City of Palo Alto (ID # 8832)

Finance Committee Staff Report

Report Type: Action Items **Meeting Date: 2/6/2018**

Summary Title: Transportation Impact Fee Nexus Study and Fee Adoption

Title: Review the Draft Transportation Impact Fee Nexus Study and Recommend that the City Council Consider Adoption of an Ordinance Based on Study Recommendations to Consolidate and Update the City's Transportation Impact Fee Program as Anticipated in the City's Comprehensive Plan Adopted on November 13, 2017

From: City Manager

Lead Department: Planning and Community Environment

Recommendation

Staff recommends that the Finance Committee review the Draft Transportation Impact Fee Nexus Study included as Attachment A and recommend that the City Council consider adoption of an ordinance based on study recommendations to consolidate and update the City's Transportation Impact Fee Program as anticipated in the City's Comprehensive Plan adopted on November 13, 2017.

Note: Staff invites the Finance Committee's questions and comments regarding the study methodology, assumptions, and conclusions, and hopes to address these questions and comments prior to preparing a draft fee ordinance for consideration by the City Council. This is a similar process to what was used for updating the City's housing impact fee in early 2017.

Executive Summary

State law allows the City to charge transportation impact fees to new development based on that development's contribution to the need for capital improvements designed to reduce motor vehicle trips, or to address traffic congestion and other impacts of new motor vehicle trips.

The recently adopted Comprehensive Plan calls for an update to the City's transportation impact fee program. The draft nexus study, included as Attachment A, provides the information required to accomplish this task. Specifically, the draft nexus study reviews the City's current traffic impact fees, development projected to occur during the life of the Comprehensive Plan (i.e. by 2030), and anticipated capital improvements that will be needed during the same

timeframe.

Based on this information, the study recommends transitioning to one citywide traffic impact fee charged to new development based on the number of peak hour vehicle trips that are anticipated after implementation of an enforceable transportation demand management (TDM) plan. The recommended fee is $8,083 per net new peak hour trip.

Operationally, this means that new development will be subject to one fee, rather than multiple fees, and that fee will be reduced to reflect investments in trip reduction via TDM plans. For example, the new requirement for TDM plans in the California Avenue Area in Comprehensive Plan Program T1.2.2 (and EIR mitigation measure Trans 1a) is to achieve a 35% reduction below motor-vehicle trip-generation rates established by the Institute of Traffic Engineers (ITE). Therefore, new development would have to provide an enforceable plan to meet this requirement *and* pay a fee of $8,083 for each remaining peak hour trip.

Background

Impact fees are established based on the reasonable relationship (i.e. nexus) between the impacts caused by new development and the improvements to mitigate those impacts that will be funded by the fee.

As shown in Table 1 below, the City currently charges one or more transportation impact fees for virtually all new development based on location.[1] All existing transportation impact fees were adopted some time ago and have generated significant funding for transportation improvements over the years. Please see the summary in Attachment A for more information.

Table 1. Summary of Existing Transportation Impact Fees in Palo Alto

Area	Date Established	Current Fee Amount (1)	Approximate Funds Generated (2)(5)
Citywide	2007	$3,575.00 per PM peak hour trip	$5 million
San Antonio/West Bayshore	1986	$2.56/ft(3)	$0.3 million
Stanford Research Park/ El Camino Real CS Zone	1989	$12.42/ft(3)	$4.5 million
Charleston – Arastradero Corridor	2005	$0.38/ft	$1 million

[1] Exemptions are provided for the following uses: single family home remodels or additions; 100% affordable housing projects; below market rate housing units provided in excess of the number required by ordinance; public buildings and schools; retail, personal service, or automotive service uses that are 1,500 sq. ft. or smaller; daycare, nursery schools and preschools, on-site cafeteria/recreation/child care for employees only; and hazardous materials storage.

Area	Date Established	Current Fee Amount (1)	Approximate Funds Generated (2)(5)
Pedestrian and Bicycle Safety		$1,306/du (4)	

(1) FY2018 Municipal Fee Schedule
(2) Administrative Services Department, amounts are total fees paid from inception
(3) Residential uses are exempt
(4) Commercial development is charged per square foot; residential development is charged per unit.
(5) Fund balances, shown in Attachment A, include accrued interest and investment income

Source: Planning & Community Environment, January 2018

The Comprehensive Plan, adopted in November 2017, includes an implementation program (Program T1.2.2) calling for a formal process for adopting and monitoring transportation demand management (TDM) plans for new developments and to pay a transportation impact fee (TIF) "for all those peak hour motor vehicle trips that cannot be reduced via TDM measures." Consistent with state law, the plan anticipated that all impact fees collected would be used for capital improvements aimed at reducing motor vehicle trips and traffic congestion.

Comprehensive Plan Program T1.25.1 reiterated that "Modifications to the impact fee program should be structured in keeping with the City's desire to require new development to reduce peak-hour motor vehicle trips to the extent feasible through TDM plans and by contributions to the provision of transit services, shuttles, carpool/rideshare incentives, and similar programs."

Over the life of the Comprehensive Plan (i.e. to 2030), the Final Environmental Impact Report (EIR), certified on November 13, 2017, anticipated development of 3,545 to 4,420 new dwelling units, and 9,850 to 11,500 new jobs. These assumptions form the basis for the transportation impact fee calculations in Attachment A, despite the fact that some of the new dwelling units are likely to be exempt from the fee (because they will be in affordable housing projects) and that many of the jobs will result from already approved development (i.e. SUMC), and may occur within existing building space. This is because State law allows the City to charge transportation impact fees to new development based on that development's proportional "fair-share" contribution to the impact and required remedy (improvement). The City would need to fund or identify other funding for the portion attributable to vehicle trips from exempt projects as well existing development.

Discussion

State law requires agencies to identify a reasonable relationship (or nexus) between an impact fee and new development, and to make findings regarding (a) the purpose of the fee; (b) what mitigation projects the fee will be used to fund; (c) the nexus between the needed mitigation projects and the type of development that will be charged a fee; and (d) the nexus between the amount of the fee and the cost of the needed mitigation. The draft study in Attachment A is designed to support these findings and is structured as shown below:

Table 2. Summary of Nexus Study Methodology

Step 1	Project Future Growth by 2030 (based on the Comprehensive Plan Update Final EIR)
Step 2	Estimate Total & Net New PM Peak Hour Vehicle Trips (based on the Comprehensive Plan Update Final EIR, the 2,855 net new PM Peak Hour trips represent 5.7% of the total PM Peak Hour trips)
Step 3	Identify Impacts or Deficiencies Caused by the Additional Trips (based on the Comprehensive Plan Update Final EIR)
Step 4 & 5	Identify Projects that Would Mitigate Impacts or Deficiencies and their Cost (See List of Capital Improvements, Attachment A, Table 8.)
Step 6	Calculate the Base Fee to be Charged Per PM Vehicle Trip (5.7% of total costs = $23,075,783; divided by 2,855 trips = $8,083)

Source: Planning & Community Environment, January 2018

When the fees are applied to projects, staff would exempt uses specified in the fee ordinance and apply the percent reduction based on the location of the project and the applicable TDM requirement (if any), as shown below.

Table 3. Current List of Exemptions

1	Single family home remodels or additions
2	100% affordable housing projects
3	Below market rate housing units provided in excess of the number required by ordinance
4	Public buildings and schools
5	Retail, personal service, or automotive service uses that are 1,500 sq. ft. or smaller
6	Daycare, nursery schools and preschools
7	On-site cafeteria/recreation/child care for employees only
8	Hazardous materials storage

Source: Planning & Community Environment, January 2018

Table 4. TDM Requirements

District	% Trip Reduction Required (1)
Downtown	50%
California Avenue Area	35%
Stanford Research Park	30%
El Camino Real Corridor	30%
Remainder of the City	20%
(1) Comprehensive Plan Program T1.2.2	

Source: Planning & Community Environment, January 2018

The Comprehensive Plan includes a program about formalizing the City's TDM requirements by ordinance, requiring new developments above a certain size threshold to prepare and implement TDM plans to meet the performance standards in Table 4 above (Program T1.2.2). The program references the need for regular monitoring/reporting and enforcement with meaningful penalties for non-compliance.

Recent changes to the Palo Alto Municipal Code have established clear criteria for when TDM plans are required in the entitlement process. Staff is currently working on operationalizing the review, approval, filing, and monitoring of TDM plans, which will enable enforcement of performance goals and the issuance of fines for non-compliance. The relevant code sections are below:

> ***18.52.030 Basic Parking Regulations***
> *(i) Transportation Demand Management Plan*
> *(1) Requirement for TDM Plan: A Transportation Demand Management (TDM) Plan to reduce and manage the number of single-occupant motor vehicle trips generated by the project shall be prepared and submitted by the applicant in the following circumstances:*
> *A. For all projects that generate 100 [upcoming code amendments will reduce this to "50"] or more net new weekday (AM or PM peak hour) or weekend peak hour trips;*
> *B. For all projects claiming a reduction in net new trips due to proximity to public transit or the implementation of a TDM plan; and*
> *C. For all projects requesting a parking reduction.*
> *(2) The Director shall have the authority to adopt guidelines for preparing TDM plans and when applicable shall coordinate such guidelines with the Transportation Management Authority [upcoming code amendments will change this to "Transportation Management Association"].*
>
> ***18.52.050 Adjustments by the Director***
> *(d) Transportation Demand Management (TDM)*
> *(1) A Transportation Demand Management (TDM) program may be (a) proposed by an applicant, or may be (b) required by the director for any project requesting a reduction in parking or generating 50 or more net new weekday (AM or PM peak hour) or weekend peak hour trips, or (c) may be required as CEQA mitigation for identified potential significant parking impacts.*
> *(2) Where a Transportation Demand Management (TDM) program is proposed or required, the TDM program shall outline parking and/or traffic demand measures to be implemented to reduce parking need and trip generation. The Director shall have the authority to adopt guidelines for preparing TDM plans. Required measures may include, but are not limited to:*

participation in the Transportation Management Authority or similar organization, limiting "assigned" parking to one space per residential unit, providing for transit passes, parking cash-out, enhanced shuttle service (or contributions to extend or enhance existing shuttle service or to create new shared or public shuttle service), car-sharing, traffic-reducing housing, providing priority parking spaces for carpools/vanpools or "green" vehicles (zero emission vehicles, inherently low emission vehicles, or plug-in hybrids, etc.), vehicle charging stations, additional bicycle parking facilities, or other measures to encourage transit use or to reduce parking needs. The program shall be proposed to the satisfaction of the director, shall include proposed performance targets for parking and/or trip reduction and indicate the basis for such estimates, and shall designate a single entity (property owner, homeowners association, etc.) to implement the proposed measures.

(3) Monitoring reports shall be submitted to the director two years after building occupancy and again every year thereafter, noting the effectiveness of the proposed measures as compared to the initial performance targets, and implementing modifications if necessary to enhance parking and/or trip reductions.

(4) Where the monitoring reports indicate that performance measures are not met, the director may require program modifications and may impose administrative penalties if identified deficiencies are not addressed within six months.

Planning staff and consultants will be available to answer Finance Committee member questions about any of the nexus study methodology as well as inherent assumptions and calculations. In particular, staff would like the Committee's input on the list of projects included in Table 8 of Attachment A and on the list of uses that should be exempted from the new transportation impact fee.[2]

Timeline

Staff will prepare a draft ordinance based on the Committee's discussion and recommendation(s) for consideration by the City Council in the coming months. Impact fee ordinances require formal public notice and do not become effective until 60 days after adoption on a second reading.

Resource Impact

The draft nexus study identifies a list of capital projects that would cost close to $1 billion in total ($954.8 million), with the City's share approximately $404.8 million, assuming a City contribution to the county and regional projects on the list. Funding for these projects will be included in the Capital Improvement Program and are subject to annual review and approval in

[2] The draft nexus study (p. 24) suggests potentially expanding the list of exempt uses to include Accessory Dwelling Units and retail uses > 1,500 sq. ft.

future budget cycles. If all development projected to occur by 2030 procedes as predicted, the impact fee recommended would generate 5.7% of the total cost, or $23.0 million.

See Nexus Study Table 9 (page 27) for a comparison of the proposed fee to surrounding jurisdictions.

Policy Implications

Updating the City's transportation impact fee program is a key implementation action identified in the City's Comprehensive Plan and resulted from a mitigation measure in the associated Final EIR.

Environmental Review

The proposed update to the City's traffic impact fee program was evaluated in the Final EIR for the Comprehensive Plan (certified and adopted November 13, 2017) and identified as a mitigation measure (Measure Trans1b) for the Plan. Projects to be funded by the fee will be subject to review pursuant to the California Environmental Quality Act (CEQA) prior to implementation when preliminary designs are available to enable that review.

Attachments:

- Attachment A: City of Palo Alto Transportation Impact Fee Nexus Study Draft Report 2017-09-21

HEXAGON TRANSPORTATION CONSULTANTS, INC.

City of Palo Alto Transportation Impact Fee Nexus Study

Draft Report

Prepared for:

City of Palo Alto

September 21, 2017

Hexagon Transportation Consultants, Inc.
Hexagon Office: 4 North Second Street, Suite 400
San Jose, CA 95113
Phone: 408.971.6100
Client Name: City of Palo Alto
Hexagon Job Number: 16JC05

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Executive Summary

This nexus study reviews the City of Palo Alto's existing transportation impact fees and makes recommendations regarding the impact fee program in the future. Findings have been made in accordance with the requirements of the Mitigation Fee Act (AB 1600).

Existing Transportation Impact Fees

The City of Palo Alto currently has four transportation-related impact fees, of which three are applied in specific areas of the city and one is applied citywide. These four impact fees, the year when each was first adopted, and a brief summary of their current status are as follows:

- **San Antonio / West Bayshore Area Traffic Impact Fee**, **1986:** This area has been redeveloped since the EIR and nexus study were prepared in 1986.
- **Stanford Research Park / El Camino Real CS Zone Transportation Impact Fee**, **1989:** Of the four intersection improvement projects listed in the municipal code for this area-specific fee, two are complete. The City is currently coordinating with the Santa Clara County Department of Roads and Airports, which has jurisdiction over county expressways, to make improvements to three intersections on Page Mill Road.
- **Charleston – Arastradero Corridor Pedestrian and Bicyclist Safety Impact Fee**, **2005:** The corridor project is not yet complete. The City plans to continue to use these impact fee funds towards completion of the Charleston-Arastradero Corridor Plan, as provided for in the original nexus study.
- **Citywide Transportation Impact Fee, 2007:** The City has used funds from the citywide TIF to fund bicycle and pedestrian improvements and an upgraded traffic signal system.

Projected Future Growth and Resulting Impacts

The Preferred Scenario of the Palo Alto Comprehensive Plan Update includes a range of 8,435 – 10,455 new residents and a range of 9,850 – 11,500 new jobs, The number of PM-peak-hour motor vehicle trips was projected for the low end and the high end of those growth assumptions and then averaged. It is estimated for purposes of this nexus study that there will be 4,202 additional PM-peak-hour motor vehicle trips generated by the Preferred Scenario in 2030.

