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**RE: The San Francisco to San José Project Section Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS)**

Thank you for including the City of Palo Alto in the environmental review process for the above-referenced project. The California High Speed Rail (HSR) will have a long-lasting and far-reaching impact on the City of Palo Alto; therefore, we appreciate the opportunity to comment on this Draft EIR/EIS as a responsible agency for the Project.

*Executive Summary*

The Draft EIR/EIS is seriously flawed in numerous respects as outlined in this letter. Fundamentally, the document fails to adequately analyze, much less mitigate, a variety of clear and significant impacts that this project will cause to the Palo Alto community. Failure of the Draft EIR/EIS to consider the cumulative impacts of this project with the Caltrain business plan through the four at-grade crossings would pose an increased safety risk of collisions between trains and people walking, biking, and driving across these crossings. When examining impacts, the Draft EIR/EIS does not analyze the reasonably foreseeable consequences and impacts of the adopted or on-going planning efforts of other users of the corridor that are tied to the HSR project. Such a disconnect ignores the impacts related to the at-grade crossings and the additional four-tracking that may be needed within the corridor. The proposed project alternatives lead to significant impacts to emergency response, noise, and circulation. Grade separation between tracks and crossings at Meadow Drive, Charleston Road, Churchill Avenue, and Palo Alto Avenue would address the impacts related to noise with the elimination of train horns and alleviate the other safety concerns posed at-grade intersection. There is no rationale for excluding grade separations as a feasible mitigation particularly given the Federal Rail Administration's conclusion that the Palo Alto at-grade crossings are amongst the most dangerous in the State. The Draft EIR/EIS falls woefully short of any reasonable standard of environmental analysis.

*Project Understanding*

The City of Palo Alto (City) understands that, Consistent with Tier 1 decisions, the San Francisco to San Jose Project Section (Project Section or project) would provide High Speed Rail (HSR) service from the Salesforce Transit Center (SFTC) in San Francisco to Diridon Station in San Jose along approximately 49 miles of the Caltrain corridor. Within the City of Palo Alto, the project would be located along 3.8 miles of Caltrain right-of-way through the middle of Palo Alto, where the existing Caltrain tracks bifurcate the City from east to West. The current project design proposes a blended infrastructure with Caltrain operations through the City. The current proposed project, as well as both Alternatives carried forward in the environmental analysis, propose two at-grade tracks through the City, mostly within the existing Caltrain right-of-way.



[CityOfPaloAlto.org](http://CityOfPaloAlto.org)

The City understands that within Palo Alto, the project would require slight modifications (typically of less than one foot) to the tracks in several areas to straighten curves in order to support higher speeds. The project also requires the installation of two radio towers (one north of Embarcadero Road and one north of West Charleston Road), four-quadrant gates at existing at-grade crossings, and either fencing or sound walls along the entire corridor within the City. The Project will provide HSR services at a downtown San Francisco station, a Millbrae station, and the San Jose Diridon Station; no station is proposed within the City of Palo Alto under the current proposed project or either of the two alternatives.

The blended system would accommodate operating speeds of up to 110 mph for up to four HSR trains and six Caltrain trains per hour per direction in the peak period. HSR and Caltrain are the only passenger rail services that would operate in the blended system. North of the Santa Clara Caltrain Station, freight would use the same tracks as HSR and Caltrain but would operate at night with temporal separation to avoid conflicting with HSR and Caltrain operation, similar to existing conditions.

### Rail Alignment, Profile, and Right-of-Way

1. As discussed further throughout this letter, the EIR/EIS shall consider an alternative or mitigation that includes grade separation of the existing at-grade crossings within the City to reduce impacts related to land use, transportation, and safety that would result from the project. Impacts under these three resources have not been fully identified and mitigated in the Draft EIR/EIS. Additionally, the Authority shall begin inter-agency conversations with the City and other relevant state, regional and local agencies with respect to fair-share funding contributions for grade separations.
2. The City understands that two options are provided for each of the two radio towers required within the City. For each of these two options a site located on private property (4131 Park Blvd and 100 Addison Avenue) and a site located within Caltrain right-of-way is shown. The installation of these towers requires a discretionary permit from the City of Palo Alto and may require easements and/or encroachment permits, depending on which option is selected. The City would not support the location of these towers on private property if an alternate location within Caltrain right-of-way is viable. If construction of either of these radio towers is necessary on private property, the California High Speed Rail Authority (Authority) shall contact and inform these property owners and coordinate for such needs with these property owners prior to filing for any permits from the City.
3. The EIR baseline operational analysis considers only six (6) trains per direction during the peak hours for Caltrain services, which requires the two tracks currently proposed. However, Caltrain's 2040 Vision Plan identifies a moderate growth scenario that calls for eight (8) Caltrain trains per direction during the peak hours and a high growth scenario that calls for twelve (12) Caltrain trains per direction during the peak hours. This conflict in corridor planning needs to be reconciled. The City understands that if eight (8) trains are proposed during the peak hours, additional passing tracks would be necessary. Based on Caltrain's adopted 2040 Vision Plan, this shall be considered a reasonably foreseeable future project and shall be analyzed under the Cumulative scenario. The location of these additional passing tracks shall be disclosed, and the impacts of these tracks must be fully evaluated.

### Land Use

4. In the City's scoping comments dated March 31, 2009, the City of Palo Alto requested that the Authority utilize the City's CEQA thresholds in evaluating impacts on components within the City's jurisdiction. However, the EIR/EIS established its own thresholds for land use impacts, which do not reflect the City's thresholds or the State CEQA Guidelines. As a responsible agency, the City of Palo Alto will rely on this EIR in issuing the necessary permits for construction of the project. Therefore, for the purposes of CEQA, the environmental analysis needs to evaluate impacts under land use consistent with the thresholds recommended by the state and adopted by the City of Palo Alto. This includes an analysis of:

- whether the project would physically divide and established community; and
  - whether the project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
5. In accordance with the thresholds identified above, the EIR/EIS must analyze the impacts of HSR preemptions at at-grade crossings and the construction of a noise barrier across the City. With major educational (elementary, middle, high schools, Stanford University), employment centers, and central business districts across the train corridor, the addition of HSR preemptions for at-grade intersections and a 12-14 foot noise barrier across the majority of the tracks will significantly impact connections across the City, visually and physically dividing the community. Because these impacts have not been properly identified, mitigations measures have similarly not been identified to reduce these impacts.
6. In accordance with the thresholds identified above, the EIR/EIS must identify the project's conflicts with the City's Comprehensive Plan policies and Municipal Code Regulations. Land Use Section 3.13 does not identify any inconsistencies with the City of Palo Alto's policies or regulations and concludes that the projects impacts would be less than significant without the need for mitigation.

