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Memorandum

Date: February 23, 2017
To: Planning Commission
From: Wade Wietgrefe, Senior Planner, (415) 575-9050
RE: **California Environmental Quality Act: Vehicle Miles Traveled, Parking, For-Hire Vehicles, and Alternatives**

INTRODUCTION

During recent Planning Commission hearings, members of the public have sought clarification regarding the Planning Department's (Department) transportation impact analysis in California Environmental Quality Act (CEQA) documents as it relates to parking,[1] for-hire vehicles,[2] and vehicle miles traveled (VMT). This memorandum responds to those inquiries by providing an overview of a) parking and CEQA; b) VMT and CEQA; c) CEQA alternatives; d) planning policies and policy decisions regarding parking, including the Planning Commission's role in approving the amount of parking for development; and e) potential future approaches to transportation impact analysis. An expanded discussion of the history of, methodology, and data available for parking and VMT analysis is provided in Attachment A.

BACKGROUND

The Department's transportation impact analysis in CEQA documents has progressed over the last 15 years. The Department is at the forefront of an ever-evolving field of transportation by comprehensively working to address such impacts from new development, as demonstrated by the recent legislative success of all three components of the Transportation Sustainability Program.[3] One component of the Transportation Sustainability Program is Align. This component became effective in March 2016, when the Planning Commission unanimously adopted a resolution that directed the Department to remove automobile delay as a factor in determining significant impacts pursuant to CEQA and replace it with VMT criteria. In doing so, San Francisco became the first county in California to adopt such criteria and, for the first time, it aligned the Department's transportation analysis in CEQA documents with adopted plans, policies, and ordinances related to transportation.

The Department's methodology in assessing VMT impacts in CEQA documents uses a state-of-art, activity-based model that estimates current and predicts future travel patterns for the City. As noted though, the transportation field is not static and the Department's analysis will continue to evolve. Therefore, the Department is involved in several efforts with partner agencies that may update the approach for analyzing transportation impacts over time, including the effects of parking supply and for-hire vehicles on VMT.

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[1] "Parking" can mean a variety of things: on-street, off-street, public, private, bicycle, car-share, vehicle, etc. For the purposes of this memo, "parking" refers to private, off-street vehicular parking.
[2] For the purposes of this memo, "for-hire vehicles" refers to taxis and transportation network companies.
[3] Refer to http://sf-planning.org/transportation-sustainability-program for more details.

Through the Department's inclusion of a robust transportation impact analysis within CEQA documents, the Planning Commission has wide latitude for decisions related to transportation components within a development, including the amount of parking that should be approved. Therefore, in most circumstances, the Planning Commission would be able to adopt a development that includes reduced or no parking, even if the CEQA document analysis did not describe a variant to the project with no parking or include a labeled "no parking" alternative.

PARKING AND CEQA

This section briefly summarizes the Department's current approach to parking analysis.

Approach to Parking Analysis

The Department's Transportation Impact Analysis Guidelines for Environmental Review (Transportation Impact Analysis Guidelines), October 2002, identify the general conditions for when a transportation study is required for projects subject to CEQA and the methodology for the transportation analysis. The Department has updated the general conditions for when a transportation study is required for projects subject to CEQA, including for parking. The current parking condition states a transportation study may be required if "the project would potentially add…greater than 50 parking spaces/is over the amount of parking allowed in the code." Elements of the parking analysis, some for informational purposes, are described below.

Parking Demand

The parking demand estimated for a development reflects a free, unconstrained supply of parking at the development. From a CEQA perspective, the approach conservatively estimates the parking demand from the development to inform decision-makers of the potential adverse effects from the development. Therefore, the CEQA analysis covers the upper bound of the potential demand for parking and the associated secondary effects of people searching in their vehicles for available parking spaces to meet that demand. For informational purposes, on a case-by-case basis, these parking demand estimates continue to be provided in CEQA documents.

Parking Code Requirements

For informational purposes, on a case-by-case basis, the amount of parking provided for a development in comparison to code allowances or requirements is provided in CEQA documents.

Parking Supply and Significance Criterion

A development's parking supply is compared to the estimated parking demand. This discussion is provided in CEQA documents for informational purposes. If the estimated parking demand from the development exceeds the off-street parking supply, a discussion regarding publicly available on-street and off-street spaces in the project vicinity is provided. The environmental analysis then accounts for the secondary effects (e.g., air quality, noise) of people searching in their vehicles for those available or unavailable parking spaces.[4] The secondary effect is also the basis for the criteria used to determine if a project would have a significant transportation-related impact as it relates to parking:

[4] A quantified secondary effect analysis is typically conducted only for very large development projects where a substantial parking deficit may occur (e.g., 50 First Street). In these instances, all vehicle trips are distributed to the site and then those vehicle trips that cannot be accommodated by the development's off-street parking supply may be distributed to available parking spaces in the study area.