The Comprehensive Plan Update FEIR includes a mitigation measure that would require all new development projects to develop Transportation Demand Management (TDM) plans to reduce the number of PM-peak-hour motor vehicle trips by a specified amount, depending on the location of the project. In other words, the City is requiring an upfront investment in ongoing trip reductions by new

development through the implementation of robust TDM plans. The range of required reductions is from 20% to 50%. Based on the amount of growth projected for each area and the TDM trip reduction target for that area, there would be an estimated reduction of 1,347 PM-peak-hour trips, assuming all projects meet their TDM targets.

Thus, with this upfront investment in trip reductions through TDM measures, it is estimated that 2,855 new PM-peak-hour trips would be generated by the future housing and employment growth defined by the Preferred Scenario, which is 5.7% of the total estimated citywide PM-peak-hour trips in the year 2030. The total estimated citywide PM-peak-hour vehicle trips were estimated with the Palo Alto travel demand forecasting model used in the Comprehensive Plan Update analysis.

The level of growth included in the six planning scenarios that were analyzed as part of the Comprehensive Plan Update would result in significant impacts to intersections, to freeway segments, to transit travel times (due to increased congestion), and to local residential streets (due to drivers avoiding increased congestion on arterials). Because all six of the planning scenarios that were examined in the Comprehensive Plan Update would result in some significant transportation impacts and because the City's Preferred Scenario represents a level of growth that is within the range of the six planning scenarios analyzed, there would be significant and unavoidable transportation impacts with the Preferred Scenario. The purpose of the improvements to be funded by the Transportation Impact Fee is to mitigate or offset these projected impacts to the extent feasible.

Improvements to Mitigate Impacts

Hexagon recommends transitioning to a single citywide Transportation Impact Fee (TIF) rather than the current structure of three fees that apply in specific areas and one citywide fee. However, we recommend retention of the Charleston-Arastradero Corridor fee until that bicycle and pedestrian safety project has been completed. The City's Comprehensive Plan Update EIR is the basis for the nexus between the projected future development in the City and the proposed citywide TIF.

The proposed citywide TIF expenditure plan is rooted in the City's policies of encouraging alternative mode use, discouraging single-occupant vehicle trips, improving traffic flow without major capacity enhancements, and encouraging motorists to use arterials rather than local residential streets. The total estimated cost of the improvements to be funded partially with the citywide TIF is $954,778,300. For projects for which an annual expenditure amount has been provided, the total cost assumes 14 years (2017 – 2030) of that annual amount. The City's estimated share of these total costs is $404,838,300.

Based on the fact that 5.7% of the total PM-peak-hour motor vehicle trips generated in the year 2030 would be generated by new development, 5.7% of the City's share of improvement costs, $23,075,783, is attributed to new development and should be funded by the citywide TIF. As noted earlier, new development will also be responsible for a significant upfront and ongoing investment in trip reductions, through implementation of TDM plans.

Proposed Citywide Transportation Impact Fee

The proposed amount of the citywide Transportation Impact Fee has been calculated by dividing the cost of the improvements to be funded by the TIF by the number of additional PM-peak-hour motor vehicle trips. The resulting impact fee is $8,083 per PM-peak-hour trip (23,075,783 / 2855 = $8,082.59). Additional recommendations include:

- The City should continue to charge the TIF on a "per PM-peak-hour trip" basis and use the trip rates included in the most recent edition of the ITE *Trip Generation Manual.* Trip reductions due

to implementation of TDM plans should be applied in accordance with the policies of the Comprehensive Plan Update.

- It is recommended that the existing exemptions from the citywide TIF be retained, for consistency with Palo Alto's community facilities impact fees and to continue to encourage development of those land uses. The City may wish to consider a lower per PM-peak-hour trip fee for retail uses or increasing the size of retail uses that would be exempt from the TIF. The rationale for such a change is that many retail projects serve to reduce vehicle miles travelled (VMT) and result in lower traffic impacts than their trip generation rate suggests, due to short trip lengths, pass-by trips, and diverted linked trips.
- The City should consider adding accessory dwelling units to the list of exemptions from the citywide TIF in order to encourage their development. The City currently includes "second units" in the list of uses that are subject to the TIF and other impact fees.
- It is recommended that development projects on parcels that have been vacant for two or more years do not receive credit for the existing uses on the parcel, when calculating the TIF. Such a policy is consistent with VTA's *Transportation Impact Analysis Guidelines* requirement to use traffic counts that are no more than two years old. If a parcel has been vacant for two or more years, existing traffic conditions reflect that vacancy, rather than the historical usage of the site.
- The City should continue to adjust fee levels annually, in line with the Construction Cost Index.

Impact Fees in Other Cities

The Transportation Impact Fees of numerous nearby cities were tabulated in order to provide context for considering Palo Alto's existing citywide TIF of $3,575 and proposed TIF of $8,083 per net new PM-peak-hour vehicle trip. Table ES-1 presents a summary of the TIF rates for two common land uses, multi-family housing and offices, in nearby cities, most of which specify their rates on a per dwelling unit and per thousand square feet basis. To facilitate comparison with other cities' rates, Palo Alto's "per PM-peak-hour vehicle trip" existing and proposed rates were converted to rates per dwelling unit and per thousand square feet, based on standard ITE *Trip Generation Manual* rates. The apartment land use rate (ITE category 220) has been used for multi-family housing. The proposed TIF of $8,083 per net new PM-peak-hour trip results in a "pre-TDM reduction" rate of $5,011 per multi-family dwelling unit and $12,043 per thousand square feet of office space.

However, because Palo Alto would require development projects to achieve a trip reduction of between 20% and 50% via robust TDM plans, depending on a project's location, no project would pay the "pre-TDM reduction" rates. The derived TIF rates for Palo Alto are shown after accounting for TDM trip reductions that would apply in different parts of the City. As shown in Table ES-1, although there would be a single citywide rate of $8,083 per net new PM-peak-hour vehicle trip, the effective rate that would be paid by a specific project would depend on the estimate of the number of PM-peak-hour trips it would generate after achieving the trip reduction target for its location. The cost of achieving those trip reductions through implementation of TDM plans has not been included and rests solely with the developer.

Of the cities surveyed, three cities currently have TIFs that are higher than the proposed "pre-TDM reduction" level in Palo Alto: Mountain View's TIF for office and R&D uses in the North Bayshore Area, Los Gatos's TIF for some land uses, and San Jose's four TIF programs for some land uses. Los Altos and the Moffett Park area of Sunnyvale have rates than are lower than the proposed "pre-TDM reduction" level in Palo Alto, but higher than the amount that would be charged in some areas after TDM reductions are accounted for. The TIF amounts in all other cities in the survey are lower than the proposed citywide TIF even when the highest trip reduction (50% in downtown area) is accounted for, and many are also lower than Palo Alto's current citywide TIF.

Table ES- 1
TIF Rates for Multi-Family Residential and Office Uses in Nearby Cities

City or Area within City	Multi-Family TIF (per d.u.)	Office TIF (per KSF)	Notes
Palo Alto [a]			
Current Citywide TIF	$ 2,217	$ 5,327	Based on $3,575 per PM-peak-hour trip.
Proposed TIF, no TDM reduction	$ 5,011	$ 12,043	Based on $8,083 per PM-peak-hour trip.
Proposed TIF less 20% for TDM	$ 4,009	$ 9,634	Based on $8,083 per PM-peak-hour trip; all other areas of City.
Proposed TIF less 30% for TDM	$ 3,508	$ 8,430	Based on $8,083 per PM-peak-hour trip; Stanford Research Park or El Camino Corridor location.
Proposed TIF less 35% for TDM	$ 3,257	$ 7,828	Based on $8,083 per PM-peak-hour trip; Calif. Ave. location.
Proposed TIF less 50% for TDM	$ 2,506	$ 6,022	Based on $8,083 per PM-peak-hour trip; downtown location.
Menlo Park			
Citywide	$ 1,927	$ 4,630	
Supplemental Downtown [a]	$ 235	$ 565	Based on $379 per PM-peak-hour trip .
Redwood City			
Non-Downtown	$ 992	$ 2,380	
Downtown	$ 744	$ 1,790	
San Carlos	$ 1,892	$ 4,547	
San Mateo	$ 2,101	$ 3,135	
Los Altos	$ 3,777	$ 9,076	
Mountain View			
North Bayshore Area	N.A.	$ 23,260	No rate given for residential uses in this area.
Sunnyvale			
South of S.R. 237	$ 1,931	$ 4,640	
North of S.R. 237	N.A.	$ 6,375	No rate given for residential uses in this area. R&D TIF rate is $6,375; used for offices north of SR 237.
Los Gatos [a]	$ 6,185	$ 10,258	TIF is $902 per DAILY trip. TIF calculated with ITE daily trip rates times $902.
Santa Clara	N.A.	$ 1,000	TIF applies only in defined area (north of Caltrain tracks). No rate given for residential uses in this area.
San Jose			
North San Jose Area	$ 7,742	$ 14,440	Industrial TIF rate is $14,440; used for offices in this area.
Evergreen-East Hills Area	N.A.	$ 13,170	No rate for Multi-Family. Single-Family is $15,148 per unit.
US 101/Oakland Ave/Mabury Rd			TIF is $35,767 per PM peak hour trip that would use one of the planned interchange improvements.
I-280/Winchester Blvd.			TIF is $25,641 per PM peak hour trip that would use the proposed off-ramp improvement.
Fremont	$ 2,382	$ 5,297	Multi-Family rate shown is for units with 2-3 bedrooms.

Note: TIF amounts are from each city's website. (a) Where TIF fees are specified by a city on a per vehicle trip basis, standard ITE trip generation rates have been used to calculate the rate per dwelling unit for multi-family residential and per KSF for offices.

Source: Hexagon Transportation Consultants, Inc., 2017

1. Introduction and Existing Impact Fees

This report presents the results of a nexus study prepared to update the City of Palo Alto's existing transportation impact fees. Development impact fees are commonly used throughout California to require new development to pay for the needs that it creates. In Palo Alto, impact fees are currently charged for transportation, housing, community facilities, public art, and parkland dedication. The purpose of this study is to allow the City to make the necessary findings in order to revise its existing transportation-related impact fees.

The City of Palo Alto currently has four transportation-related impact fees, of which three are applied in specific areas of the city and one is applied citywide. These four impact fees and the year when each was first adopted are as follows:

- San Antonio / West Bayshore Area Traffic Impact Fee, 1986
- Stanford Research Park / El Camino Real CS Zone Transportation Impact Fee, 1989
- Charleston – Arastradero Corridor Pedestrian and Bicyclist Safety Impact Fee, 2005
- Citywide Transportation Impact Fee, 2007

Development Impact Fees in California

The Mitigation Fee Act (Government Code Sections 66000-66025) was originally enacted through Assembly Bill 1600 in 1987 and requires that a reasonable relationship (nexus) be established between the projects or mitigations to be funded by an impact fee and the impacts caused by new development. Impact fees are one-time fees that are charged by a local government agency and are distinct from taxes and special assessments. When imposing an impact fee as a condition of approval of a development project, a local agency must make the following findings:

- Identify the purpose of the fee;
- Identify the use to which the fee is to be put;
- Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed;
- Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

This study provides the necessary evidentiary basis to support these findings. The current status of each of the four transportation impact fees in Palo Alto is also provided in order to address the question of whether it would be preferable for the City to retain four separate transportation impact fees or consolidate some or all of them.

Existing Impact Fees in Palo Alto

The City of Palo Alto currently charges development impact fees for the following broad purposes: transportation, affordable housing, community facilities, public art, and parkland dedication. Within the category of community facilities, separate impact fees are charged for parks, community centers, libraries, public safety facilities, and general government facilities. Within the category of transportation, there are currently four separate impact fees, of which three are imposed only in specific areas of the city and one is applied citywide. A summary of Palo Alto's impact fees for Fiscal Year 2017-18 (effective as of August 28, 2017) is presented in Table 1.

The first impact fee established by Palo Alto was for affordable housing, in 1984. This was followed by adoption of two of the transportation-related impact fees in the late 1980s, around the time that AB 1600 was passed. The other two transportation-related fees were adopted approximately ten years ago, in the mid-2000s. Community facilities fees (for parks, libraries, community centers, public safety facilities, and general government facilities) were established in 2002 and 2015, and the housing impact fee was significantly revised in 2017. It should be noted that the city also has an in-lieu parking fee for the Downtown Parking Assessment District, but this is not an impact fee and is not addressed in this nexus study.

Exemptions from impact fees for specific land uses vary for the different fees. The Citywide Transportation Impact Fee (TIF) and the Charleston-Arastradero Corridor Safety Fee have the same exemptions as all of the community facilities impact fees. These exemptions, as identified in the July 1, 2017 update of the "Palo Alto Development Impact Fees" document, include:

- Single-family home remodels or additions,
- Housing projects with 100% affordable housing units,
- Below Market Rate (BMR) housing units beyond the minimum number required by the City's BMR housing program,
- Public buildings and schools,
- Retail, personal service, or automotive service that is 1,500 s.f. or smaller,
- Daycare, nursery schools, and preschools,
- On-site cafeteria/recreation/childcare facilities for employee use only,
- Hazardous materials storage.

All residential uses are exempt from the San Antonio-West Bayshore and the Stanford Research Park traffic impact fees, but the following residential uses are subject to the Citywide TIF and the Charleston/Arastradero TIF: new homes on an empty parcel, second units, multi-family residential projects, and required Below Market Rate units. Replacement single-family homes are not subject to the citywide TIF.

Figure 1 shows the areas covered by the three transportation-related impact fees that apply in specific areas of the city. Any new project that is within one of the three areas would pay at least two transportation-related impact fees: the appropriate area-specific fee and the citywide fee. Because of the overlap of the three areas, there are locations where a new development may be subject to three transportation impact fees: the citywide fee, the Charleston-Arastradero Corridor fee, and either the San Antonio/West Bayshore fee or the Stanford Research Park fee.