However, Appendix 2-J clearly states that the project is inconsistent with the City of Palo Alto's Comprehensive Plan policies and regulations with respect to noise. Table 1 of Appendix 2-J acknowledges that "Although mitigation measures would be able to reduce project noise levels, they would not reduce all levels to the standards for residential, commercial, and institutional land uses due to the limitations in noise barrier cost effectiveness, implementation (HSR cannot implement quiet zones; only local jurisdictions can), and funding (in regards to grade separations)."

Land Use Section 3.13 must be revised to accurately reflect that the project would have a significant impact with respect to inconsistencies with applicable plans and policies within the City of Palo Alto. It must clearly identify the mitigation measures that would reduce that impact to the extent feasible. If mitigation does not reduce this impact to a less than significant level, the EIR/EIS must conclude, for the purposes of CEQA, that impacts would be significant and unavoidable with respect to consistency with local land use policies.

### **Noise**

7. Impact NV#1 in Section 3.4 of the EIR/EIS identifies temporary exposure of sensitive receptors to construction noise as a significant and unavoidable impact. The proposed mitigation (NV-MM#1) encourages, but does not require, daytime construction. It appears to allow the construction contractor to determine the appropriate measures to limit noise but does not set a performance measure that the contractor is required to meet. It only requires reporting after the fact (annually) to the Authority, identifying measures that were implemented. NV-MM#1 should be revised to require daytime construction if other measures cannot effectively reduce impacts to a less than significant level in accordance with the established thresholds for nighttime noise.
8. Table 3.4-25 of the Draft EIR/EIS explains that under Impact NV#8, temporary exposure of sensitive receptors and buildings to construction vibrations, the project "would cause annoyance at nighttime to sensitive receptors within 140 feet for infrequent events and within 300 feet for repetitive equipment such as pile driving, vibratory compaction, and ongoing demolition work with jackhammers or hoe-rams." However, NV-MM#2 only appears to address potential impacts to buildings and does not address impacts to sensitive receptors that may be impacted by vibrations at nighttime. Although NV-IAMF#1 (impact, avoidance and minimization feature) is identified to reduce impacts to sensitive receptors, this measure primarily reduces noise rather than vibration. The measure does not identify performance criteria that must be met to reduce impacts on sensitive receptors to a less than significant level.

Within the City there are hundreds of sensitive receptors along this corridor, many of which are residences that would be severely impacted due to nighttime vibrations during construction. The Draft EIR/EIS must identify mitigation with clear performance criteria to reduce impacts to these sensitive receptors to a less than significant level. Mitigation shall include prohibition of nighttime construction that causes vibration if other measures cannot effectively reduce impacts to a less than significant level. Pile driving at nighttime shall be prohibited.

9. The analysis of both noise and vibrations needs to clearly quantify the expected level of noise and vibration that sensitive receptors would experience before and after the implementation of mitigation. The analysis currently only provides information on the number of receptors that would be impacted before and after mitigation; not on the level of impact that those receptors would experience.
10. The proposed construction hours for track modifications are outside of the City's allowed construction hours, as established in Chapter 9.10 of the City's Municipal Code. Construction outside of the allowed construction hours requires a permit from the City. The City would not issue this permit for construction activities near residential areas if measures cannot be implemented to reduce impacts on receptors to a less than significant level.
11. Under Impact NV# 2, the Draft EIR/EIS concludes that implementation of the project alternatives would not change current practices regarding the sounding of train horns and crossing bells, but would change the amount of train horns and crossing bells sounding due to the additional trains. Additional trains will cause noise levels above existing ambient levels and in exceedance of FRA criteria, causing severe noise impacts at sensitive receptors.

The City understands that the project has analyzed two scenarios with respect to mitigation for noise associated with train horns. The first scenario assumes that quiet zones have not been established within the peninsula and identifies the location where sound walls would therefore be constructed along the corridor to reduce noise levels associated. The City understands that sound walls would be constructed along the majority of the corridor within the City of Palo Alto if quiet zones are not established at the City's existing at-grade crossings. Under the second scenario, if the City were to establish quiet zones for the City of Palo Alto through the requisite process, this would eliminate the requirement for all trains to routinely sound their warning horns when approaching at-grade crossings. Under this scenario, the EIR/EIS shows that sound walls would therefore only be necessary in three locations with the City of Palo Alto.

The City recommends that the Authority shall consider grade separation for at-grade crossings due to safety and other reasons stated in this letter, which is feasible mitigation that would also mitigate the need for train horns and therefore construction of noise barriers across the City. However, for the interim measures until grade crossings are built the City of Palo Alto recommends the Authority to establish a Quiet Zone within the City of Palo Alto. In addition, since this process is only necessary to address impacts of the proposed project (as an alternative to noise barriers) the City of Palo Alto shall not bear the financial burden of the process to establish a Quiet Zone. The mitigation measures must require that the Authority bear any costs and to support the process of establishing a Quiet Zone for any jurisdiction that elects to pursue this alternative as well as any liabilities associated with this.

### **Transportation**

12. The City has established a Local transportation Impact Analysis Policy (See Attachment A). The City requests that the Authority comply with this policy, in addition to CEQA and NEPA guidelines, in order to assess the project's local impacts within the City's jurisdiction. The analysis of intersection delays

that was included in the Draft EIR/EIS under Impact TR#5 shall utilize the City's significance criteria when determining whether localized impacts would occur outside of CEQA.

13. Section 3.2 of the Draft EIR/EIS analyzes impacts on bicycle and pedestrian access and Section 3.11 of the Draft EIR/EIS studies hazards associated with the project. However, the Draft EIR/EIS does not adequately analyze the potential hazards associated with the increase in the number of trains and increase in train speeds on school age pedestrians and bicyclists.

In Palo Alto, approximately 58 percent of students from elementary school to high school ages walked or biked to school in 2019. Therefore, a significant number of school age children cross the train tracks at existing at-grade crossings in order to attend nearby K-12 schools (e.g. Hoover Elementary, Palo Alto High, Castilleja, etc.). The proposed four-channel crossing gate mechanism is not adequate to protect these children; this shall be identified as a significant impact with respect to safety and shall be evaluated further. Providing a grade-separated crossing would reduce impacts on pedestrians and bicyclists, including school age children.

