Report

City of Orange Transportation System Improvement Program Fee Update

The Economics of Land Use

Prepared for:
City of Orange

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1. Study Overview and Results

Introduction

This Transportation Impact Fee Nexus Study (Nexus Study) provides the City of Orange (City) with the necessary technical documentation to update to the City's Transportation System Improvement Program (TSIP). A Nexus Study provides the technical basis for the City to collect fees consistent with Mitigation Fee Act (AB 1600/ Government Code Section 66000 et seq.). Impact fees are one-time charges on new development collected and used by the City to cover the cost of capital facilities and infrastructure that are required to serve new growth.[1] The fees are typically collected upon issuance of a building permit or certificate of occupancy.

The City established the TSIP in 1988. The current Program is comprised of three areas, each with its own fee rates, and has primarily funded projects improving roadway level of service. While the Program has successfully served its purpose, the City has determined that the Program can best serve the City's future transportation needs with an updated project list and overall structure that responds to changing trends in local land use and travel patterns, as well as to the passage of Senate Bill (SB) 743. The updated Program seeks to fund a broader range of project types, including multimodal transportation facilities and intelligent transportation systems, and shifting the current trip-based fee schedule to a Vehicle-Miles-Traveled (VMT) based fee schedule. The updated Program will also modify the Program from area-based to citywide, reflecting a more holistic approach to addressing the City's transportation needs. These changes are discussed further in the following section.

The Fee Program described in this Nexus Study is based on City growth projections from the Center for Demographic Research (CDR) at California State University – Fullerton and their impact on travel patterns based on the Orange County Transportation Authority (OCTA) travel demand model (or OCTAM). City staff worked with the Consultant Team to identify the transportation improvements and facilities needed to serve this growth. This Nexus Study quantifies the potential allocation of the proposed transportation improvements to new growth in the City and calculates the ***maximum allowable*** transportation impact fee by land use category. The City may decide to adopt fees below the maximum supportable level based on economic or policy considerations Such fee reductions should be considered in conjunction with the availability of alternative sources of capital improvement funding.

[1] New development includes any construction activity that requires a building permit and creates additional impacts on the City's transportation infrastructure once completed (e.g., through additional travel demand or "trips").