Table 1
Summary of Existing Palo Alto Impact Fees

Impact Fee	Year Fee Was First Adopted	Residential: Single Family <3000 s.f.	Residential: Single Family >3000 s.f.	Residential: Multi-Family < 900 s.f.	Residential: Multi-Family > 900 s.f.	Non-Residential: Commercial	Non-Residential: Hotel/ Motel	Non-Residential: Institutional	Non-Residential: Industrial
Transportation									
San Antonio/West Bayshore	1986	All residential uses exempt				$2.56 per square foot			
Stanford Research Park/El Camino Real	1989	All residential uses exempt				$12.42 per net new square foot			
Charleston-Arastradero Corridor	2005	$1,306 per residential unit				$0.38 per square foot			
Citywide	2007	$3,575 per net new PM peak hour trip							
Community Facilities		Per dwelling unit				Per square foot			
Parks	2002	$ 11,917	$ 17,795	$ 3,944	$ 7,801	$ 5.061	$ 2.288	$ 5.061	$ 5.061
Community Centers	2002	$ 3,089	$ 4,626	$ 1,026	$ 2,033	$ 0.286	$ 0.129	$ 0.286	$ 0.286
Libraries	2002	$ 1,079	$ 1,606	$ 355	$ 645	$ 0.272	$ 0.114	$ 0.272	$ 0.272
Public Safety Facilities	2015	$ 1,036	$ 1,036	$ 829	$ 829	$ 0.579	$ 0.579	$ 0.772	$ 0.193
General Govt Facilities	2015	$ 1,305	$ 1,305	$ 1,044	$ 1,044	$ 0.729	$ 0.729	$ 0.974	$ 0.243
Total Community Facilities		**$ 18,426**	**$ 26,368**	**$ 7,198**	**$ 12,352**	**$ 6.927**	**$ 3.839**	**$ 7.365**	**$ 6.055**
Housing	2017	Single-Family Detached: $75 per s.f. Condos, Single-Family Attached: $50 per s.f. Apartments: $20 per s.f.				Office/R&D: $35 per s.f. Hotel, Retail, Other Non-Residential: $20.37 per s.f.			
Public Art	2013	All residential uses exempt				1% of first $109 million construction valuation and 0.9% of construction valuation in excess, for commercial buildings with floor area > 10,000 s.f. and construction value >$200,000			
Parkland Dedication	2006	Applies only to projects that require a subdivision or parcel map with less than 50 parcels when land is not dedicated. If over 50 parcels, project must dedicate land.				All non-residential uses exempt			

Note: All fees are as of August 28, 2017. Fee amounts are revised annually.

Source: City of Palo Alto, "Development Impact Fees", updated 7/1/17

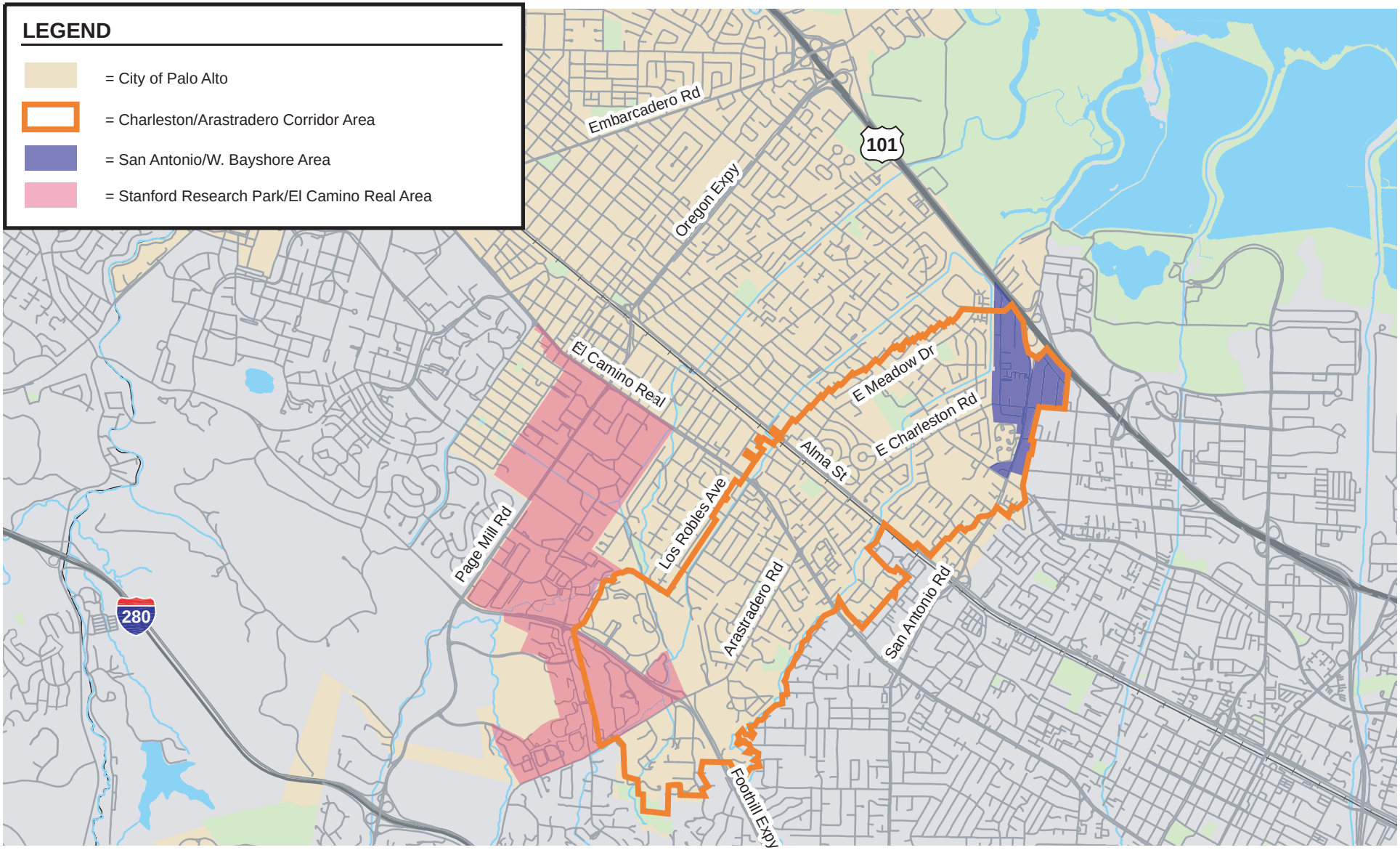

Figure 1
Traffic Impact Fee Areas

NORTH
Not to Scale

All four of the transportation impact fees provide for annual adjustments to the fees based on the Construction Cost Index published by the *Engineering News Record*. The following sections provide more detail on the history and the projects included in each of the city's four transportation-related impact fees.

San Antonio/West Bayshore Area

Adopted in 1986, Chapter 16.46 of the Palo Alto Municipal Code (PAMC) is entitled "Approval of Projects with Impacts on Traffic in the San Antonio/West Bayshore Area," which is generally bounded by U.S. Highway 101, Middlefield Road, Fabian Way, and the city limits. The municipal code identifies four specific projects to be funded with this impact fee, as shown in Table 2, but also states that the funds may be spent on "alternative improvements in the area as determined by the Chief Transportation Official, subject to the approval of the City Council."

The need for this impact fee was established in the *San Antonio/West Bayshore Environmental Impact Report (EIR)*. Most of the development that was analyzed in that EIR has occurred.

This impact fee was primarily intended for capacity-enhancing intersection improvements to accommodate the projected growth in traffic resulting from new development. The City's approach to accommodating traffic growth has shifted in the last 30 years and is now geared more towards encouraging alternative mode use than towards adding roadway and intersection capacity. Therefore, as shown in Table 2, not all of the projects specifically identified in the municipal code in 1986 have been completed.

Table 2
San Antonio/West Bayshore Traffic Impact Fee Projects

Projects Listed in Municipal Code [a]	Current Status
San Antonio Road/Middlefield Road: Feasibility study for a second left-turn lane on westbound Middlefield at San Antonio	City currently plans to widen Middlefield to add bike lanes, but no longer plans to add a second left-turn lane to westbound Middlefield at San Antonio.
San Antonio Road/Charleston Road: Right-turn lane on westbound Charleston	Project not implemented and City does not plan to pursue project. Mountain View has recently resurfaced westbound approach.
Signalized intersection at Ford Aerospace driveway	Project is no longer needed. Former Ford Aerospace site is now JCC site.
Interconnections of area traffic signals	Project Complete.

Note: (a) Projects listed in Palo Alto Municipal Code Chapter 16.46.

Source: Hexagon Transportation Consultants, Inc., 2017

The current status of the projects, as presented in Table 2, is based on input from City staff and on Resolution No. 9389, passed by the City Council on January 14, 2014, which included an update on projects to be funded by impact fees that had not yet been completed at that time.[1]

The current amount of this fee, as of August 28, 2017, is $2.56 per square foot for non-residential projects only. The current balance in the San Antonio /West Bayshore Fund, as of June 30, 2016, is $876,563, according to the "Annual Report on Development Impact Fees for Fiscal Year 2016," as presented to the City Council on February 6, 2017. No funds have been spent from the San Antonio/West Bayshore Traffic Impact Fee fund for many years.

The following projects have been proposed for expenditure from this fund:

- **US 101/Adobe Creek Bicycle/Pedestrian Bridge**. The current budget for this project does not include any TIF funds. However, if additional funds are needed to complete this project, it would be the first priority for San Antonio/West Bayshore TIF funds, and funds would be directed as needed to the US 101/Adobe Creek bridge.
- **Fabian Way Enhanced Bikeway**, which is part of the "Waverley Multi-Use Path Improvements and East Meadow Drive and Fabian Way Enhanced Bikeways" project, for which the City has applied to VTA for funding. This project has three components and the Fabian Way component is within the San Antonio/West Bayshore area. The City proposes to use $200,000 from the TIF fund as the local match for this project.
- **San Antonio Road and East Charleston Road Intersection Improvements**. The project would construct multi-modal safety and operational improvements at this intersection. The City proposes to use $250,000-$500,000 from the TIF for this project.
- **San Antonio Road/Avenue Enhanced Bikeway Project**. This project includes a Class I shared-use path with improved intersection treatments and wayfinding between East Charleston and Byron Street and a Class III bicycle boulevard with traffic calming between Byron Street and Alma Street. The Class I portion of the project is in the San Antonio/West Bayshore area. All remaining San Antonio/West Bayshore TIF funds would be directed to this project.

Stanford Research Park / El Camino Real CS Zone

The "Transportation Impact Fee for New Non-Residential Development in the Stanford Research Park/ El Camino Real CS Zone" (PAMC Chapter 16.45) was adopted in 1989. Improvements to eight intersections were originally identified as the purpose of the impact fee, based on the impacts identified in the *Citywide Land Use and Transportation Study Environmental Impact Report,* September 1988, and certified by the City Council on March 6, 1989. The project list was updated in 2002 to reflect the four capacity improvements identified in the *1998-2010 Comprehensive Plan Environmental Impact Report*. These four projects, as currently specified in the municipal code, and their current status are presented in Table 3. Of these four projects, two have been completed and two will be completed soon.

Three of the four intersections currently identified in the municipal code as the projects to be funded with this impact fee were studied extensively in the *Draft Expressway Plan 2040* by the Santa Clara County Department of Roads and Airports and in the *Page Mill Road Expressway Corridor Study*

[1] California law (Government Code Section 66001(d)) requires local agencies to make certain findings with respect to development fees which remain unexpended or uncommitted five or more fiscal years after deposit of such fees.

Report, prepared for Santa Clara County, the City of Palo Alto, and the Town of Los Altos Hills. The Santa Clara County Department of Roads and Airports has jurisdiction over all expressways in Santa Clara County, including two in Palo Alto: Foothill Expressway and Oregon Expressway/Page Mill Road.

The City plans to implement improvements at three Page Mill Road intersections, at El Camino Real, Hansen Way, and Hanover Street, using the project descriptions included in the *Page Mill Road Expressway Corridor Study Report*. The City is currently developing an agreement with the County for the design and construction of these improvements, which will include $3.2 million in City funds.

At the intersection of Foothill/Arastradero/Miranda, which currently functions as two closely spaced signalized intersections, the project described in the municipal code has been completed. However, the County has proposed a major reconstruction of that intersection to include grade separation of Foothill and Arastradero, a roundabout at Miranda and Arastradero, and a signalized intersection for the southbound Foothill off-ramp on Arastradero.

As with the San Antonio/West Bayshore Impact Fee, the Stanford Research Park/El Camino Real impact fee funds may be used for alternative improvements or alternative intersections, subject to the City Council's approval. The current amount of this fee, as of August 28, 2017, is $12.42 per net new square foot for non-residential projects only. The current balance in the Stanford Research Park/El Camino Real Fund, as of June 30, 2016, is $3,223,649, according to the "Annual Report on Development Impact Fees for Fiscal Year 2016", as presented to the City Council on February 6, 2017. These funds will provide the City's share of the budget for the Page Mill Road intersection improvements described above.

Table 3
Stanford Research Park/El Camino Real Traffic Impact Fee Projects

Projects Listed in Municipal Code [a]	Current Status
Page Mill Expressway/Hanover Street: Add southbound right-turn lane; restripe northbound approach. (Hanover is the N-S street)	Page Mill Corridor Study: "Add a northbound and southbound left-turn lane and convert signal to 8-phase operation. Convert Hanover to one through lane each direction and add bike lanes."
Page Mill Expressway/El Camino Real: Add right lanes to all approaches.	Page Mill Corridor Study: "Modify alignment of westbound left-turn lane to provide additional capacity; provide dedicated westbound right-turn lane; extend bike lanes." City plans to implement project using Corridor Study definition.
Foothill Expressway/Arastradero/Miranda: Add additional westbound lane on Arastradero at Miranda to provide two left-turn lanes and a right-turn lane at Foothill.	Project as defined in PAMC has been completed. County's 2040 Expwy Plan proposes major reconstruction of this intersection, including grade separation and a roundabout.
Middlefield Road/Oregon Expressway: Add northbound and southbound left-turn lanes (Middlefield is the N-S street)	Project complete. Portion of project not implemented due to need for tree removal.

Note: (a) Projects listed in Palo Alto Municipal Code Chapter 16.45.

Source: Hexagon Transportation Consultants, Inc., 2017

Charleston-Arastradero Corridor

The "Charleston Arastradero Corridor Pedestrian and Bicyclist Safety Impact Fee" (PAMC Chapter 16.60) was adopted in 2005. It applies to both residential and non-residential development within one-half mile of the corridor, beginning at Fabian Way and ending at Miranda Avenue, near Foothill Expressway. The purpose of the impact fee is to provide funding for the Charleston Arastradero Corridor Plan, a streetscape improvement plan intended to address the safety concerns of pedestrians and bicyclists using the corridor. As described in the 2005 nexus study prepared for this impact fee, the improvements include:

- Reorganization of auto travel lanes throughout the corridor, with removal of auto travel lanes in some locations in favor of bike lanes and landscaped medians;
- Provision of a bike lane in each direction that is tinted or painted to enhance safety;
- Lighted (in-pavement, pedestrian-activated) crosswalks in several locations, particularly near schools;
- Pedestrian bulb-outs and median island refuges for pedestrian safety, along with an irrigated, planted center median interspersed with left-turn pockets;
- Installation of frontage improvements, including new street lighting to improve pedestrian and bicyclist visibility and safety.

The 2005 nexus study characterized the Charleston Arastradero Corridor Plan as a defined project with a defined timeline, and noted that there was no need for funds after the project had been fully implemented. Thus, it was assumed that the impact fee would terminate after project construction was complete. The City has partially completed the project, and has recently received an updated cost estimate of $11,316,200 for the remaining work.

