Inter-Departmental Correspondence

Date: March 14, 2001 Board Meeting Date:

March 27, 2001 10:30 a.m.

TO: Honorable Board of Supervisors

1

FROM: Neil R. Cullen, Director of Public Works

SUBJECT: Alameda de las Pulgas Interim Striping - Ashton to Avy Avenues - West Menlo Park Area

RECOMMENDATION

Determine:

if the signal timing at the Alameda de las Pulgas (Alameda)/Avy Avenue intersection should be modified or if other traffic modifications should be made and the impacts on traffic evaluated for an additional period of time; or

if sufficient information on traffic flow and possible mitigations have been presented to allow your Board to determine if staff should move forward with developing concept plans and the environmental document for a proposed project to construct sidewalks on the Alameda between Ashton and Harkins Avenues, or if the Alameda should be returned to its pre-August 2000 lane configuration (i.e. four lanes with left-turn-lanes).

Staff Recommendation

Direct staff to:

- 1. re-adjust the timing of the traffic signals at the intersection of the Alameda and Avy Avenue and evaluate traffic patterns after the signal timing has been revised for a period of at least two (2) months.
- 2. reduce the delineated "bulb-out" located at the southwest corner of the Alameda and Avy Avenue intersection and restripe the Alameda south of Avy Avenue to accommodate two lanes of traffic if it is determined that the change in the timing of the signal still restricts the movement of traffic on the Alameda through this intersection;

Honorable Board of Supervisors

Subject: Alameda de las Pulgas Interim Striping - Ashton to Avy Avenues - West Menlo Park Area

March 14, 2001

Board Meeting Date:	March 27, 2001
-	10:30 a.m.

Page 2

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- 3. restripe Avy Avenue west of the Alameda to accommodate a dedicated left-turn-lane and a shared right-turn/through lane;
- 4. either eliminate:
 - a) the north and south bound left-turn signal phasing on the Alameda at Avy Avenue and remove the left-turn signal heads; or
 - b) the ability to make left turns off of the Alameda onto Avy Avenue to increase green time for through traffic on both the Alameda and Avy Avenue;
- 5. evaluate the impacts of the above actions and report to your Board after the traffic modifications have been in place for at least two months.

Previous Board Action

- 1. Approved zoning changes for the area to:
 - a. emphasize its commercial and retail use
 - b. preserve the existing building scale;
 - c. attempt to create a bicycle and pedestrian friendly oriented business district
- 2. Directed the Department of Public Works to:
 - a. restripe the Alameda to essentially replicate the proposal in the Alameda Streetscape Plan prepared by Nelson/Nygard Associates and to provide two travel lanes, a two-way left-turn-lane, bicycle lanes, and delineating future walking areas for pedestrians between Ashton and Avy Avenues;
 - b. evaluate traffic patterns on the Alameda for a period of at least six (6) months after it was restriped;
 - c. evaluate the impacts on traffic due to the restriping.
- 3. Adopted an ordinance establishing bicycle lanes on the Alameda between Ashton and Avy Avenues to implement the restriping as described above.

March 14, 2001

Board Meeting Date: March 27, 2001 10:30 a.m.

Page 3

Key Facts

- 1 Traffic counts taken on some of the surrounding streets indicate that the restriping of the Alameda has diverted traffic to other streets (Cloud and Altschul Avenues).
- 2. The Transportation Consultant (Consultant) retained by the Department determined that:
 - a. there is a backup of traffic on the Alameda during the morning peak period but that they believe that the backup can be mitigated by improving the traffic signal phasing at the Alameda/Avy Avenue signal;
 - b. the eastbound movement of traffic on Avy Avenue could be improved by restriping Avy to provide a through/right-turn-lane and a left-turn-lane at the Alameda intersection;
 - c. other changes could be made to improve the traffic flow on the Alameda;
 - d. changes in signal timing or other changes to improve the flow of traffic on one street will impact the flow of traffic on other streets, and may divert traffic off of some streets onto others.
- 3. The restriping of the Alameda has generated a significant amount of comments both in favor of moving forward with the Street Scape Plan whereby this section of the Alameda would remain essentially in the lane configuration as it is currently striped, and in favor of returning the Alameda back to a four-lane facility.
- 4. Your Board's direction is necessary before staff can proceed with developing a concept plan for changes in the road cross-section.