> The project would have a significant effect on the environment if it would result in a substantial parking deficit that could create hazardous conditions or significant delays affecting transit, bicycles or pedestrians and where particular characteristics of the project or its site demonstrably render use of other modes infeasible.

This parking supply vs demand information and secondary effect analysis is sometimes completed for both the development's proposed parking supply and if the development were to include no parking. The no parking analysis is conducted in case the Planning Commission adjusts the amount of parking included in the development, including at the entitlement hearing.

Other Parking-Related Topics

The current parking condition directly addresses the relationship between the amount of parking provided at the site and the potential for site circulation conflicts. Whenever parking is proposed for a development, analysis is conducted regarding the potential for vehicle movement conflicts with transit operations and people, particularly vulnerable users (e.g., people walking or bicycling) along streets with documented safety concerns (e.g., High-Injury network). Common components of this conflict analysis include a discussion of the location and width of proposed curb cuts in relation to other transportation facilities, the anticipated number of vehicles entering and exiting the parking facility, and the design of the parking facility as it relates its ability to accommodate queues.

VMT AND CEQA

This section briefly summarizes the Planning Department's current approach in assessing the impacts of VMT, including the current approach for assessing the effects parking supply and for-hire vehicles have on a development's VMT estimates. This section also briefly discusses how for-hire vehicles affect other transportation analysis topics.

Approach to VMT Analysis

The Department's approach to VMT analysis under CEQA is based on a screening analysis which compares development-estimated VMT to the regional average, as recommended by the California Office of Planning and Research in a technical advisory that accompanied its January 2016 draft CEQA guidelines implementing Senate Bill 743.[5] The Department uses maps illustrating areas that exhibit low levels of existing and future year VMT[6] to screen out developments that may not require a detailed VMT analysis. The thresholds used to determine low levels of VMT are set at 15 percent below regional averages of VMT.

The Department relies on San Francisco Chained Activity Model Process (SF-CHAMP) runs prepared by the San Francisco County Transportation Authority (Transportation Authority) to estimate VMT within different geographic locations throughout San Francisco. Travel behavior in SF-CHAMP is calibrated by Transportation Authority staff based on observed behavior from the California Household Travel Survey 2010-2012, Census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP uses a synthetic population, which is a set of

[5] This document is available online at: https://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf.

[6] The VMT estimates in CEQA documents report a per population metric; it is not an absolute amount of VMT. Therefore, a development could have a lot of parking, but also a substantial amount of people. Therefore, a development that is located in San Francisco will likely have lower VMT per capita low relative to the region.

individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day. The role parking supply and for-hire vehicles have on these VMT estimates are described below.

Parking Supply

One rationale for using the SF-CHAMP maps to screen out projects, instead of a project-by-project detailed VMT analysis, is because most developments are not of a large enough scale and/or contain unique land uses to substantially alter the VMT estimates from SF-CHAMP. SF-CHAMP is not sensitive to site-level characteristics for a development (e.g., the amount of parking provided for a development). The amount of parking provided for a development, as well as other transportation demand management (TDM) measures, could result in VMT that differs from SF-CHAMP estimation.

As part of the "Shift" component of the Transportation Sustainability Program, the City adopted a citywide TDM Program (effective March 2017). For the TDM Program, staff prepared the TDM Technical Justification document.[7] The document provides the technical basis for the selection of and assignment of points to individual TDM measures in the TDM Program. As summarized in the TDM Technical Justification document, a sufficient amount of research indicates that more parking is linked to more driving and that people without dedicated parking are less likely to drive. However, at this time, there is not sufficient data to quantify the specific relationship between parking supply and VMT for a development in San Francisco. CEQA discourages public agencies to engage in speculation. Therefore, the quantified VMT estimates in CEQA documents for a development currently do not directly account for the effect of development's parking supply on VMT.

For-Hire Vehicles

SF-CHAMP estimates VMT from private automobiles and taxis, the latter of which is a type of for-hire vehicle. The observed data within SF-CHAMP is from the years with the latest data available, 2010-2012. Since that time, the prevalence of for-hire vehicles has increased in San Francisco and elsewhere. This growth is primarily a result in the growth of transportation network companies. Transportation network companies are similar to taxis in that drivers take passengers to and from destinations typically using a distance-based fare system. SF-CHAMP estimates the probability of driving based on auto ownership, household income, and other variables. To the extent that people previously would have traveled in another for-hire vehicle (i.e., taxi), now travel using a transportation network company service, this would be accounted for in previous household travel surveys.

