DATE: April 4, 2013

AGENDA ITEM # 5

TO: Planning and Transportation Commission

FROM: Cedric Novenario, Transportation Project Manager

SUBJECT: Traffic Impact Analysis

RECOMMENDATION:

Receive presentation regarding Traffic Impact Analysis

BACKGROUND

Traffic Impact Analysis (TIA) reports are prepared to ensure that new development projects comply with all applicable transportation policies and regulations. The TIA will identify the impact of the proposed development on the surrounding transportation network, as well as the specific development impacts and any required mitigation measures.

Typically, TIA's are prepared by a traffic consultant hired by the applicant. City staff, working closely with the consultant, identify intersections to be studied and provide available existing and background information. Upon submittal of the completed traffic report, staff will review the consultant's analysis to ensure compliance with the city's level-of-service (LOS) policy, any unique transportation characteristics to that area and/or policies. A TIA may become part of an environmental documentation if a project requires environmental review.

DISCUSSION

Currently, the City requires that a Traffic Impact Analysis be prepared for any project that generates 50 or more traffic trips per day. This requirement is a comparatively low threshold to require TIA's. Accepted traffic engineering standards anticipate that a single home, for example, generates 10 trips per day – so a five lot residential subdivision would require a Traffic Impact Analysis. Traffic Impact Analyses include; a) existing traffic on the affected streets, b) anticipated increased traffic within the vicinity of the particular project as a result of other pending projects in the area, and c) the amount of traffic anticipated to be generated by the subject project. The Institute of Transportation Engineers Trip Generation publication provides accepted traffic trips generated by different types of land uses, and is commonly used for projects that are easily defined such as housing or offices.

Traffic Impact Analyses then take that information and apply it to affected controlled intersections to measure their Level-of-Service. Level-of-Service measurements are the accepted traffic engineering method to measure traffic impacts. Los Altos' General Plan uses an LOS of D or better as the City's standard. Level of Service A represents free flow operations with little or no delay, LOS E represents conditions at capacity, and LOS F represents oversaturated conditions. Any project that would either lower an intersection from an LOS of D, or that would have a measurable effect on an intersection with an LOS of E or F, would be considered to have a significant effect on the environment pursuant to the terms of the California Environmental Quality Act. A project that created a significant environmental impact cannot be approved unless the approving authority adopts a Statement of Overriding Consideration. This is typically done for projects where the community benefit is greater than the impact created, such as public schools or recreational facilities.

Section C8 of the Circulation Element of the Los Altos General Plan establishes the criteria for development traffic impact analysis.

Traffic Infusion on Residential Environments (TIRE) Index

Another qualitative traffic metric that has been published for some time is the Traffic Infusion on Residential Environments index. The TIRE index is an additional piece of information to use when evaluating a project, it does not in itself provide a threshold standard for denying a project or requiring mitigation measures.

The TIRE index is a measure of the impact of traffic on residents along a street. The TIRE index scale ranges from 0 to 5 depending on daily traffic volume. An index of 0 represents the least infusion of traffic and 5 the greatest, and thereby, the poorest residential environment. Typical street types associated with the various index levels are shown on the TIRE index chart.

TIRE INDEX CHART

TIRE Index	Daily Traffic Volume	Residential Environment Typical of
0	1	A cul-de-sac street with one home.
1	10	A cul-de-sac street with 2 to 15 homes.
2	100	A 2-lane minor street.
3	1,000	A 2-lane collector or arterial street.
4	10,000	A 2 to 6-lane arterial street
5	100,000	

The TIRE index is based on the theory that a given increase in traffic volume has a greater impact on residential environment along a residential street with a low traffic volume than along a street with a high pre-existing volume. TIRE effects are separate from noise and air pollution impacts. TIRE represents the effect of traffic on the safety and comfort of human activities, such as walking, cycling, and playing on or near a street and on the freedom to maneuver vehicles in and out of residential driveways.

The TIRE Index Table gives values associated with various daily traffic volume ranges. A street with a TIRE value of three or greater is considered to function primarily as a traffic street and exhibit significantly impaired residential environment. The projected difference between a pre and post project TIRE value in the predicted impact of the project on residential environment. Any projected change of 0.1 or greater would be noticeable to residents.

