

MEMORANDUM

Date: August 7, 2014

To: East Pleasanton Specific Plan Task Force

Via: Brian Dolan, Director of Community Development

From: Mike Tassano, Deputy Director of Community Development, Transportation

Subject: Overview and preliminary transportation analysis of scenarios discussed at the June 2014 East Pleasanton Specific Plan Task Force Meeting.

SUMMARY:

At the June 5, 2014 East Pleasanton Specific Plan Task Force meeting, several new scenarios were discussed and this discussion raised several questions regarding the City's circulation network and possible impacts (new scenarios include elimination and/or reduction of the El Charro Road extension). A transportation impact analysis (TIA) was completed by Fehr and Peers (January 2014) for the East Pleasanton Specific Plan (EPSP), however, this TIA did not contemplate the proposed new scenarios or the change in the General Plans roadway network that were discussed at the June 5, 2014 meeting.

Unlike the alternatives outlined in the earlier traffic analysis for the East Pleasanton Specific Plan, the scenarios from the June 5, 2014 meeting change the circulation network. The most significant change to the circulation network is the elimination of El Charro Road connections.

This memorandum outlines the new scenarios and provides a summary of anticipated trip generation and distribution and attempts to quantify the impacts of the change to the circulation network.

This report concludes that the elimination of El Charro Road limits the amount of development that may be constructed in the Plan area. Scenarios 2, 3 and 4 are feasible from a transportation level of service perspective. Scenarios 1-A and 1-B generate too many vehicle trips for the existing roadway network and would need to construct El Charro Road to maintain adequate intersection level of service on Santa Rita Road.

NEW SCENARIOS:

The five new scenarios are named: Scenario 1-A, 1-B, 2, 3, 4.

<u>Scenario 1-A</u>	500 single family homes. No El Charro Road connections. Office and Retail in north parcel with access from the north only.
<u>Scenario 1-B</u>	500 single family homes. El Charro Road connects to I-580. Office and Retail located in the north parcel.
<u>Scenario 2</u>	Park concept. No El Charro Road connections. No other new land uses.
<u>Scenario 3</u>	1000 single family homes. Full El Charro Road connection. Office, Retail and Industrial uses are also present.
<u>Scenario 4</u>	1300 single family homes. Full El Charro Road connection. Office, Retail and Industrial uses are also present.

Also included in the analysis for comparison purposes are:

<u>Current Base Plan</u>	This is the Preliminary Draft EPSP land use which includes 1143 single family homes, 616 multi-family homes. Full El Charro Road connections. Office, Retail and Industrial uses.
<u>Existing Zoning</u>	Industrial land use currently allowed by the City. Total square footage is based on the available industrial land that is inside the Urban Growth Boundary and city limits which is approximately 1.68 million square feet.

TRIP GENERATION:

Table 1 outlines the number of PM peak hour trips anticipated from each scenario based on the number of dwelling units and/or square footage of office/retail/industrial uses. The City of Pleasanton’s General Plan requires that the Level of Service not fall below level of service D. Level of service is measured in terms of vehicle delay and the greatest delay is found during the peak hours, with the PM peak hour having the greatest average delay. While traffic impact studies will also review AM peak hour delay and sometimes Saturday or Sunday delay, for this preliminary analysis, only the PM peak will be summarized. Additional analysis of the AM and potentially weekend delay may be completed if one of the new Scenarios is selected for inclusion in the Environmental Document.

Table 1 - PM Vehicle Trips

		SFH	MFH	Retail	Office	Industrial	City Park	Total trips
Scenario	1-A	505	0	286	386	0	27	1204
Scenario	1-B	505	0	286	386	0	27	1204
Scenario	2	0	0	0	0	0	89	89
Scenario	3	1010	0	341	659	898	18	2926
Scenario	4	1313	0	341	659	898	18	3229
	current base plan	1154	382	341	659	898	18	3453
	existing zoning	0	0	0	0	1429	18	1447

EL CHARRO ROAD IMPACT TO VEHICLE TRIPS

The impacts/benefits of the El Charro Road extension were analyzed as part of the Housing Element Update. The Housing Element Update looked at the benefits of extending El Charro Road in the next 5 years and the analysis showed that the El Charro Road extension did alleviate some of the congestion on Santa Rita Road and Valley Avenue by diverting approximately 250-400 vehicle trips in the PM peak hour off of Santa Rita and Valley and on to El Charro Road (250 in near term and 400 at build out).