Funds have been transferred annually to the City's Capital Improvement Program since the inception of this impact fee fund, for use on improvements in the corridor. The current amount of the fee, as of August 28, 2017, is $1,306 per residential unit and $0.38 per square foot for non-residential development. The current balance in the Charleston-Arastradero Corridor Pedestrian and Bicyclist Safety Fund, as of June 30, 2016, is $8,708, according to the "Annual Report on Development Impact Fees for Fiscal Year 2016", as presented to the City Council on February 6, 2017. The City plans to also use other fund sources to complete this project.

Citywide Transportation Impact Fee

The "Citywide Transportation Impact Fee" (PAMC Chapter 16.59) was adopted in 2007. However, the original nexus study for this impact fee was conducted in 2004, prior to the adoption of the Charleston Arastradero Corridor Impact Fee in 2005. The nexus study for the citywide fee was updated in 2007 to incorporate revised project costs and traffic projections.

One key difference between the Citywide TIF and the three other TIFs is that it is based on PM peak hour trips generated by a project, rather than on a per square foot or per dwelling unit basis. This fee basis provides an even closer nexus between the transportation impacts caused by new development and the amount that a given project is required to pay.

The nexus study identified projects for the Citywide Transportation Impact Fee, as shown in Table 4. Because the fee was to be charged on a citywide basis, a geographically balanced expenditure plan was developed in order to ensure geographic equity. None of the projects to be funded by the citywide fee were capacity enhancements as identified in the San Antonio/West Bayshore fee or the Stanford Research Park/El Camino Real fee. Because the citywide fee was intended to fund different types of projects than those specific area fees, the area fees were retained when the citywide fee was adopted.

The current amount of the fee, as of August 28, 2017, is $3,575 per net new PM peak hour trip for both residential and non-residential development. The current balance in the Citywide Transportation Fund, as of June 30, 2016, is $2,979,023, according to the "Annual Report on Development Impact Fees for Fiscal Year 2016", as presented to the City Council on February 6, 2017. An updated list of projects to be funded with the Citywide TIF is presented in Chapter 3.

Table 4
Citywide Transportation Impact Fee Projects

Projects Listed in Nexus Study [a]	Current Status
Citywide Transportation Demand Management: 0.5 FTE for a city staffperson to manage and market a TDM program.	TIF funds have not been used for this project. (State law currently limits the use of impact fees to capital projects.)
Advanced Transportation Management and Information System	Project complete.
Expanded Palo Alto Shuttle Service: Nexus study included both operating cost of shuttle service and capital cost of replacing 7 buses.	TIF funds have not been used for this project. (State law currently limits the use of impact fees to capital projects.)
Bicycle and Pedestrian Projects: Bicycle boulevards, bike/ped undercrossings, bike lanes/routes on major arterials and streets, spot bike/ped improvements.	Many specific projects have been completed. City has updated its *Bicycle + Pedestrian Transportation Plan* since Nexus Study was conducted. This plan is the current source of bike/ped project priorities.

Note: (a) Projects listed in the 2004 *Transportation Impact Fee Nexus Study* and the 2007 *Addendum to the Transportation Impact Fee Nexus Study.*

Source: Hexagon Transportation Consultants, Inc., 2017

Report Organization

The remainder of this report addresses the following steps in order to make the necessary findings for updating the City's transportation impact fee program:

1. The level of future growth in Palo Alto in terms of residential dwelling units and new jobs is projected;
2. The number of PM-peak-hour motor vehicle trips that would be generated by that growth is estimated;
3. The transportation impacts or deficiencies caused by those additional PM-peak-hour trips are identified;
4. Projects that would mitigate or offset those impacts or deficiencies to the extent feasible are identified;
5. The cost of those projects is estimated;
6. A proposed impact fee to be charged to future growth is calculated.

Chapter 2 covers the City's projected growth, the trips it would generate, and their projected impacts. Chapter 3 presents the improvements and programs that would mitigate those impacts. Chapter 4 addresses the recommended transportation impact fee structure and recommended fee level. Chapter 5 summarizes the impact fees currently charged by other municipalities on the peninsula and in the South Bay. Chapter 6 summarizes the findings of this report.

2. Projected Growth and Its Impacts

This chapter describes the level of growth projected to occur in Palo Alto through the horizon year of 2030, the number of PM-peak-hour motor vehicle trips expected to be generated by that growth, and the transportation impacts resulting from those additional motor vehicle trips.

Projected Development

The City of Palo Alto is currently engaged in a planning effort to update its Comprehensive Plan. The forecast year for the Comprehensive Plan Update is the year 2030. As part of this process, six hypothetical planning scenarios have been developed in order to capture a range of possible outcomes stemming from different growth assumptions. Each of the different planning scenarios makes different land use assumptions regarding household growth and job growth, as well as different assumptions regarding transportation investments and policies. These scenarios were analyzed in the February 2016 Draft EIR and the February 2017 Supplement to the Draft EIR.

Based on the analysis of the six planning scenarios, the City Council has identified a Preferred Scenario for the Comprehensive Plan Update, which is within the range of the growth assumptions in the six scenarios. The growth assumptions for the City of Palo Alto, excluding its Sphere of Influence, under the Preferred Scenario are presented in Table 5. All of the data in this table and in the remainder of this chapter are from the Comprehensive Plan Update Final EIR, dated August 30, 2017. The Preferred Scenario's projections of housing and employment for the year 2030 include a range of 3,545 – 4,420 new residential units and 9,850 – 11,500 new jobs (see Table 5).

Table 5
Projected Growth by the Year 2030 under the Preferred Scenario

Land Use Assumption	Existing Conditions [a]	Increase Under Preferred Scenario [b]	% Increase
Housing Units	28,545	3,545 - 4,420	12.4 - 15.5%
Population [c]	65,685	8,435 - 10,455	12.8 - 15.9%
Jobs	95,460	9,850 - 11,500	10.3 - 12.0%

Notes:
(a) From the Comprehensive Plan Update EIR, reflects 2014 conditions.
(b) Increase by 2030, based on the Preferred Scenario of the Comprehensive Plan Update EIR, excluding the Sphere of Influence.
(c) Based on a housing unit vacancy rate of 5 percent and an average household size of 2.41 persons per household in 2030.

Source: Hexagon Transportation Consultants, Inc., 2017

Projected Increase in PM-Peak-Hour Motor Vehicle Trips

The Comprehensive Plan Update process has used the Palo Alto 2030 travel demand forecasting model to project the number of PM-peak-hour motor vehicle trips that each of the six planning scenarios and the Preferred Scenario would generate. Palo Alto's model is based on Santa Clara Valley Transportation Authority's (VTA's) travel demand forecasting model, which is based, in turn, on the Metropolitan Transportation Commission's (MTC's) regional model for the entire Bay Area.

Palo Alto's citywide model has calculated PM-peak-hour traffic volumes projected to occur in the year 2030 based on both the low end and the high end of the range of input land use assumptions shown in Table 5 above. As shown in Table 6, it is estimated that the level of development at the low end of the Preferred Scenario's range would generate 3,710 additional PM-peak-hour vehicle trips with origins and/or destinations within the City of Palo Alto in the year 2030. The level of development at the high end of the Preferred Scenario's range would generate 4,693 additional PM-peak-hour vehicle trips. For purposes of this nexus study, 4,202 PM-peak-hour vehicle trips, which is the average of the two estimates, is used as the projection of new PM-peak-hour vehicle trips that would be generated by the Preferred Scenario. This projection does not include trips for which both the origin and the destination are outside Palo Alto and are "pass through" trips of a regional nature.

Table 6
Projected PM-Peak-Hour Vehicle Trips Generated by the Preferred Scenario

Scenario Assumption [a]	PM-Peak-Hour Vehicle Trips [b] Existing Conditions	2030 Conditions	Increase
Low End of Preferred Scenario's growth assumptions	47,206	50,916	3,710
High End of Preferred Scenario's growth assumptions	47,206	51,899	4,693
Average of the two projections	47,206	51,408	4,202

Notes:
(a) Based on the Preferred Scenario of the Comprehensive Plan Update FEIR, excluding Sphere of Influence.
(b) PM-Peak-Hour Vehicle Trips includes both single-occupant and shared ride vehicle trips.

Source: Hexagon Transportation Consultants, Inc., 2017

Trip Reduction Due to TDM Plans

One of the mitigation measures included in the Comprehensive Plan Update Final EIR for impacted intersections would require all new development projects above a certain size to prepare a Transportation Demand Management (TDM) Plan to reduce the number of peak hour motor vehicle trips generated by the project. The mitigation measure sets different trip reduction requirements for different areas of City, ranging from 20% to 50%. This TDM requirement will also be included in one of the policies in the Comprehensive Plan Update itself. Mitigation Measure Trans-1A in the Final EIR reads as follows:

> "Adopt a programmatic approach to reducing motor vehicle traffic with the goal of achieving no net increase in peak-hour motor vehicle trips from new development, with an exception for uses that directly contribute to the neighborhood character and diversity of Palo Alto (such as ground-floor retail and below-market-rate housing). The program should, at a minimum:
>
> - Require new development projects above a specific size threshold to prepare and implement a Transportation Demand Management (TDM) plan to achieve at least the following reduction in peak-hour motor vehicle trips from the rates included in the Institute of Transportation Engineers' *Trip Generation Manual* for the appropriate land use category and size. These reductions are deemed aggressive, yet feasible, for the districts indicated:
>   - 50 percent reduction in the Downtown district
>   - 35 percent reduction in the California Avenue area
>   - 30 percent reduction in the Stanford Research Park
>   - 30 percent reduction in the El Camino Real Corridor
>   - 20 percent reduction in other areas of the city
>
> TDM plans must be approved by the City and monitored by the property owner or the project proponent on an annual basis. The Plans must contain enforcement mechanisms or penalties that accrue if targets are not met and may achieve reductions by contributing to citywide or employment district shuttles or other proven transportation programs that are not directly under the property owner's control.

- Require new development projects to pay a Transportation Impact Fee for all those peak hour motor vehicle trips that cannot be reduced via TDM measures. Fees collected would be used for capital improvements aimed at reducing motor vehicle trips and motor vehicle traffic congestion."

The Transportation Impact Fee referred to in the second bullet point of the mitigation measure is the subject of this nexus study. For purposes of estimating the total citywide reduction in peak hour motor vehicle trips through implementation of TDM plans by new development projects, Hexagon has assumed that all projects would meet the reduction target for the area where they are located. Hexagon has used the PM-peak-hour as the basis of analysis, since it is the basis of the existing citywide TIF and is typically more congested than the AM-peak-hour. The number of PM-peak-hour motor vehicle trips generated in each of the Traffic Analysis Zones (TAZs) used in the travel demand forecasting model was used as the basis for the appropriate trip reduction target for each area. When the amount of projected growth in each area and the appropriate trip reduction targets are taken into account, an estimated 1,347 PM-peak-hour motor vehicle trips would be eliminated on a citywide basis.

After the TDM reduction is accounted for, the future growth included in the Preferred Scenario would generate 2,855 PM-peak-hour motor vehicle trips (see Table 7). This increase in vehicle trips represents 5.7% of the total PM-peak-hour vehicle trips projected for Palo Alto in the year 2030.

Table 7
Projected Increase in PM-Peak-Hour Motor Vehicle Trips After TDM Reductions

	Number of PM Peak-Hour Vehicle Trips
Existing Conditions	47,206
2030 Conditions: Preferred Scenario (Average) [a]	51,408
Increase in PM-Peak-Hour Vehicle Trips	**4,202**
Trip Reduction due to TDM Plans [b]	(1,347)
New PM-Peak-Hour Vehicle Trips Generated	**2,855**
New Trips Generated as Percentage of Total 2030 Trips [c]	5.7%

Notes:
[a] Based on the average of the low end and the high end of growth assumptions in the Preferred Scenario.
[b] Based on trip reduction targets for different areas of the city in Mitigation Measure TRANS-1a in the Comprehensive Plan Update FEIR.
[c] The trip reduction of 1,347 is also subtracted from the total of 51,408 trips to calculate percentage. [2,855 / (51,408 - 1,347)=0.057]

Source: Hexagon Transportation Consultants, Inc., 2017

Trips Generated by Exempt Uses

As described in Chapter 1, the citywide transportation impact fee currently exempts certain land uses from payment of the fee. However, the Planning Department has indicated that the number of projects that have been included in the model's 2030 growth estimates ***and*** that would be exempt from the TIF is negligible. Therefore, trips generated by exempt uses have not been deducted from the estimate of 2030 PM-peak-hour vehicle trips.

Projected Impacts Due to Growth

As documented in the Comprehensive Plan Update Final EIR, all six of the planning scenarios examined would result in some significant transportation impacts. Because the Preferred Scenario is within the range of growth assumptions defined by the six planning scenarios, the Final EIR concluded that the Preferred Scenario would also result in significant and unavoidable transportation impacts, including impacts to intersections, to freeway segments, and to transit travel times (due to increased congestion). A significant impact to local residential streets (due to drivers avoiding increased congestion on arterials) was also projected, but would be mitigated to a less than significant level through a traffic calming program. Construction of traffic calming improvements is one element of the impact fee expenditure program presented in the next chapter.

The purpose of all the improvements presented in the next chapter is to mitigate or offset to the extent feasible the impacts of the Preferred Scenario's projected growth on all components of the transportation system, both through modifications to the roadway network and by reducing the number of single-occupant vehicle trips.

3. Transportation Impact Fee Improvements

This chapter presents the improvements proposed by the City to mitigate to the extent feasible the impacts of increased congestion caused by future growth. The growth in demand for the transportation system will be accommodated by the development of a safe, efficient, and environmentally sensitive multimodal transportation system. An effective multimodal transportation system will allow people to choose modes of transportation other than the single-occupant vehicle and will make bicycling, walking, taking transit, and ridesharing attractive, safe, cost-competitive and time-competitive choices. As envisioned by the City's Sustainability and Climate Action Plan and the Comprehensive Plan Update , by providing adequate infrastructure for all modes, the City's multimodal transportation system will lead to increases in alternative mode usage and reduce the number of motor vehicle trips. The City's goal is to provide access by all transportation modes to employment, housing, shopping, schools, health care, entertainment, dining, and other common trip purpose destinations. Users of the transportation system would not have rely on a car to get where they need to go.

Scope of Improvements and Fees

With the over-arching goal of transportation system balance, the City has included a very broad range of improvements in its list of projects to be funded through Transportation Impact Fees. It focuses on bicycle and pedestrian facilities, and also includes intersection and roadway improvements that would mitigate impacts identified in the Comprehensive Plan Update Final EIR and other recent traffic studies, such as the *Expressway Plan 2040* and the *Page Mill Expressway Corridor Study Report*. The expenditure plan is rooted in the City's policies of encouraging alternative mode use, discouraging single-occupant vehicle trips, improving traffic flow without major capacity enhancements, and encouraging motorists to use arterials rather than local residential streets.