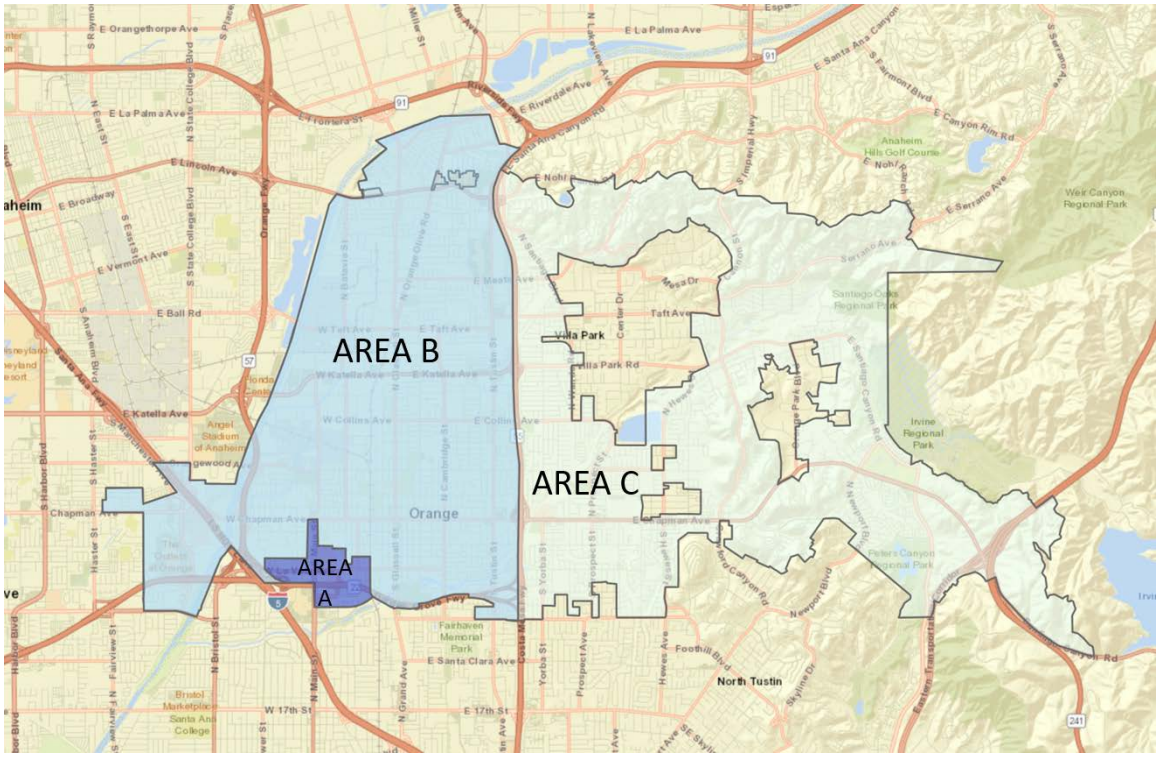
Changes to the TSIP

As referenced above, the update to the TSIP will entail several changes to the Program's project list and structure. Most notably, the Program will shift from a trips-based fee to a VMT-based fee, and from an area-based fee to a citywide fee, as described below:

- **Shift to VMT based fee**: The first shift, from trip to VMT-based, is driven by the passage of SB 743, a law passed in 2013 which updates the way transportation impacts are measured for new development projects in California. While project impacts were previously assessed based on level of service (LOS)—that is, whether or not the project will cause deficient operations —SB 743 requires that public agencies assess the project's environmental impacts based on the vehicle miles traveled generated by the new development as compared to a regional average. An example of the implications of this shift is that infill development projects will be assessed as having lower transportation impacts than new greenfield projects with lower density and homogeneous land-uses. The shift also encourages developers and public agencies to prioritize access to non-automobile modes of transportation. It should be noted that while the City is looking to incorporate VMT-reducing improvements into its updated project list, the Program will still include capacity-enhancing improvements needed to support future growth.

- **Shift to Citywide based fee**: The second shift, from an area-based to citywide-based fee, reflects the City's relatively built-out nature. When there were still large-scale greenfield developments in the City, the needs for new transportation infrastructure were area-specific, meant to support those new developments, and a fee based on the area of development (see **Figure 1**) ensured that developments in other parts of the City were not shouldering the burden of providing that infrastructure. Now that the City is built-out, and new development is increasingly infill in nature, new transportation infrastructure needs will be those that support citywide mobility. Additionally, in relation to the shift to a VMT-based fee, the Program's project list will include projects that provide greater access to non-automobile modes of transportation, such as transit and cycling, for all residents and employees of the City. Therefore, a citywide-based fee is a more appropriate format for the updated Program.

Figure 1 Map of Existing TSIP Areas



Legal Context

This Nexus Study is designed to provide the necessary technical analysis to support a schedule of transportation impact fees to be established by an Impact Fee Act Fee Ordinance and Resolution. The Mitigation Fee Act allows the City to adopt an ordinance that enables the fee and defines the program structure and allows periodic updates to the fee level by resolution with the supporting technical analysis. The Resolution approach to setting the fee allows periodic adjustments of the fee amount that may be necessary over time, without amending the enabling ordinance.

Impact fee revenue can be collected and used to cover the cost of constructing capital and infrastructure improvements required to serve new development and growth in the City. As such, impact fees must be based on a reasonable nexus, or connection, between new growth and development and the need for a new facility or improvement. Impact fee revenue cannot be used to cover the operation and maintenance costs of these or any other facilities and infrastructure. In addition, impact fee revenue cannot be collected or used to cover the cost of existing needs/ deficiencies in the City transportation capital improvement network.

In establishing, increasing, or imposing a fee as a condition for the approval of a development project, Government Code 66001(a) and (b) state that the local agency must:

1. Identify the purpose of the fee;
2. Identify how the fee is to be used;
3. Determine how a reasonable relationship exists between the fee use and type of development project for which the fee is being used;
4. Determine how the need for the public facility relates to the type of development project for which the fee is imposed; and
5. Show the relationship between the amount of the fee and the cost of the public facility.