The index has its shortcomings, and is not widely used as a result. One, it measures the *change* in traffic intensity, so if you have a cul-de-sac with four homes on it and two new homes were added the TIRE index would be high. And this leads to its prominent shortcoming – what do you do with this information once you have it? Still, Los Altos began incorporating a TIRE index analysis with Traffic Impact Analyses in 2005 to help express neighborhood traffic impacts as a result of new construction. The City continues to rely on intersection LOS analyses to define significant traffic impacts pursuant to the terms of the California Environmental Quality Act and the Los Altos General Plan.

Summary

To summarize, when TIA's are required, the City requests the following for new developments:

- The a.m. and p.m. peak period trips and the average daily net trip increases generated by the new development.
- The impact of any net trip increases on nearby roadways and intersection Level-of-Service.
- The anticipated number of trips which may cut through residential neighborhoods during the a.m. and p.m. peak periods due to work commutes or school trips, and the noticeable effect of any increased trips pursuant to the TIRE methodology.
- An assessment of the site circulation.

Attachments

A. Traffic Impact Analysis Presentation

Traffic Impact Analyses (TIAs) in Los Altos

A Primer

Why do we do TIAs?

- As input to evaluating proposed land use or street system changes
  - How well does traffic flow now?
  - How well will it flow if the proposed change is approved?
- City and County guidelines require an analysis
- The California Environmental Quality Act (CEQA) requires disclosure of potential significant impacts

How do we do TIAs?

- With inputs and procedures that are as objective as possible
  - Describe the existing conditions using standard terminology as adopted in City or County guidelines
  - Trip generation estimates based on standard, published databases
  - Trip distribution assumptions based on observation of similar nearby land uses or adopted traffic models
  - Evaluate impacts based on adopted guidelines

What comprises a typical TIA?

- Almost all TIAs study the operation of nearby signalized intersections
- Study scenarios usually include:
  - Existing conditions (what's it like now?)
  - Existing + Approved Projects (there is another nearby project that has already been approved but not yet built. What will operation be like once that one is in place?)
  - Existing + AP + Project

What else might a TIA study?

- Future year operations, eg, General Plan buildout
- Other travel modes, eg bicycle, pedestrian, transit, carpool, equestrian, safety (accident risk), neighborhood environment
- Important consideration – a uniform set of requirements avoids wasted time and potential claims

What guidelines has City adopted?

- The City General Plan Circulation element includes:
  - A requirement to do a TIA for all new projects that generate 50 or more daily trips
  - Establishes Level of Service D as cutoff of acceptable operations for signalized intersections
  - Establishes nexus to mitigate if LOS standard is exceeded
  - May establish LOS D as cutoff of acceptable operations for overall unsignalized intersection operation

Current City guidelines (cont'd)

- The City General Plan has some TIA guidelines in the Circulation Element:
  - Presents a bicycle route map and establishes a path to build out all routes through road improvement projects
  - Presents a pedestrian circulation map and establishes a path to build out all routes through road maintenance and improvement projects
- City staff have been requesting a neighborhood analysis via the Traffic Infusion in the Residential Environment since 2005. (Disclosure only - no nexus provided in General Plan)

What guidelines has County adopted?

- The Santa Clara Valley Transportation Authority publishes the *Transporation Impact Analysis Guidelines* (2007)
  - TIAs required for projects that generate 100 or more net new peak hour trips (roughly equivalent to 1,000 daily trips)
  - Establishes method to select study intersections
  - Requires study of freeway segments
  - Requires "near term" conditions analysis (for the year the project is expected to be fully occupied)
  - Requires use of uniform Existing traffic counts when available

County Guidelines (cont'd)

- Requires discussion of transit, bicycle and pedestrian circulation
- Requires inclusion of vehicle reduction strategies
- Provides "bonuses" for projects near transit
- Establishes LOS E as cutoff for CMP intersection operations
- Requires detailed traffic queuing analysis
- Establishes nexus for imposing mitigation measures
- States that member agencies must follow the methodologies presented in this document to prepare TIAs of land use decisions that impact the CMP system