To date, there is limited information as to how the introduction/adoption of transportation network companies affects travel behavior (e.g., whether people using these services are making trips they would not otherwise make, or substituting a transportation network company ride for a trip they would make by another mode). The Census Bureau and other government sources do not currently include transportation network company vehicles as a separate travel mode category when conducting survey/data collection (e.g., American Community Survey, Decennial Census, etc.). Thus, little can be determined from these standard transportation industry travel behavior data sources. Further, the transportation network companies are private businesses and generally choose not to disclose specifics regarding the number of vehicles/drivers in their service fleet, miles driven with or without passengers, passengers transported, etc. Thus, based on the information currently available it is currently difficult, if

[7] San Francisco Planning Department, "Transportation Demand Management Technical Justification," June 2015. Available online at: http://default.sfplanning.org/plans-and-programs/emerging_issues/tsp/TDM_Technical_Justification.pdf.

not impossible, to document how transportation network company operations quantitatively influence overall travel conditions in San Francisco or elsewhere.

For the above reasons, the effects of for-hire vehicles as it relates to transportation network companies on VMT is not currently estimated in CEQA documents, except to the extent those trips are captured in taxi vehicle trip estimates for a development.

Other For-Hire Vehicle Topics. During the current transportation review process for development, curbside management is an important aspect of that review and the Department coordinates with the San Francisco Municipal Transportation Agency (SFMTA) regarding the necessity for and location of passenger loading zones to accommodate future long-term demands for curbside space due to for-hire vehicles. In addition, as part of the transportation review process for developments, the Department is also currently considering requiring a for-hire vehicle classification as part of existing conditions data collection counts to help with analysis related to this topic.

CEQA ALTERNATIVES

This section briefly summarizes the requirements under CEQA for an alternatives analysis and the rationale for sometimes including other alternatives in CEQA documents, even though they may not be required under the statute under specific circumstances.

CEQA Required Alternatives

The CEQA Guidelines require an environmental impact report (EIR) to analyze a reasonable range of potentially feasible alternatives to the proposed project or to the location of the project, which would meet both of the following two criteria 1) feasibly attain most of the basic objectives of the project; and 2) avoid or substantially lessen any of the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit informed public participation and an informed and reasoned choice by the decision-making body.

These requirements are the basis that the Department uses in selecting a reasonable range of potentially feasible alternatives for a development. This range will necessarily depend on the specific circumstances of each development. Commonly labeled alternatives in EIRs published by the Department that meet these two criteria are partial preservation alternatives, full preservation alternatives, reduced height alternatives, and reduced density alternatives. The CEQA Guidelines also require that a no project alternative be evaluated; the analysis of the no project alternative assumes that the proposed project would not be approved. In addition, an environmentally superior alternative must be identified among the alternatives considered. The environmentally superior alternative is generally defined as the alternative that would result in the least adverse environmental impacts to the project sites and affected environment.

Other Alternatives

The CEQA Guidelines requires an EIR to identify and briefly discuss any alternatives that were considered by the Lead Agency but were rejected because they did not meet the two criteria for CEQA required alternatives or were determined infeasible. The CEQA Guidelines generally defines "feasible" to mean the ability to be accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors.

On a case-by-case basis, the Department may carry forward other alternatives in the analysis. These other alternatives may have substantially different project characteristics than those common types of alternatives described above while still meeting most of the basic objectives of the project. These other alternatives typically have similar environmental impact conclusions as the project or other required

alternatives. Commonly labeled other alternatives include code compliant alternatives and alternatives proposed by neighborhood groups.

PLANNING POLICIES AND POLICY DECISIONS REGARDING PARKING

This section briefly summarizes General Plan and Planning Code policy regarding parking; the Planning Commission's role as it relates to parking policy decisions; and how CEQA documents cover the range of decisions before the Planning Commission regarding the amount of parking approved for development.

General Plan and Planning Code Parking Policies

The General Plan and Planning Code include policies that acknowledge or at least imply a relationship between parking supply and driving. These policies, include, but are not limited to:

- The San Francisco General Plan, Transportation Element acknowledges the need to limit the city's parking capacity to control the impact of automobiles on the city by: establishing parking caps for residential and commercial uses to lead to a sustainable mode split (Policy 14.8); limiting parking demand through limiting the absolute amount of spaces (Policy 16.5); and limiting parking in downtown to help ensure the number of auto trips to and from downtown is not detrimental (Objective 32).
- Parking Maximums (Planning Code Section 151.1)
- Curb Cut Restrictions
- Transportation Brokerage Services (Planning Code Section 163)
- Unbundle Parking (Planning Code Section 167)
- TDM Program (Planning Code Section 169)

Policy Decisions

The Planning Commission has wide latitude for decisions regarding the amount of parking that should be approved for a development. For developments located in use districts with parking maximums, those maximums set the limit on the amount of parking; beyond these limits, conditions can be imposed on a development that further limit the amount of parking within a development based upon policy reasons. For developments located in use districts with parking minimums, exceptions have been added over the years that allow for developments to park below those minimums (e.g., bicycle or car-share replacement parking; if a curb cut to a parking facility would conflict with a pedestrian, bicycle, or transit facility; compliance with a TDM Plan).

