physical Roadway Improvements section, where the City will be able to test and evaluate a variety of options including physical improvements, policies and programs that are aimed at improving multimodal mobility in the City of West Hollywood. As part of this task, Fehr & Peers is evaluating the current and future roadway infrastructure needs based on the local and regional 2040 land use/SED forecasts. A series of performance metrics is being developed to measure the effects of multi-modal improvements, along with the development of a framework for an annual transportation performance report card that can be updated and used beyond the life of this project. An essential element of this task is coordination with City of West Hollywood staff and the City Council during key points of the process.

We are also updating the City of West Hollywood's Transportation Impact Fee Program, which will:

- Provide funding for circulation element improvements necessary to support the land use element of the General Plan.



- Ensure that new development is paying a "reasonable" fair share of circulation element network expansion.
- Engage the residential and commercial development community to build support for the impact fees.
- Obtain consensus from elected officials in support of the impact fees.
- Develop a defensible nexus analysis.
- Minimize potential financial disincentives caused by impact fees on affordable housing.
- Minimize potential financial disincentives caused by impact fees on desired land uses that can help minimize longer distance travel.
- Leverage impact fees to increase state and federal funding.

Dates: 2017, ongoing
Client Reference: Bianca Siegel, Long Range & Mobility Planning Manager
City of West Hollywood Community Development Department
150 North Third Street, 2nd Floor
West Hollywood, CA 90069
(323) 848-6853
BSiegl@weho.org

Westside Mobility Plan & Impact Fees, City of Los Angeles



Fehr & Peers led a multi-disciplinary team to develop a long-term comprehensive Mobility Plan for the Westside of the City of Los Angeles, California. The study included six major components: development of a state-of-the-art travel demand model; a mobility and rail connectivity study including the potential for north/south rail transit connections from the LAX area through the Westside and integration of

transit, highway, bicycle and pedestrian modes; a comprehensive Westside parking study; updates to the Coastal Transportation Corridor and the West Los Angeles Transportation Specific Plans; and a livable boulevards study addressing the integration of urban design/streetscape and transportation planning. As part of the Specific Plan updates for West Los Angeles and the Coastal Corridor, innovative trip fee nexus studies were conducted that will base fees on VMT rather than trips, utilizing cell phone data to determine trip lengths by land use type in the Westside. As part of the Specific Plan updates for the City of Los Angeles West LA and Coastal Corridor, innovative trip fee nexus studies were conducted that will base fees on VMT rather than trips, utilizing cell phone data to determine trip lengths by land use type in the Westside. The updates to the fee programs consist of revisions to the fees, trip generation rates, exemptions, and in lieu credits, and an update to the list of transportation improvements and mitigation measures to be funded, in part, by the impact fees collected from new development. Historically, fee programs in the City have funded roadway capacity enhancements with minimal emphasis on transit and active modes of transportation. The recent changes in legislation make the consideration of other transportation impacts and benefits



applicable in the assessment of a TIA fee. This requires transportation plans and their associated fee programs to consider non-vehicular modes of travel, such as transit, biking and walking and the infrastructure needed to make these modes a viable options for those that live and work in the community. The Final EIR for these two Specific Plans was published in fall 2016 and the new fees are currently in the approval process.

The project developed five streetscape plans that reflect community values and extensive input from residents and local business owners. The streetscape plans created vibrant boulevards connecting local neighborhoods to major transit stations. The study included a substantial public outreach program to engage the community throughout the process. The Westside Mobility Plan blueprint is intended to serve as a catalyst for future action to improve transportation on the Westside. Our Westside Dashboard won the Award of Excellence for Innovative Use of Technology for the 2013 APA LA Awards.

Dates: 2010 to 2018
Client Reference: Sean Haeri, Senior Transportation Engineer
LADOT
7166 Manchester Avenue
Los Angeles, CA 90045
(213) 485-1062
sean.haeri@lacity.org



TEAM MEMBERS' QUALIFICATIONS AND EXPERIENCE

RFP QUESTION

Describe the qualifications of Principal-In-Charge, Project Manager, and staff proposed for the assignment, position(s) in the firm, and types and amount of equivalent experience. Be sure to include any municipal agencies they have worked with in the past three years and their level of involvement.

Identify and provide the resume(s) of the Principal-In-Charge, Project Manager, and personnel who will be assigned to this project.

PROJECT TEAM PERSONNEL & ORGANIZATION CHART

Fehr & Peers has assembled a unique and talented team to serve the City of Culver City in this effort. We intend to work closely with a Project Management Team of city staff on a monthly basis for the duration of the study.

Our Fehr & Peers project leadership team will include **Tom Gaul serving as Principal-in-Charge**. As Principal-in-Charge, Tom will take ultimate responsibility for quality assurance and quality control (QA/QC). **John Muggridge will serve as Project Manager**. In addition, we will bring input from strategic advisors throughout the firm at key points along with our highly trained technical staff to exceed your expectations for customer service and technical skill. Figure 1 shows the Fehr & Peers team organization chart for the project. Bios for each member are included below and full resumes are provided in Appendix B.

Fehr & Peers has a proven track record for our problem-solving approach, which is emphasized in the foundation of project development, management and client service. This foundation allows projects to be completed to the degree necessary to seamlessly carry them forward into execution. Our clients have found the Fehr & Peers philosophy saves both time and money.



TOM GAUL, PRINCIPAL – PRINCIPAL-IN-CHARGE



Mr. Gaul has over 30 years of experience as a transportation planner and engineer, and has conducted studies for public agencies, private firms and institutions throughout the western United States. Mr. Gaul has managed areawide transportation planning studies involving needs assessment, travel demand modeling, alternatives evaluation and public outreach, including general plans, specific plans and corridor studies. He has conducted traffic impact, circulation, parking and site access studies for residential, commercial, institutional, industrial, mixed-use and entertainment developments. He is experienced at recreational and special events planning. He has conducted alternatives analysis, station access planning and rail/traffic integration studies for rail transit projects in Los Angeles and Honolulu and was a task manager for the Los Angeles County HOV Performance Program and HOV System Integration Plan studies for MTA and Caltrans. He has managed preparation of Caltrans Project Study Reports and/or Project Reports for various improvement projects on the state highway system. Finally, Mr. Gaul is experienced with multimodal planning including complete streets, streetscape plans and bicycle/pedestrian studies. Mr. Gaul was the PIC for the Los Angeles Westside Mobility Plan and the Santa Monica LUCE, and is currently managing the SB743/VMT metrics development for the City of Los Angeles, after advising on the General Plan Mobility Element. Tom is the PM for Los Angeles TDF Modifications currently ongoing.

Proposed Role and Responsibilities

As Principal-in-Charge, Tom will provide executive-level project oversight, serve as a technical advisor, and oversee quality assurance and quality control of project deliverables.

JOHN MUGGRIDGE, AICP, PRINCIPAL – PROJECT MANAGER

Mr. Muggridge, AICP is a skilled project manager specializing in transportation planning and traffic engineering projects. He has over 17 years of experience in transportation planning and engineering, both in England and in the United States. As a transport planner and project manager, Mr. Muggridge has research and analysis experience in both the private and academic sectors. John is experienced in multi-disciplinary transportation and research projects, including multi-modal transportation planning projects and travel demand forecasting. He has authored numerous reports, managed and participated in a large range of transportation planning, traffic engineering, and parking studies for both private and public clients in Southern California and Hawaii. He also has extensive experience in conducting parking and circulation studies, traffic impact studies, downtown parking studies, long-range transportation plans, corridor studies and specific plans.



John has worked with interdisciplinary teams to develop consensus on a wide range of transportation improvements. He has extensive experience in transportation analyses in the City of Culver City, including several mixed-use projects. He has also been responsible, as project manager, for developing travel demand models in southern California for jurisdictions and agencies such as City of Los Angeles, Burbank, West Hollywood, Pasadena, and Glendale. Though the Burbank model project ended more than three years ago, John occasionally works with City staff to use the model to assess projects.