14. With the addition of new trains, the proposed gate down time during peak hours will increase by almost 67% (with the addition of 4 HSR). These additional trains throughout the day reduce the time available for pedestrians and bicyclists to cross through the at-grade locations in Palo Alto (Churchill, Meadow, Charleston and Palo Alto) crossings. The impact of the proposed project on these crossing connections for pedestrians and bicyclists must be analyzed and mitigated.
15. Impacts TR # 1 through TR #5 identify impacts and delays on intersection operations. As explained on page 3.2.63, the project results in a 334 second increase in delays at Churchill and 187 second increase in delays at West Meadow Drive. This will severely affect signal operations and controls and thus traffic flow in the area. Although under SB 743 vehicle delays are no longer considered a significant impact under CEQA, the delay at these intersections will impact other modes of transportation such as bicyclists, pedestrians, and bus transit. Such impacts to other modes of transportation still require analysis and appropriate mitigation in accordance with CEQA. These impacts have not been properly identified and TR-MM#1 does not adequately address these impacts.
16. Vehicle delays would also result in extensive queueing spilling on to through lanes and may cause the need for additional storage for turning movements. Extensive queueing will create safety hazards near at grade crossings. The intersection geometry at all four at-grade crossings within the City must be studied in order to properly identify potential hazards and these impacts shall be mitigated.
17. With major educational (elementary, middle, high schools, Stanford University), employment centers, and central business districts across the train corridor, the addition of HSR preemptions for at-grade intersections will significantly impact all modes of transit throughout the day, causing impacts on the transportation system. These impacts have not been properly identified; therefore, mitigations measures have similarly not been identified to reduce these impacts.
18. The project proposes a change in the speed of trains from 79 mph to 110 mph. This change will reduce the reaction time for pedestrian, bicycle, and vehicular activities. In addition, this will impact advanced preemption timings for nearby signals. The existing signals in the vicinity, until grade separated, will need to have advanced preemption to ensure that there is adequate queue clearance, pedestrian times, track clearance and signal operation coordination. These impacts are identified generally but are not quantified and clearly explained to address such impacts. The project shall describe how these improvements will be funded and constructed. The City does not support higher speeds of trains running through urbanized area and therefore requests to use Caltrain planned speed limits or speeds that match existing speed of Caltrain service unless grade separation is proposed at crossings.

19. The analysis shall evaluate service options that include HSR operating at the same speed as Caltrain from San Jose to San Francisco and must identify the safety benefits that could be derived by running slower speed trains in an urban environment.
20. Due to additional delay at the intersections near the at-grade crossings, the traffic may be diverted to other parallel residential streets, thus impacting the character of neighborhood and livability of Palo Alto residents. These impacts must be identified and mitigated and shall be studied in accordance to City of Palo Alto Traffic Impact policy on Traffic Infusion and Residential Environment (TIRE) (Attachment B in Exhibit A).
21. Under Impact TR#7, the analysis identifies that the HSR will increase the parking demand on the other Caltrain stations with increased ridership to connect to get onto HSR at other HSR stations. This increase in ridership to get to HSR transit hubs will necessitate additional parking at other existing Caltrain Stations. This must be identified and mitigated in the EIR/EIS.
22. Impact TR# 9 and TR#11 study permanent and continuous impacts on bus transit. However, the Draft EIR/EIS fails to recognize existing transit routes near the corridor that are impacted by project. Alma Avenue, which parallels the HSR tracks in Palo Alto, is a major road used by express bus transit. The intersections along this corridor will experience significant delays at traffic signals adjacent to at-grade crossings, which in turn, will affect express bus service. TR-MM#2 identifies the transit priority for corridors but fails to identify such impacts on Alma Avenue, and therefore fails to provide any mitigation to address this impact.

#### Public Services

23. As discussed on Draft EIR/EIS Page 3.11-60, the reduced availability of crossings will impact emergency response times. The project includes mitigation, which includes the Authority's fair share toward reducing the vehicle response time; however, impacts are still identified as significant and unavoidable. Under CEQA, the analysis must analyze any feasible mitigation or alternatives to address impacts before identifying an impact as significant and unavoidable. An alternative or mitigation that includes grade separation for at-grade crossings must be evaluated to ensure adequate response times. If the Authority does not pursue at-grade crossings as part of an alternative or as mitigation to restore response times, the Authority shall bear the full cost of restoring response times to existing conditions.

#### Historic

24. The proposed project identifies track modifications, including horizontal alignment changes of more than 1 foot and less than 3 feet on the SPRR San Francisquito Creek Bridge, which is located approximately 10 feet west of the Historic El Palo Alto redwood tree. Track work in this location may also require relocation of OCS poles and OCS pole electrical safety zones. The EIR/EIS concludes that the project would not result in modifications to the El Palo Alto redwood, and that impacts would therefore be less than significant without mitigation. However, although the project does not propose direct removal or modifications to the tree, grading or the use of vibratory equipment for track work within 10 feet of the historic tree could result in direct or indirect impacts to the root structure. These impacts must be evaluated and mitigated to ensure that impacts to this historic landmark would remain less than significant.

#### Utilities

25. Impact PUE#2 identifies impacts associated with the relocation or removal of existing major utilities as less than significant without mitigation. However, construction activities that result in vibrations above or immediately adjacent to existing infrastructure could indirectly impact infrastructure. The City of

Palo Alto owns and maintains a wide variety of infrastructure that cross these tracks. The potential for indirect impacts must be identified and mitigation shall be included to require advanced coordination with the City when working in close proximity to its infrastructure as well as to verify, post-construction, that the City's infrastructure has not been damaged.

26. Although the analysis concludes that the Authority and service providers would work to relocate utilities on a long-term basis, the discussion identifies that temporary utility disruptions may occur. Although applicant proposed measures are identified to reduce these impacts and provide notifications to customers, the duration of these outages is unclear. The document needs to more clearly identify the anticipated temporary impacts on utilities, including the likely duration of outages that may be necessary.