Discussion

The proposed construction of a three-story office building at the corner of Ashton and the Alameda focused the nearby residents' concerns for restricting the use of the adjoining property on this section of the Alameda to a commercial area with the emphasis on serving the adjacent residential community. Your Board revised the zoning regulations for the area but deferred action on the building setbacks pending an evaluation of the interim restriping and if changes were to be made in the existing road cross-section

March 14, 2001

Board Meeting Date: March 27, 2001 10:30 a.m.

Page 4

The development of the Alameda Streetscape Plan overlapped the changes in the zoning and was developed with the intended goals of:

- Maintaining smooth flowing through traffic
- Improving safety for all users
- Improving business viability while maintaining the current character of the area
- Developing continuous sidewalks
- Maintaining small community feel
- Adding street trees
- Maintaining development flexibility
- Maintaining easy and convenient parking

These goals were seen as complementing the rezoning as approved by your Board.

However, the Alameda serves as a north south arterial and the impacts of implementing a Streetscape Plan on both local and through traffic needs to be considered. The evaluation of the Streetscape Plan requires your Board to make a series of sequential decisions to determine if there are impacts on traffic, if impacts need to be or can be mitigated, if the cross section of the road should be modified, if the building setback should be changed, when and if curb, gutter and sidewalk should be installed in front of the businesses in this area, if street trees should be installed, and what will be the method of financing any proposed improvements.

We had recommended and your Board approved the interim restriping of the Alameda as it allowed for the evaluation of the specific roadway segments (reduced travel lanes, two-way leftturn-lanes, et. al) on pedestrian, vehicular and bicycle traffic to meet the goals of the Streetscape Plan without sacrificing the off-street parking of the adjacent businesses during the evaluation period, and without requiring the construction of improvements that would have to be removed if the traffic lane reconfiguration proved unsuccessful.

The road was restriped in August of 2000, but we did not change the signal timing or make other changes in traffic control devices, as our goal was to replicate the Streetscape Plan as originally proposed to your Board. The restriping has generated significant feedback from property owners, business owners, residents, and general users with regard to comparative safety, feasibility, aesthetics and efficiency of the reconfigured road. The vast majority of the comments stemmed from the efforts of two groups who were concerned with the impacts of the restriping plan. We also installed informational signs on the Alameda with a web site address and a phone number where residents, business owners and motorists could and can receive general information on the

March 14, 2001 Board Meeting Date: March 27, 2001 10:30 a.m.

Page 5

Interim Striping Plan, or where they could and can leave e-mail or voicemail messages to voice their opinions on this issue.

Respondents, who provided their opinions on whether or not they were in favor of the Interim Striping Plan, also had additional comments related to the Plan. The following were the main issues that were noted:

- 1. Proponents of the interim striping stated that they:
 - would like to see the aesthetics of the area increase with the planting of street trees as part of the final plan. Many would support an assessment district to fund the installation;
 - are concerned with the safety of pedestrians due to the high motorist speeds and lack of a clear boundary between pedestrian and motorist, and would therefore support the installation of concrete curb and sidewalk;
 - are pleased with the current layout of the striping and configuration of the street, but would like to have the street trees and sidewalks in place;
 - consider traffic delays a small price to pay for the overall beautification of the area.
- 2. Proponents of returning the road to four lanes stated that they:
 - are annoyed by the increase in traffic and congestion on the Alameda and on side streets that the reduction of lanes has caused;
 - are concerned for the safety of pedestrians due to the increase in traffic on the Alameda and on side streets;
 - believe that the loss of off-street parking on the Alameda will adversely affect the local businesses,
 - are annoyed by the actions of drivers that ignore the delineation of bike lanes and walking areas.

March 14, 2001 Board Meeting Date: March 27, 2001 10:30 a.m.

Page 6

Attached is a summary of the postcards, letters, and e-mails indicating the respondent's support of either the Streetscape Plan or returning the road to its original configuration.