These statutory requirements have been followed in updating this impact fee, as documented in subsequent chapters. **Chapter 3** summarizes the specific findings that explain or demonstrate this nexus.

After the update TSIP is adopted, this Nexus Study and the technical information it contains should be maintained and reviewed periodically by the City to ensure Impact Fee accuracy and to enable the adequate programming of funding sources. To the extent that transportation improvement requirements, costs, and development potential changes over time, the Fee Program will need to be updated.

Maximum Allowable Fee Schedule

Table 1 shows the City's maximum allowable transportation impact fee schedule by land use consistent with nexus requirements and the associated analysis contained in this Technical Report. These transportation impact fees apply to new residential and nonresidential development and cover the transportation improvement costs required to support new development after existing deficiencies and known other funding sources have been taken into account. The fee estimates also include a two percent fee program administration fee, consistent with Mitigation Fee Act program administrative costs in many other California jurisdictions.[2] The fees apply to all new development, except those exempted by the Ordinance of other means, such as projects with vested rights that specifically exempt fees under the terms of an approved Development Agreement.[3] The updated fee program consolidates several of the land use categories included in the existing program, a change discussed in further detail in **Chapter 3.**

Table 1 also includes City staff's recommendation for the fee levels that should be adopted. These recommended fees were calculated based on 25 percent of the maximum allowable fee per VMT calculated in the nexus analysis and detailed in **Chapter 4**. These

[2] The 2 percent administration cost is designed to cover expenses for preparation of the development impact fee study and subsequent updates as well as the required reporting, auditing, collection and other annual administrative costs involved in overseeing the program. Development impact fee programs throughout California have applied similar administrative charges.

[3] These individual Development Agreements specify the specific transportation improvements/ contributions to be made by these individual developments.

recommended levels will moderate the increase from current levels to better align with inflation since 2008 while maintaining consistency with the updated nexus analysis.

Table 1 Maximum Allowable Fee and Staff Recommended Fee by Land Use Category

Land Use	Unit	Maximum Allowable Fee per Unit [1]	Staff Recommended Fee Per Unit [2]
Single Family	Dwelling Unit	$ 6,119.86	$ 1,473.90
Multifamily	Dwelling Unit	$ 3,526.70	$ 849.37
Hotel	per room	$ 5,370.77	$ 1,293.49
General Office	per sq.ft.	$ 6.26	$ 1.51
Medical Office	per sq.ft.	$ 22.36	$ 5.38
Industrial	per sq.ft.	$ 3.19	$ 0.77
Retail/Commercial	per sq.ft.	$ 15.76	$ 3.80
Other Uses	per trip end	$ 642.44	$ 154.72

[1] Includes two percent program administration fee
[2] Calculated based on 25 percent of maximum allowable fee per VMT, plus a two percent program administration fee.
Source: Fehr & Peers; EPS

The adoption of the maximum allowable fee schedule would result in fee revenues of about $51.2 million in today's dollar terms, based on the CDR and OCTA growth projections. This represents approximately 53 percent of the approximately $95.9 million cost estimated for future transportation improvement projects identified as needed to mitigate impacts associated with projected growth in the City (see **Appendix**). The remaining additional $44.7 million in costs will have to be funded through other revenue sources. If the City choses to set the fees below the maximum allowable levels, the fee revenues generated by the Program will also decrease.

Key Issues and Assumptions

The results of this analysis are based on a variety of conditions and assumptions regarding facility costs, service standards, growth projections, and facility demand. Assumptions are covered in detail in later chapters, though some of the key issues are summarized below:

- **Future Development and Trips**. The fee calculations were based on residential and nonresidential development projections through 2045, and associated vehicle miles generated. The primary source data for these calculations came from the CDR and from OCTA, utilizing the agency's Orange County Transportation Analysis Model (OCTAM) Version 5.0.
- **Capital Improvement Program and Cost Estimates**. The list of transportation improvements included in the Fee Program was compiled by City staff, reflecting

expectations regarding future transportation facilities needs in the City. The City provided cost estimates for the identified improvements, which were reviewed and verified by Fehr & Peers.