Transitioning to a Single Citywide TIF

As described in Chapter 1, there are currently four separate Transportation Impact Fees and four separate lists of improvements to be funded with them. The improvements to be funded with the San Antonio / West Bayshore and the Stanford Research Park / El Camino Real impact fees, both of which were initiated in the 1980s, were focused primarily on adding lanes at key intersections. The Charleston – Arastradero Corridor impact fee is dedicated to improvements that will enhance bicycle and pedestrian safety in that corridor. The citywide impact fee has been spent on upgrading the City's traffic signals and on bicycle and pedestrian facilities.

Hexagon recommends transitioning to a single citywide TIF rather than the current structure of three fees that apply in specific areas and one citywide fee. The City should identify improvements in each

area that can be funded with the money that has already been collected for that area, but collect TIFs in the future (after completion of specified projects) on a citywide basis. The three area-specific fees would be allowed to "sunset" when their current balances are expended on appropriate projects. The reasons for this recommendation are as follows:

1. **Areas that are (or will be) past their identified purpose:** The development identified in the *San Antonio/West Bayshore EIR* and in the original nexus study for the San Antonio/West Bayshore area has already occurred. No funds have been spent out of the San Antonio/West Bayshore area funds in a very long time, and the city has either completed the projects on the list or no longer plans to do them. Thus, this area-specific fee is obsolete since the area has already been redeveloped.

   Of the four projects defined in the Palo Alto Municipal Code for the Stanford Research Park / El Camino area, two are already complete (intersection of Foothill/Arastradero/Miranda and intersection of Middlefield/Oregon Expressway) and two will completed soon (Page Mill/El Camino and Page Mill/Hanover). The City and the County have recently planned further improvements for the Foothill/Arastradero/Miranda intersection complex, but the project defined when the project list for this fee was updated in 2002 (adding an additional westbound lane on Arastradero at Miranda to provide two left-turn lanes and a right-turn lane at Foothill) was completed years ago.

   The nexus study for the Charleston-Arastradero fee stated that it was intended to fund a specific project, and the fee would terminate when that project was constructed. After the Charleston-Arastradero Corridor Project has been completed, the TIF that was created to help fund it should be eliminated, as its identified purpose would be accomplished.

2. **Overlapping areas of the three specific area fees:** Because the Charleston/ Arastradero area overlaps with portions of the San Antonio/West Bayshore area and the Stanford Research Park/El Camino Real area, it is now possible for one parcel to be subject to three different fees (two area-specific TIFs and the citywide TIF), while another parcel is only subject to the citywide TIF. All three of the specific area fees obviously overlap with the citywide fee. This overlap raises an equity issue. The nature of a boundary is that it arbitrarily indicates that development projects inside the boundary have impacts, but that projects outside the boundary do not. However, traffic patterns and traffic impacts are generally not so black and white. This issue is compounded when defined area boundaries overlap, and the resulting boundaries indicate that one location would generate far more impacts than another location. Most cities that have defined specific areas for TIFs do not have overlapping areas, whereby projects are subject to multiple transportation-related impact fees. Cities that define specific areas for impact fees (even if they do not overlap) need to be especially careful that the boundary defined for a fee is based on clear and recent data indicating that the projects within that area will result in impacts whereas projects outside the area will not.

3. **Equity benefits with a single citywide TIF:** When the citywide TIF was established, the projects it included (TDM program, shuttle, bike/ped projects) were clearly differentiated from the types of projects that were funded by the two older area fees (San Antonio/West Bayshore and Stanford Research Park), which were specific intersection improvements (capacity enhancements). Thus, certain areas having to pay two fees made sense, because they funded very different types of improvements. The types of improvement projects that are currently being proposed are a mixture citywide. It is hard to justify that Stanford Research Park/El Camino Real developments pay for specific improvements in that area and pay for improvements across

town when other development areas don't have the same burden. The impacts to be mitigated by the updated impact fee are those identified in the Comprehensive Plan Update FEIR, which is a citywide document.

4. **Administrative Complexity and Project Readiness:** It is clear that having four separate fees makes it harder for staff to keep project lists current for each fee, to collect funds, and to track funds available for specific projects. Hexagon believes that transitioning to a single list of TIF-eligible projects would simplify administration and would allow the City to spend money on projects in a more timely way, rather than waiting for a project in a specific area to become active. Geographic equity can be maintained by funding projects from all parts of the city from the single list.

The only area-specific fee that Hexagon recommends be retained in the near-term is the Charleston – Arastradero Corridor impact fee, because it is being used to fund a specific project that is not yet completed. When the improvements identified in the Charleston - Arastradero Corridor Plan are fully implemented, we recommend that this fee be terminated, as proposed in the original nexus study.

Hexagon recommends that the current balances in the San Antonio / West Bayshore and the Stanford Research Park / El Camino Real impact fee accounts be applied towards the cost of planned improvements in their respective areas. Recently proposed projects for both specific areas were described in Chapter 1. As provided for in the municipal code, the Chief Transportation Official can propose "alternative improvements in the area," subject to the City Council's approval. After the current TIF balances have been expended and the projects identified for their use have been completed, we recommend that the City eliminate the three specific area fees and charge only a citywide TIF to new development projects.

Improvements To Be Funded by Transportation Impact Fees

Table 8 lists the improvements that will be funded through a citywide transportation impact fee, the estimated total cost of each improvement, and an estimate of the City's share of the cost (local match). Appendix A includes a complete project description for each project listed in Table 8. The list has been prepared by City staff to achieve a balanced transportation network and includes projects identified in the Comprehensive Plan Update, the Bicycle and Pedestrian Transportation Plan, the Page Mill Corridor Study, the Draft Expressway Plan 2040, and the City's Capital Improvement Program. The list has been developed to benefit all parts of the City.

All cost and local match estimates have been provided by City staff, based on the most recent planning estimates available. For projects for which an annual expenditure amount has been provided, the total cost assumes 14 years (2017 – 2030) of that annual amount. As shown in Table 8, the total cost of the improvements is $954,778,300, and the estimated City share of these improvements is $404,838,300.

The City's share of project costs is based on a 10% or 20% local match requirement for projects where federal, state, or county funding is anticipated, or in some cases, the balance required after expected outside grants. Four of the projects listed may also receive funding from the San Antonio / West Bayshore TIF Fund. Direct developer funding will also fund a portion of the cost for a few of the listed improvement projects. The direct developer funding is generally set forth in individual development agreements and is intended to reflect a fair-share contribution towards significant project impacts. Hexagon recommends that fair-share payments towards improvements that are included in the City's impact fee program be credited (in the amount of any such payment) towards the project's TIF

payment, in order to avoid double-charging developers for planned improvements. No credit would be given for off-site improvements that are not included in the impact fee expenditure plan.

California's Mitigation Fee Act (AB 1600) does not permit new development to pay for existing deficiencies. A reasonable relationship must be established between the amount of the impact fee and the improvement costs that are attributed to future development. Because virtually all the improvements listed in Table 8 are projects that the City would pursue even if there were no additional growth in Palo Alto, it would not be appropriate to require future development to pay for the City's entire share of the improvement costs. Since the number of additional PM-peak-hour trips to be generated by new development represents 5.7% of the total PM-peak-hour trips in the year 2030, as was shown in Table 7, that is the percentage of the City's share of total project costs that should be funded through an impact fee. As shown in Table 8, 5.7% of the City's share of the improvement costs is $23,075,783. This is the amount that is used to calculate the citywide transportation impact fee.

Table 8
Citywide Transportation Impact Fee Improvements

Citywide Transportation Impact Fee Projects	Total Est. Project Cost [a]	City's Est. Share of Cost [a]
Alma Street Enhanced Bikeway	$ 2,000,000	$ 2,000,000
Adobe Reach Trail	$ 100,000	$ 100,000
Bicycle and Ped Transportation Plan Implementation: $4 M/year	$ 56,000,000	$ 56,000,000
Bol Park Path Reconstruction	$ 1,125,000	$ 1,125,000
California Ave Caltrain Undercrossing ADA Retrofit/Reconstruction	$ 13,000,000	$ 13,000,000
Citywide Bicycle Sharing System - Capital Costs	$ 2,000,000	$ 2,000,000
Citywide Traffic Improvements (signage, striping): $500K/year	$ 7,000,000	$ 7,000,000
Citywide Traffic Calming Program: $500K/year	$ 7,000,000	$ 7,000,000
Downtown Mobility and Safety Improvements	$ 1,447,100	$ 1,447,100
El Camino Real at Olive Avenue Traffic Signal	$ 500,000	$ 500,000
El Camino Real at Page Mill Rd Intersection Improvements	$ 2,400,000	$ 240,000
El Camino Real Pedestrian Safety and Streetscape Project	$ 5,300,000	$ 600,000
Embarcadero Rd at El Camino Real Improvements	$ 4,526,200	$ 4,526,200
Embarcadero Road at East Bayshore Road Traffic Signal	$ 500,000	$ 500,000
Embarcadero Road at Middlefield Road Traffic Signal	$ 500,000	$ 500,000
Fabian Way Complete Street	$ 1,000,000	$ 1,000,000
Foothill Expwy and Arastradero Rd and Miranda Ave Improvements	$ 60,000,000	$ 6,000,000
Geng Road Extension	$ 2,200,000	$ 2,200,000
Hansen Way Connector Path	$ 1,000,000	$ 1,000,000
Middlefield Rd Enhanced Bikeway	$ 2,000,000	$ 2,000,000
Middlefield Rd Midtown Corridor Improvements	$ 2,300,000	$ 2,300,000
Page Mill Rd at Hanover Street Intersection Improvements	$ 2,400,000	$ 240,000
Page Mill Rd at Porter Drive Intersection Improvements	$ 300,000	$ 30,000
Page Mill Road Expresssway Corridor Improvements	$ 97,000,000	$ 9,700,000
Palo Alto Intermodal Transit Center	$ 50,000,000	$ 10,000,000
Quarry Road Improvements and Transit Center Access	$ 1,000,000	$ 1,000,000
Railroad Grade Separations	$ 600,000,000	$ 250,000,000
San Antonio Rd/Ave Enhanced Bikeway	$ 2,180,000	$ 2,180,000
San Antonio Rd/E Charleston Rd intersection improvements	$ 1,000,000	$ 1,000,000
South Palo Alto Caltrain Pedestrian/Bicycle Grade Separation	$ 8,000,000	$ 8,000,000
Traffic Signal and Intelligent Transportation Systems: $400K/year	$ 5,600,000	$ 5,600,000
Transit Traffic Signal Pre-emption and Priority	$ 1,400,000	$ 1,400,000
US 101/Adobe Creek Bicycle-Pedestrian Bridge	$ 14,000,000	$ 4,650,000
Total	**$ 954,778,300**	**$ 404,838,300**
Percentage to be Funded by Citywide TIF (5.7%)		**$ 23,075,783**

Notes:
(a) Both the estimated project cost and the estimated city share of the project cost are planning level estimates. For projects with an annual capital cost, the total estimated cost is based on 14 years (2017-2030).

Source: Hexagon Transportation Consultants, Inc., 2017

4. Recommended Fee Program

This chapter presents the recommended fee structure and recommended fee level for the citywide Transportation Impact Fee.

Motor Vehicle Trip-Based Fee

When the citywide impact fee was adopted in 2007, it was decided to charge fees on a per-trip basis, based on PM-peak-hour motor vehicle trips, rather than on a per residential unit or per square foot basis. Levying fees on a per trip basis provides the closest possible nexus between the traffic impact caused by a new development project and the amount that it is required to pay. Projects that would generate little additional traffic on the City's roadway network are not required to pay as much as projects that would generate more traffic.

Both the City's and VTA's standards for preparing Transportation Impact Analyses (TIAs) require preparation of peak hour trip generation estimates. Thus, an estimate of PM-peak-hour trip generation is prepared for most development projects proposed in the City of Palo Alto as part of a TIA or, in the case of some small projects, a feasibility study or traffic operations study. These trip generation estimates have been used as the basis for calculating the citywide TIF during the approval process for all development projects since the citywide TIF was established in 2007, and would continue to be used for this purpose in the future.

In the case of proposed projects that are so small that the City does not require a trip generation estimate to be prepared, City staff is responsible for calculating PM-peak-hour trip generation, using the same methodology as used for larger projects.

Methodology for Estimating PM-Peak-Hour Trips

The City currently requires that a development project's estimate of PM-peak-hour trips follow the guidelines in VTA's *Transportation Impact Analysis Guidelines (TIA Guidelines).* These guidelines require use of the trip generation rates in the most recent version of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, or other documented source when the ITE manual does not include an appropriate rate. The most recent version of ITE's *Trip Generation Manual* is the 9th Edition, published in 2012.

As discussed in Chapter 2, one of the mitigation measures proposed in the Comprehensive Plan Update Final EIR would require projects to develop strong TDM Plans to achieve specific reductions in PM-peak-hour motor vehicle trips from the ITE rates. The target reductions vary, depending on where

the project is located, and would be enforced through monitoring and penalties. These targets take into account each district's proximity to transit services provided by Caltrain, VTA, SamTrans, the Palo Alto Shuttle, Stanford's Marguerite service, and the Dumbarton Express. The full text of the mitigation measure was provided in Chapter 2, but for ease of reference a portion of it is repeated here.

- Require new development projects above a specific size threshold to prepare and implement a transportation demand management (TDM) plan to achieve at least the following reduction in peak-hour motor vehicle trips from the rates included in the Institute of Transportation Engineers' *Trip Generation Manual* for the appropriate land use category and size. These reductions are deemed aggressive, yet feasible, for the districts indicated:
    - Downtown area: 50 percent reduction
    - California Avenue area: 35 percent reduction
    - Stanford Research Park: 30 percent reduction
    - El Camino Real Corridor: 30 percent reduction
    - Other Areas: 20 percent reduction

  TDM plans must be approved by the City and monitored by the property owner or the project proponent on an annual basis. The plans must contain enforcement mechanisms or penalties that accrue if targets are not met and may achieve reductions by contributing to citywide or employment district shuttles or other proven transportation programs that are not directly under the property owner's control.

If the City requires development projects to implement TDM Plans that meet these targets, then it will also need to allow those projects to reduce their trip generation estimates by these same percentages for impact fee calculation purposes.

These reduction percentages are substantially higher than the standard trip reduction percentages set forth in VTA's *TIA Guidelines* in Table 1, "Standard Auto Trip Reduction Rates (page 33)" for proximity to transit, preparation of a TDM Plan, and mixed-use developments. However, the *TIA Guidelines* also allow projects to use target-based trip reductions instead of the standard trip reductions when estimating a project's trip generation. In order to avoid potential confusion, Hexagon recommends that development projects use the target-based trip reduction approach when estimating trip generation in a TIA, so that the PM-peak-hour vehicle trip estimate in the project's TIA is the same as the estimate used for impact fee calculation purposes. No additional reductions should be taken beyond the target percentage established by the City. If, however, a project uses the standard reduction percentages in the TIA Guidelines in preparing a TIA, the PM-peak-hour vehicle trip generation estimate in the TIA will be higher than the estimate for TIF calculation purposes, because the standard trip reduction percentages are lower than the City's targets.