Traffic Analysis of the Alameda

The Department retained a Transportation Consultant (Consultant) to aid in the evaluation of the traffic impacts as the letters, e-mails, etc., that we received indicated that there are strong feelings for the interim striping plan and for returning the road to a four lane facility. The Consultant used standard traffic engineering criteria (Level of Service) to evaluate the various intersections and overall delays. The Department also did non-directional counts on the Alameda and on various side streets and compared them to pre August 2000 traffic counts to determine if there was an indication that the traffic patterns had been changed by the interim striping. The Consultant concluded that in general, that the Level of Service (LOS) at the intersections in the area were generally about the same before and after the interim striping except for:

Southbound traffic on the Alameda during the a.m. peak hour Eastbound Avy at the a.m. peak hour; Westbound Sharon Road

The Departments' non-directional traffic counts also indicate that some motorists are leaving the Alameda and using other streets to avoid this section of the Alameda.

Recommended Revisions to the Interim Plan

Staff is recommending that the interim striping be modified or that other adjustments be made as follows and evaluated before your Board makes a decision on returning the area to four lanes or directing staff to develop a concept plan to reconfigure this portion of the Alameda:

- 1. Stripe the eastbound approach on Avy Avenue with a dedicated left-turn lane and a shared right-turn/through lane. The Consultant believes that this modification will improve this leg of the intersection from LOS 'F' (extreme delays) to LOS 'C' (average delays) in the a.m., while maintaining a LOS of 'B' for p.m. traffic.
- 2. Increase the minimum green times for northbound and southbound Alameda signals and increase the "delay time" on Avy (i.e. the time between when a vehicle is "sensed" on the side street and when the signal changes).

March 14, 2001

Board Meeting Date:	March 27, 2001
	10:30 a.m.

Page 7

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The current minimum cycle (green at one signal to green at the same signal, assuming no pedestrian use) for the signals at the Alameda/Avy intersection is 60 seconds; minimum green times for North/Southbound and East/Westbound signals are 20 and 15 seconds respectively; and minimum green time for left turn signals on the Alameda is 7 seconds per signal.

The following tables summarize two suggested increases that can be evaluated during the proposed extended trial period:

Alameda/Avy Intersection ¹	Current Minimum Green Time ²	Proposed Increase ²	Proposed Total Green Time ²
NB/SB on Alameda	20	15	35
EB/WB on Avy	15	0	15

1. Left turn phasing to be eliminated

2. Time in Seconds.

Alameda/Avy Intersection ¹	Current Green Time ²	Proposed Increase ²	Proposed Total Green Time ²
NB/SB on Alameda	20	20	40
EB/WB on Avy	15	0	15

1. Left turn phasing to be eliminated

2. Time in Seconds.

However, increasing the green times for the Alameda may result in increased delays for cars and pedestrians on Avy Avenue, and this may be more evident in the a.m. peak period.

3. Eliminate the protected left-turn phasing on the Alameda to increase green time for the through traffic movements on the approaches to the Alameda/Avy intersection .The Consultant evaluated eliminating the left turns off of the Alameda onto Avy Avenue as a means of increasing green time on the Alameda. This can serve an additional purpose as the area in the middle of the street could then be used for a pedestrian refuge. However, motorists wishing to access Avy Avenue from the Alameda would have to use other adjacent streets.

We can initially eliminate the left-turn signal phasing and remove or cover the left-turn signal heads at this intersection, which will also allow us to increase the green time for north/south bound traffic on the Alameda, thus, reducing delays. However, the Consultant noted that elimination of the left-turn phasing only may result in increased queuing (number of vehicles) and delays for vehicles turning left onto Avy Avenue, and possible

March 14, 2001

Board Meeting Date: March 27, 2001 10:30 a.m.

Page 8

operational difficulties for through traffic on the Alameda. We recommend evaluating the elimination of the protected left turn, and then the elimination of the left turn movement if queuing into the through lanes becomes a problem.