Proposed Role and Responsibilities

As Project Manager, John will be the main point of contact with the City of Culver City, and will manage the project team, tasks, staff, budget, and schedule. He will harness his considerable experience working with public agency and private clients to provide responsive client service and effective management techniques to keep the project on budget and on schedule and to exceed expectations.

RONALD T. MILAM, AICP, PTP, PRINCIPAL – TECHNICAL ADVISOR



Ronald T. Milam, AICP, PTP is the director of evolving the status quo at Fehr & Peers and leads the company's research and development. He is actively involved in a wide variety of project work but also finds time to teach transportation planning and introductory and advanced SB 743 courses for UC Berkeley and UC Davis. Ron has an extensive background in travel demand model development and applications, transportation impact fee programs, traffic operations analysis, micro-simulation modeling, and transportation impact studies involving NEPA and CEQA. He has also published papers on a wide variety of transportation planning and traffic engineering topics and received recognition for his work that includes the Institute of Transportation Engineer's (ITE)

National Past President's Award and best paper honors at the Transportation Research Board (TRB) Conference on Planning Applications. He is currently focused on the use of big data in transportation planning and new performance measures such as VMT. Ron contributed to model development specifically in terms of SB 743 in Pasadena, Burbank and Los Angeles, as well as the cities of Palo Alto, Novato, San Francisco, Woodland, Sacramento, among many MPOs and state agencies.

SB 743 Implementation

Fehr & Peers has been actively involved with the SB 743 implementation and guidelines development working closely with OPR staff including Chris Calfee and Chris Ganson. Ron Milam has led the Fehr & Peers effort, having prepared a VMT White Paper under contract to OPR and participated in close to 20 presentations with OPR staff statewide and nationally. In addition, Ron has participated in OPR meetings on SB 743 implementation with key stakeholders including Caltrans, the State Transportation Agency, plus various MPOs and interest groups to discuss specific issues such as induced travel, infill development, and CEQA streamlining.



The VMT White Paper and the presentations have helped to explain SB 743 and the associated changes to the CEQA Guidelines Update. Many of the presentations were given with an education and training approach covering the following areas.

- How to define VMT (i.e., VMT per capita, etc.)
- How to measure VMT using empirical data, models, and sketch planning tools
- How to establish thresholds
- Different approaches for land development versus transportation projects
- How to quantify induced travel effects
- How to address traffic safety impacts
- How to integrate SB 743 changes with general plans and fee programs



JINGHUA XU, PHD, PE - TRAVEL BEHAVIOR MODELER



Jinghua Xu has more than 15 years of experience. Her expertise includes travel demand model development and application, network modeling and simulation, and transportation planning. Jinghua has extensive experience in modeling with both highway and transit focuses. She has in-depth understanding in model estimation, calibration and validation, and has developed and/or enhanced a wide range of complicated regional travel demand models for large MPOs, such as SCAG and SANDAG, as well as developing subarea models based upon the regional model, such as SBTAM.

She is familiar with and has extensive working knowledge on the models in Southern California and selected models in Northern California, such as SCAG's trip-based Model and the ongoing activity-based model, LA Metro Model, SANDAG model, OCTAM, SBTAM, and VTA model, etc. Jinghua has strong analytical skills and is proficient in various transportation modeling software packages, including TransCAD (GISDK), CUBE (Voyager/TP+) and TRANPLAN. Jinghua is contributing to the City of Diamond Bar model development, the Glendale travel demand model update, and assisting Tom's team with the City of LA update of VMT impacts and benefits.



BRANDON HAYDU, AICP – TRAVEL BEHAVIOR MODELER AND SB 743/VMT METRICS

Brandon Haydu, AICP is an innovative, responsible, and analytical transportation planner with over five years of travel demand forecasting, model development, and data analysis experience. Brandon utilizes programming and technical tools to solve complex transportation planning questions, and effectively communicates outcomes to clients, staff, and the public. He is passionate about the development of healthy, sustainable, and equitable transportation systems that are both efficient and cost effective. Brandon has played a significant role in VMT-based model development and VMT calculation tool for the City of Los Angeles SB 743/VMT metrics development, is assisting John in West Hollywood, contributed to Santa Barbara TDM updates, and he is the PM for the Pasadena Travel Demand Model Update currently ongoing.



CHELSEA RICHER, AICP, SENIOR TRANSPORTATION PLANNER – TDM PLANNER



Ms. Richer has five years of experience in transportation planning with expertise in multi-modal data collection, survey design, and active transportation planning. Chelsea effectively communicates complex, data-driven findings to a wide variety of audiences. She is proficient in ArcGIS, Adobe InDesign, Adobe Illustrator and SPSS. Ms. Richer's clients have been so pleased with her TDM work that they recommended her to other clients. Ms. Richer was responsible for developing materials, conducting, and interpreting these interviews to guide the process of completing the data analysis for the Los Angeles Vision Zero project. Ms. Richer worked with the team to effectively

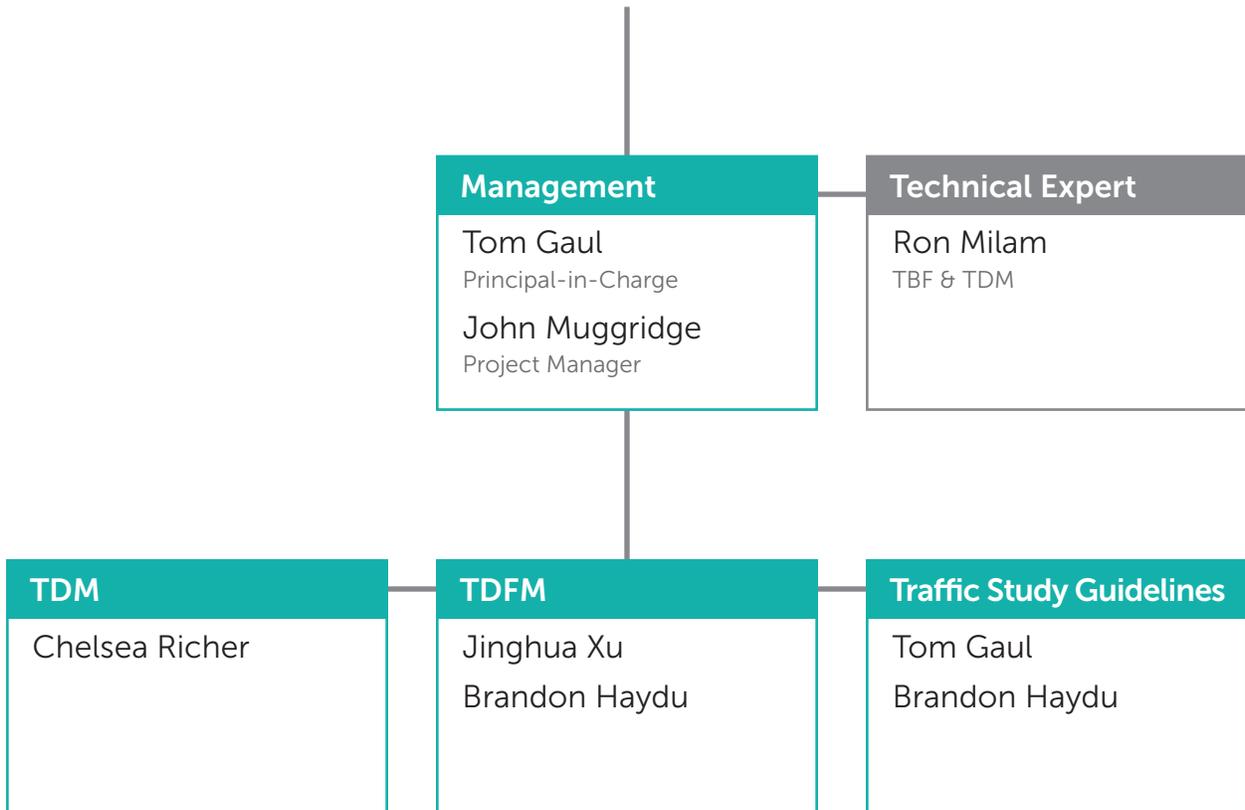
communicate the findings of the data analysis and translate these findings into an actionable strategy for the Department of Transportation. She is now working on another team on the Vision Zero Action Plan. For the LA VMT project, Ms. Richer is assisting with quantifying the parking demand and vehicle trip reduction benefits for mixed-use projects, creative office buildings, market rate housing, and affordable housing, and TDM strategies. She is currently managing F&P's involvement in the Culver City Bicycle and Pedestrian Action Plan, contributed to the City of LA's Mobility Element Update, and is PM of the West Hollywood Citywide Traffic and Mobility Study.