Policy Decisions and CEQA

In most circumstances, the range of alternatives analyzed in the EIR or the analysis conducted in other CEQA documents by the Department covers the variations of a project proposal that may be considered for approval by the Planning Commission. For example, the Eastern Neighborhoods EIR analyzed three alternatives to the plan and rezoning plus a no project alternative. The Planning Commission adopted alternative for the Eastern Neighborhoods Plan and Rezoning represented a combination of two alternatives; the combination of which was fully covered in the EIR analysis. As another example, the Planning Commission adopted a height for 706 Mission Street lower than that described in the EIR, but which was fully covered in the EIR analysis. In the rare case that the Planning Commission is considering a variation to the project proposal that was not analyzed in the EIR (e.g., substantial increases in development intensity or height), additional analysis may be required prior to certifying the EIR and approving a development.

With respect to parking, a "no parking" alternative would typically have similar environmental impact conclusions as the project or other EIR alternatives selected by the Department. As stated in the "Parking

and CEQA" section above, a secondary effect analysis is sometimes completed both for the development's proposed parking supply and if the development were to include no parking. Therefore, in most circumstances, including a "no parking" alternative would not better inform public participation or promote a more informed and reasoned choice by the decision-making body. In most circumstances, the Planning Commission would be able to adopt a development that includes reduced or no parking, even if the EIR did not include a labeled "no parking" alternative. However, in the circumstances where the project may result in a significant parking impact by creating some hazardous conditions, for example, location and width of a curb cut to access a parking facility and the anticipated number of vehicles entering and exiting the parking facility, it may be appropriate to analyze a "no parking" alternative, just as it may be appropriate to explore feasible alternatives for any significant impacts identified through the EIR process. This alternative could also be considered in combination with other selected alternatives (e.g., a "Reduced Density Alternative" that includes no parking).

POTENTIAL FUTURE APPROACHES TO TRANSPORTATION IMPACT ANALYSIS

This section briefly summarizes some data collection efforts and policy development currently underway or planned as part of the Transportation Impact Analysis Guidelines Update, Connect SF, and the TDM Program and how the results of those efforts may affect the VMT estimates in CEQA documents in the future. Each of these efforts will require inter-agency collaboration, particularly with the SFMTA and Transportation Authority.

Transportation Impact Analysis Guidelines

The last update to the Transportation Impact Analysis Guidelines was in 2002. Since that time, the Department has instituted various updates to the conditions, data, and methodology within that document. These updates are recorded in various memos, resolutions, and emails. The Department intends to update the guidelines comprehensively. For this effort, substantial data collection and analysis is currently underway, primarily at newer development sites, which will result in the creation of new trip generation rates, mode split, and loading demand rates. With this data, the Department hopes to quantify the effects of for-hire vehicles and the amount of parking and VMT and update the effects delivery companies and for-hire vehicles have on a development's commercial and passenger loading demand.

Connect SF

Connect SF is a process to develop a unifying long-range vision that will guide plans and investments for the City and its transportation system. Connect SF will coordinate several transportation plans and projects. To inform the vision and transportation plans and projects, the agencies are coordinating on the development of white papers, including one related to technology enabled transportation. While the scope and the eventual contents of the transportation plans and white papers are being developed, the results could be useful for CEQA documents. Depending on the availability of data, the technology enabled transportation white paper may include an analysis of the relationship between for-hire vehicles and VMT that could be used in the near term. In addition, some of the transportation plans may develop citywide and potentially neighborhood-specific VMT goals. If the goals are allocated to different sources of VMT (e.g., existing vs. new developments' role), then these goals could be considered as future thresholds of significance for developments under CEQA or as part of the TDM Program.

TDM Program

The TDM Program is a living program due to its implementation strategy. Potential updates to the TDM menu may occur to reflect new findings on the efficacy of the measures in the TDM menu or for measures not previously included in the TDM menu. TDM measures will be revisited in light of research findings and the results of local data collection efforts, including at sites subject to the TDM Program. The menu may be updated to reflect a deeper understanding regarding relative TDM measure effectiveness determinations, including the efficacies of individual (e.g., Parking Supply) or multiple TDM measures

(e.g., Bicycle Parking and Car-Share Parking) within varying San Francisco contexts (e.g., geographies or land use types). The menu and points may also be updated to reflect citywide and regional Vehicle Miles Traveled targets outlined in ongoing planning efforts, such as that described in Connect SF. These data collection efforts and results may also be used for VMT estimates in CEQA documents.