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4. Reduce the "bulb-out" at the southwest corner of the Alameda/Avy Avenue intersection. We received several comments from motorists stating that delays on eastbound Avy Avenue traffic can be significantly reduced if this "bulb-out" was removed to facilitate right turn movements The consultant does not believe that this will improve the right turn movement. However, there may be a secondary benefit of facilitating southbound traffic through this intersection thus reducing the backup. Proponents of the Streetscape Plan believe that the "bulb out" is necessary to reduce the width of the intersection to aid pedestrians in crossing the Alameda. However, this is a signalized intersection and the signals are pedestrian activated.

Consultant's Recommendations Considered but not Recommended

Revise the Signal Timing at the Alameda and Sharon Avenue

The Consultant recommended modifying signal timing on the Alameda at Sharon Road to improve the Sharon Avenue traffic. We are not recommending the change in timing at this time as reducing the green time on the Alameda may have an affect on the movement of traffic on the Alameda and distort the conclusions of the current evaluation. We can revisit this intersection after a determination on the study area is made by your Board.

Return the Alameda to a Four-Lane Facility

We are not recommending this alternative at this time as we believe that it is appropriate to evaluate the modifications as recommended to determine if they will improve the flow of traffic to an acceptable level on the Alameda which can then allow for the continuation of the bike lane and the future installation of sidewalks. This alternative can be reviewed again if your Board directs staff to make the recommended modifications, and the results of these modifications do not improve traffic flow to an acceptable level. Honorable Board of Supervisors
Subject: Alameda de las Pulgas Interim Striping - Ashton to Avy Avenues - West
Menlo Park Area
March 14, 2001
Board Meeting Date: March 27, 2001

10:30 a.m.

Page 9

7

Future Decisions

Location of Curb Returns and Curb Line

We can develop a concept plan which will delineate the location of the future curb returns and the line of the curb after the proposed two-month study of the proposed revisions and after your Board has provided direction as to the road cross-section to be used (i.e. continuation of the interim striping plan or the return to a four-lane facility) based on the impact of the proposed revision on traffic flow. The curb returns, with either option will incorporate ADA accessible access ramps.

Construction of Curbs and Sidewalks

We believe that a decision on an ultimate road cross-section needs to be made and the necessary concurrent environmental document needs to be developed before project plans for curbs and sidewalks is begun. The County Standards provide for 6-inch high unmountable curbs and specifies the width and location of driveway entrances into both residential and commercial properties. Some of the adjacent property owners have objected to restricting the current unlimited vehicle access to the parking areas adjacent to the Alameda. An alternative is to sequence the construction of curbs and sidewalks with the redevelopment of the adjacent property.

Building Setbacks from the Alameda

It may also be advantageous to revisit the set back of buildings from the Alameda as part of a future consideration of the location of curbs and sidewalks, as a primary issue that led to the proposed Streetscape Plan was the conflict between motorists entering the front parking areas and pedestrians wanting to walk along the Alameda or to have continual access to the stores that are adjacent to this section of the road. Reducing the set back would allow the building to move closer to the road right of way thus eliminating the offstreet parking in this area and the conflicts that are associated with this parking. Businesses could then concentrate on providing off-street parking behind their buildings.

Installation of Street Trees

A goal of the Streetscape Plan is the addition of street trees to the area, and some residents have been working on a proposed assessment district to finance the maintenance of street trees with the installation of the trees proposed to be financed by other means.

Board Meeting Date: March 27, 2001 10:30 a.m.

Page 10

The location and installation of trees is another decision that is dependent on a determination of where curbs and sidewalks are to be located, if there is public and property owner support for the trees and if financial support would be forth coming. We also believe that a decision by your Board on the tree issue is premature at this time.

Fiscal Impact

The estimated cost to adjust the signal phasing and remove the traffic signal head is \$1,000, and the cost for eliminating the 'bulb-out' at the Alameda/Avy Avenue intersection and restriping the two lanes and shoulder lane south of Avy Avenue is \$2,000. We are recommending that this cost be paid for with Road Funds.