Calculation of the Transportation Impact Fee

The proposed amount of the citywide Transportation Impact Fee has been calculated by dividing the cost of the improvements to be funded by the TIF by the number of additional PM-peak-hour motor vehicle trips. The cost of the improvements to be funded with impact fees, as shown in Table 8, is $23,075,783. This amount represents 5.7% of the City's share of the total cost, so that there is a reasonable relationship between the cost being borne by projected development and the traffic generated by that development. The projected number of trips generated by new development, as shown in Table 7, is 2,855 additional PM-peak-hour vehicle trips. The resulting impact fee is $8,083 per net new PM-peak-hour motor vehicle trip ($23,075,783 / 2,855 = $8,082.59).

This fee would be applied to all development projects, except those exempt from the TIF, throughout the City of Palo Alto. Projects within the Charleston-Arastradero Corridor Area would also be required to pay that area-specific fee until the corridor project is completed and the fee is terminated.

The citywide TIF rate for FY 2017-2018 is $3,575 per net new PM-peak-hour vehicle trip. The proposed rate of $8,083 is 126% higher than the current rate. If the City no longer charges fees for the San Antonio/West Bayshore area or the Stanford Research Park/El Camino Real area, the difference between the amount collected in total transportation impact fees under the existing fee structure and under the proposed fee structure will vary, depending on the location of the development project. The amount that would be collected also depends, of course, on the size and trip generation rate associated with the existing land use that would be replaced, if any.

It is also important to note that the proposed TIF will be collected on an estimated 2,855 PM-peak-hour vehicle trips, which is significantly fewer trips than the 2007 "Addendum to the Palo Alto TIF Nexus Study" used in its fee calculation (4,029 PM-peak-hour trips). Because the Comprehensive Plan Update Final EIR includes a mitigation measure that requires projects in different areas of the city to reduce their trips by from 20% to 50%, new development will generate fewer trips than had been assumed in the past. From the standpoint of reducing traffic congestion and achieving the goals in the City's Sustainability and Climate Action Plan, this is a clear advantage. It also means that the "per PM-peak-hour vehicle trip" TIF rate will be higher than in the past, but that the TIF will be collected on fewer trips.

Indexing the TIF

The amount of all four of the existing transportation-related impact fees is adjusted annually to reflect inflation. The Construction Cost Index, published by *Engineering News Record*, is used to adjust the amount of the fees. It is recommended that fee levels continue to be adjusted annually, in line with the Construction Cost Index. Since most of the improvements to be funded with the citywide TIF are capital projects for which cost estimates will increase with time, indexing the TIF will allow the fees collected to also increase over time in order to keep up with construction costs.

In addition, the City should continue to follow the requirements of the Mitigation Fee Act with regard to reporting annually on expenditures from the TIF accounts and making findings every five years regarding the continuing need for development impact fees that remain unexpended or uncommitted five or more years after deposit of such fees.

Exemptions from the TIF

The citywide TIF currently exempts certain types of development from the TIF, consistent with the City's impact fees for parks, community centers, libraries, and other community facilities. The existing exemptions are land uses that the City wishes to encourage. As stated in Chapter 1, the exempt uses include:

- Single-family home remodels or additions,
- Housing projects with 100% affordable housing units,
- Below Market Rate (BMR) housing units beyond the minimum number required by the City's BMR housing program,
- Public buildings and schools,
- Retail, personal service, or automotive service that is 1,500 s.f. or smaller,
- Daycare, nursery schools, and preschools,
- On-site cafeteria/recreation/childcare facilities for employee use only,
- Hazardous materials storage.

For reasons of administrative simplicity and consistency with other Palo Alto development impact fee programs and to continue to encourage development of the exempted land uses, the City should continue the above exemptions.

As noted in Chapter 1, replacement single-family homes are not subject to the citywide TIF, because a new home would generate the same number of PM-peak-hour vehicle trips as an older home, based on the ITE trip generation rates. The residential uses that are subject to the citywide TIF include: new homes on an empty parcel, second units, multi-family residential projects, and required Below Market Rate units.

Exemption for Accessory Dwelling Units

The Palo Alto City Council approved an ordinance regarding Accessory Dwelling Units (ADUs) and Junior Accessory Dwelling Units (JADUs), also referred to as second units, on May 8, 2017, in response to recent state legislation and so as to provide more variety in the City's housing stock and additional affordable housing opportunities. In light of these recent changes, the City may also wish to reconsider its existing policy of charging a TIF on second units. Adding ADUs and JADUs to the list of exemptions to the TIF would be consistent with the changes included in Ordinance No. 5412 designed to reduce the cost of creating such units. For example, ADUs and JADUs are exempt from the housing impact fee and from standard parking requirements. They are not, however, exempt from the community facilities impact fees.

There is no clear source of revenue that would replace the revenue that would be lost by exempting ADUs and/or JADUs from the TIF. The City's need for funding to address transportation needs would need to be balanced against the City's desire to increase affordable housing opportunities when deciding whether to make this change.

Exemption for Retail Uses

The City currently exempts retail, personal service, and automotive service projects that are less than 1,500 square feet from the TIF, but it may wish to consider increasing the size of retail projects that are exempt from the TIF or establishing a lower TIF rate for neighborhood-serving retail development. Although very large regional destination retail projects tend to have large traffic impacts, smaller projects may actually facilitate shorter shopping trips by residents, less congestion, and reduced vehicle miles travelled (VMT). Even though retail projects have high trip generation rates, the traffic impacts of neighborhood-serving retail can be fairly low because of short trip lengths. Depending on where a retail project is located, it may serve to reduce VMT, if its location allows some people to drive shorter distances than they otherwise would to a shopping destination. Shorter trips are also more likely to be made by walking or bicycling. Retail projects also generate sales tax revenue for a municipality.

The ITE average trip generation rate for retail (category 820) is 3.71 PM-peak-hour vehicle trips per thousand square feet (KSF). This is a much higher rate than the PM-peak-hour vehicle trip rates for residential or office uses. Based on the proposed TIF of $8,083 per net new PM-peak-hour trip, this amounts to a TIF of $29,986 per thousand square feet for retail projects, before accounting for any TDM trip reduction and before accounting for any existing land use. In parts of the city where a 20% TDM reduction is required, the TIF would be the equivalent of $23,989 per thousand square feet. On the El Camino corridor, the TIF would be the equivalent of $20,990 per thousand square feet after accounting for the required 30% TDM reduction. In the downtown district, the TIF would be the equivalent of $14,993 per thousand square feet after accounting for the required 50% TDM reduction in that area. It may be challenging for some retail projects to achieve the higher TDM reductions, since it is generally not feasible to institute TDM measures that apply to customers.

Thus, the City may wish to consider increasing the size of retail projects that it exempts from the TIF or reducing the TIF for neighborhood-serving ground-floor retail projects. Hexagon recommends reducing the TIF rate by 50% (from the proposed level of $8,083 to $4,041) for retail projects that are less than 50,000 square feet.

However, as with accessory dwelling units, there is no clear source of revenue that would replace the revenue that would be lost by exempting somewhat larger retail projects from the TIF. The City's need for funding to address transportation needs would need to be balanced against the City's desire to encourage neighborhood-serving ground-floor retail uses when deciding whether to make this change.

Applying the TIF to Vacant Parcels

In addition to the trip reductions described above, development projects typically receive credit for the trips generated by existing uses on the project site, in accordance with VTA's *TIA Guidelines*. For example, if a proposed project would generate 70 PM-peak-hour trips and the existing use on the site generates 50 PM-peak-hour trips, then the net new trips generated would be 20 PM-peak-hour trips. However, if a site has been vacant for at least two years, then it is recommended that the credit for existing uses not be given when calculating the Transportation Impact Fee. To extend the above example, if the existing structure on the site has been unoccupied for over two years, then the fee should be calculated based on the full 70 PM-peak-hour trips that would be generated. The rationale for this is that the project would generate 70 new trips compared to recent and existing conditions, regardless of the site's historical use. The rationale for two years as the minimum period of vacancy is that it is consistent with VTA's *TIA Guidelines* requiring traffic studies to use traffic counts that are no more than two years old.

Applying the TIF on Changing Land Uses

Under the existing citywide impact fee, if a new use replaces a use that was exempt from the TIF, the trips generated by the exempt use cannot be subtracted from the proposed trips when the TIF is calculated. Further, the TIF is applied when the land use on a given parcel changes, due to the wide variation in trip generation rates for different uses. The TIF for changing land uses is triggered when a permit for construction, a zoning change, or a conditional use permit is required. Hexagon recommends that these provisions in the City's current method for calculating the fee be retained.

5. Transportation Impact Fees in Other Cities

In order to consider the proposed citywide transportation impact fee of $8,083 per PM-peak-hour trip in the context of TIFs charged by other cities in the Bay Area, Hexagon has compiled information on current TIF levels in nearby cities. Our survey focused on nearby cities on the Peninsula and in the South Bay in order to provide relevant data on existing fee amounts in the vicinity of Palo Alto. Transportation impact fees in San Francisco and Oakland are also discussed.

Most, but not all, nearby cities currently have a Traffic/Transportation Impact Fee. Cities that do not currently have a TIF include East Palo Alto, Belmont, Foster City, and Cupertino. However, Cupertino has recently conducted a nexus study, and it is likely that a TIF will be established in 2017.

The TIF in many cities is provided on a per square foot basis or per dwelling unit basis, rather than on a per vehicle trip basis. In those cases, the underlying nexus study typically has calculated a per trip amount and then converted it to a rate for common land uses, using the trip generation rates in the ITE *Trip Generation Manual*. Sometimes a per trip rate is also provided for projects that do not fall into one of the land uses for which rates have been provided. Key distinguishing points about each city's TIF program follows the TIF summary presented in Table 9.

In order to facilitate the comparison of Palo Alto's citywide TIF with TIFs charged in other municipalities that specify their TIF on a per unit or square footage basis, Hexagon has converted Palo Alto's proposed per PM-peak-hour vehicle trip rate to a per thousand square feet (KSF) rate and per dwelling unit rate for the land uses most commonly used by other cities in their TIF programs. These have been calculated with the ITE trip generation rates for the PM-peak-hour, as follows (the ITE land use code for each is shown in parentheses):

- Single family home (210): 1.00 per dwelling unit
- Multi-family housing (Apartments 220): 0.62 per dwelling unit
- Office (710): 1.49 per thousand square feet (KSF)
- R&D (760): 1.07 per KSF
- Industrial (Light Industrial 110): 0.42 per KSF
- Retail (820): 3.71 per KSF
- Hotel (310): 0.60 per room

Because the City would require projects to achieve a trip reduction based on a project's location, Table 9 also presents the calculated TIF rate with a 20%, 30%, 35% and 50% reduction, corresponding to the TDM trip reduction targets in the Comprehensive Plan Update. These rates illustrate the range of fees on a per unit basis and per KSF basis after accounting for the TDM trip reductions. As shown in Table

9, the rate per thousand square feet for retail uses is substantially higher than the other non-residential uses because the PM-peak-hour trip rate for retail uses is higher.

Table 9
Transportation Impact Fees in Nearby Cities

City or Area within City	Per PM Peak Hour Trip	Single Family Per d.u.	Multi-Family Per d.u.	Office Per KSF	R&D Per KSF	Light Industrial Per KSF	Retail Per KSF	Hotel Per Room
Palo Alto [a]								
Current Citywide TIF	$ 3,575	$ 3,575	$ 2,217	$ 5,327	$ 3,825	$ 1,502	$ 13,263	$ 2,145
Proposed TIF, no TDM reduction	$ 8,083	$ 8,083	$ 5,011	$ 12,043	$ 8,648	$ 3,395	$ 29,986	$ 4,850
Proposed TIF less 20% TDM reduction		$ 6,466	$ 4,009	$ 9,634	$ 6,919	$ 2,716	$ 23,989	$ 3,880
Proposed TIF less 30% TDM reduction		$ 5,658	$ 3,508	$ 8,430	$ 6,054	$ 2,376	$ 20,990	$ 3,395
Proposed TIF less 35% TDM reduction		$ 5,254	$ 3,257	$ 7,828	$ 5,621	$ 2,207	$ 19,491	$ 3,152
Proposed TIF less 50% TDM reduction		$ 4,041	$ 2,506	$ 6,022	$ 4,324	$ 1,697	$ 14,993	$ 2,425
Menlo Park								
Citywide	$ 3,108	$ 3,139	$ 1,927	$ 4,630	$ 3,330	$ 2,280	$ 4,630	$ 1,834
Supplemental Downtown	$ 379	per PM peak hour trip within ECR/Downtown Specific Plan area						
Redwood City								
Non-Downtown		$ 1,617	$ 992	$ 2,380	$ 1,710	$ 1,550	$ 940	$ 945
Downtown		$ 1,212	$ 744	$ 1,790	$ 1,280	$ 1,160	$ 2,960	$ 709
San Carlos		$ 3,052	$ 1,892	$ 4,547	$ 3,266	$ 2,228	$ 11,323	$ 1,831
San Mateo	$ 3,763	$ 3,422	$ 2,101	$ 3,135		$ 2,042	$ 5,893	
Los Altos		$ 6,152	$ 3,777	$ 9,076			$ 11,269	
Mountain View								
North Bayshore Area				$ 23,260	$ 23,260		$ 2,430	$ 2,071
Sunnyvale [b]								
Moffett Park	$ 5,958			$ 6,375	$ 6,375	$ 5,779	$ 11,052	$ 3,575
South of S.R. 237	$ 3,114	$ 3,114	$ 1,931	$ 4,640	$ 3,332	$ 3,021	$ 5,776	$ 1,868
Los Gatos [c]	$ 9,300	$ 8,854	$ 6,185	$ 10,258	$ 7,542	$ 6,482	$ 39,711	$ 7,598
Santa Clara				$ 1,000	$ 1,000	$ 670		$ 400
San Jose								
North San Jose Area [d]	$ 15,410	$ 9,677	$ 7,742			$ 14,440	$ 19,880	$ 4,299
Evergreen-East Hills Area		$ 15,148		$ 13,170			$ 13,170	
US 101/Oakland Ave/Mabury Rd	$ 35,767	per PM peak hour trip that would use one of the improved interchanges						
I-280/Winchester Blvd.	$ 25,641	per PM peak hour trip that would use the proposed off-ramp improvement						
Fremont [e]		$ 2,382	$ 2,382	$ 5,297	$ 3,803	$ 3,839	$ 7,253	$ 2,169
Oakland		$ 1,000	$ 750	$ 850		$ 550	$ 750	$ 650

Sources: TIF amounts are from each city's website.
(a) The Palo Alto citywide TIF is on a per PM peak trip basis. TIF amounts for specific land uses have been calculated using ITE trip generation rates to facilitate comparison with other cities' fees. Derived rates for different land uses also shown with TDM reductions that would apply In downtown (50%), California Ave. (35%), Stanford Research Park and El Camino corridor (30%), and the rest of the city (20%).
(b) Sunnyvale applies its R&D rate to office uses in Moffett Park. Retail rates reflect 50% reduction from ITE trip generation rates.
(c) Los Gatos specifies its TIF as $930 per DAILY trip. PM peak hour trip amount has been approximated as 10 times the daily amount. Amounts for specific land uses are calculated using DAILY ITE trip generation rates and $930 per daily trip, and do not reflect any TDM reductions.
(d) Retail uses under 100,000 square feet in North San Jose are exempt from TIF.
(e) Fremont specifies TIF amounts for residential uses based on the number of bedrooms. Amount shown is for 2-3 bedroom units.