- **Cost Allocation**. Transportation analysis conducted by Fehr & Peers was used to determine the portion of transportation improvements costs to be included in the Fee Program. Only transportation improvement costs specifically required to support new development are included in the transportation impact fee calculation. Funding remaining from the current Fee Program was subtracted from the gross cost estimates.

2. Transportation Projects and VMT

Projects List for Fee Program

Development impact fees are derived from a list of specific capital improvement projects and associated costs that are needed in part or in full to accommodate new growth. Consequently, the capital improvements included in the fee program need to be described in sufficient detail to generate cost estimates. However, impact fee programs do not, in themselves, represent actual approval of a City plan or capital project (and as such do require clearance through the California Environmental Quality Act or CEQA).

In consideration of the above, City staff compiled a list of capital improvement projects that are anticipated to meet future transportation needs in the City. These projects include improvements related to traffic signals; intelligent transportation systems (ITS); transit; streets, intersections, and arterials; bikeways; and related studies. The projects include those which will address needed capacity enhancements to existing infrastructure. In accordance with the Mitigation Fee Act, none of the projects included in the TSIP addresses existing deficiencies.

City staff additionally provided per unit or per project cost estimates for the projects included on the list, which were reviewed by Fehr & Peers. The full cost of the identified projects is approximately $95.9 million. A detailed list of projects and associated costs is included in the **Appendix**.

VMT-Based Fee Program

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated the California Environmental Quality Act (CEQA) Statutes and Guidelines to include new transportation-related evaluation metrics.[4] For the purposes of CEQA, level of service can no longer be used to determine a project's environmental impact. Instead, the final proposed Guidelines include a new Section 15064.3 on VMT analysis and thresholds for land use developments. OPR also released a Technical Advisory on Evaluating Transportation Impacts in CEQA.[5]

The City of Orange has recently adopted CEQA VMT thresholds which require that overall project-generated VMT are lower than estimated VMT generated through the General Plan buildout projections. Participation in the VMT fee program can be used as a mitigation measure for projects in order to comply with this threshold. [6] As such, this fee program was evaluated to ensure that the transportation improvement projects proposed would

[4] Association of Environmental Professionals, *2019 CEQA Statute & Guidelines*
[5] Governor's Office of Planning and Research, *2018 Technical Advisory on Evaluating Transportation Impacts in CEQA*
[6] City of Orange Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment, 2020

reduce the existing citywide VMT on a collective or aggregated basis. Citywide VMT includes trips that travel through the City in addition to trips to and from locations within the City that occur within City boundaries. The existing average weekday VMT that occur within the boundaries of Orange is 2,971,217 miles.

Induced VMT was calculated for capacity enhancing projects (i.e. arterial widenings) using the National Center for Sustainable Transportation's Induced Travel Calculator. The Induced Travel Calculator allows users to estimate the annual VMT induced by adding lane miles to principal arterials such as Cannon Street and Chapman Avenue. Annual VMT was then converted to average weekday VMT.

Projects that would reduce VMT were quantified following guidance from the Quantifying Greenhouse Gas Mitigation Measures.[7] VMT reductions were taken for projects with pedestrian/bicycle, traffic calming, or transit enhancement components.

Overall, VMT reducing projects account for 27 percent of total project costs. At the same time, as shown in **Table 2**, the project list would achieve an overall reduction in citywide VMT by approximately 3.7 percent.

Table 2 Impact of TSIP Project List on Vehicle Miles Traveled

Scenarios	VMT	Percentage Change From Existing
Existing Citywide VMT	2,971,217	--
VMT Induced by Project List	+ 69,231	+2.3%
VMT Reduced by Project List[1]	- 178,273	-6.0%
Citywide VMT with Fee Program	2,862,175	--
Net change in Citywide VMT with Fee Program	**-109,042**	**-3.7%**

[7] California Air Pollution Control Officers Association, 2010

3. Land Use and Travel Demand Assumptions

This chapter documents the land use and travel demand assumptions and growth forecasts that underlie the fee calculations. These factors are critical in determining how to allocate new transportation improvement costs between existing and new development and between different land uses.