Our staffing organization chart is shown on the next page. Resumes are provided in Appendix B.



Project Organization

Culver City Travel Demand Forecast Model



PROJECT CONTROLS, METHODOLOGY AND IMPLEMENTATION

Fehr & Peers will be responsible for overall technical quality of the work. Fehr & Peers has successfully managed travel demand forecasting efforts in support of multi-disciplinary studies and analyses. Monthly progress reports that include a summary of the work performed, a summary of outstanding issues, and recommendations for resolution will be submitted.

We will employ a 4-step quality control process. The first stage is a review by the individual responsible for production of each work product. The second step is a review by the Task Leader responsible for each technical study area. The third is a review of every work product by the Project Management team. The fourth, and final, stage is a review by a member of the QA/QC team.

Fehr & Peers has developed an extensive quality assurance and quality control plan that we implement on every project. We pride ourselves in our personal commitment to each client, which is reflected in the resources we devote to client service and producing a high quality product. Our quality assurance plan consists of the following quality control procedures:

- Record Management & Retention
- Creation of Standard Procedures
- Internal/External Training
- Schedule Control
- Review Checklist
- Internal Review by Travel Forecasting Discipline Group & Review by Third Party

All documents are reviewed by at least one Associate or Principal and a third party. The purpose of the third-party review is to bring a fresh perspective and engineering judgment to the assignment. Products are reviewed with respect to technical quality, innovation, implementation, and context.

In addition, proactive project management and client service is paramount to our success. Two key factors for a successful project are budget and schedule control. Project managers receive weekly reports on the financial status of their projects and have frequent communication with the Principal-in-Charge.



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 with 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

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 assessed 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.



PROPOSED FEES/BUDGET

RFP QUESTION

Each proposer shall submit a single copy of a fee proposal in a separately marked, sealed envelope. The fee proposal shall indicate the expected total fee for the work described in the services proposal. The total fee shall be itemized by task, including firm(s) staff time and hourly rates, and other direct costs such as printing and travel. The fee proposal shall be signed by an individual authorized to bind the firm(s).

- *Provide fees for the proposed services. Fee quotes should be detailed by service.*
- *Outline billing and payment expectations, including timing and method of payment.*
- *Describe and remaining fees not previously detailed in the above.*

FEE PROPOSAL

Fehr & Peers bring incredible value to the City in the form of our existing tools and written guidance documents surrounding VMT and infill trip generation. While these resources represent a substantial savings compared to teams that may need to recreate them, this effort will require an extensive update to the City travel model and careful attention to the education and outreach tasks to achieve stakeholder acceptance. This project is ambitious, important, and fundamental to aligning the City's evaluation procedures with the community values expressed in the draft Mobility Element and statewide legislation.

Our fee proposal is provided in a separately marked, sealed envelope.



IMPLEMENTATION SCHEDULE

RFP QUESTION

Include a detailed implementation schedule with an estimated project start date of June 2018. The schedule should note key project milestones, critical path items that are dependent on the City taking action, and timelines for deliverables. Identify any assumptions used in developing the schedule.

PROPOSED SCHEDULE

Our schedule, provided in Table 3, reflects our estimate of the time needed to complete the tasks described in the scope. We are anxious to discuss your schedule needs and have staff availability such that this schedule can be accelerated or extended to meet your particular expectations. We have staff resources available and a number of the tasks can occur concurrently, as shown in Table 4. Our team also provides unique benefits to the City of Culver City since many of the products requested in the RFP can be customized using existing documents, tools, and procedures we have already established for similar project efforts. We are able to start work immediately upon notice to proceed.

The schedule assumes completion of the technical work in regards to building the TDFM and preparing the traffic study guidelines within 11 months. Key assumptions in this schedule include:

- Receipt of permission to use the City of LA or SCAG model within the first month.
- Receipt of base year land use and socioeconomic database from the City by the end of Month 3.
- Receipt of future year land use and socioeconomic database from the City by the end of Month 6.
- Traffic counts conducted in fall 2018 after school starts.
- Initial meetings with Planning Commission and City Council at the outset of the study.
- A public outreach process including a series of community, Planning Commission, and City Council meetings surrounding the development of new SB743 VMT metrics and thresholds and the revised traffic study guidelines. The schedule in Table 4 indicates potential points for these meetings/events; it is assumed that the schedule for the outreach process will be further developed in consultation with City staff, particularly in regards to potential coordination with the outreach effort for the General Plan Update.
- Formal Planning Commission and City Council hearing process for adoption of new SB 743 VMT metrics/thresholds and traffic study guidelines beginning in Month 12. As the public hearing process is not under our control, this could extend beyond 12 months.



Table 3 - Culver City Travel Demand Forecast Model Draft Schedule

Tasks	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
A. Project Management & Coordination	[Green bar]											
B. Project Initiation	[Green bar]											
C. Build TDFM	[Green bar]											
Develop & Validate TDFM	[Green bar]											
SB743 VMT Metrics & Threshold Options	[Green bar]											
District-Level Trip Generation Rates	[Green bar]											
D. Technical Support for GPU Mobility Element	[Green bar]											
E. Prepare Traffic Study Guidelines	[Green bar]											
F. Hearings, Meetings & Events	[Green bar]											
Internal Meetings	▼	▼		▼	▼	▼	▼	▼	▼	▼	▼	▼
Public Meetings/Events/Hearings		■	■			●	■	●	■	●	●	■
GPU Transportation TAC Meetings (as needed)												
G. Assist TDM Consultant on Evaluation of TDM Strategies	[Green bar]											
H. Estimate for Ongoing TDFM Operations & Management	[Green bar]											

Key:

- ▼ Monthly Project Conference Call/Meeting
- Community Meeting/Event
- Commission/City Council Meeting
- Commission/City Council Hearing

INSURANCE, BUSINESS TAX CERTIFICATE, AND AGREEMENT

RFP QUESTIONS

The City will require the successful proposer to provide Certificates of Insurance evidencing required coverage types and the minimum limits. See the attached City Draft Standard Agreement for more information on the City's insurance requirements.

The proposing organization does not require a Culver City business tax certificate to respond to this RFP. However, the successful proposer will be required to acquire a Culver City business tax certificate during the contracting process and to maintain an active certificate throughout the contract period.

The City will require the successful Proposer to execute a professional services agreement with the City. Please review the attached draft agreement and identify any questions or areas of concern in your response to the City. Any/all requests for changes to the agreement must be included with the responsive proposal.

INSURANCE, BUSINESS LICENSE AND AGREEMENT

Certificates of Insurance will be provided if Fehr & Peers is selected.

Fehr & Peers holds a current City of Culver City Business license #65233.

Fehr & Peers has reviewed the draft agreement and has not identified any questions or areas of concern.