Source: Hexagon Transportation Consultants, Inc., 2017

The three area-specific TIFs are not shown in Table 9 because it is recommended that Palo Alto transition to a single citywide TIF. If they are also considered, then the differential between Palo Alto's TIF program and the amounts charged by many other cities would be even greater.

Highlights of Other Cities' TIF Programs

Because every city's TIF program is unique, we have summarized below some of the key points about each city included in Table 9.

Menlo Park

Menlo Park is the only Peninsula city in our survey that has both a citywide TIF and an overlapping area-specific TIF, like Palo Alto currently has. Thus, it is the only other city where a parcel may be subject to more than one TIF. The citywide TIF is provided on a per unit or per square foot basis for common land uses and as a "per PM-peak-hour trip" rate of $3,108 for all other land uses. The supplemental TIF is applicable to properties within the El Camino Real/Downtown Specific Plan Area, and is specified as $379.40 per PM-peak-hour trip. Even when Menlo Park's two TIFs are combined, the PM-per-peak hour rate is comparable to Palo Alto's existing citywide PM-peak-hour rate, and far less than the proposed citywide rate.

Redwood City

Redwood City provides two different TIF rates for each land use category: a downtown rate and a non-downtown rate. The downtown rates are generally 25% lower than the non-downtown rates and take into account the downtown area's proximity to transit, better bicycle and pedestrian connectivity, and the City's requirement that downtown projects prepare a TDM Plan. The City's fee schedule provides fee rates for 24 different land uses.

San Carlos

San Carlos provides TIF rates for 11 different land uses, and includes different rates for apartments and condominiums. Based on the rate of $3,052 for single-family residential uses and the fact that the ITE trip generation rate for that use in the PM-peak-hour is 1.0, it can be assumed that the underlying per PM-peak-hour rate is $3,052, which is less than Palo Alto's current rate of $3,575 and much less than the proposed rate of $8,083.

San Mateo

San Mateo provides TIF rates for five different land uses, and states that $3,763 is the per PM-peak-hour trip rate to be used for other land uses. The fact that the per trip amount is higher than Palo Alto's existing per trip TIF, but the San Mateo fees shown for specific land uses are lower than Palo Alto's derived rates for those uses, is because standard ITE rates were not used for the San Mateo land use categories. San Mateo is currently in the process of conducting a new nexus study and updating its TIF rates.

Los Altos

Los Altos specifies Traffic Impact Fees for five different land uses: single-family residential, multi-family residential, senior residential units, commercial, and office. Its rates for most uses are higher than Palo Alto's current rates (as they have been derived from its current per PM-peak-hour trip fee), but lower than the proposed Palo Alto rates before TDM reductions are accounted for. Compared with Palo Alto's derived rates after accounting for TDM reductions, Los Altos's rates are higher than the rates for areas where a 30% or greater TDM reduction would be required.

Mountain View

Mountain View does not have a citywide TIF, although it is currently considering adopting one. It established the North Bayshore Development Impact Fees in 2016 for transportation, water, and sewer purposes. This fee applies only in the North Bayshore area of Mountain View, and the transportation fee is specified for Office/R&D, retail, and hotel uses. Its fee of $23.26 per square foot for office and R&D uses is the second highest rate in our survey (only the fees in San Jose are higher). The rates for retail and hotel uses are much more moderate, since the city is trying to encourage those uses within the North Bayshore area in order to reduce overall vehicle miles traveled (VMT) to and from the area.

Sunnyvale

The City of Sunnyvale recently completed a new nexus study and approved new TIF rates. Sunnyvale has two different TIF rates: one for the area south of State Route 237 (SR 237) and one for the area north of SR 237. Rates are significantly higher for the area that is north of 237, commonly referred to as Moffett Park. For uses that are not otherwise specified, the per PM-peak-hour trip fee is $3,114 for the area south of 237 and $5,938 for the area north of 237. In Moffett Park, the city typically applies the R&D rate to office development projects. The city's retail rates reflect a 50% reduction from the ITE rates: $6,375 per KSF in Moffett Park and $3,332 in the remainder of the city. Like Mountain View, the City is trying to encourage more neighborhood retail within its main office park area, so that employees do not have to leave the area to shop. The retail rate for the area south of 237 is also 50% lower than it would be if based on the ITE rate of 3.71 PM-peak-hour trips per thousand square feet.

Los Gatos

Los Gatos is the only city in this survey that specifies its TIF solely on a "per trip" basis (as does the Palo Alto citywide TIF), and does not specify TIF rates for any land uses. However, Los Gatos's TIF is charged on a per **daily** trip basis, rather than a per PM-peak-hour trip basis. Because most land uses have a daily trip rate that is many times the PM-peak-hour trip rate, the Los Gatos rate of $902 per daily trip is higher than Palo Alto's existing rate for most land uses, but lower than the proposed rate. For example, office uses (ITE category 710) have a daily trip generation rate of 11.03 trips per KSF and a PM-peak-hour trip rate of 1.49 trips per KSF. Thus, an office with 100,000 square feet would be required to pay $1,025,790 in Los Gatos (11.03 x 100 x $930 = $1,025,790) before accounting for existing uses or TDM or other reductions, and $532,675 in Palo Alto today (1.49 x 100 x $3,575) and $1,204,306 under the proposed rate of $8,083 per PM-peak-hour trip before accounting for existing uses or TDM reductions.

Santa Clara

Santa Clara does not have a citywide TIF. The city collects traffic mitigation fees only within a defined area and only on certain land uses within that area. Santa Clara's Traffic Mitigation Program area is mostly north of the Caltrain tracks that run through the city. TIF rates are specified for the following four uses: office/R&D, industrial, warehousing/utilities/communications, and hotels. As seen in Table 9, Santa Clara's TIF rates are the lowest in this survey, except Oakland. Because Santa Clara has not revised its TIF rates annually based on the Construction Cost Index or other inflation metric (as Palo Alto does), its rates have not changed since 2010, when the last nexus study update was conducted. The City of Santa Clara is in the process of conducting a new nexus study in 2017 in order to update its Traffic Impact Fees.

San Jose

San Jose has four different transportation impact fees that apply in specific areas of the city, but does not have a citywide TIF. The four areas defined for the four fees do not overlap, so no proposed project

ever pays more than one TIF, and projects that do not fall into any of the four areas would not pay any TIF. San Jose has the highest impact fees of all the cities included in this survey.

North San Jose Area

The North San Jose TIF rates were established by the travel demand forecasting model used to project future traffic volumes in the area, not by standard ITE rates, and therefore account for internalization of trips within the area and much higher transit use and bicycle use than the ITE rates assume. North San Jose TIF rates are specified for the following five land uses: single-family residential, multi-family residential, industrial, hotel, and large-scale commercial, which is defined as regional-serving destination retail. Retail uses that are under 100,000 s.f. are exempt from the TIF. The industrial rate is typically applied to office use development in the area. For uses that do not fall into one of these categories, a rate of $15,410 per PM-peak-hour trip is used. This per trip fee is higher than the proposed citywide Palo Alto TIF per trip fee. However, in recent years, the City of San Jose has offered to significantly reduce these impact fees in order to stimulate more development in the area.

Evergreen – East Hills Area

This traffic impact fee is charged to all new development within the boundaries of the Evergreen-East Hills Development Policy area. Just two fee amounts are specified: the residential fee is $15,148 per unit and the commercial/office fee is $13.17 per square foot. This residential fee is higher than the proposed fee in Palo Alto, but the commercial/office fee is lower than Palo Alto's proposed fee.

U.S. 101/Oakland/Mabury TIF

The U.S. 101/Oakland/Mabury TIF was established to partially fund the improvement of the U.S. 101/Oakland Road interchange and the construction of a new U.S. 101 interchange at Mabury Road. The TIF is charged to all new development in the vicinity of the existing U.S.101/Oakland Road interchange and the planned U.S. 101/Mabury interchange where the project-specific traffic analysis indicates that the development will generate net new vehicle trips on those interchanges. The current trip fee per PM-peak-hour trip is $35,767. This is the highest fee shown in Table 9.

Interstate 280/Winchester Boulevard TIF

The Interstate 280 (I-280)/Winchester Boulevard TIF is charged to all new development within the boundaries of the I-280/Winchester Transportation Development Policy area, that is projected to generate vehicle trips utilizing the planned improvement. The planned improvement is the design and construction of a new northbound off-ramp from I-280 to Winchester Boulevard. The TIF will provide partial funding for this project, and was established in 2016. The fee is $25,641 per PM-peak-hour trip projected to use the planned improvement. This TIF is also higher than the proposed Palo Alto fee.

Fremont

Fremont is included in the survey because it is on the other side of the Dumbarton Bridge and is thus the closest city in Alameda County to Palo Alto. Unlike other cities in this survey, it specifies its rates for residential uses in terms of the number of bedrooms in each dwelling unit. For studios and 1-bedroom units, the TIF is $2,133; for units with 2 or 3 bedrooms, the TIF is $2,382; and for units with 4 or more bedrooms, the TIF is $3,626.

Oakland

Oakland adopted new transportation, capital improvements, and affordable housing impact fees as of September 2016. Oakland's transportation impact fees are lower than the rates of all the other cities included in the survey, except Santa Clara for residential uses.

San Francisco

San Francisco replaced its previous citywide Transit Impact Development Fee with a citywide Transportation Sustainability Fee (TSF) in 2015. The current fee is $8.13 per s.f. for residential projects with 21-99 units and $9.18 per s.f. for residential projects over 99 units. San Francisco is the only city in this survey that uses square footage as the basis of its residential rates, rather than dwelling units or vehicle trips. For non-residential projects, the fee is $18.94 per s.f. for projects under 99,999 s.f. and $19.99 per s.f. for projects over 99,999 s.f. Residential projects that are less than 20 units and non-residential projects with less than 800 s.f. are exempt from the fee. The non-residential rates are higher than Palo Alto's proposed citywide TIF.

San Francisco also has seven development impact fees that apply only in specific neighborhoods that include funding for transportation purposes. For example, a Community Infrastructure Impact Fee in the Market-Octavia Area includes funding for pedestrian and streetscape improvements, bicycle facilities, and transit, as well as funding for non-transportation purposes. The impact fees that apply to these seven specific districts or neighborhoods are based on adopted area plans. Some area fees are further subdivided into tiers or apply only if a project exceeds a specified Floor Area Ratio (FAR). Because of the complexity of the TSF and the area plan fees, San Francisco's TIF rates are not included on Table 9.

The nexus study that underlies the citywide Transportation Sustainability Fee addressed the relationship between the TSF and the area plan transportation fees. The area plan transportation fees were developed to address local impacts from new development, while the TSF is designed to fund projects and programs that address citywide impacts. The nexus study notes:

> "Regardless of the separation or overlap between area plan fees and the TSF, the TSF should be adopted at a level such that the combined area plan and TSF amounts are less than the maximum justified TSF amounts…This approach would ensure that new development is not overpaying for transportation impacts."

The TSF nexus study identified the maximum justified transportation fee for various transportation purposes and presented the amounts of the area plan fees and the TSF to ensure that the combined rates would not exceed the maximum justified amount. The maximum justified rate is $30.93 per s.f. for residential projects, $87.42 per s.f. for non-residential projects (except production, distribution, and repair uses), and $26.07 per s.f. for production, distribution, and repair uses.

Summary

Three Silicon Valley cities included in this survey currently have TIFs that are higher than the proposed Palo Alto fee of $8,083 per net new PM-peak-hour vehicle trip: Mountain View's TIF for office/R&D uses in the North Bayshore Area, Los Gatos's TIF for some land uses, and San Jose's four TIF programs for some land uses. San Francisco's Transportation Sustainability Fee is also higher than Palo Alto's proposed TIF. Los Altos and the Moffett Park area of Sunnyvale have rates than are lower than the proposed "pre-TDM reduction" fee in Palo Alto, but higher than the amount that would be charged in some areas of Palo Alto after TDM reductions are accounted for. The TIF amounts in all other cities in the survey are lower than the proposed citywide Palo Alto TIF even when the highest trip reduction (50% in the downtown area) is accounted for, and many are lower than Palo Alto's current citywide TIF of $3,575 per PM-peak-hour trip.

Given that Palo Alto currently also charges area-specific fees in three defined areas of the city, the total TIF amount for parcels located in one or more of those areas is currently even higher than what is shown in Table 9 and much higher than most other cities. This is especially true in the Stanford Research Park/El Camino Real area, with a TIF of $12.42 per square foot. By eventually eliminating the

three area-specific TIFs and transitioning to a single citywide TIF, the administrative process would be simplified in Palo Alto and the total TIF burden would be higher than what is charged in many other nearby cities but the differential would not be as great as it would be if the proposed new citywide rate were adopted and the area-specific TIFs were retained.

6. Conclusions

This nexus study reviews the City of Palo Alto's existing transportation impact fees and makes recommendations regarding the impact fee program in the future. Findings have been made in accordance with the requirements of the Mitigation Fee Act (AB 1600).

Existing Transportation Impact Fees

The City of Palo Alto currently has four transportation-related impact fees, of which three are applied in specific areas of the city and one is applied citywide. These four impact fees, the year when each was first adopted, and key findings about each area are as follows:

- **San Antonio / West Bayshore Area Traffic Impact Fee**, **1986:** This area has been redeveloped since the EIR and nexus study were prepared in 1986. .
- **Stanford Research Park / El Camino Real CS Zone Transportation Impact Fee**, **1989:** Of the four intersection improvement projects listed in the municipal code for this area, two are complete. The City is currently coordinating with the Santa Clara County Department of Roads and Airports, which has jurisdiction over county expressways, to make improvements to three intersections on Page Mill Road.
- **Charleston – Arastradero Corridor Pedestrian and Bicyclist Safety Impact Fee**, **2005:** The corridor project is not yet complete. The City plans to continue to use these impact fee funds towards completion of the Charleston-Arastradero Corridor Plan, as provided for in the original nexus study.
- **Citywide Transportation Impact Fee, 2007:** The City has used funds from the citywide TIF to fund bicycle and pedestrian improvements and an upgraded traffic signal system.