Land Use Assumptions

The existing and future land use estimates used in the TSIP fee are derived from projections made by the CDR, which are consistent with those in OCTAM Version 5.0, released in January 2020. The land use assumptions are summarized in **Table 3**.

Table 3 City of Orange Projected Growth (2020 to 2045)

Year	Total Population	Households	Total Employment	VMT[1]
Existing (2020)	140,878	43,731	125,401	8,461,124
Future (2045)	157,874	50,458	135,141	9,174,409
Growth	16,996	6,727	9,740	713,285

[1] Total vehicle miles traveled of trips to or from locations within the City of Orange.
Source: Center for Demographic Research at California State University – Fullerton; Orange County Transportation Authority; Fehr & Peers.

The current TSIP levies fees on 12 distinct land uses. As part of the update to the Program, the land uses will be consolidated to eight categories. Additionally, condo and townhome units, which are charged the same fee as single family units in the current Program, will be charged the same fee as multifamily units in the updated Program. **Table 4** details the existing and new land use categories and units for fee charges. The trip lengths and VMT associated with each land use in the new set of categories are detailed in the following section.

Table 4 TSIP Program Land Use Categories

Existing Land Use Categories		Updated Land Use Categories	
Category	**Unit for Fee Charge**	**Category**	**Unit for Fee Charge**
Single Family, Condo and Townhome Residential	Dwelling Unit	Single Family Residential	Dwelling Unit
Multifamily Residential	Dwelling Unit	Multifamily Residential, Condo and Townhome Residential	Dwelling Unit
Hotel	Room	Hotel	Room
General Office	Square Foot	General Office	Square Foot
Medical Office	Square Foot	Medical Office	Square Foot
Industrial	Square Foot	Industrial	Square Foot
Retail/Commercial	Square Foot	Retail/Commercial	Square Foot
Hospital	Bed	Atypical Uses	Per Trip End Daily
Religious	Square Foot		
Educational	Student		
Childcare	Square Foot		
Atypical Uses	Per Trip End Daily		

[1] The new multifamily residential category will include townhome and condo uses.
Source: City of Orange; EPS

Travel Demand Assumptions

The land use forecasts documented above are used to estimate future travel demand, or trips, based on a variety of assumptions related to trip lengths by general land use category. These assumptions are summarized in **Table 5**. Trip rates were derived from the Institute of Transportation Engineer's Trip Generation Manual, 10th Edition, as detailed in **Table 6**.

Table 5 Trip Lengths by Trip Type

Trip Type	Trip Length (miles)
Residential (i.e. Home-Based Trips)	8.86
Nonresidential[1] (i.e. Citywide Average Trip Length)	8.78

[1] The nonresidential trip length is used for the Other Uses land use category.
Source: OCTA; Fehr & Peers

Table 6 Trip Rates by Land Use Category

Land Use Code	Trip Type	Daily Trip Rate	
210	Single Family Detached	9.44	per dwelling unit
221	Multifamily Housing (Mid-Rise)	5.44	per dwelling unit
310	Hotel	8.36	per room
710	General Office	9.74	per 1,000 sq. ft.
720	Medical Office	34.8	per 1,000 sq. ft.
110	Industrial	4.96	per 1,000 sq. ft.
820	Retail/Commercial[1]	37.75	per 1,000 sq. ft.

[1] Retail/Commercial trips assumed a 35% pass-by trip reduction to reflects vehicles already on the roadway network that would visit the commercial center.
Source: ITE; Fehr & Peers

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4. Nexus Analysis and Maximum Fee

This chapter presents the nexus analysis and calculations for the maximum allowable fee based on the land use projections and transportation improvements described in the previous chapter.

Overview of Nexus Methodology

A "nexus" or relationship between new development in the City and transportation improvements and their costs must be established before incorporating transportation improvement costs into a transportation impact fee calculation. To determine the appropriate costs to include in the new transportation fee calculation, it is necessary to conduct a series of steps:

1. **Identify Total Costs of Transportation Improvements**. The identification of the required transportation improvement projects and their associated costs (described in prior chapter).