APPENDIX A: FEHR & PEERS OWNERS LIST



Last Name	First Name	% of ownership	Gender/Ethnicity
Bawa	Anjum	0.35%	Male/Asian
Benjamin	Matthew	0.59%	Male/ Non-Minority
Bierstedt	Jane	5.94%	Female/Non-Minority
Bowers	Ann	0.83%	Female/Non-Minority
Brandenberg	Sarah	2.28%	Female/Non-Minority
Breiland, C.	Christopher	1.79%	Male/Asian
Breiland, K.	Kendra	0.28%	Female/Non-Minority
Brown	Steven	8.84%	Male/ Non-Minority
Carr	Katie	1.52%	Female/Non-Minority
Choa	Frederick	5.46%	Male/Asian
Donnelly	Marion	3.68%	Female/Non-Minority
Gard	John	3.05%	Male/ Non-Minority
Gaul	Thomas	1.90%	Male/ Non-Minority
Grandy	Robert	2.24%	Male/ Non-Minority
Grayuski	Daniel	4.15%	Male/ Non-Minority
Haynes	Matthew	2.66%	Male/ Non-Minority
Henry	Matthew	11.05%	Male/ Non-Minority
Klop	Jeremy	2.07%	Male/ Non-Minority
Milam	Ronald	8.29%	Male/ Non-Minority
Mitchell	Christopher	2.90%	Male/ Non-Minority
Mitman	Meghan	0.28%	Female/Non-Minority
Morgan	Julie	4.70%	Female/Non-Minority
Muggridge	John	1.70%	Male/ Non-Minority
Nepstad	Jon	3.87%	Male/ Non-Minority
Pack	Jason	1.45%	Male/ Non-Minority
Peterman	Josh	0.69%	Male/ Non-Minority
Rashid	Daniel	3.89%	Male/ Non-Minority
Rees	Robert	5.18%	Male/ Non-Minority
Ridgway	Matthew	6.49%	Male/ Non-Minority
Samdahl	Donald	0.48%	Male/ Non-Minority
Tellez	Kathrin	1.00%	Female/Non-Minority
Wallace	Mike	0.44%	Male/Non-Minority

APPENDIX B: RESUMES





About

Mr. Gaul has over 30 years of experience as a transportation planner and engineer, and has conducted studies for public agencies, private firms and institutions throughout the western United States. Mr. Gaul has managed areawide transportation planning studies involving needs assessment, travel demand modeling, alternatives evaluation and public outreach, including general plans, specific plans and corridor studies. He has conducted traffic impact, circulation, parking and site access studies for residential, commercial, institutional, industrial, mixed-use and entertainment developments. He is experienced at recreational and special events planning, including circulation studies for the Disneyland Resort in Anaheim and parking and circulation improvements for Los Angeles Dodger Stadium. He has conducted alternatives analysis, station access planning and rail/traffic integration studies for rail transit projects in Los Angeles and Honolulu and was a task manager for the Los Angeles County HOV Performance Program and HOV System Integration Plan studies for MTA and Caltrans. He has managed preparation of Caltrans Project Study Reports and/or Project Reports for various improvement projects on the state highway system. Finally, Mr. Gaul is experienced with multimodal planning including complete streets, streetscape plans and bicycle/pedestrian studies.

Education

Graduate Course Work, University of California, Berkeley, 1982

Bachelor of Science, Civil Engineering, Massachusetts Institute of Technology, 1981

Affiliations

Institute of Transportation Engineers

Publications and Presentations

- The Making of Iniki Express (The Kauai Emergency Bus System), 1993 ITE District 6 Annual Meeting
- Warner Center: A Plan for the 21st Century, 1993 ITE District 6 Annual Meeting
- Planning in Motion: The 2030 Oahu Regional Transportation Plan, 2006 ITE District 6 Annual Meeting
- Growing Without Vehicle Trips: The Santa Monica LUCE, 2011 AEP California State Conference

Project Experience

Transportation and Outreach Consultant Services for the Update of the City of Los Angeles, CA General Plan Mobility Element

Fehr & Peers led a team updating the General Plan Mobility Element for the City of Los Angeles. From a selection of alternative approaches, the City chose a multimodal layered-network approach with a context sensitive overlay to update its street classification system. Fehr & Peers picked up where its LA Street Classification and Benchmarking System study left off and working with the City to develop concepts for a layered network. Fehr & Peers worked with the City to create new street standards based on the development of that layered network. Through an extensive social media campaign and a series of meetings and workshops, Fehr & Peers framed the conversation in terms of transportation choices, where options and tradeoffs are clearly defined to reflect both aspirational goals and the constraints of conditions on the ground. This framing allows for the



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productive exchange of ideas between the public and the City. The Fehr & Peers team worked with the City to prepare a Streetscape Manual that identifies required improvements associated with each street type and addresses the existing disconnects between policy goals and current street standards. Throughout the project, our team performed outreach and branding related to public engagement for the Mobility Element. Using an innovative social media approach, the engagement approach includes crowdsourced idea generation and dialogue, a custom contest for ideas, and in-person workshops across the City. Mr. Gaul was Principal-in-Charge.

Santa Monica Land Use and Circulation Elements Travel Demand Model

With Tom as Principal-in-Charge and Project Manager, Fehr & Peers developed a citywide travel demand model for the award-winning Santa Monica General Plan Land Use and Circulation Elements (LUCE) update. The study included development of performance measures for evaluating and monitoring transportation-related goals, development of a travel demand model to evaluate proposed land use scenarios and circulation strategies, a transportation analysis for the LUCE EIR, and a nexus study to develop multi-modal transportation-based impact fees. The model incorporated many state-of-the-art and unusual features, including smart growth sensitivity to fully capture the potential effects of the General Plan alternatives on vehicle travel, greenhouse gas emissions, a Saturday model in addition to a traditional weekday model, a walking and bicycling demand GIS model, and a direct ridership model providing the ability to predict the change in the likelihood of transit use based on differences in development density in proximity to rail transit stations as well as changes in rail service levels. In addition to traditional LOS, the model was used to evaluate innovative performance measures including travel times, greenhouse gases, and the ability of the City to achieve its groundbreaking “no net new PM peak trips” policy. Mr. Gaul was Principal-in-Charge.

Infill and Complete Streets - Capturing VMT Impacts and Benefits to CEQA, City of Los Angeles, CA

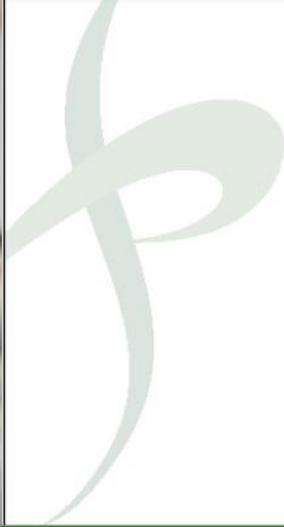
The City of Los Angeles is shifting from an auto-oriented metropolis to a city built around transit, compact transit-oriented development, and multi-modal “Complete Streets” which emphasize all travel modes. However, these dynamic policy shifts have been significantly impeded by requirements under CEQA to mitigate automobile delay. The City wants to seize the historic opportunity, mandated

by SB 743, to realign the environmental review processes with policies that support infill development and Complete Streets transportation projects. Fehr & Peers was selected to work closely with the LADCP and LADOT to develop new VMT-based CEQA thresholds and to update the tools necessary to implement the new procedures. In addition to developing the new thresholds, Fehr & Peers is updating the City’s travel demand model and developing a sketch model tool to perform project-level VMT analysis; quantifying the parking demand and vehicle trip reduction benefits for mixed-use projects, creative office buildings, market rate housing, and affordable housing, and Transportation Demand Management (TDM) strategies. The affordable housing sites are broken down based on population (senior, family, special needs, permanent supportive) and location (inside or outside a transit priority area). Fehr & Peers is educating city staff, private developers, and the community about the new impact review methodology through an engaging public outreach program. Tom is PM.