CONCLUSION

While policies demonstrate a relationship between parking and VMT, the Department's current approach used in CEQA documents to qualitatively assess this relationship agrees with those policies. The Department is involved in several efforts that may update the approach for analyzing transportation impacts, including quantifying the VMT effects of parking supply and for-hire vehicles. However, the Department is currently using the best available information to assess the transportation effects from a development in CEQA documents.

The purpose of CEQA is primarily to inform decision makers and the public and, where possible, reduce a project's environmental effects through mitigation measures and alternatives. While CEQA can be quite effective in accomplishing these outcomes, its purpose is not to resolve all policy decisions before a decision-making body. In addition, regardless of whether a development results in a significant VMT impact under CEQA, it does not negate the City from needing to do more to reduce VMT from new development or provide more and safer options for people to move around. Keeping people moving as our city grows is the goal of the TDM Program, and this applies to most new development, regardless of whether the project has a significant VMT impact or not.

Lastly, the Planning Commission can rely on other policy analysis outside the confines of CEQA to inform their decisions. The Planning Commission also has other tools available its toolbox, besides CEQA mitigation measures and alternatives, to reduce a development's impact. As it relates to transportation, those tools include the TDM Program, the Transportation Sustainability Fee, and decisions regarding the amount of parking that should be approved for a development, which the analysis in CEQA documents covers.

REQUIRED COMMISSION ACTION

None. Informational.

Attachment:
Attachment A: Expanded Description of Parking and VMT Analysis

ATTACHMENT A: EXPANDED DESCRIPTION OF PARKING AND VMT ANALYSIS

PARKING AND CEQA

This section expands upon the "Parking and CEQA" section in the memorandum by briefly summarizing the history of parking analysis in CEQA documents and providing further details regarding the parking demand analysis.

Brief History

CEQA was enacted in 1970 to ensure the long-term protection of the environment and requires public agencies to analyze and disclose the physical effects of their actions on the environment. The California legislature writes the statute into law. The California Office of Planning and Research develops the CEQA Guidelines to interpret CEQA statute and published court decisions. The CEQA Guidelines include several appendices that contain useful forms and guidance for lead agencies when performing environmental review. One of the appendices, Appendix G, includes a checklist of sample questions for lead agencies to consider addressing in CEQA documents. Appendix G is a guidance document; lead agencies are not required to use it in their environmental review, unless they have adopted policies that adopt Appendix G as their own.[8] Appendix G has been amended several times since 1970. Parking has been a topic analyzed in the earliest CEQA documents found in the Department's library (mid-1970s). This appears to indicate that parking was included in the original or early Appendix G checklist questions/thresholds. As late as 2009, an Appendix G checklist question asked whether a project would result in "inadequate parking capacity."

While Appendix G included inadequate parking capacity, the Department for many years found that, in the transit-rich urban context of San Francisco, parking loss or deficit in and of itself does not result in direct physical changes to the environment. In other words, the social inconvenience of a person searching in their vehicle for an available parking space is not an environmental impact under the purview of CEQA; instead, the secondary effect of this search in relation to other topics (e.g., air quality, noise) is an environmental impact. This approach was affirmed in a published court decision, *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.[9]

In response in part to the *San Franciscans* published court decision, as part of amendments in 2009, the California Office of Planning and Research removed inadequate parking capacity from the Appendix G checklist questions in the CEQA Guidelines. However, some jurisdictions continued to analyze parking capacity impacts for a variety of reasons. In 2013, Governor Brown signed California Senate Bill 743,

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[8] For Initial Studies, Chapter 31 of the San Francisco Administrative Code requires the Department to use as its base the environmental checklist form set forth in Appendix G of the CEQA Guidelines.

[9] In another published court decision, *Taxpayers for Accountable School Bond Spending v. San Diego Unified School District* (2013) 215 Cal.App.4th 1013, the court distinguished *San Franciscans*, holding that the circumstances within that case were special, given its urban context and adopted city policies, and may not apply elsewhere. Furthermore, the court found that in the San Diego case, the lack of parking could potentially lead to environmental impacts, given the specific circumstances of that case, in which narrow, curvy streets in the vicinity of a school sports facility created potentially hazardous conditions. The *Taxpayers'* case findings also reflected the circumstances of the case: a "fair argument" test was applied given a mitigated negative declaration had been prepared for the project in question as opposed to the "substantial evidence" test for environmental impact reports; which the latter is more deferential to the lead agency.

which affected parking analysis through legislation. Specifically, the senate bill stated that, effective January 1, 2014, parking (and aesthetics) shall not be considered significant impacts on the environment for residential, mixed-used residential, or employment center projects on an infill site within a transit priority area. Most development projects in San Francisco meet these criteria. For those projects that do not meet these criteria, upon full implementation of the Senate Bill 743 provisions (refer to "VMT and CEQA" section below for more information about implementation), the adequacy of parking shall also not be considered a significant impact on the environment. The amendments in the CEQA Guidelines in 2009 and the Senate Bill 743 provisions do not affect the continued need to analyze the secondary effects of the search for parking on other environmental topics, as described above. Therefore, the 2009 CEQA Guidelines amendments and Senate Bill 743 confirmed, rather than substantially altered, the Department's approach for parking analysis in CEQA documents.