Projected Future Growth and Resulting Impacts

The Preferred Scenario of the Palo Alto Comprehensive Plan Update includes a range of 8,435 – 10,455 new residents and a range of 9,850 – 11,500 new jobs, The number of PM-peak-hour motor vehicle trips was projected for the low end and the high end of those growth assumptions and then averaged. It is estimated for purposes of this nexus study that there will be 4,202 additional PM-peak-hour motor vehicle trips generated by the Preferred Scenario.

The Comprehensive Plan Update FEIR includes a mitigation measure that would require all new development projects to develop TDM plans to reduce the number of PM-peak-hour vehicle trips by a specified amount, depending on the location of the project. The range of required reductions is from

20% to 50%. Based on the amount of growth projected for each area and the TDM trip reduction target for that area, there would be an estimated reduction of 1,347 PM-peak-hour trips, assuming all projects meet their TDM targets. Thus, it is estimated that 2,855 new PM-peak-hour trips would be generated by the future growth defined by the Preferred Scenario, which is 5.7% of the total estimated citywide PM-peak-hour trips in the year 2030.

The level of growth included in the six planning scenarios that were analyzed as part of the Comprehensive Plan Update process would result in significant impacts to intersections, to freeway segments, to transit travel times (due to increased congestion), and to local residential streets (due to drivers avoiding increased congestion on arterials). Because all six of the planning scenarios that were examined in the Comprehensive Plan Update would result in some significant transportation impacts and because the City's Preferred Scenario represents a level of growth that is within the range of the six planning scenarios analyzed, there would be significant and unavoidable transportation impacts with the Preferred Scenario. The purpose of the improvements to be funded by the TIF is to mitigate or offset these projected impacts to the extent feasible.

Improvements to Mitigate Impacts

Hexagon recommends transitioning to a single citywide Transportation Impact Fee (TIF) rather than the current structure of three fees that apply in specific areas and one citywide fee. However, we recommend retention of the Charleston-Arastradero Corridor fee until that bicycle and pedestrian safety project has been completed. The City's Comprehensive Plan Update Final Environmental Impact Report is the basis for the nexus between the projected future development in the City and the proposed citywide TIF.

The proposed citywide TIF expenditure plan is rooted in the City's policies of encouraging alternative mode use, discouraging single-occupant vehicle trips, improving traffic flow without major capacity enhancements, and encouraging motorists to use arterials rather than local residential streets. The total estimated cost of the improvements to be funded partially with the citywide TIF is $954,778,300. For projects for which an annual expenditure amount has been provided, the total cost assumes 14 years (2017 – 2030) of that annual amount. The City's estimated share of these total costs is $404,838,300.

Based on the fact that 5.7% of the total PM-peak-hour motor vehicle trips generated in the year 2030 would be generated by new development, 5.7% of the City's share of improvement costs, $23,075,783, is attributed to new development and should be funded by the citywide TIF. As noted earlier, new development will also be responsible for a significant upfront and ongoing investment in trip reductions, through implementation of TDM plans.

Proposed Citywide Transportation Impact Fee

The proposed amount of the citywide Transportation Impact Fee has been calculated by dividing the cost of the improvements to be funded by the TIF by the number of additional PM-peak-hour motor vehicle trips. The resulting impact fee is $8,083 per PM-peak-hour trip (23,075,783 / 2855 = $8,082.59). Additional recommendations include:

- The City should continue to charge the TIF on a "per PM-peak-hour trip" basis and use the trip rates included in the most recent edition of the ITE *Trip Generation Manual.* Trip reductions due to implementation of TDM Plans should be applied in accordance with the policies of the Comprehensive Plan Update.
- It is recommended that the existing exemptions from the citywide TIF be retained, for consistency with Palo Alto's community facilities impact fees and to continue to encourage

development of those land uses. The City may wish to consider a lower per PM-peak-hour trip fee for retail uses or increasing the size of retail uses that would be exempt from the TIF. The rationale for such a change is that since many retail projects serve to reduce vehicle miles travelled (VMT) and result in lower traffic impacts than their trip generation suggests, due to short trip lengths, pass-by trips, and diverted linked trips.

- Consider adding accessory dwelling units to the list of exemptions from the citywide TIF in order to encourage their development. The City currently includes "second units" in the list of uses that are subject to the TIF.
- It is recommended that development projects on parcels that have been vacant for two or more years do not receive credit for the existing uses on the parcel, when calculating the TIF.
- Continue to adjust fee levels annually, in line with the Construction Cost Index.

Impact Fees in Other Cities

The Transportation Impact Fees of numerous nearby cities were tabulated in order to provide context for considering Palo Alto's existing citywide TIF of $3,575 and proposed TIF of $8,083 per net new PM-peak-hour vehicle trip. To facilitate comparison with other cities' rates, Palo Alto's "per PM-peak-hour vehicle trip" rates were converted to rates per dwelling unit, per thousand square feet, and per hotel room. Of the cities surveyed, four cities currently have TIFs that are higher than the proposed level in Palo Alto: Mountain View's TIF for office and R&D uses in the North Bayshore Area, Los Gatos's TIF for some land uses, San Jose's four TIF programs for some land uses, and San Francisco's Transportation Sustainability Fee. Los Altos and the Moffett Park area of Sunnyvale have rates than are lower than the proposed "pre-TDM reduction" level in Palo Alto, but higher than the amount that would be charged in some areas of Palo Alto after TDM reductions are accounted for. The TIF amounts in all other cities in the survey are lower than the proposed citywide TIF even when the highest trip reduction (50% in the downtown area) is accounted for, and many are also lower than Palo Alto's current citywide TIF.

Transportation Impact Fee Nexus Study

Technical Appendices

Appendix A
Project Descriptions for Proposed TIF Improvements

CITYWIDE TRANSPORTATION IMPACT FEE PROJECTS	PROJECT DESCRIPTION	PROJECT COST	CITY SHARE
Adobe Reach Trail	Construct Class I shared-use path along Adobe Creek between West Bayshore Road and East Meadow Drive.	$ 100,000	$ 100,000
Alma Street Enhanced Bikeway		$ 2,000,000	$ 2,000,000
Bicycle and Pedestrian Transportation Plan Implementation	Construct bicycle boulevards, enhanced bikeways, shared-use paths, bicycle parking and a citywide bicycle sharing system in accordance with the Palo Alto Bicycle and Pedestrian Transportation Plan, which was adopted by City Council in 2012. $4 million/year for 14 years.	$ 56,000,000	$ 56,000,000
Bol Park Path Reconstruction	Improve the existing Bol Park Path and implement context-sensitive solutions such as widening the path, creating a separate pedestrian walkway, and assessing all access points, signage, and street crossings.	$ 1,125,000	$ 1,125,000
California Avenue Caltrain Undercrossing ADA Retrofit/Reconstruction	Replace California Avenue bicycle/pedestrian undercrossing of Caltrain tracks with new ADA-compliant structure.	$ 13,000,000	$ 13,000,000
Citywide Bicycle Sharing System	Operate city wide bicycle sharing system with ~700 smart bicycles. Capital costs only.	$ 2,000,000	$ 2,000,000
Citywide Traffic Improvements (signage, striping)	Install miscellaneous traffic improvements, including signing and striping modifications. $500K/year for 14 years.	$ 7,000,000	$ 7,000,000
Citywide Traffic Calming Program	Construct specific improvements that can be used to discourage non-local drivers from using local, neighborhood streets to bypass traffic congestion on arterials. $500K/year for 14 years.	$ 7,000,000	$ 7,000,000
Downtown Mobility and Safety Improvements	Construction of multi-modal safety improvements in Downtown Palo Alto, including, but not limited to, installation of countdown pedestrian signal heads and ADA-accessible vibra-tactile push buttons, installation of separated bikeways, addition of bicycle parking, traffic signal retiming and coordination, installation of transit amenities, and enhanced bicycle and pedestrian access to the Palo Alto Transit Center.	$ 1,447,100	$ 1,447,100
El Camino Real at Olive Avenue Traffic Signal	Install new full traffic signal or hybrid pedestrian beacon at El Camino Real and Olive Avenue intersection.	$ 500,000	$ 500,000
El Camino Real at Page Mill Rd Intersection Improvements	Modify alignment of westbound left-turn lane to provide additional left-turn storage capacity, provide a dedicated westbound right-turn lane, extend bicycle lanes, and possibly eliminate the eastbound right-turn pork-chop island.	$ 2,400,000	$ 240,000
El Camino Real Pedestrian Safety and Streetscape Project	Install complete streets improvements focused on pedestrian safety at controlled and uncontrolled crosswalks, enhanced bus operations at two existing major transit stops, and new urban design amenities between Stanford Avenue and Sheridan Avenue. The project includes: curb extensions; median refuges; two pedestrian hybrid beacons at a new and an existing uncontrolled crosswalk; median shade trees; pedestrian scale lighting.	$ 5,300,000	$ 600,000
Embarcadero Rd at El Camino Real Improvements	Construct bicycle, pedestrian and traffic circulation improvements along Embarcadero Road between Bryant Street and El Camino Real. Improvements include better bicycle and pedestrian connection to the Bryant Street Bicycle Boulevard, safety improvements at High Street, dedicated bikeways between the Caltrain Path and the Stanford Perimeter Trail, a protected intersection for bicyclists at El Camino Real, and pedestrian safety enhancements.	$ 4,526,200	$ 4,526,200
Embarcadero Road at East Bayshore Road Traffic Signal	Install new full traffic signal at at Embarcadero Road and East Bayshore and restripe intersection to permit eight-phase signal operation.	$ 500,000	$ 500,000
Embarcadero Road at Middlefield Road Traffic Signal	Install new full traffic signal at at Embarcadero Road and Middlefield Road and restripe intersection to permit eight-phase signal operation.	$ 500,000	$ 500,000

CITYWIDE TRANSPORTATION IMPACT FEE PROJECTS	PROJECT DESCRIPTION	PROJECT COST	CITY SHARE
Fabian Way Complete Street	Restripe Fabian Way with two travel lanes, two bicycle lanes, and one two-way left-turn lane. Add pedestrian refuge islands.	$ 1,000,000	$ 1,000,000
Foothill Expressway and Arastradero Road and Miranda Avenue Improvements	Based on Santa Clara County's concept plan for this intersection, construct a grade-separated crossing at intersection of Foothill Expressway and Arastradero Road and a roundabout at intersection of Miranda Avenue and Arastradero Road. Install traffic signal at southbound Foothill off-ramp and Arastradero. Provide connection for bike-ped trail.	$ 60,000,000	$ 6,000,000
Geng Road Extension	Construct extension of Geng Road from current teminus to Laura Lane to provide bypass of the congested Embarcadero Road at East Bayshore Road intersection.	$ 2,200,000	$ 2,200,000
Hansen Way Connector Path	Class I shared-use path between Bol Park Path and El Camino Real with signalized crossing of El Camino Real to connect to the Park Boulevard bicycle bouelvard.	$ 1,000,000	$ 1,000,000
Middlefield Road Enhanced Bikeway	Install Class II bicycle lanes and improved turn-lanes on Middlefield Road between East Charleston Road and Mountain View city limits.	$ 2,000,000	$ 2,000,000
Middlefield Road Midtown Corridor Improvements	Project includes sidewalk enhancements, transit stop improvements, lighting improvements, and traffic signal improvements.	$ 2,300,000	$ 2,300,000
Page Mill Road at Hanover Street Intersection Improvements	Add northbound and southbound left-turn lanes and convert the traffic signal to an eight-phase operation. Convert Hanover Street to one through-lane in each direction and add two bicycle lanes.	$ 2,400,000	$ 240,000
Page Mill Road at Porter Drive Intersection Improvements	Add an eastbound U-turn only movement.	$ 300,000	$ 30,000
Page Mill Road Expresssway Corridor Improvements	Widen Page Mill Road to six lanes with two HOV/HOT lanes and provide a continuous trail from I-280 to Foothill Expressway; improve intersections between Foothill Expressway and El Camino Real, and construct grade separation at the Page Mill Rd and Foothill Expressway/Junipero Serra Boulevard intersection.	$ 97,000,000	$ 9,700,000
Palo Alto Intermodal Transit Center	Construct an intermodal facility for trains, buses, bicycles, autos and pedestrians, and act as a gateway to both Downtown Palo Alto and Stanford University.	$ 50,000,000	$ 10,000,000
Quarry Road Improvements and Transit Center Access	Construct bicycle and pedestrian improvements along Quarry Road between El Camino Real and Welch Road, including, but not limited to, upgraded bicycle lanes and crosswalks, innovative intersection treatments for bicyclists, and improved access to transit stops. Improve bicycle and pedestrian connection between the Palo Alto Transit Center and the intersection at El Camino Real and Quarry Road, including development of passive green space, installation of lighting, and landscaping.	$ 1,000,000	$ 1,000,000
Railroad Grade Separations	Construct railroad grade separations at Palo Alto Avenue, Churchill Avenue, West Meadow Drove and West Charleston Road	$ 600,000,000	$ 250,000,000
San Antonio Road/Ave Enhanced Bikeway	Construct Class I shared-use path with improved intersection treatments and wayfinding on San Antonio Road between East Charleston Road and Byron Street. Class III bicycle boulevard with traffic calming and new bike/ped-oriented roundabout on San Antonio Avenue between Byron Street and Alma Street	$ 2,180,000	$ 2,180,000
San Antonio Rd at E Charleston Rd Intersection Improvements	Construct multi-modal safety and operational improvements at the San Antonio Road and East Charleston Road intersection.	$ 1,000,000	$ 1,000,000
South Palo Alto Caltrain Pedestrian/Bicycle Grade Separation	Construct grade-separated bicycle/pedestrian Caltrain crossing between California Avenue Station and West Meadow Drive.	$ 8,000,000	$ 8,000,000

CITYWIDE TRANSPORTATION IMPACT FEE PROJECTS	PROJECT DESCRIPTION	PROJECT COST	CITY SHARE
Traffic Signal and Intelligent Transportation Systems	Construct traffic signals, traffic signal communications networks, video surveillance projects for transportation use, and maintenance of the City's traffic signal central system. The project includes the replacement of traffic signal controllers/cabinets, video detection systems, and other field equipment. $400K/year for 14 years.	$ 5,600,000	$ 5,600,000
Transit Traffic Signal Preemption and Priority	Install traffic signal transit pre-emption and priority equipment and construct transit queue-jump lanes where feasible. $100K/year for 14 years.	$ 1,400,000	$ 1,400,000
US 101/Adobe Creek Bicycle-Pedestrian Bridge	Construct a year-round, Class I overcrossing of Hwy. 101 to replace the existing, seasonal Lefkowitz Tunnel.	$ 14,000,000	$ 4,650,000
TOTAL		**$ 954,778,300**	**$ 404,838,300**