Westside Mobility Plan, City of Los Angeles

Fehr & Peers led a multi-disciplinary team to develop a long-term comprehensive Mobility Plan for the Westside of the City of Los Angeles, California. The study included development of a state-of-the-art travel demand model; a mobility and rail connectivity study including the potential for north/south rail transit connections from the LAX area through the Westside and integration of transit, highway, bicycle and pedestrian modes; a comprehensive Westside parking study; updates to the Coastal Transportation Corridor and the West Los Angeles Transportation Specific Plans (including trip fee nexus studies for each); and a livable boulevards study addressing the integration of urban design/streetscape and transportation planning. The study includes a substantial public outreach program to engage the community throughout the process. The Westside Mobility Plan blueprint is intended to serve as a catalyst for future action to improve transportation on the Westside. Mr. Gaul was Project Manager.





About

Mr. Muggridge, AICP has nearly 20 years of experience in transportation planning and engineering, both in England and in the United States. As a transport planner, Mr. Muggridge has research and analysis experience in both the private and academic sectors. John is knowledgeable in multi-disciplinary transportation and research projects, including multi-modal transportation planning projects and travel demand forecasting. He has authored numerous reports, managed and participated in a large range of transportation planning, traffic engineering, and parking studies for both private and public clients in Southern California and Hawaii. He also has extensive experience in conducting parking and circulation studies, traffic impact studies, downtown parking studies, long-range transportation plans, corridor studies and specific plans. John has worked with interdisciplinary teams to develop consensus on a wide range of transportation improvements.

Education

Master of Science, Transportation Planning and Engineering, University of Leeds, Leeds/UK, 1999
Bachelor of Engineering, Mechanical and Process Engineering, University of Sheffield, Sheffield/UK, 1996

Affiliations

American Planning Association (APA)

Professional Registration

American Institute of Certified Planners (021879)

Project Experience

Pasadena General Plan Update & Travel Demand Model Development

Fehr & Peers developed a travel demand model for the City of Pasadena to be used as a tool in the evaluation of Land Use and Mobility Element land use scenarios and transportation system alternatives. The model provides the ability to evaluate transportation system network and modal alternatives, and to assess various performance indicators for land use and transportation, including vehicle miles travelled. Fehr & Peers prepared the transportation impact analysis for the general plan update EIR. Mr. Muggridge served as Project Manager.

Burbank General Plan Update & Travel Demand Model Development

Fehr & Peers developed a travel forecasting model for the City of Burbank that was used to evaluate land use scenarios and transportation system alternatives for the general plan update. The travel forecasts have been used to estimate the effectiveness of land use scenarios on the transportation system. An analysis of special generators was conducted to help the City assess traffic conditions. The model was made sensitive for traffic impact analysis purposes. The model can provide measures such as VMT, VHT, and other performance measures for any alternative modeled.

Supplementing the model development and forecasting work, Fehr & Peers prepared a Transportation Analysis Report incorporated in the EIR. Fehr & Peers is providing technical support in the formulation of horizon-year alternatives. Mr. Muggridge was Principal-in-Charge.



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Infill and Complete Streets - Capturing VMT Impacts and Benefits to CEQA, City of Los Angeles, CA

The City of Los Angeles is shifting from an auto-oriented metropolis to a city built around transit, compact transit-oriented development, and multi-modal "Complete Streets" which emphasize all travel modes. However, these dynamic policy shifts have been significantly impeded by requirements under CEQA to mitigate automobile delay. The City wants to seize the historic opportunity, mandated by SB 743, to realign the environmental review processes with policies that support infill development and Complete Streets transportation projects. Fehr & Peers was selected to work closely with the LADCP and LADOT to develop new VMT-based CEQA thresholds and to update the tools necessary to implement the new procedures. In addition to developing the new thresholds, Fehr & Peers is updating the City's travel demand model, which John is overseeing, and developing a sketch model tool to perform project-level VMT analysis; quantifying the parking demand and vehicle trip reduction benefits for mixed-use projects, creative office buildings, market rate housing, and affordable housing, and Transportation Demand Management (TDM) strategies. The affordable housing sites are broken down based on population and location. Fehr & Peers is educating city staff, private developers, and the community about the new impact review methodology through an engaging public outreach program.

West Hollywood Citywide Traffic and Mobility Study

Fehr & Peers is leading a team to assist West Hollywood and John is PIC. Key tasks include the TDM Program, Physical Roadway Improvements, and Traffic Impact Fee Program, which all have unique challenges. The Fehr & Peers team is helping the City navigate through this process to emerge with solutions serve the City's goals and the changing needs of land use development and people traveling in the City. For the TDM program, the Fehr & Peers-led team is using extensive team expertise along with the best available data and input from stakeholders to tailor strategies and solutions that are likely to be most effective in West Hollywood. The use of "Big Data" in evaluating the travel markets for each of the five commercial districts is a critical element in understanding the needs of the districts.

Fehr & Peers is developing a model that goes beyond traditional highway-focused 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, travel demand management effectiveness, VMT estimation, and mixed-use trip generation considering the effects of the built environment.

The study also includes a Physical Roadway Improvements section, where the City will be able to test and evaluate a variety of options including physical improvements, policies and programs that are aimed at improving multimodal mobility in the City of West Hollywood. As part of this task, Fehr & Peers is evaluating the current and future roadway infrastructure needs based on the local and regional 2040 land use/SED forecasts. A series of performance metrics is being developed to measure the effects of multi-modal improvements, along with the development of a framework for an annual transportation performance report card that can be updated and used beyond the life of this project. An essential element of this task is coordination with City of West Hollywood staff and the City Council during key points of the process. We are also updating the City of West Hollywood's Transportation Impact Fee Program, which will:

- Provide funding for circulation element improvements necessary to support the land use element of the General Plan.
- Ensure that new development is paying a "reasonable" fair share of circulation element network expansion.
- Engage the residential and commercial development community to build support for the impact fees.
- Obtain consensus from elected officials in support of the impact fees.
- Develop a defensible nexus analysis.
- Minimize potential financial disincentives caused by impact fees on affordable housing.
- Minimize potential financial disincentives caused by impact fees on desired land uses that can help minimize longer distance travel.
- Leverage impact fees to increase state and federal funding.





About

Ronald T. Milam, AICP, PTP is a Principal with Fehr & Peers located in the Roseville, California office. He is actively involved in a wide variety of project work but also finds time to co-lead the firm's research and development efforts and teach transportation and land use planning courses for UC Davis. Ron has an extensive background in GHG and VMT analysis, big data analysis, travel demand model development and applications, traffic operations analysis, micro-simulation modeling, and transportation impact studies involving NEPA and CEQA. He has also published papers on a wide variety of transportation planning and traffic engineering topics and received recognition for his work that includes the Institute of Transportation Engineer's (ITE) National Past President's Award and best paper honors at the Transportation Research Board (TRB) Conference on Planning Applications. His recent work has included developing recommended practices on VMT modeling and analysis for the FHWA *Handbook for Estimating Transportation Greenhouse Gases for Integration into the Planning Process* and a *VMT White Paper* for the California Governor's Office of Planning and Research related to SB 743 implementation.

Education

Bachelor of Science (with Highest Honors), Environmental Policy Analysis and Planning
(Emphasis on Land Use and Transportation Planning),
University of California at Davis, 1990

Registrations

American Institute of Certified Planners (011595)
Transportation Professional Certification Board Inc.,
Professional Transportation Planner (52)

Professional Affiliations

- Transportation Research Board (TRB)
- Institute of Transportation Engineers (ITE)
- American Planning Association (APA)

Recent Planning Awards

APA Sacramento Valley Section 2012 Innovation in Green Community Planning for the [City of Sacramento Climate Action Plan](#) (Fehr & Peers – subconsultant)

APA Sacramento Valley Section 2012 Focused Issue Planning Award for the [Sacramento River Crossing Alternatives Study](#) (Fehr & Peers – prime consultant)

Project Experience

Infill and Complete Streets - Capturing VMT Impacts and Benefits to CEQA, City of Los Angeles, CA

The City of Los Angeles is shifting from an auto-oriented metropolis to a city built around transit, compact transit-oriented development, and multi-modal "Complete Streets" which emphasize all travel modes. However, these dynamic policy shifts have been significantly impeded by requirements under CEQA to mitigate automobile delay. The City wants to seize the historic opportunity, mandated by SB 743, to realign the environmental review processes with policies that support infill development and Complete Streets transportation projects. Fehr & Peers was selected to work closely with the LADCP and LADOT to develop new VMT-based CEQA thresholds and to update the tools necessary to implement the new procedures. In addition to developing the new thresholds, Fehr & Peers is updating the City's travel demand model and developing a sketch model tool to perform project-level VMT analysis; quantifying the vehicle trip reduction benefits for mixed-use projects, creative office buildings, market rate housing, and affordable housing, and Transportation Demand



Management (TDM) strategies. Fehr & Peers is educating city staff, private developers, and the community about the new impact review methodology through an engaging public outreach program.