Approach to Parking Analysis

This section expands upon the Parking Demand section in the memorandum by providing further details regarding the methodology.

Parking Demand

Parking demand generated by the people within the development's proposed uses is estimated. Appendix G of the Transportation Impact Analysis Guidelines identifies the methodology for estimating parking demand. Short-term parking demand for commercial uses is estimated based upon the daily vehicle trips associated with the commercial use and an assumption regarding the daily turnover rate of the parking space. Long-term parking demand for commercial uses is based upon the number of daily vehicle trips from employees associated with the commercial use.[10]

Vehicle trips for commercial uses are estimated based upon the general geographical locations of the site within San Francisco, using data collected and analyzed in a citywide travel behavior study and from other sources. This vehicle trip estimate does not account for variables such as the price or parking supply proposed for the development or the parking supply that already exists in the surrounding neighborhood.[11] Given vehicle trip estimates are the input for estimating parking demand for commercial uses, parking demand estimates for commercial uses also do not account for these variables.

Residential parking demand is estimated based upon assumptions regarding the unit size and whether the development is market-rate, affordable housing, or a senior housing project. The parking demand estimates for residential uses also do not account for variables such as the price or parking supply proposed for the development or the parking supply that already exists in the surrounding neighborhood.[12]

[10] A separate methodology is described for hotel/motel parking demand in Appendix G and not provided here for the sake of brevity.

[11] An exception is the extent those variables influenced employees' travel behavior at the time they were surveyed.

[12] Ibid, except for residents instead of employees.

VMT AND CEQA[13]

This section expands upon the "VMT and CEQA" section in the memorandum by briefly summarizing the history of VMT analysis in CEQA documents and providing further details regarding the VMT analysis, while repeating some information from the memorandum for the sake of clarity.

Brief History

VMT measures the amount and distance that a project might cause people to drive, including the number of passengers within a vehicle. VMT is comprised of three inputs: automobile modal split (percentage of trips made by automobile), vehicle occupancy (number of people in a vehicle), and vehicle trip length (distance of the vehicle trip). The Department has long required an estimate of a development's VMT as an input for those developments that require quantification of regional air quality impacts.

As stated above, in 2013, Governor Brown signed California Senate Bill 743. Senate Bill 743 also included provisions that eventually resulted in expanding the use of VMT in environmental analysis. The senate bill directed the California Office of Planning and Research to prepare, develop, and transmit to the California Natural Resources Agency for certification and adoption proposed revisions to the CEQA Guidelines to establish criteria for determining the significance of transportation impacts that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." The senate bill recommended that VMT may be an appropriate metric to establish that criteria. Senate Bill 743 also stated that upon certification of the CEQA Guidelines by the California Natural Resources Agency, "automobile delay, as described solely by level-of-service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment" pursuant to CEQA. Similar to parking, this legislative change reflects that automobile delay in and of itself does not result in direct physical changes to the environment. In other words, the social inconvenience of a person waiting in their vehicle is not an environmental impact under the purview of CEQA; however, any secondary effect of this delay related to other topics (e.g., air quality, noise) is an environmental impact.

Since that time, the California Office of Planning and Research has published three documents to implement Senate Bill 743. The third document was published for public review and comment in January 2016. VMT was identified as the metric to establish criteria for determining the significance of transportation impacts in that third document.

On March 3, 2016, the Planning Commission, by Resolution No. 19579, removed automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, as a significant impact on the environment pursuant to CEQA and replaced it with VMT criteria which meet the criteria of Senate Bill 743.

Department staff has been in communication with the California Office of Planning Research since March 2016, but it remains unclear on when the California Office of Planning and Research will transmit the next draft of the CEQA Guidelines to the California Natural Resources Agency for certification and adoption. Upon adoption of amendments to the CEQA Guidelines by the California Natural Resources Agency, Department staff will inform the Planning Commission if any significant amendments have been made since the January 2016 proposal and recommend if any actions should be taken by the Planning Commission in response to those significant amendments.