Scenario 1-A, Scenario 1-B and Scenario 2 propose changes to the future circulation system that is outlined by the General Plan. All three of these alternatives eliminate the El Charro Road connection to Stanley Boulevard. Scenario 1-A and Scenario 2 also eliminate the extension of El Charro Road from I-580 to Busch Road, illustrations of these 5 Scenarios can be found in Attachment A. The result of the elimination of El Charro Road is similar for all three of these scenarios and yields an additional 250 to 400 non EPSP vehicles that use Valley Avenue and Santa Rita Road.

When evaluating the number of trips generated by these three scenarios, the diversion of trips from Santa Rita Road to El Charro Road needs to be included.

Figure 1 shows three of the predominant travel patterns that contribute to the congestion on Santa Rita Road. These are trips that do not begin or end in the East Pleasanton Specific Plan area. Figure 2 shows how these three travel patterns change when El Charro Road is added to the circulation network. These three patterns are the main routes that make up the 250 to 400 vehicle trips. As volumes increase throughout the Tri-Valley, the volume that use these routes increase. Santa Rita and Valley currently experience about 250 vehicles using these three routes, but by General Plan build out, this volume is predicted to increase to 400 vehicles.

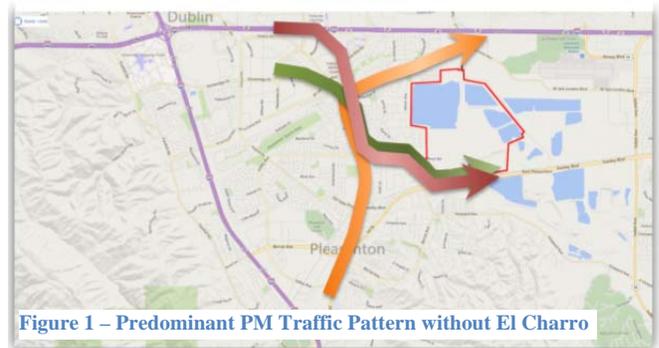


Figure 1 – Predominant PM Traffic Pattern without El Charro

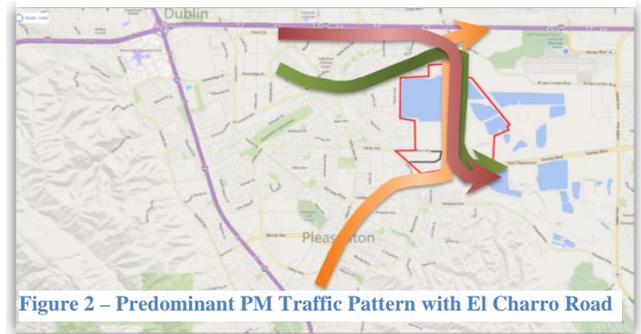


Figure 2 – Predominant PM Traffic Pattern with El Charro Road

TRIP DISTRIBUTION

Each of the new vehicle trips created by a Scenario are assigned routes based on the land use producing the trip and the destination of the trip. Residential, office and industrial trips are all assigned destinations, but the direction and path of the trips differ based on the land use type. For example: Industrial trips are normally regional in nature and have a higher percentage of trips traveling outside the immediate area, whereas many retail trips are more localized and may not use the freeway system or have longer lengths of travel.

The TIA completed by Fehr and Peers (January 2014) for the East Pleasanton Specific Plan used the Pleasanton Traffic Model to determine the way in which trips will be distributed onto the roadway network and maps of those distribution percentages and locations are included at the end of this memorandum (Attachment B) and are used for purposes of distributing trips for the new scenarios. Some of the more critical roadway volumes are shown in the following table. These volumes include the reduction from the extension of El Charro Road.

SCENARIO ANALYSIS

Scenario 1-A (500 single family homes. No El Charro. Office and retail access from the north only)

Using the trip generation shown in Table 1, a total of 1,204 trips would be added to the PM Peak hour traffic volumes for Scenario 1A. These volumes would be distributed based on the maps shown in Figure 3 (distribution percentage maps for each scenario are included in Attachment B).

Figure 3 - Trip Distribution for Scenario 1A



Figure 3 shows the percentages of trips on the primary routes to and from the Plan area by land use type. Using the maps shown in Figure 3, it is identified that 45% of the residential trips use Santa Rita north of Valley Avenue. Also, 10% of the office trips and 5% of the retail trips use this section of roadway. Repeating this exercise for each primary route produces a complete set of traffic volumes for each primary roadway. The Pleasanton primary roadway volumes are shown in Table 2.