2. **Remove Existing Deficiencies**. It is necessary to evaluate whether there is an existing deficiency at any of the project locations, and if so, the magnitude of that deficiency. Existing deficiencies are accounted for by reducing the project cost that is included in the Program, requiring funding from other sources for those deficiencies.

3. **Determine Proportionate Allocation to New Development**. Once existing deficiencies are identified, it is necessary to determine the proportion of the remaining project cost that is attributable to new development, and therefore can be included in the fee program.

4. **Account for Known Funding**. The balance remaining in the current Fee Program fund was subtracted from the gross cost estimates. As of the time of this report, the current Fee Program fund has a balance of $625,000.

Purpose

The fee will help maintain adequate levels of transportation service in Orange and support reduction of vehicle miles traveled in the City overall.

Use of Fee

Fee revenue will be used to fund City transportation improvements, including street, arterial, and intersection improvements, traffic signal and ITS installations, transit system improvements, pedestrian and bikeway improvements, and associated studies to support these projects. The City staff and Consultant team has determined that these improvements are required to serve future growth.

The list of eligible transportation projects and costs are summarized in **Chapter 2** and further detailed in the **Appendix**. The updated program will shift from area-based to citywide-based, and fees collected on new development will be utilized for projects that serve the needs of overall city growth.

Relationship

New development in the City of Orange will increase demands for and travel on the City's transportation network. The TSIP fee revenue will be used to fund additional transportation improvements necessary to accommodate this growth. New development will benefit from the improved transportation infrastructure. As described above, fees will be collected citywide and be spent on projects that serve the needs of overall City growth, rather than projects that are area-specific.

Need

Each new development project will add to the incremental need for transportation capacity and improvement, as well as to vehicle miles traveled in the City. The transportation improvements considered in this study are considered necessary to meet the City's future transportation needs and goals, as well as to reduce overall VMT.

Proportionality

The fee levels are tied to fair share cost allocations to new Citywide development, based on the OCTAM transportation model developed by OCTA and adapted for this study purpose by Fehr & Peers. The fair share allocations take into account the relative impacts of existing development versus new development on transportation infrastructure, as well as the relative impacts of different land uses on transportation infrastructure.

Cost Allocation

The nexus analysis must first determine if transportation facilities that will be addressed by the projects in the fee program are currently deficient. If there are existing deficiencies at any of those locations, then an adjustment must be made in the fee calculations to ensure that new development pays its fair share and is not being charged to correct an existing deficiency.

The City uses Level of Service as a performance measure, with a standard of LOS D or better at intersections and roadway segments. Any capacity enhancing project with an intersection or roadway segment currently operating at LOS E or F was noted as an existing deficiency and the proportionate allocation to new development for the project was subsequently adjusted to reflect only the share that is attributable to new development.

The City identified an existing deficiency on Cannon Street between Serrano Avenue and Santiago Canyon Road, which currently operates at LOS E or F[8], and confirmed that all

[8] Traffic Impact Analysis for The Trails at Santiago Creek, published September 2018

other intersection enhancements and arterial widening projects locations do not currently operate at LOS E or F.

All other transportation improvement projects are network-wide enhancements. For these projects, the proportionate allocation to new development was determined based on the projected growth in VMT of 8.43 percent by trips made to or from the City.

Maximum Fee Calculation

The maximum projects cost that can be funded through the TSIP is approximately **$51.2 million**. This was calculated by subtracting the remaining funds in the current fee program ($625,000) from the total project costs that are attributable to new development in the City ($51.8 million).

Table 7 shows the maximum supportable transportation impact fee per trip. The maximum fee per trip is calculated by dividing the aggregate fee program cost by the total amount of VMT generated by new development (as shown in **Table 3**). This results in a maximum fee per VMT of **$71.74.** Based on the assumptions for average trip length for residential and nonresidential uses detailed in **Table 6**, this equates to a maximum fee per trip end of **$635.58** for residential uses and **$629.84** for nonresidential uses.