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[13] For an even more robust discussion regarding the history of and approach for VMT analysis in CEQA documents, refer to the Executive Summary for the March 3, 2016 Planning Commission hearing regarding the Align Component of the Transportation Sustainability Program. Available online at: http://sf-planning.org/meeting/planning-commission-march-3-2016-agenda.

Approach to VMT Analysis

The maps and thresholds that the Department uses for VMT analysis meet the criteria of Senate Bill 743: they demonstrate whether a development is in a transportation-efficient location within the region, with safe and adequate access to a multi-modal transportation system and key destinations, and whether the development will help the city, region, and state reach their greenhouse reduction targets. The thresholds are also set at a level acknowledging that a development site cannot feasibly result in zero VMT without substantial changes in variables that are largely outside the control of a development sponsor (e.g., large-scale transportation infrastructure changes, social and economic movements, etc.).

An expanded discussion regarding the role parking supply and for-hire vehicles have on the VMT estimates the Department uses are described below.

Parking Supply

As part of the "Shift" component of the Transportation Sustainability Program, the City adopted a citywide TDM Program (effective March 2017). The purpose of the TDM Program is to reduce the VMT that otherwise would be forecast to occur from new development (in SF-CHAMP or other transportation modeling software) based upon the new development's geographic location. To achieve this VMT reduction, the San Francisco TDM Program requires that property owners select from a menu of 26 TDM measures, defined as measures that reduce VMT by residents, tenants, employees, and visitors and are under the control of the property owner. A reduction in VMT may result from shifting vehicle trips to sustainable travel modes or reducing vehicle trips, increasing vehicle occupancy, or reducing the average vehicle trip length.

Each development subject to the TDM Program is required to meet a points target that is aimed at reducing a development's VMT. The points target is based upon the land use(s) associated with the development and the number of parking spaces proposed for the land use. The more parking proposed for a land use, the higher the points target for the development to achieve. The rationale for tying the points target to parking is based on the linkage between parking and driving. Therefore, more incentives and tools to support non-auto modes and more disincentives to using personal vehicles are needed at a site with a greater amount of parking spaces than a site with fewer parking spaces to encourage sustainable travel and reduce VMT. These incentives, disincentives, and tools that affect that choice are the TDM measures in the menu.

The TDM Technical Justification document[14] provides the technical basis for the selection of and assignment of points to individual TDM measures in the TDM Program. For the TDM Program, San Francisco hired transportation consultants Fehr and Peers to develop a spreadsheet that estimates the VMT reduction from individual measures proposed for a development, based upon a literature review and local data collection. Based upon that research, substantial documentation exists to quantify the relationship between nine TDM measures in the menu and VMT reduction for a development in San Francisco. For the other 17 TDM measures, enough research exists to substantiate that these measures reduce VMT, but not to the extent of quantifying the relationship between them and VMT reduction for a development in San Francisco.

One TDM measure in the menu not quantified in the spreadsheet currently is "Parking Supply". As summarized in the TDM Technical Justification document, a sufficient amount of research indicates that more parking is linked to more driving and that people without dedicated parking are less likely to drive.

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[14] San Francisco Planning Department, "Transportation Demand Management Technical Justification," June 2015. Available online at: http://default.sfplanning.org/plans-and-programs/emerging_issues/tsp/TDM_Technical_Justification.pdf.

However, at this time, there is not sufficient data to quantify the specific relationship between parking supply and VMT for a development in San Francisco.[15] Instead, the various data collection and literature review resources were used to assign a high potential point value that a development could receive for the Parking Supply measure in comparison to other TDM measures in the menu. The point assignment was not intended to translate to a quantified amount of VMT as it relates the effects of a development's parking supply in CEQA documents. CEQA discourages public agencies to engage in speculation. Therefore, the quantified VMT estimates in CEQA documents for a development currently do not directly account for the effect of development's parking supply on VMT.

SF-CHAMP does indirectly account for parking supply in its VMT estimates to the extent the parking supply affects the travel behavior of people within different geographic locations throughout San Francisco. To address this indirect relationship, the Department on a case-by-case basis may conduct a qualitative analysis in CEQA documents of the effects of parking supply on VMT (e.g., refer to Pier 70 Draft EIR). This qualitative analysis is based upon whether the project's parking supply is greater or less than the neighborhood parking rate. The neighborhood parking rate is the estimated number of existing off-street parking spaces provided per dwelling unit or per 1,000 square feet of non-residential uses for different geographic locations within San Francisco. A development may not reduce VMT as it relates to parking supply if the new development is not parked at or below the neighborhood parking rate.

For-Hire Vehicles

Based upon anecdotal evidence and a limited number of travel decision surveys conducted by the San Francisco Municipal Transportation Agency (SFMTA) as well as other studies, as described below, it is clear that more people are using for-hire vehicles today than just a few years ago. It is difficult to predict whether this usage will continue to grow, decline, or stabilize. Numerous legal, consumer, technological, funding, and regulatory questions regarding this topic remain to be answered.