Caltrans Transportation Analysis Guide / Transportation Impact Study Guide

Ron oversaw Fehr & Peers' work in helping to prepare the Caltrans Transportation Analysis Guide (TAG). These guidelines will provide a consistent, effective, and standardized approach to transportation analysis to streamline the Caltrans project delivery process, guide the practice of analysts by establishing appropriate methodologies, and document the requirements for technical reports. Ron also oversaw the development of the Traffic Impact Study Guide (TISG), which directs how development and infrastructure projects not on the state highway system will be analyzed. The TISG revises current practice by incorporating SB 743 requirements for using VMT rather than LOS to determine environmental impacts.

West Hollywood Citywide Traffic and Mobility Study

Fehr & Peers is leading a team to assist the City of West Hollywood. Key tasks include the TDM Program, Physical Roadway Improvements, and Traffic Impact Fee Program, which all have unique challenges. Ron is advising the team on updating the model to reflect changes in CA legislation.

VMT and GHG Analysis

Project director, project manager, or technical specialist preparing VMT and GHG analysis for general plans, climate action plans, greenhouse gas reduction plans, and transportation analysis guidelines.

- FHWA *Handbook for Estimating Transportation Greenhouse Gases for Integration into the Planning Process*
- *VMT White Paper* for the California Governor's Office of Planning and Research related to SB 743 implementation
- *California RTP Guidelines Update* for Compliance with SB 375 – California Transportation Commission, 2010
- *City of Sacramento Climate Action Plan*, 2011
- *City of Sacramento General Plan*, 2014
- *City of Los Angeles Westside Plan*, 2012
- *City of Pasadena General Plan*, 2014

- *City of Citrus Heights General Plan Update and Climate Action Plan*, 2011
- *Sacramento County General Plan VMT Analysis*, 2010
- *Sacramento Municipal Utility District (SMUD) Greenhouse Gas Inventory Analysis*, 2010
- *Yolo County General Plan and Climate Action Plan*, 2010
- *City of Woodland General Plan*, 2014
- *City of Roseville Sustainability Plan*, 2010
- *Tahoe Regional Planning Agency (TRPA) Regional Plan and Regional Transportation Plan VMT Analysis*, 2010
- *Sonoma Mountain Village VMT Analysis*, 2009
- *Newhall Mission Village Draft EIR VMT Analysis*, Los Angeles County, 2010
- *Newhall Entrada Village Draft EIR VMT Analysis*, Los Angeles County, 2010
- *Centennial VMT Analysis*, Los Angeles County, 2011
- *El Rancho San Benito Draft EA VMT Analysis*, San Benito County, 2009
- *I-80/Eureka Road Interchange VMT and Fuel Consumption Analysis*, Roseville, CA 2010
- *US 50/Rancho Cordova Parkway Interchange VMT Analysis*, Rancho Cordova, CA, 2010

Selected Expert Panels/Committees

Participated in expert panels related to travel demand forecasting, traffic simulation, and smart growth planning.

OPR SB 743 Modeling Convenings for SB 743 (2015)
White House Area Transportation Study, FHWA – Member of Transportation Working Group (2006-2007)
California RTP Guidelines Update for Compliance with California RTP Guidelines Update for Compliance with SB 375 – California Transportation Commission - Member of Regional Transportation Plan Guidelines subcommittee and Modeling subcommittee (2009-2010)
TRB ADB45 Committee – Travel Forecasting Resource (2010-2013)
Innovative Urban Mobility Services Meeting – National Academy of Sciences/TRB (2014)



About

Jinghua Xu has more than 14 years of experience. She recently joined the Anaheim office of Fehr & Peers as an Associate. Her expertise includes travel demand forecasting, network modeling and simulation, transportation planning, goods movement, and GIS. Jinghua has served as project manager, technical leader and key modeler in various modeling projects for both highway and transit, including model conversion, model development and calibration, model application, and data analysis. She has strong analytical skills and is proficient in various transportation modeling software packages, including TransCAD (GISDK), CUBE (Voyager/TP+) and TRANPLAN. She is also familiar with GIS, statistical and traffic simulation software, as well as programming languages (e.g., C, JAVA).

Education

Ph.D. in Civil Engineering, *University of Massachusetts, Amherst*, 2004

M.E. in Transportation Engineering, *Beijing Jiaotong University, Beijing, China*, 1997

B.E. in Transportation Engineering, *Beijing Jiaotong University, Beijing, China*, 1994

Affiliations

Women's Transportation Seminar, member
International Chinese Transportation Professional Association – Southern California Chapter, board member

Professional Registration

Licensed Civil Engineer, State of California (73925)

Teaching

California State Polytechnic University, Pomona: instructor on "Urban Transportation", Spring Quarter 2011 and 2012.

Recent Presentations and Publications

Xu, J., and S. Ruegg. "Dynamic Modeling Application for Toll Demand and Price Equilibrium on Toll Facilities". Presented on Transportation Research Board 92nd Annual Meeting, January 13-17, 2013, Washington, D.C.

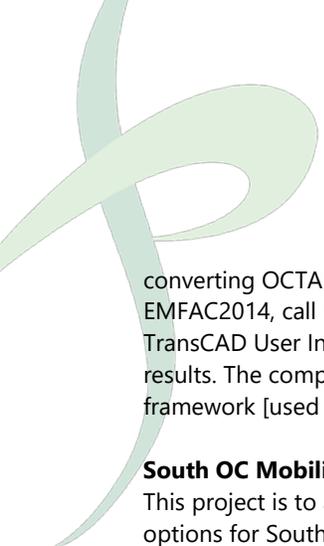
Xu, J., and S. Ruegg. "An Iterative Procedure for the Estimation of Dynamic Toll Demand, Toll and Level-of-Service on Toll Facilities". Published on the ASCE "Sustainable Transportation Systems – Plan, Design, Build, Manage, and Maintain", p308-315, 2012.

Xu, J., and R. Picado. "Validation of Person Trip Tables for Transit Forecasting". Presented on TRB Conference on "Using Census Data for Transportation", Irvine, California, October 2011.

Project Experience

Consultant Services for Tool Creation to be used with OCTAM Output to Forecast Emission (Project Manager)
Jinghua was the project manager to update the air quality modeling component for OCTAM, for both TRANPLAN and TransCAD versions. This component involves





converting OCTAM outputs to the inputs required by EMFAC2014, call EMFAC2014 directly from OCTAM TransCAD User Interface, and reporting the EMFAC2014 results. The component is integrated to the OCTAM framework [used TransCAD/GISDK].

South OC Mobility Study (Modeling Task Leader)

This project is to assist the TCA in evaluating mobility options for South OC. This effort included working with a variety of stakeholders to define a range of future mobility treatments, testing those treatments via technical analysis to see how they perform, and reporting the results to the team for their consideration. Jinghua led all the modeling-related tasks and provided technical information to gain the confidence of all participants in the objective.