#### Trees and Vegetation

27. The proposed project plans appear to show that new walls or fence would be installed up to the edge of the existing right-of-way, with no space planned for planting vegetation screening. It is unclear to what extent existing vegetation along the right-of-way, which currently provides effective screening in some locations, would be retained or replanted. Space needs to be provided for vegetation screening, especially where the rail is within close proximity to sensitive receptors.
28. MM-39 states that mitigation would be provided at no more than a 1:1 ratio unless the City's ordinance provides for stricter ratios. For mitigation within the City, the project would be required to replace trees in accordance with the City's Tree Tech Manual tree value replacement standard, as outlined in the City's Tree Technical Manual, which is codified in Chapter 8 of the City's Municipal Code. The Tree Technical Manual can be found at: <https://tinyurl.com/PA-Tree-Technical-Manual>

We appreciate the opportunity to comment and look forward to reviewing the Final EIR/EIS, including responses to the City's comments. Should you have any questions regarding this letter, please contact Philip Kamhi at (650) 329-2500 or via e-mail at [Philip.Kamhi@cityofpaloalto.org](mailto:Philip.Kamhi@cityofpaloalto.org)

Sincerely,



Ed Shikada  
City Manager

#### Attachments:

Exhibit A: Local transportation Impact Analysis Policy

#### CC:

Palo Alto City Council Members  
Expanded Community Advisory Panel  
Palo Alto Planning and Transportation Commission  
Palo Alto Pedestrian and Bicycle Advisory Committee  
Palo Alto Safe Routes to School Committee



**CITY OF PALO ALTO**  
**LOCAL TRANSPORTATION IMPACT ANALYSIS POLICY**

Senate Bill (SB) 743, adopted in 2013, required the Governor’s Office of Planning and Research (OPR) to prepare amendments to the CEQA Guidelines with respect to the analysis of potential transportation effects to provide an alternative metric to traffic congestion and delay at intersections (often referred to as Level of Service (LOS)). After five years of analysis and outreach, in December 2018, the California Natural Resources Agency approved OPR’s proposed amendments to the CEQA Guidelines requiring agencies to use vehicle miles traveled (VMT) generated by a project as the metric for transportation impact analyses under CEQA effective July 1, 2020. Under SB 743 and the revised CEQA Guidelines, LOS may no longer be used to determine whether a project may have a significant environmental impact to transportation and traffic under CEQA.

While statewide implementation of VMT analysis to replace LOS analysis is required under CEQA, SB 743 did not require changes to transportation analyses outside of CEQA, including the evaluation of regionally significant intersections under the Congestion Management Program (CMP) under a separate state law. Nor did SB 743 affect the discretion of public agencies to assess impacts on local streets and intersections for compliance with adopted plans and policies. As such, in conformance with Policy T-2.3 and Program T-2.3.1 of the City’s [Comprehensive Plan 2030](#),<sup>1</sup> LOS standards are adopted through this policy to analyze potential local transportation impacts of projects in Palo Alto.

**I. Purpose**

The purpose of this Policy is to ensure consistency in reviewing and identifying transportation effects of proposed development projects for local intersections and facilities and to determine standards for necessary remediation measures.

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<sup>1</sup> Comprehensive Plan Policy T-2.3: Use motor vehicle LOS at signalized intersections to evaluate the potential impact of proposed projects, including contributions to cumulative congestion. Use signal warrants and other metrics to evaluate impacts at unsignalized intersections.

Program T-2.3.1: When adopting new CEQA significance thresholds for VMT for compliance with SB 743 (2013), adopt standards for vehicular LOS analysis for use in evaluating the consistency of a proposed project with the Comprehensive Plan, and also explore desired standards for MMLOS, which includes motor vehicle LOS, at signalized intersections.

Policy T-2.4: Consistent with the principles of Complete Streets adopted by the City, work to achieve and maintain acceptable levels of service for transit vehicles, bicyclists, pedestrians and automobiles on roads in Palo Alto, while maintaining the ability to customize to the Palo Alto context.

Policy T-3.3: Avoid major increases in single-occupant vehicle capacity when constructing or modifying roadways unless needed to remedy severe congestion or critical neighborhood traffic problems. Where capacity is increased, balance the needs of motor vehicles with those of pedestrians and bicyclists

**II. Level of Service (LOS) Analysis**

LOS is the measurement of delay at intersections used to determine whether a project is consistent with the City’s Comprehensive Plan and this Policy LOS is based on the Highway Capacity Manual (HCM) methodology where a letter grade is assigned to an intersection operation based on the amount of delay motorists experience in traveling through the intersection. Table 1 below shows the comparison in LOS depending on whether the intersection is signalized or not.

*Table 1: Level of Service Delay – Signalized vs. Non-Signalized Intersections*

Level of Service Grade	Description	Signalized Average Delay (Sec)	Unsignalized Average Delay (Sec)
A	Signal Progression is extremely favorable. Little or no traffic delay.	10.0 or less	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. Short traffic delays.	10.1 to 20.0	10.1 to 15.0
C	Higher delays may result from fair signal progression. Average traffic delays.	20.1 to 35.0	15.1 to 25.0
D	Congestion becomes noticeable. Long traffic delays.	35.1 to 55.0	25.1 to 35.0
E	Considered the limit of acceptable delay.	55.1 to 80.0	35.1 to 50.0
F	Level of delay is considered unacceptable by most drivers. Extreme traffic delays.	Greater than 80.0	Greater than 50.0

Source: Transportation Research Board, Highway Capacity Manual 2010

**III. Standards for Determining Transportation Analysis**

1. ~~Within the CMP System~~ [Regional CMP Analysis](#)

Traffic Impact Analysis (TIA) reports vary in scope depending on the use of the report and size of the project.

Under the purview of the California Congestion Management Program (CMP) Statute, Palo Alto must follow the methodologies presented in the [VTA Transportation Impact Analysis Guidelines for intersections within the CMP system](#), to evaluate transportation effects and submit a full TIA report of all development projects that are expected to generate 100 or more net new weekday (AM or PM peak hour) or weekend peak hour trips, including both inbound and outbound trips.

CMP intersections within Palo Alto are listed below. A map of all CMP intersections can be found in Attachment A.

- i. Middlefield Rd./Oregon Exp.
- ii. Middlefield Rd./San Antonio Rd.
- iii. El Camino Real/University Ave./Palm Dr.
- iv. El Camino Real/ Sand Hill Rd./Palo Alto Ave.
- v. El Camino Real/Embarcadero Rd.
- vi. El Camino Real/Page Mill Rd.
- vii. El Camino Real/Arastradero Rd./Charleston Rd.
- viii. Foothill Exp./Junipero Serra Blvd./Page Mill Rd.
- ix. Foothill Exp./Arastradero Rd.
- x. San Antonio Rd./Charleston Rd.