We had previously estimated that additional improvements could cost as much as \$350,000 which could be financed in part by Road Funds, ½ Cent Transportation Funds that the County receives and property owner assessments. By Board policy, curb returns, sidewalks and street trees are considered a benefit to the adjacent property and are paid for by the adjacent property owners

We have looked at Transportation for Livable Community (TLC) funds as an alternative means to fund the installation of curb, gutters, bike lanes and sidewalks. A staff member attended a TLC funding workshop and determined that we do not qualify for funding at this time based on the information received at the workshop. We can reapply for these funds after direction by your Board is given and when additional funds become available in the fall. However, TLC funds are typically given to projects that directly connect developments to public transit and to projects that have wide support. We may therefore, not rank highly in the funding evaluation process. We will also continue to investigate other potential funding sources.

There is no impact to the General Fund.

We also recommend that your Board's direction to staff be in the form of a resolution and we will provide your Board with a form approved by County Counsel that specifies the direction given.

Honorable Board of Supervisors

Subject: Alameda de las Pulgas Interim Striping - Ashton to Avy Avenues - West Menlo Park Area

March 14, 2001

Board Meeting Date: March 27, 2001 10:30 a.m.

Page 11

A copy of the Consultant's report has previously been sent to your Board, the proponents of the interim striping plan, to the proponents of returning the Alameda to four lanes and to the City of Menlo Park. We have also provided these same groups with a copy of our staff report as well as to the property owners and business owners along this section of the Alameda and to other individuals that have requested a copy of the report. The report has also been made available on the web site established for the Alameda interim striping plan as well as on the web site that contains your Board's agenda.

Neil R. Cullen Director of Public Works

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Enclosures: Summary of Responses Received
 Description of Level of Service
 Comparison of Level of Service for Specific Intersections
 Comparison of Traffic Counts on Various Streets
 Interim Striping at Alameda and Avy
 Proposed Restriping at the Alameda at the Alameda/ Avy and Reduction of the
 "Bulb Out" at Avy
 Proposed Elimination of the Protected Left Turns off of the Alameda at Avy
 Proposed Delineated Left-Turn Lane and Shared Right/Through Lane on Avy
 Avenue Eastbound Approach

cc: Brian C. Lee, P.E., Division Manager, Programs and Engineering Services Milt Mares, County Counsel

Total from Individuals, Letters, emails

or Voicemails:	Count	Percent of Total Respondants
Support the New Lane Configuration	61	3 2%
Dislike the New Lane Configuration	32	1 7%
Did Not Approve/Disapprove or Reiterating Opinion	22	1 2%
Subtotal	115	

Total via Streetscape Taskforce Mailings:

	Count	Respondants	
Support the New Lane Configuration	496	26 4%	
Dislike the New Lane Configuration	0	0 0%	
Other	7	0 4%	
Subtotal	503		

Total via Coalition Postcard Mailing:	Count	Percent of Total Respondants
Support the New Lane Configuration	56	3 0%
Dislike the New Lane Configuration	1206	64 1%
Subtotal	1262	

Grand Total: Count	Percent of Total Respondants
Support the New Lane Configuration 613	32 6%
Dislike the New Lane Configuration 1238	65 9%
Other 29	1 5%
Total 1880	

Percent of Total

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<u> </u>	Table 1				
	Signalized Intersection Level of Service Definitions Using Average Control Delay				
Level		Average Control Delay			
of Service	Description	Per Vehicle (Seconds)			
A	Operations with very low delay occurring with favorable progression and/or short cycle length	≤ 10			
B	Operations with low delay occurring with good progression and/or short cycle lengths	> 10 and ≤ 20			
С	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear	> 20 and ≤ 35			
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are nonceable.	> 35 and ≤ 55			
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios Individual cycle failures are frequent occurrences.	> 55 and ≤ 80			
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor piogression, or very long cycle lengths	> 80			
Source Highway	Capacity Manual (Special Report 209 Transportation Research Board, 1997)				