San Bernardino County Transportation Analysis Model (SBTAM) Modeling Support (Project Manager)

Jinghua manages this modeling activity to provide modeling support for SANBAG's Countywide Transportation Plan (CTP). Jinghua led the effort to develop SBTAM 2040 scenarios, and performed scenario analysis for both highway and transit sides. In addition, Jinghua assists the client to maintain SBTAM and enhance its functionalities [used TransCAD/GISDK].

Santa Cruz County Countywide Transportation Modeling Tool (Key Model Developer)

This project is to develop a stand-alone countywide travel demand model, complemented with a suite of GIS-based "direct response models" that allow SCCRTC staff to conduct sensitivity testing of the trip making activities for future land use and/or transportation network alternatives. Jinghua serves as the lead travel demand modeler to efficiently and expeditiously prepare the countywide model in TransCAD/GISDK, and the direct response tools [used TransCAD/GISDK].

Santa Clara City Place EIR (Modeling Task Leader)

Jinghua led the modeling task for City Place Santa Clara transportation impact analysis. She is responsible for the model review and sensitivity testing on different land use plans in the project area. Jinghua validates the model for the project study area, and will perform travel forecasts to evaluate the impact of the development at the City Place to the overall transportation [used CUBE/Voyager].

Prior to joining Fehr & Peers, Jinghua worked on the following projects:

San Bernardino County Transportation Analysis Model (SBTAM) Modeling Support (Technical Leader)

Jinghua led this modeling activity as the technical leader to support SANBAG to generate SBTAM 2012 Base Year scenario, based on SCAG's 2012 Base Year scenario prepared for the 2016 RTP.

SBTAM Development (Project Manager)

Jinghua was the project manager to develop a subregional model for San Bernardino County based on the 2009 version of the SCAG Regional model. She managed the project from both technical and managerial perspectives and coordinated with clients and multiple agencies.

SCAG Trip-based Model Calibration (Project Manager)

Jinghua was the project manager to lead the effort to calibrate SCAG's Trip-based Model, focusing on the calibration of the Destination Choice Model and the Model Choice Model, as well as the generation of calibration targets from the recent Household Survey and Transit On-Board Surveys.

SCAG Activity-based Model Development and Validation in Support of the 2016 RTP/SCS (Key Modeler)

Jinghua was the key modeler in developing SCAG's Activity-Based Model (ABM). Starting from the model developed in the previous stage, an extensive re-specification of the model was performed, to advance the ABM to the point where it is a practical tool that supports the 2016 RTP and other regional planning needs.

SCAG Mode Choice Model Enhancement and Regional Model Update (Key Modeler)

Jinghua was the key modeler to help enhance SCAG's Trip-Based Model (TBM), including application of 4D concepts to the SCAG regional model, mainly to the mode choice model, vehicle availability, and trip generation models, and other model components.

Metro Mode Choice Model Re-calibration/Re-validation (Key Modeler)

Jinghua was the key modeler to refine Metro's travel demand model, focusing on the mode choice model to be in accordance with the latest requirements stipulated by the FTA.





About

Brandon Haydu, AICP is an innovative, responsible, and analytical transportation planner with over five years of travel demand forecasting, model development, and data analysis experience. Brandon utilizes programming and technical tools to solve complex transportation planning questions, and effectively communicates outcomes to clients, staff, and the public. He is passionate about the development of healthy, sustainable, and equitable transportation systems that are both efficient and cost effective.

Education

Master of City and Regional Planning, California Polytechnic State University, 2010

Master of Science Engineering, California Polytechnic State University, 2010

Bachelor of Arts, Political Science, University of California, Davis, 2006

Professional Registration

American Institute of Certified Planners (026112)
League of American Bicyclists Certified Instructor (2310)

Expertise

- Modeling (Cube and TransCAD)
- Programming (Python, R, Javascript, D3)
- Spatial Analysis (ArcGIS, Quantum GIS)

- Database (SQLite, PostgreSQL)
- Operations (Synchro, SimTraffic)
- Communication (Excel, Word, PowerPoint)

Publications

Active Travel Co-Benefits of Travel Demand Management Policies that Reduce Greenhouse Gas Emissions, Caroline Rodier, Richard Lee, Brandon Haydu, and Nicholas Linesch, Mineta Transportation Institute, 2014

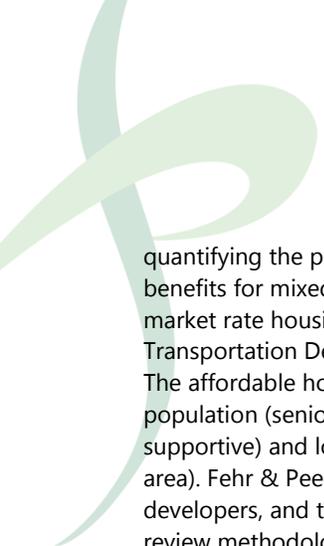
Impact of Proposed Land Use and Transportation Investments on Future Travel Patterns in California, Andrew McFadden, Giovanni Circella, Brandon Haydu, and Nicholas Linesch, Transportation Research Record, 2014

Project Experience

Infill and Complete Streets - Capturing VMT Impacts and Benefits to CEQA, City of Los Angeles, CA

The City of Los Angeles is shifting from an auto-oriented metropolis to a city built around transit, compact transit-oriented development, and multi-modal "Complete Streets" which emphasize all travel modes. However, these dynamic policy shifts have been significantly impeded by requirements under CEQA to mitigate automobile delay. The City wants to seize the historic opportunity, mandated by SB 743, to realign the environmental review processes with policies that support infill development and Complete Streets transportation projects. Fehr & Peers was selected to work closely with the LADCP and LADOT to develop new VMT-based CEQA thresholds and to update the tools necessary to implement the new procedures. In addition to developing the new thresholds, Fehr & Peers is updating the City's travel demand model and developing a sketch model tool to perform project-level VMT analysis;





quantifying the parking demand and vehicle trip reduction benefits for mixed-use projects, creative office buildings, market rate housing, and affordable housing, and Transportation Demand Management (TDM) strategies. The affordable housing sites are broken down based on population (senior, family, special needs, permanent supportive) and location (inside or outside a transit priority area). Fehr & Peers is educating city staff, private developers, and the community about the new impact review methodology through an engaging public outreach program.

Westside Mobility Plan, City of Los Angeles

Fehr & Peers led a multi-disciplinary team to develop a long-term comprehensive Mobility Plan for the Westside of the City of Los Angeles, California. The study included a state-of-the-art travel demand model; a mobility and rail connectivity study; a comprehensive Westside parking study; updates to the Coastal Transportation Corridor and the LA Transportation Specific Plans (including trip fee nexus studies for each); and a livable boulevards study addressing the integration of urban design/streetscape and transportation planning. Brandon led the travel modeling and big data analysis for the trip fee nexus studies.

Southern California Association of Governments (SCAG) Urban Footprint Active Transportation Module

Fehr & Peers worked with SCAG to develop an active transportation module for the Urban Footprint sketch planning tool. The tool hinges off a mode choice model that was developed using California Household Travel Survey data, SCAG model data, and infrastructure information collected by SCAG. The end result is a model that can quickly assess trip reductions and VMT reductions associated with adding bike and walk facilities.

SBCAG Central Coast Origin/Destination Survey

Fehr & Peers collected and analyzed data for the Santa Barbara County Association of Governments (SBCAG) as part of the Central Coast Origin-Destination Survey. The purpose of the study was to gather information on the travel behavior of people who make regional and inter-regional trip on U.S. 101 in and between Ventura, Santa Barbara, and San Luis Obispo counties. The survey was designed to collect origin-destination, demographic, purpose, and other information about the travel patterns of U.S. 101 users. The information is to be used to help

calibrate the regional travel demand model and to inform local, regional, state, and federal transportation stakeholders about the importance of U.S. 101 to the economy of the Central Coast.