## 2. Outside the CMP System Local Analysis

The City requires a Local Transportation Analysis (LTA) report for any project that is expected to generate 50 or more net new weekday (AM or PM peak hour) trips, including both inbound and outbound trips, prior to any reductions assumed for Transportation Demand Management (TDM) measures. The City may also require a LTA if in its reasonable judgement a project will potentially cause a deficiency in the operation of local intersections. A LTA report must include the following:

- i. Project description;
- ii. Existing conditions;
- iii. Site access and circulation;
- iv. Vehicle trip generation (weekday AM and PM peak);
- v. Vehicle trip distribution;
- ~~vi.~~ vi. LOS analysis for selected study intersections; and
- ~~vi.~~ vii. Remediation measures (if proposed)

Depending on the size and layout of the project, additional elements listed below may be required by the City to include in the LTA report.

- i. Traffic Infusion on Residential Environments (TIRE) Analysis is an analysis of new potential traffic disturbances along a local residential streets created by a project as described in the Attachment B. When a proposed development project is expected to add 10 or more peak hour vehicles per any direction to a local residential street that is not on a project's direct route to collector or arterial streets, the project is required to submit a TIRE analysis.
- ii. Queuing Analysis that identifies queues spilling beyond their current storage bays. Improvements may include lengthening storage bays to meet projected

demand or roadway capacity improvements to add additional turn pockets at an intersection. The City typically takes the lead in identifying potential capacity improvements to help facilities site design.

- iii. Transit Analysis for projects located along a key transit route, such as El Camino Real, a focused analysis in partnership with the VTA or other transit operators is provided to determine if off-site improvement of a project should consider additional parking stop improvements such as shelters or bus duck-outs.
- iv. Bicycle and Pedestrian Circulation Study is an analysis of how the site operations may affect bicycle and pedestrian operations. Where appropriate, if a project is located along a major bicycle route in the City's [Bicycle & Pedestrian Transportation Plan](#), the project may be required to help implement a portion of the recommended facility. Additional improvements may include limiting driveway curb-cuts to minimize conflicts with pedestrians or provision of enhanced crosswalk facilities.
- v. Parking Analysis is a study to determine location, use, and adequacy of the proposed parking facility. Projects should include a parking analysis under the following conditions:
  - a. Change in the facilities' existing design or supply; or
  - b. Change in the existing parking management; or
  - c. Propose parking less than that required by the Palo Alto Municipal Code 18.52 (<https://tinyurl.com/PA-Municipal-Code>); or
  - d. Use of parking adjustments by the Director as defined in the Palo Alto Municipal Code 18.52 (<https://tinyurl.com/PA-Municipal-Code>).

When a proposed project requests a parking reduction or exception as allowed under the Municipal Code, a robust Transportation Demand Management (TDM) Plan is typically required independent of the LTA. For projects in a Parking Assessment District, required payment of assessments to the District will be noted in the LTA report and included in the project's conditions of approval.

A project will provide an analysis of one or more of the above elements if the project is expected to substantially affect the identified local facilities, even if the anticipated number of new vehicle trips would not require a LOS analysis.

#### **IV. Local Transportation Impacts – Standards for Determining Transportation Consistency**

##### **1. Level of Service Standard**

The City of Palo Alto's Level of Service (LOS) standard is D, which is more conservative than the CMP LOS standard of E. If the LTA shows that a development project is anticipated to cause a transportation facility (intersection or roadway) to degrade below LOS D to LOS E or F, then the project will be deemed inconsistent with this Policy.

For a transportation facility determined to have been at LOS E or F under existing and background conditions without the project, a project is said to have significant local impact if the LTA shows that the project will cause LOS to deteriorate by the following amounts:

- i. Addition of project traffic increases the average delay for critical movements by four or more seconds; or
- ii. Addition of project traffic increases the critical Volume/Capacity (V/C) value by 0.01 or more; or
- iii. Affects a freeway segment or ramp to operate at LOS F or project traffic increases freeway capacity by one or more percent.

##### **2. Selection of Study Intersections or Roadways**

An intersection should be included in the LTA if it meets any one of the following conditions:

- i. Proposed development project is expected to add 10 or more peak hour vehicles per any lane to any intersection movement; or
- ii. The intersection is adjacent to the project; or
- iii. Based on engineering judgement, City staff determines that the intersection should be included in the analysis.

Additionally, a roadway segment should be included in the LTA with a TIRE analysis if a proposed development project is expected to add 10 or more peak hour vehicles per any direction to a local residential street. More details on the TIRE analysis are available in Attachment B.

### 3. CMP Intersection Standard

A CMP intersection must adhere to the standards set by the Congestion Management Agency<sup>2</sup> (currently LOS E), as set forth in the [VTA Transportation Impact Analysis Guidelines](#). The City's standard of LOS D would apply for determining local level impacts.. Any transportation impact triggered by VTA's standard for CMP intersections would need to be addressed following guidelines established by VTA. More information regarding mitigation measures and Multimodal Improvement Plans (MIP) are available in the VTA Guidelines for TIAs and Deficiency Plans.

### 4. Auto Level of Service Analysis at Unsignalized Intersections

For all-way stop control, the LOS is based on the average delay. For 1- or 2-way stop control, the LOS should be based on the critical approach movement. The above standards for determining transportation consistency remain appropriate only if traffic volumes satisfy the peak hour traffic signal warrant. Meeting a peak hour traffic signal warrant does not automatically make a traffic signal an appropriate remediation measure.

### 5. Other Transportation Impacts

Depending on the size and layout of the project, a LTA may require analysis to evaluate other project-related effects on the transportation system. The following is a list of elements that are considered to have project-related local impacts:

- i. Result in noticeable traffic effects on local residential streets defined as an increase of 0.1 or more using the TIRE methodology.
- ii. Impede the development or function of existing or planned pedestrian or bicycle facilities.
- iii. Increase demand for pedestrian or bicycle facilities that cannot be met by existing or planned facilities.
- iv. Impede the operation of a transit system as a result of increased traffic congestion.
- v. Create demand for transit services that cannot be met by current or planned services.
- vi. Create the potential demand for cut-through traffic or redistribution of traffic to use local residential streets, based on the TIRE methodology described above.
- vii. Create an operational safety hazard.
- viii. Result in inadequate emergency access.