Table 2 - Net PM trips on select roadways

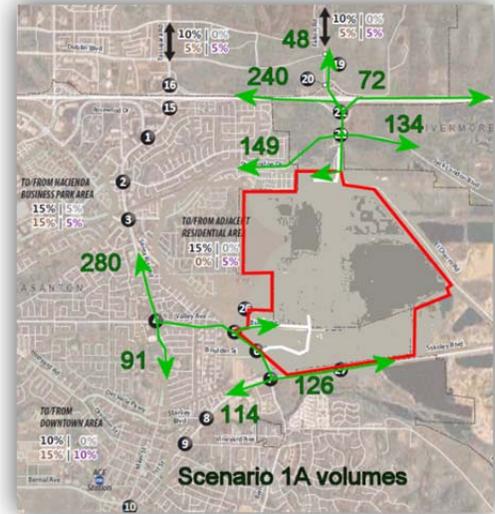
	Santa Rita North	Santa Rita South	Stanley West	Stanley East	West Stoneridge
Scenario 1-A	280	91	114	126	149
Scenario 1-B	126	71	147	51	124
Scenario 2	40	7	20	22	0
Scenario 3	0	1	425	291	215
Scenario 4	19	23	493	321	238
current base plan	58	40	543	343	255
existing zoning	643	0	143	643	0

For Scenario 1-A, all of the vehicle trips produced from the residential development will need to use Valley Avenue via Busch Road and Boulder Street to reach the Specific Plan area. The 22 acre parcel on the north side of the Plan area which contains the office and retail will have access to and from the north.

The trips for this scenario are shown on the image to the right. The 280 total project trips do not include the 250 trips that would remain on Santa Rita Road for this scenario. These 250 trips (the number increases to 400 trips at General Plan build out) should either be added to the 280 vehicles for a total of 530 trips or subtracted from the vehicle trips in the scenarios where El Charro is included.

For purposes of this analysis, the 250 trips are subtracted out of the volumes in the scenarios that contain the full El Charro Road construction.

Santa Rita Road does not have the available capacity to support the additional 371 trips on Santa Rita Road making Scenario 1-A infeasible from a traffic circulation perspective.

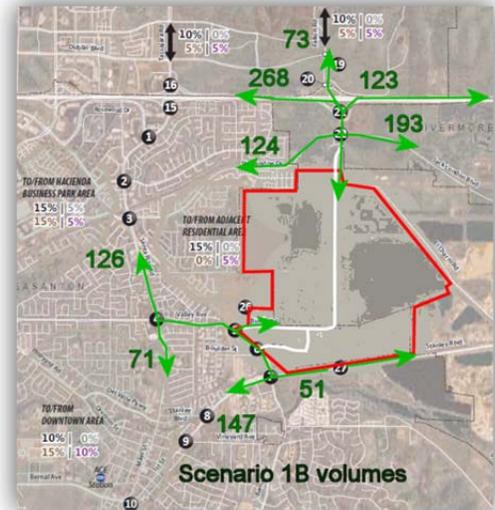


Scenario 1-B (500 single family homes. El Charro built north of Busch Road)

Scenario 1-B contains the identical land use to that of Scenario 1-A, with the only difference is that Scenario 1-B would extend El Charro Road from Stoneridge Drive down to Busch Road.

This connection results in a change in the distribution percentages on the various roadways and results in the reduction of the number of vehicles on Santa Rita Road compared to Scenario 1-A. The 280 vehicle trips that were on Santa Rita north of Valley Avenue in Scenario 1-A is reduced to 126 vehicles in Scenario 1-B. This change in volume is the result of the availability of El Charro Road to provide access to the north.

This partial El Charro construction provides the opportunity for the EPSP land uses to connect directly to the freeway system. It will not, however, provide a change in travel pattern to the existing 250 and potential future 400 vehicles that use or will use Santa Rita Road as a result of not having El Charro Road.