SFMTA Travel Decisions Surveys. In San Francisco, the results of SFMTA Travel Decisions Surveys[16] indicate that between 2012 and 2015 transportation network company usage has grown year over year and that transportation network company trips exceed those of taxis, while taxi use has declined. The SFMTA Travel Decisions Survey 2015 results also indicate that 53 percent of respondents in San Francisco have never tried a transportation network company. Of those respondents who indicate that they use transportation network companies in the SFMTA Travel Decisions Survey 2015, younger people (ages 18-34) use the services more than people who are older and people with higher incomes (>$75,000 annually) use the services more than those with lower incomes.

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[15] Some studies and models attempt to quantify the effects of parking supply on travel behavior. However, these studies are often conducted in geographic contexts different than San Francisco and the quantified results are often in comparison to Institute of Transportation Engineers parking demand or vehicle trip generation rates (e.g., California Air Pollution Control Officer's Association, "Quantifying Greenhouse Gas Reduction Measures," August 2010). These rates are primarily established based upon studies in suburban settings. As stated above, SF-CHAMP uses locally calibrated data for San Francisco VMT estimates and thus, at this time, quantified vehicle trip should not typically be applied directly for developments in San Francisco.

[16] SFMTA, Travel Decisions Survey 2012. Available online at: https://www.sfmta.com/sites/default/files/reports/2015/Travel%20Decision%20Survey%202012%20Summary%20Report_0.pdf. SFMTA, Travel Decisions Survey 2015. Available online at: https://www.sfmta.com/sites/default/files/reports/2016/Travel%20Decision%20Survey%202015%202016-01-08.pdf.

University of California Study. During the Spring 2014, University of California academics conducted an intercept survey in the Mission, Marina, and North Beach neighborhoods in San Francisco during evening hours to collect data on transportation network companies' users and trips.[17] The University of California results had similarities and differences to the SFMTA survey results, while also including additional information. The University of California results indicate that younger people (ages 25 and 34) use the services more than other age groups, similar to the SFMTA survey results. While the University of California results indicate that people with higher incomes (>$71,000 annually) use the services more than those with lower incomes, consistent with the SFMTA survey results, those respondents (i.e., those who used the services) with incomes between $30,000 and $70,000 were representative of San Francisco's population at this income bracket (~22%). Those respondents with incomes below $30,000 were underrepresented compared to San Francisco's at this income bracket (~9% respondents vs. ~26% population in San Francisco).

Of most relevance as it relates to in-use VMT (i.e., trips that include a passenger) were University of California results related to mode split, induced travel, and vehicle occupancy. The results indicated that 92% respondents would have still made the trip had transportation network companies' services were not available. Of those, 39% would have used a taxi, 33% would have used bus or rail, 8% would have walked, and 6% would have drove their own car. This suggests that transportation network companies have an induced travel effect, given 8% of respondents said they would not have taken the trip if the transportation network companies' services were not available, and that some of these trips replaced traditional for-hire vehicles (i.e., taxis) and personal driving, while others replace public transportation and walking options. These results would indicate an increase in VMT because of transportation network companies. However, other results within the survey indicate in a decrease in VMT due to increased vehicle occupancy in transportation network company services vehicles compared to traditional taxis. The University of California study concludes that the impacts on overall VMT from these services are uncertain.

Other research. Other research regarding transportation network companies' usage and effects include an American Public Transportation Association research analysis,[18] a Pew Research Center study,[19] and a National Association of City Transportation Officials Policy paper.[20] The last paper indicates that the effects these services have on VMT are unclear. Clearly, more study is needed to better understand and quantify the effects of TNCs on travel behavior in aggregate or in San Francisco or elsewhere.

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[17] University of California Transportation Center, "App-Based, On-Demand Ride Services: Comparing Taxi and Ridesourcing Trips and User Characteristics in San Francisco", August 2014. Available online at: http://uctc.berkeley.edu/research/papers/UCTC-FR-2014-08.pdf.

[18] American Public Transportation Association, "Shared Mobility and the Transformation of Public Transit," March 2016. Available online at: https://www.apta.com/resources/reportsandpublications/Documents/APTA-Shared-Mobility.pdf.

[19] Pew Research Center, "Shared, Collaborative and On Demand: The New Digital Economy," May 2016. Available online at: http://www.pewinternet.org/2016/05/19/the-new-digital-economy/.

[20] National Association of City Transportation Officials, "Ride-Hailing Services: Opportunities & Challenges for Cities, 2016. Available online at: http://nacto.org/policy-2016/ride-hailing-services-opportunities-and-challenges/.