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<sup>2</sup> The Santa Clara Valley Transportation Authority (VTA) is the Congestion Management Agency (CMA) for Santa Clara County.

## V. Remediation Measures

All Local Transportation Impacts under Section VI of this Policy must be addressed through the project's adoption or use of appropriate local remediation measures, including funding their associated costs. The LTA must include proposed remediation measures and identify any potential impacts of such measures. Remediation measures shall reduce the project-related local impacts to a level without the proposed project, and should not themselves create potentially significant CEQA impacts. These remediation measures will be incorporated in the project conditions of approval and not as part of the CEQA analysis. The following is a list of potential remediation methods in priority order:

1. Projects and programs that reduce a project's vehicle trip generation, including, but not limited to Transportation Demand Management (TDM) programs, capital improvements to transit, bicycle, and pedestrian facility enhancements within an influential project area.<sup>3</sup> The following is a non-exhaustive list of potential remediation methods:
  - i. Provide new or upgrade existing access to, from, and through the project for pedestrians and bicyclists.
  - ii. Provide improvements to transit facilities or services.
  - iii. Implement TDM programs such as flexible at-place working hours, telecommuting, carpools, shuttles, transit passes, parking cash-out, among others.
2. Multimodal operational or facility improvements including intersection operational efficiency treatments. Proposed improvements or treatments with geometric changes to an intersection are limited to features that would not likely lead to substantial or measurable increase in vehicle travel.
3. If project impacts cannot be remediated through methods 1 and 2 above, a fair share of the cost for multimodal network remediation shall be contributed to the City's transportation improvement funds.

While the remediation measures in method 1, above, should be proposed within an influential project area, methods 2 and 3 may apply outside the area. However, these proposed improvements should substantially contribute to the City's Comprehensive Plan goals in expanding the City's multimodal transportation system. By implementing or funding these types of improvements, the project would therefore be consistent with the Comprehensive Plan and this Policy.

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<sup>3</sup> Area of influence of a project is defined as up to half-mile for pedestrian facilities and up to three miles for bicycle facilities, or bicycle facilities that provide a connection to the local or regional bicycle network.

### Unacceptable Measures

In addition, remediation measures that will result in a physical reduction in the capacity and/or deterioration in the quality of any existing or planned transportation facilities are unacceptable. The following is a list of remediation methods that would be considered generally unacceptable without special justification, but are not limited to:

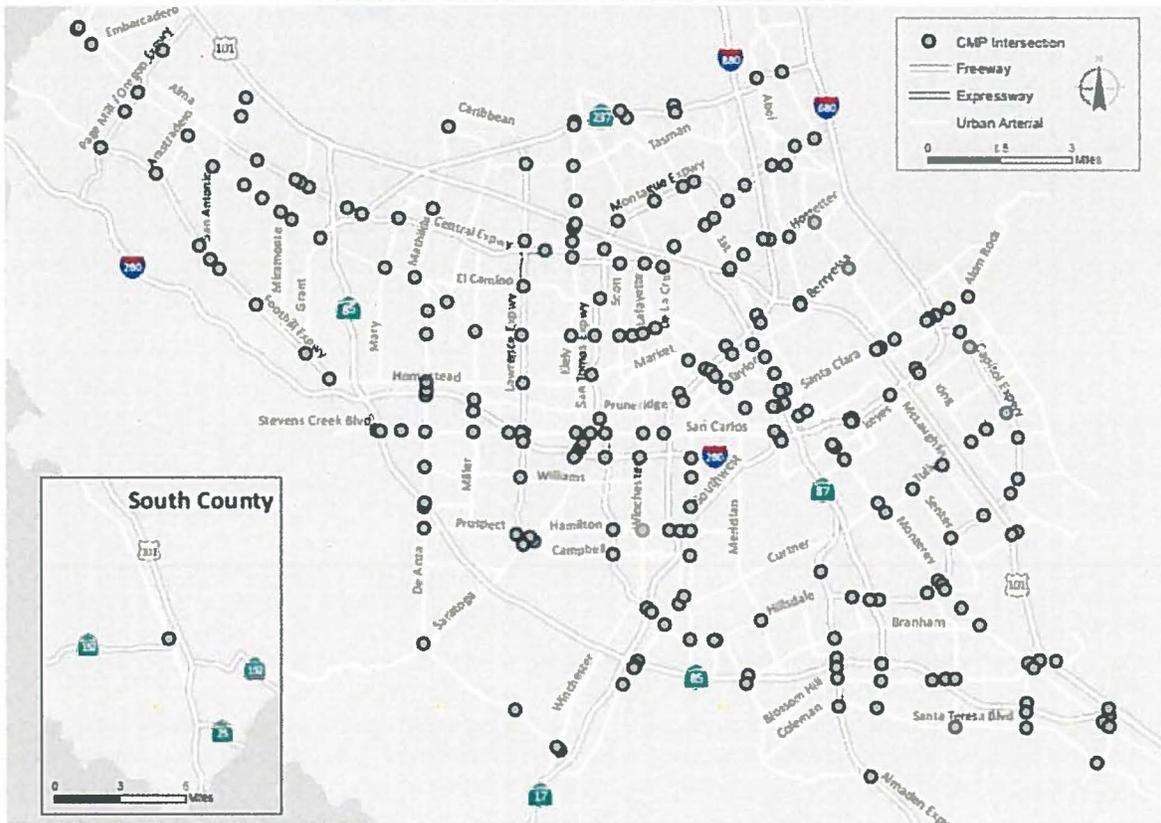
1. Roadway widening not directly related to site access and circulation, or specific conditions that reduce local impacts as a result of the project.
2. Negatively affecting a sidewalk or reducing the width of a sidewalk without substantial improvement to the overall pedestrian circulation.
3. Maintaining an existing sidewalk in the immediate vicinity that is below the current city standard.
4. Negatively affecting existing bicycle infrastructure or reducing the length of a bicycle infrastructure.
5. Maintaining existing bicycle infrastructure that is below the current city standard.
6. Eliminating a bus stop without adequate replacement or improvement to the system.
7. Encouraging neighborhood cut-through traffic (intrusion effects along local residential streets).

#### **VI. Authority to Adopt Guidelines**

The Chief Transportation Official is authorized to adopt guidelines to implement this Policy.