Table 7 Maximum Fee Per Vehicle Mile Traveled and Per Trip End

Item		Amount
Total Eligible Project Cost	$	51,793,000
Less Current Fee Balance	$	(625,000)
Total Maximum Allowable Nexus Fee	$	51,168,000
Growth in VMT (miles)		713,285
Fee Per Vehicle Mile Traveled	**$**	**71.74**
Fee Per Trip End (Residential Uses) [1]	**$**	**635.58**
Fee Per Trip End (Nonresidential Uses) [2]	**$**	**629.84**

[1] Assumes a trip length of 8.86 miles

[2] Assumes a trip length of 8.78 miles

Source: Fehr & Peers; EPS

Finally, **Table 8** calculates the maximum fee for each land use category specified in the Program based on estimates of daily VMT per category. The maximum allowable fee by land use includes a 2 percent charge needed to cover the administrative cost of administering the TSIP. The maximum supportable fees are the fee levels that would generate sufficient fee revenues to cover the attributable program costs of $51.2 million.

Table 8 Maximum Allowable Fee Schedule

Total Maximum Allowable Nexus Fee Schedule					
Land Use	**Unit**	**Average Trip Length**	**Daily Trip Generation Rate**	**Pass-by Reduction**	**Fee per Unit [1]**
Single Family	Dwelling Unit	8.86	9.44	-	$ 6,119.86
Multifamily	Dwelling Unit	8.86	5.44	-	$ 3,526.70
Hotel	per room	8.78	8.36	-	$ 5,370.77
General Office	per sq.ft.	8.78	9.74	-	$ 6.26
Medical Office	per sq.ft.	8.78	34.8	-	$ 22.36
Industrial	per sq.ft.	8.78	4.96	-	$ 3.19
Retail/Commercial	per sq.ft.	8.78	37.75	-35%	$ 15.76
Other Uses	per trip end	8.78	1	-	$ 642.44

[1] Includes two percent administrative fee.
Source: Fehr & Peers; EPS

APPENDIX

Projected VMT Growth:	8.43%

Total Maximum Allowable Nexus Fee:	$51,793,000
VMT Reducing Nexus Fee:	$13,975,000
LOS Nexus Fee:	$37,818,000