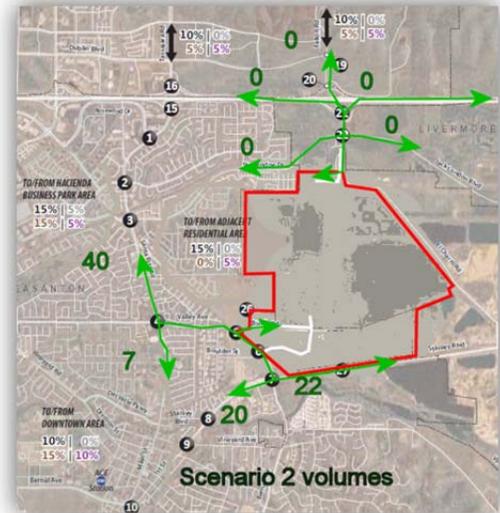
Santa Rita Road does not have the available capacity to support the 197 trips generated from Scenario 1-B making it infeasible from a traffic circulation perspective. The available vehicular volume at General Plan build out for Santa Rita Road is approximately 100-150 vehicles. To make this Scenario feasible, the land uses that produce trips on Santa Rita Road would need to be reduced.

Scenario 2 (Park land use only. No El Charro)

For Scenario 2 all vehicles will need to use Valley Avenue via Busch Road. Scenario 2 has a limited number of trips, and for purposes of this analysis it was assumed that 16 to 20 acres would be designated as a sports complex, which is where the majority of the 89 peak hour trips are generated. These trips were distributed based on the residential trip distribution percentages.

Similar to Scenario 1A, additional trips on Santa Rita will be present as a result of the elimination of El Charro Road.

This Scenario is potentially feasible from a traffic circulation perspective.

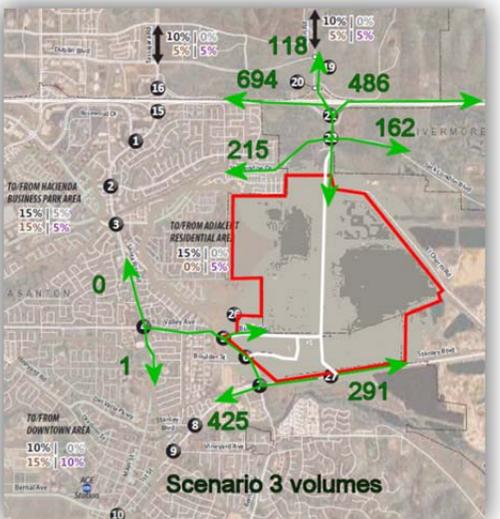


Scenario 3 (1000 single family homes. Full El Charro Road, office retail and industrial uses).

Scenario 3, along with Scenario 4, uses the same circulation network as the Current Base Plan (and the General Plan). This circulation network includes a full 4 lane connection of El Charro Road from Stanley Boulevard through the Plan area to I-580.

The land use for Scenario 3 contains 1000 residential units and a higher square footage of office and retail compared to Scenario 1-A and Scenario 1-B and also includes approximately 1 million square feet of industrial development. The resulting trips, which are shown in Table 1, are approximately 2.5 times the volume of Scenario 1A and 1B.

However, the extension of El Charro Road provides direct access to I-580 and Stanley Boulevard, which together carry 67% of the Scenario 3 trips. While the trip distribution percentage map shows that approximately 18% of the Scenario 3 trips use Santa Rita Road the net change in vehicle trips is zero when the reduction of trips is factored in (El Charro Road extension changes trip patterns reducing the number of vehicles using Santa Rita Road).



The trip volume of 425 vehicles on Stanley Boulevard west would likely be split between Bernal Avenue, Stanley Boulevard and Santa Rita south but is shown as a single point volume for comparison purposes.

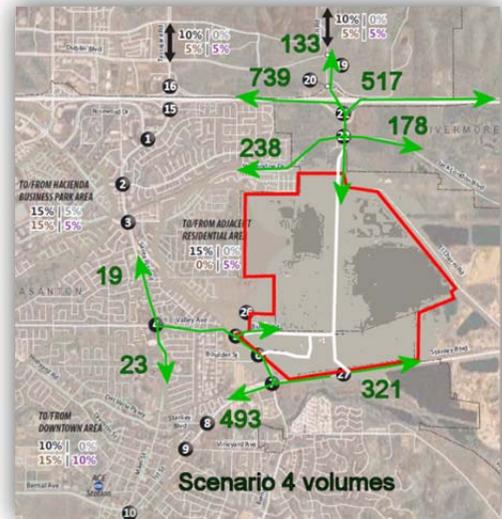
This Scenario is feasible from a traffic circulation perspective.

Scenario 4 (1300 single family homes. Full El Charro Road, office retail and industrial uses).

Scenario 4 is identical to Scenario 3 with the exception of an additional 300 residential units to the Plan area.