ATTACHMENT A  
CONGESTION MANAGEMENT PROGRAM INTERSECTIONS



Source: Santa Clara Valley Transportation Authority Congestion Management Program Document 2017

**ATTACHMENT B****CITY OF PALO ALTO – TRAFFIC INFUSION ON RESIDENTIAL ENVIRONMENTS (TIRE) ANALYSIS**

Excessive vehicular speed and traffic volume on residential streets pose a major threat to quality of life. Most Palo Alto streets are bordered by residential uses, and it is the City's priority to preserve local neighborhood characteristics. Additionally, the City has designated some streets as residential arterials to recognize that they carry large traffic volumes of through-traffic but also have residential uses on both sides of the streets. The objective of this analysis is to address the desires of residents of these streets who prefer slower vehicular speeds and to determine if implementation of a project would cause a substantial change in the character of these streets.

The City of Palo Alto uses the Traffic Infusion on Residential Environments (TIRE) methodology to estimate residential perception of traffic effects based on anticipated average daily traffic growth. Although not required under the California Environmental Quality Act (CEQA) or pursuant to the Santa Clara Valley Transportation Authority (VTA) guidelines, this methodology intends to determine new potential traffic disturbances – cut-through traffic (*intrusion effects*) and direct traffic (*infusion effects*) – along local residential streets due to a proposed development project.

For projects on a local residential street, new traffic disturbances along that specific street will likely be unavoidable. Thus, the potential infusion effects generated along a specific local residential street of which a project is proposed will be used only for informational purposes. A map of Palo Alto's local residential streets can be found in Map 1 in this attachment.

The City aims to reduce potential adverse *intrusion effects* along local residential streets. Significant amount of vehicle intrusion on these streets may need to be addressed through traffic management strategies.

**Traffic Infusion on Residential Environments (TIRE) Index**

The TIRE methodology assigns a numerical value to "residents' perception of traffic effects on activities such as walking, bicycling, and maneuvering out of a driveway on local residential streets." The TIRE index scale ranges from 0 to 5 depending on daily traffic volume. An index of 0 represents the least traffic disturbances and 5 the greatest, and thereby, the poorest residential environment. Streets with a TIRE index of 3 and above are considered to function primarily as a traffic street and exhibit an impaired residential environment. Therefore, streets with a TIRE index below 3 are better suited for residential activities.

Any projected change in the TIRE index of 0.1 or less is considered to have no noticeable effects. A change of 0.1 would be barely noticeable, and a change of 0.2 or greater would be noticeable. The TIRE Index can be found in Table 1 in this attachment.

**I. Standards for Determining Analysis**

A proposed development project expecting to add 10 or more peak hour vehicles per any direction to a local residential street.

**II. Selection and Data Collection of Roadway Segments**

Roadway segments should be included in the LTA if a proposed development project is expected to add 10 or more peak hour vehicles per any direction to a local residential street. Data collected under the TIRE methodology must be supported by 24-hour weekday traffic counts.

For projects on a local residential street including both single- or multi-family, as defined in the City's Comprehensive Plan 2030, the TIRE analysis must include the following:

1. Direct routes to the project;
2. Immediate connections to a project's direct collector or arterial streets; and
3. Based on engineering judgement, City staff determines what roadway segments should be included in the analysis.

A Palo Alto land use map can be found in Map 2 in this attachment.

**III. Standards for Determining Noticeable Effect**

Projected change in the TIRE index of 0.1 or more under existing and background conditions, is considered to cause noticeable effects on the character of local residential streets. These traffic effects may need to be addressed through traffic management strategies.

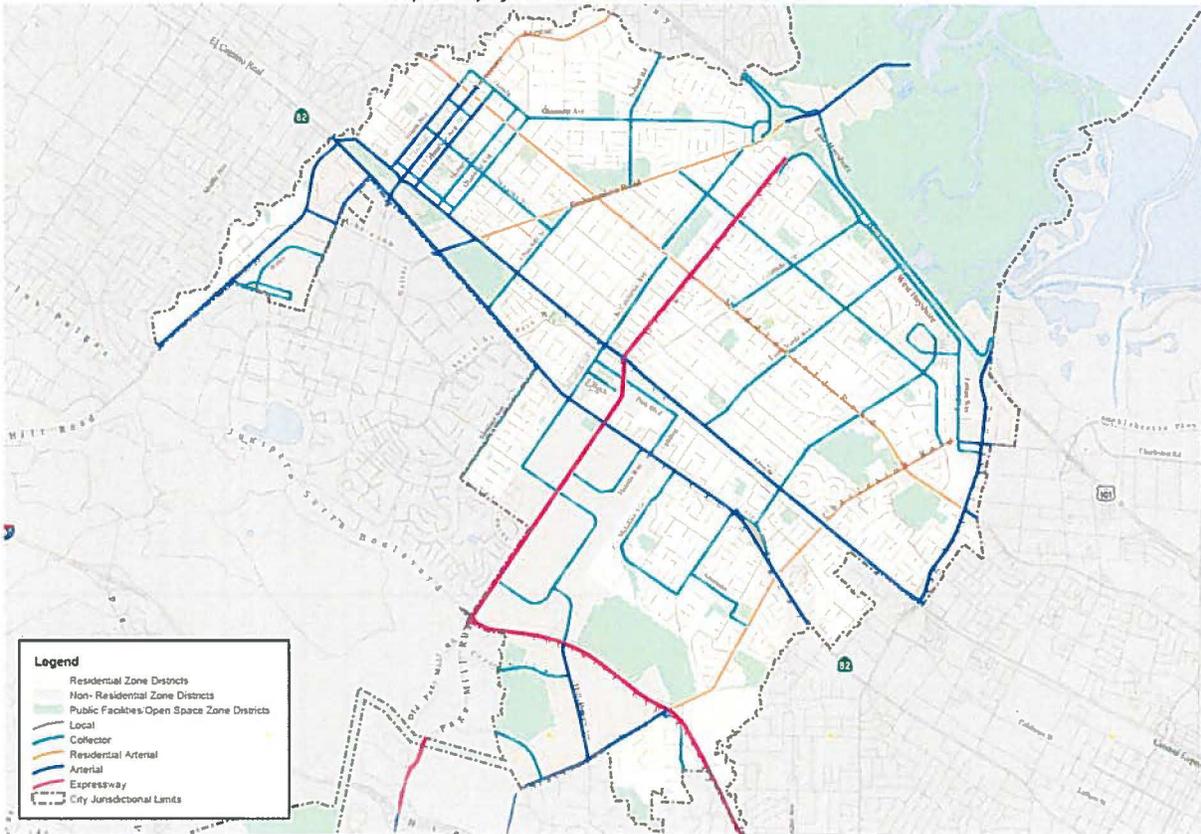
*Table 1: Traffic Infusion on Residential Environments (TIRE) Index*