Improvement	Project Description	Source	2013 TISP Cost	Cost Estimate By	Existing Quantity	Proposed Quantity	Unit Cost	Est. Cost	Existing Funds	% Funding Secured	Unfunded Cost	Existing Deficiency?	Rate	Subtotal	Max Nexus Amount
Traffic Signals and ITS															
New Traffic Signals - Various Locations	New Traffic Signal Installations (8.43% Additional Signals)	-	-	F&P	157	13	$770,000	$10,010,000	$0	0%	$10,010,000	No	100.00%	$10,010,000	$10,010,000
Traffic Signal Modificaitons - Various Locations	Signal Modifications/Phasing Updgrades (20 locations)	-	-	City	-	-	-	$6,000,000	$0	0%	$6,000,000	No	8.43%	$505,809	$506,000
TS Equipment Upgrades	Replace outdated signal cabinets/cameras/bicycle detection/Battery back up	-	-	City	-	-	-	$2,750,000	$0	0%	$2,750,000	No	8.43%	$231,829	$232,000
Traffic Signal Syncrhonization Matching Funds	Fund match for OCTA TSSP Projects: Signal Equipment and Timing/Synch; and ATSPMs	-	-	City	-	-	-	$1,000,000	$0	0%	$1,000,000	No	8.43%	$84,301	$84,000
Pedestrian Signal Retrofits	Accesible Sysptems and Leading Ped Intervals Various	-	-	City	-	-	-	$1,250,000	$0	0%	$1,250,000	No	8.43%	$105,377	$105,000
TMC and Signal System Upgrades	Upgrades to CCTV, Central System, Hardware, etc, ATSPMs	-	-	City	-	-	-	$2,000,000	$0	0%	$2,000,000	No	8.43%	$168,603	$169,000
Communcations System Network Upgrades	Replace existing copper with SMFO and	-	-	City	-	-	-	$1,500,000	$0	0%	$1,500,000	No	8.43%	$126,452	$126,000
Fiber Optic Network Extension gap Closuires	Fiber Optic Installation	-	-	City	-	-	-	$3,000,000	$0	0%	$3,000,000	No	8.43%	$252,904	$253,000
														Subtotal	$11,485,000
Transit															
Bus Stop Furniture Improvements - 135 stops	Installation of Transit stop amenities	-	-	City	-	-	-	$400,000	$0	0%	$400,000	No	8.43%	$33,721	$34,000
Fixed Route Transit System	Feasibility Study Underway, Alignment TBD	-	-	City	-	-	-	$500,000	$0	0%	$500,000	No	8.43%	$42,151	$42,000
														Subtotal	$76,000
Street Improvements															
ADA Curb Ramp Improvements	Locations TBD	-	-	City	-	-	-	$15,000,000	$0	0%	$15,000,000	No	8.43%	$1,264,522	$1,265,000
Sidewalk and Pedestrian Improvements	Locations TBD	-	-	City	-	10560	200	$2,112,000	$0	0%	$2,112,000	No	8.43%	$178,045	$178,000
Traffic Calming	Locations TBD	-	-	City	-	-	-	$1,000,000	$0	0%	$1,000,000	No	8.43%	$84,301	$84,000
Complete Street Conversions	Locations TBD	-	-	City	-	-	-	$10,000,000	$0	0%	$10,000,000	No	8.43%	$843,014	$843,000
														Subtotal	$2,370,000
Studies															
Develop Active Transportation Plan		-	-	City	-	-	-	$50,000	$0	0%	$50,000	N/A	8.43%	$4,215	$4,000
Upgrade TSIP Fee Program		-	-	City	-	-	-	$25,000	$0	0%	$25,000	N/A	100.00%	$25,000	$25,000
Update Bicycle Master Plan		-	-	City	-	-	-	$75,000	$0	0%	$75,000	N/A	8.43%	$6,323	$6,000
Develop ITS and Fiber Security Master Plan		-	-	City	-	-	-	$200,000	$0	0%	$200,000	N/A	8.43%	$16,860	$17,000
														Subtotal	$52,000
Intersection Enhancements															
Cannon/Serrano	Add WBL, NBR	General Plan	-	F&P	-	-	-	$3,237,000	$0	0%	$3,237,000	No	100.00%	$3,237,000	$3,240,000
Tustin/22 WB	Add SBR	City	-	City	-	-	-	$3,000,000	$0	0%	$3,000,000	No	100.00%	$3,000,000	$3,000,000
Right Turn Lane Additions	Various Locations (Assumes no right-of-way needed)	-	-	F&P	-	10	$570,000	$5,700,000	$0	0%	$5,700,000	No	100.00%	$5,700,000	$5,700,000
														Subtotal	$11,940,000
Arterial Widening															
Cannon - Serrano to Santiago Canyon	4d to 6d (.6 miles)	MPAH	-	F&P	-	-	-	$6,397,000	$0	0%	$6,397,000	Yes	90.11%	$5,764,573	$5,760,000
Cannon - Serrano to Santiago Canyon	Bridge Widening	MPAH	-	City	-	-	-	$6,000,000	$0	0%	$6,000,000	Yes	90.11%	$5,406,821	$5,410,000
Chapman - Cannon to Canyon View	4d to 6u (.3 miles)	Prior TSIP	$2,092,000	Prior TSIP	-	-	-	$3,560,000	$0	0%	$3,560,000	No	100.00%	$3,560,000	$3,560,000
														Subtotal	$ 14,730,000.00
Bikeway Improvements															
Class I	Assumes 2 mil for crossing improvements per mile and pedestrian lighting (no right-of-way; one side of street) (8.43% Additional Bicycle Facilities)	-	-	F&P	22.4	2.0	$5,000,000	$10,000,000	$0	0%	$10,000,000	No	100.00%	$10,000,000	$10,000,000
Class II	Assumes no roadway widening (8.43% Additional Bicycle Facilities)	-	-	F&P	22.4	2.0	$500,000	$1,000,000	$0	0%	$1,000,000	No	100.00%	$1,000,000	$1,000,000
Class III	(8.43% Additional Bicycle Facilities)	-	-	F&P	11.2	1.0	$140,000	$140,000	$0	0%	$140,000	No	100.00%	$140,000	$140,000
														Subtotal	$ 11,140,000.00

Source: City of Orange; Fehr & Peers