Data from all four data collection methods was used, with the data for each individual method being compiled into a single meaningful dataset for comparison and integration with each other and other travel behavior data. The resulting data was provided in a format nearly identical to the origin-destination matrices from the local travel demand model, offering a substantial amount of real-life origin and destination-level travel data for all types of trips that occur in the central coast to supplement the CHTS and other travel behavior data sources. The integration of the four advanced data collection methods and technologies offers an unprecedented look into travel behavior in the Central Coast.

Los Angeles Metro Active Transportation and Strategic Plan (LA Metro ATSP)

The LA Metro ATSP project aims to improve walking and biking facilities around transit stations within Los Angeles County. Brandon was key in processing data using GIS, SQL, and Python. Brandon also developed a Python and GIS program to create over 600 infographics for walking and biking characteristics of key transit stations within LA County.

I-5 and SR-99 Freight Study

Fehr & Peers is analyzing freight corridors through the central valley utilizing cellphone/GPS data, PeMS data, SWITRS information, and a variety of other data sources to analyze freight patterns in the Central Valley. Brandon has been key in developing automated infographics and customized charts using Python and GIS as well as developing a web map platform to host data and analysis.

California Statewide Travel Demand Model-CSTDM

As part of a team at UC Davis, Institute of Transportation Studies, Brandon constructed a statewide travel model for Caltrans. Brandon led a team of modelers to build future roadway and transit networks. He also developed scripts to validate the model and calculate future distance based transit fares.





About

Ms. Richer has five years of experience in transportation planning with expertise in multi-modal data collection, survey design, and active transportation planning. Using spatial analysis, statistical analysis, and design software, Chelsea effectively communicates complex, data-driven findings to a wide variety of audiences. She is proficient in ArcGIS, Adobe InDesign, Adobe Illustrator and SPSS. Ms. Richer's clients have been so pleased with her work on their Transportation Demand Management (TDM) project that they recommended her to another client.

Education

Master of Urban & Regional Planning, University of California at Los Angeles, 2014

Bachelor of Arts, Environmental Studies and Public Policy, University of Chicago, 2008

Professional Registration

American Institute of Certified Planners, Certification Number 027878

Affiliations

American Planning Association (APA)

Presentations

Beyond First Last Mile Strategies – APA National Conference, Phoenix (2016)

Transportation and Climate Change Adaptation – APA National Conference (poster session), Seattle (2015)

Awards

Lewis Center of UCLA GIS Contest – 2nd place 2014

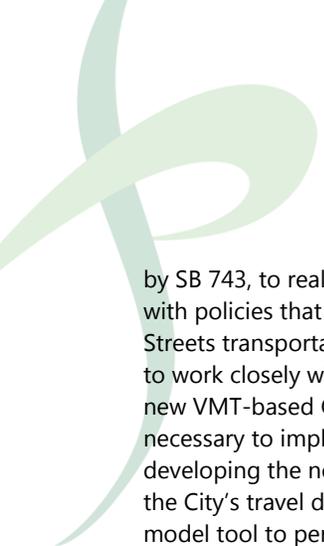
Project Experience

Vision Zero Technical Analysis – LADOT

Vision Zero is an ambitious initiative to eliminate traffic fatalities and severe injuries among all roadway users. First implemented in Sweden in the 1990s, Vision Zero has proven successful across Europe – and now it's gaining momentum in American cities. Fehr & Peers is leading a robust data-driven effort to identify the leading causes of traffic injuries and match efficient and cost-effective engineering countermeasures to address the safety challenges. As part of this process, Fehr & Peers conducted an extensive peer city review, including key interviews and led a robust, data-driven effort to identify the driving causes of traffic injuries and match efficient and cost-effective engineering countermeasures to address the safety challenges. Ms. Richer was responsible for developing materials, conducting, and interpreting these interviews to guide the process of completing the data analysis for the City of Los Angeles. In addition, Ms. Richer is working with the team to effectively communicate the findings of the data analysis and translate these findings into an actionable strategy for the Department of Transportation. Ms. Richer is now working on another team on the Vision Zero Action Plan.

Infill and Complete Streets - Capturing VMT Impacts and Benefits to CEQA, City of Los Angeles, CA

The City of Los Angeles is shifting from an auto-oriented metropolis to a city built around transit, compact transit-oriented development, and multi-modal "Complete Streets" which emphasize all travel modes. However, these dynamic policy shifts have been significantly impeded by requirements under CEQA to mitigate automobile delay. The City wants to seize the historic opportunity, mandated



by SB 743, to realign the environmental review processes with policies that support infill development and Complete Streets transportation projects. Fehr & Peers was selected to work closely with the LADCP and LADOT to develop new VMT-based CEQA thresholds and to update the tools necessary to implement the new procedures. In addition to developing the new thresholds, Fehr & Peers is updating the City's travel demand model and developing a sketch model tool to perform project-level VMT analysis; quantifying the parking demand and vehicle trip reduction benefits for mixed-use projects, creative office buildings, market rate housing, and affordable housing, and TDM strategies. The affordable housing sites are broken down based on population (senior, family, special needs, permanent supportive) and location (inside or outside a transit priority area). Fehr & Peers is educating staff, developers, and the community about the new impact review methodology through a public outreach program.

Culver City Bike Pedestrian Action Plan

Fehr & Peers is assisting a team with the Culver City Bike Pedestrian Action Plan. The goals of this effort are to develop low-stress networks that serve users of varying ages and abilities, while also closing gaps and enhancing the overall quality and connectivity of the local active transportation network. As part of this project, Fehr & Peers is supporting the team in updating the 2010 BPMP policies and strategies relating to transit integration, bike share, parking, wayfinding, and first/last mile planning. Fehr & Peers is leading the Vision Zero task, using collision data analysis to examine roadways with higher concentrations of deaths and serious injuries for bicyclists and pedestrians by developing a High Injury Network (HIN) that determines locations with significant safety needs. Fehr & Peers is analyzing crashes on the HIN to describe collision patterns across the Culver City, defining primary risk factors that lead to collisions, and identifying high-need pedestrian/bicycle safety locations. We are defining collision profiles that describe the primary factors that lead to fatalities and severe injuries. The crash profiles aid in determining what countermeasures would be most effective to treat the specific collision types at a given intersection or street segment. Fehr & Peers is developing countermeasures to match the collision profiles. We are also supporting a public workshop with materials and presentations and using workshop input to help develop incremental goals and prioritize improvements for the City to achieve zero traffic deaths.

Fehr & Peers is also working with the team and Culver City staff to determine ideal locations, time periods for counts, and data management strategies that will allow the City to monitor its performance against its goal of zero ADT growth. Using the collision analysis and HIN along with stakeholder input, count data, and information about existing and previously-proposed facilities, Fehr & Peers is collaborating with the team to develop a high-priority Mobility Opportunity Network. Chelsea is PM.

West Hollywood Citywide Traffic and Mobility Study

Fehr & Peers is leading a team to assist the City of West Hollywood. Key tasks include the TDM Program, Physical Roadway Improvements, and Traffic Impact Fee Program, which all have unique challenges. The Fehr & Peers team is helping the City navigate through this process to emerge with solutions serve the City's goals and the changing needs of land use development and people traveling in the City. For the TDM program, the Fehr & Peers-led team is using extensive team expertise along with the best available data and input from stakeholders to tailor strategies and solutions that are likely to be most effective in West Hollywood. The use of "Big Data" in evaluating the travel markets for each of the five commercial districts is a critical element in understanding the needs of the districts.

Fehr & Peers is developing a model that goes beyond the 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.

The study also includes a Physical Roadway Improvements section, where the City will be able to test and evaluate a variety of options including physical improvements, policies and programs that are aimed at improving multimodal mobility in West Hollywood. As part of this task, Fehr & Peers is evaluating the current and future roadway infrastructure needs based on the local and regional 2040 land use/SED forecasts. We are also updating the City of West Hollywood's Transportation Impact Fee Program. Chelsea is PM.



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