<b>TIRE Index</b>	<b>Existing Daily Traffic Volume</b>	<b>Volume to Cause +0.1 Change in TIRE Index</b>	<b>Volume to Cause +0.2 Change in TIRE Index</b>	<b>Volume Description</b>
1.5	29-35	6	15	Low
1.6	36-44	8	20	
1.7	45-56	10	25	
1.8	57-70	13	32	
1.9	71-89	17	41	
2.0	90-110	22	52	Moderate
2.1	111-140	29	65	
2.2	141-180	40	80	
2.3	181-220	52	100	
2.4	221-280	65	125	
2.5	281-350	79	160	
2.6	351-450	94	205	
2.7	451-560	114	260	
2.8	561-710	140	330	
2.9	711-890	170	415	
3.0	891-1,100	220	520	High
3.1	1,101-1,400	290	650	
3.2	1,401-1,800	380	800	
3.3	1,801-2,200	500	1,000	
3.4	2,201-2,800	650	1,300	
3.5	2,801-3,500	825	1,700	
3.6	3,501-4,500	1,025	2,200	
3.7	4,501-5,600	1,250	2,800	
3.8	5,601-7,100	1,500	3,500	
3.9	7,101-8,900	1,800	4,300	
4.0	8,901-11,000	2,300	5,300	Very High
4.1	11,001-14,000	3,000	6,500	
4.2	14,001-18,000	4,000	8,000	
4.3	18,001-22,000	5,200	10,000	
4.4	22,001-28,000	6,600	13,000	
4.5	28,001-35,000	8,200	17,000	
4.6	35,001-45,000	10,000	22,000	
4.7	45,001-56,000	12,200	28,000	
4.8	56,001-71,000	14,800	35,000	
4.9	71,001-89,000	18,000	43,000	

Source: Goodrich Traffic Group

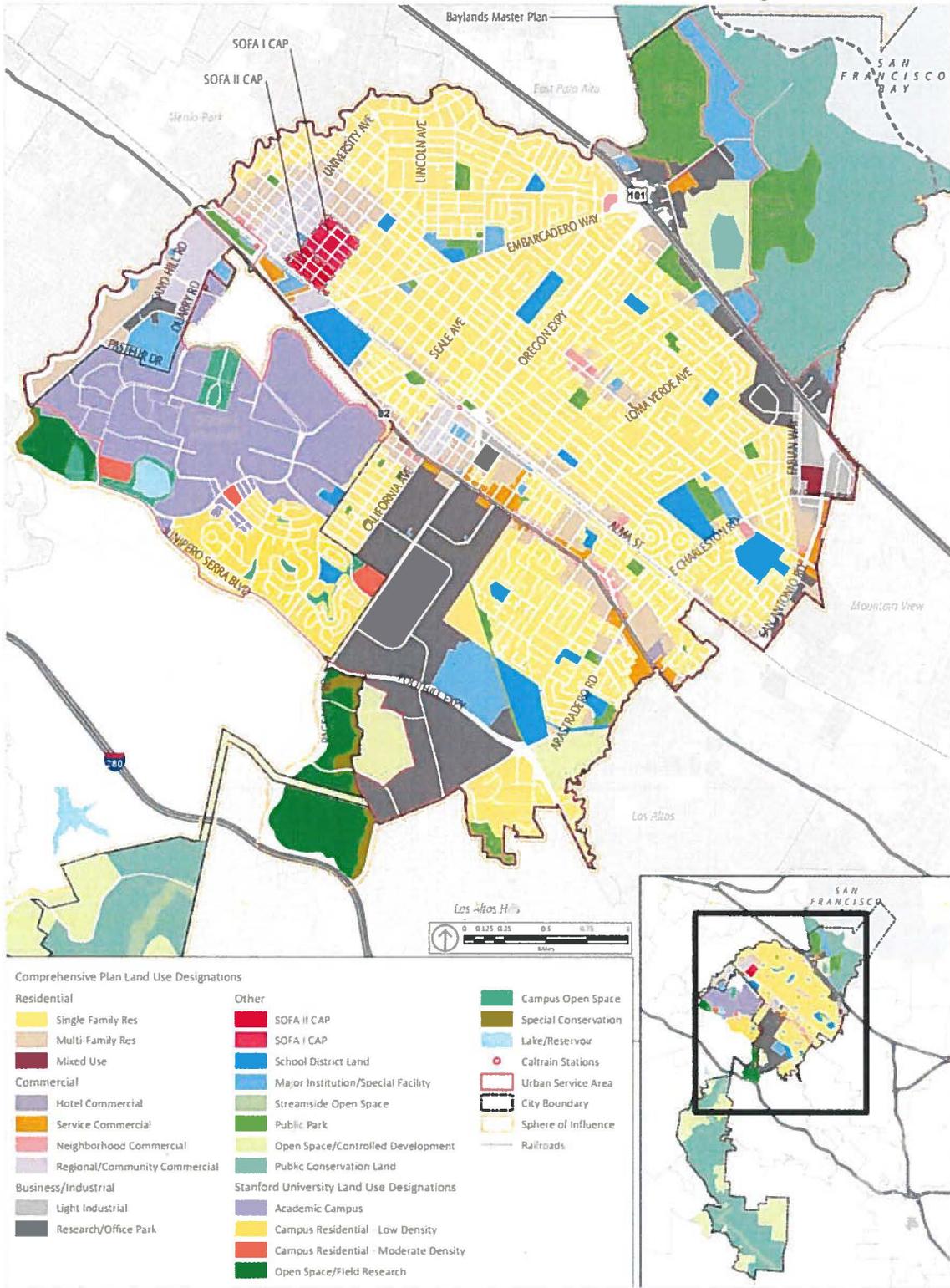


Map 1 City of Palo Alto Local Residential Streets



Source: City of Palo Alto Comprehensive Plan 2030

Map 2: City of Palo Alto Comprehensive Plan 2030 Land Use Designations



Source: City of Palo Alto Comprehensive Plan 2030