Table 2						
	Unsignalized Intersection Level of Service Definitions Using 1997 HCM Methodology					
Level ofAverage Control DelayServiceDescriptionPer Vehicle (Seconds)						
A	Little or no delays	<u>≤ 10</u>				
В	Short traffic delays	> 10 and ≤ 15				
C	Average traffic delays	> 15 and ≤ 25				
D	Long traffic delays	> 25 and ≤ 35				
E	Very long traffic delays	> 35 and ≤ 50				
F	Extreme traffic delays with intersection capacity exceeded	> 50				
Source	Highway Capacity Manual (Special Report 209 Transportation Research Board, 1997)					



Table 5							
Existing (January 2001) and Pre-August 2000 Intersection Levels of Service							
	Existing Pre-August 2000						
Intersection	Peak Hour	Delay	LOS^2	Delay '	LOS^2		
Alameda de las Pulgas/	AM	13 8	, B	111	B		
Valparaiso Avenue	PM	176	' B	13.5	В		
Alameda de las Pulgas/	AM	169	C	40 0	E		
Ashton Avenue*	PM	16.2	' C	30 4	С		
Alameda de las Pulgas/	AM	43 3	D	183	В		
Avy Avenue	' PM	19 1	B	163 -	В		
Alameda de las Pulgas/	AM	12 9	В				
Sharon Road	PM	89	A	NOT AN			
Alameda de las Pulgas/	AM	14 6	В	93	A		
Santa Cruz Avenue	PM	14 0	B	9.3	А		
Avy Avenue/Cloud	AM	11.5	B		allable		
Avenue*	PM	9.8	` A				
Avy Avenue/Santa Cruz	AM	66 4	F	83.9	F		
Avenue/Orange Avenue*	PM	62 4	F	63 4	F		
 Notes For signalized intersections, whole intersection weighted average control delay expressed in seconds per vehicle. For four-way stop controlled intersections, whole intersection average control delay expressed in seconds per vehicle. For all other unsignalized intersections, worst case total approach control delay expressed in seconds per vehicle. ² Intersection LOS calculations performed using the TRAFFIX LOS analysis software. For and unsignalized intersections, the 							
1997 Update to the Highwaj Capacity Manual delay methodology was used *Unsignalized intersections							

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Table 6							
41	Existing Configurations with Pre-August 2000 Volumes, Existing (January 2001), and Pre-August 2000 Intersection Levels of Service						
	Peak	Exist		Pre-Aug	gust 2000		g Configs. st 2000 Vols.
Intersection	Hour T	Delay	LOS ²	Delay	LOS ²	Delay'	LOS ²
Alameda de las Pulgas/	AM	13 8	I B	11.1	В	170	B
Valparaiso Avenue	' PM	176	B	135	В	22.6	С
Alameda de las Pulgas/	AM	169	, C	40 0	E	18.2	C
Ashton Avenue*	PM ,	162	' C	30 4	D	169	C
Alameda de las Pulgas/	AM	43 3	D	18.3	В	47 9	D
Avy Avenue	PM ¹	191	B	16.3	B I	18.8	В
Alameda de las Pulgas'	AM	12 9	В	Not Av		Not A	
Sharon Road	PM	89	A				hallaulo
Alameda de las Pulgas/	AM	14.6	В	9.3	A	14 4	B
Santa Cruz Avenue	PM	14.0	В	9.3	A	14.9	В
Avy Avenue/Cloud	AM	11.5	В	NotAv		NotA	and the second second
Avenue*	PM	98	A				
Avy Avenue/Santa Cruz	AM	66 4	F	83.9	F	839	F
Avenue/Orange Avenue*	PM	62 4	F	63 4	F '	63 4	F
 Notes For signalized intersections, whole intersection weighted average control delay expressed in seconds per vehicle. For all other unsignalized intersections, whole intersection average control delay expressed in seconds per vehicle. For all other unsignalized intersections, worst-case total approach control delay expressed in seconds per vehicle. ² Intersection LOS calculations performed using the TRAFFIX LOS analysis software. For and unsignalized intersections the 1997 Update to the Highway Capacity Manual delay methodology was used 							

⁴ It should be noted that the traffic counts for the southbound approach and in the westbound left-turn movement at the Alameda de las Pulgas/Valparaiso appear to be reduced during the 8 00 to 8.30 a.m. time period because of downstream queuing that prevents vehicles from clearing the intersection