The Scenario 4 Volume Map shows to the right shows a slight increase to the roadway volumes when comparing to Scenario 3.

This Scenario is feasible from a traffic circulation perspective.



Current Base Plan (1143 single family homes, 616 multi-family homes. Full El Charro Road, office retail and industrial uses).

The Current Base Plan is similar to both Scenario 3 and 4. The circulation network is the same as is the retail, office and industrial square footage. The only change is to the number and type of residential units. In the Current Base Plan there are 616 multi-family units and 1,143 single family units for a total residential number of 1,759 units.

Although the trip distribution between single family and multi-family homes is the same, the number of trips generated from a multi-family home are lower than that of a single family home and as a result the additional 459 units in the Current Base Plan (compared to Scenario 4’s 1300 units) have a slightly lesser effect to trip volumes than if they were all single family homes.

This Scenario is feasible from a traffic circulation perspective, although the Plan does produce trips equal to the 100-150 vehicle maximum on Santa Rita Road.

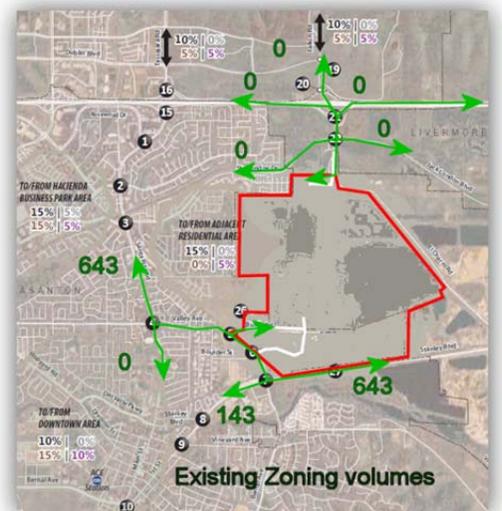


Existing Zoning (1.68 million square feet industrial. No El Charro).

The existing zoning is estimated to have almost 1.7 million square feet of industrial.

The majority of industrial trips are regional in nature and will be made by trucks. El Charro is not assumed to be constructed with this zoning and these trips will need to use Santa Rita Road or Stanley Boulevard east to reach their destinations.

This Scenario is infeasible from a traffic circulation perspective



CONCLUSION

The most significant change between any of the scenarios from a traffic circulation perspective relates to the inclusion/exclusion of El Charro Road. Scenario 1A creates 1200 trips and is infeasible, whereas the Current Base Plan creates 3,450 trips and is feasible. Although creating nearly three times the number of trips as Scenario 1-A, the Current Base Plan’s inclusion of El Charro Road creates enough additional available capacity on Santa Rita Road to allow for the Plan development.

Table 3 - Feasibility

Scenario	1-A	Infeasible
Scenario	1-B	Infeasible
Scenario	2	Feasible
Scenario	3	Feasible
Scenario	4	Feasible
current base plan	Feasible	
existing zoning		Infeasible

The most common question asked is “What is the magic number for El Charro?” In other words, how much development can be placed in the East Pleasanton Specific Plan area before El Charro needs to be constructed. The answer is that in the near term, looking at the available capacity, Santa Rita Road can handle about 200 additional PM trips before it begins to fail. This would equate to approximately 400 single family homes or 100,000 square feet of retail or 200,000 square feet of office (numbers generated based on trip distribution without El Charro). However, these square footages are only sustainable in the short term. Additional trips identified in the General Plan land use element would reduce the available capacity of the roadway network at General Plan build out and would require the construction of El Charro Road or some other mitigation to maintain the required level of service. At General Plan build out only about 100-150 new trips can be placed on the network without El Charro Road.

The follow up question asked is “What is the magic number if El Charro is only connected to the north as was shown in Scenario 1B?” This is answered in a similar fashion. In the short term 200 additional trips may be placed on Santa Rita Road, but 100-150 trips at General Plan build out. Scenario 1B places 197 new trips on Santa Rita. This volume is acceptable in the short term, but exceeds the available capacity at General Plan build out. Reducing Scenario 1B to 250 single family homes, 40,000 retail and 130,000 square feet of office may produce acceptable levels of service.

Attachment A – Scenario Illustrations

*(Provided as separate attachment for
August 7, 2014 East Pleasanton Task Force Meeting)*

Attachment B – Trip Distribution Percentage Maps

ATTACHMENT B

TRIP DISTRIBUTION MAPS

No El Charro

