PLEASANT HILL ROAD
Corridor Concept Study

City of Pleasant Hill, California
February 2000
THE CITY OF PLEASANT HILL WOULD LIKE TO ACKNOWLEDGE THE EFFORTS OF THE FOLLOWING AGENCIES AND INDIVIDUALS AND THEIR CONTRIBUTION TO THE PLEASANT HILL ROAD CORRIDOR CONCEPT STUDY

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City of Pleasant Hill City Council

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Part One

Overview and Executive Summary
PROJECT COMMUNITY MEETING DATES

May 11, 1998  General Assembly
June 3, 1998  General Assembly
June 30, 1998 First Steering Committee Meeting
July 21, 1998 Second Steering Committee Meeting
August 18, 1998 Third Steering Committee Meeting
September 9, 1998 Fourth Steering Committee Meeting
September 29, 1998 General Assembly
October 14, 1998 Fifth Steering Committee Meeting
November 18, 1998 Sixth Steering Committee Meeting
September 22, 1999 Seventh Steering Committee Meeting

PROJECT CONSULTANT TEAM

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Walnut Creek, CA
Project Management - Harry Burrowes, P.E., and Keith Halvorson, P.E.
Public Outreach and Consensus Building - Michael R. McGill, P.E.
Planning and Report Coordinator - Lisa M. Keidel, AICP
Civil Engineering - Felicia Dean, P.E.

TJKM Transportation Consultants, Inc.
Pleasanton, CA
Traffic Control Analysis/Traffic Calming Recommendations- Gary E. Kruger, P.E.
1.0 OVERVIEW AND EXECUTIVE SUMMARY

1.1 Introduction

Local streets are the heart of any community and many functions occur on them every day, such as commute and neighborhood traffic, biking, jogging, walking, etc. If traffic speeds increase, and auto volumes exceed the design capacity of the roadway, it can erode the quality of a residential neighborhood for those who live there and use the local street system. Pleasant Hill Road between Gregory Lane and Geary Road has reached this stage. One solution for controlling speed and volume of traffic is the use of traffic calming measures, either singularly or in combination with several techniques.

Traffic calming measures include elements such as traffic circles, raised thresholds, pedestrian refuges, and speed bumps. Traffic calming techniques have been used quite successfully in other urban settings. However, they are not without controversy.

Typically, there are two opposing views in any community:

- The public's right to use roads as they wish.
- The public's right to live in a safe and comfortable environment.

Finding solutions that satisfy both views along Pleasant Hill Road is difficult. Additionally, some of the key issues along the route involve improving pedestrian and bicycle facilities, improving drainage facilities, encouraging non-local traffic to use alternative routes, repairing pavement, improving vehicle sight visibility, decreasing accident potential, enhancing traffic control around Pleasant Hill Elementary School, and maintaining the rural ambiance of the corridor.

The City of Pleasant Hill decided that the best decisions could be made by involving the community and local agencies in the process.
1.2 Project Approach

The City of Pleasant Hill hired the consulting firm of McGill Martin Self, Inc. (MMS) in April 1998, to facilitate Community Workshops and coordinate with affected agencies. In addition, MMS acted as technical support on safety improvements proposed by the group of volunteer Pleasant Hill residents, assembled as the Pleasant Hill Road Steering Committee.
With regard to the Pleasant Hill Road Corridor Concept Study (The Study), the community was encouraged to participate in the following ways:

- An initial meeting was held on May 11, 1998, where the MMS team provided background information on Pleasant Hill Road and adjoining residential streets. The community voiced a variety of issues and provided additional information on the status and operation of Pleasant Hill Road. A better understanding of the public issues and concerns was gathered.

- A Steering Committee of interested local citizens was formed to look more closely into the specific safety and design challenges facing Pleasant Hill Road.

- Affected local agencies were brought together to coordinate plans and alternatives that would continue to serve both the short and long-term needs of the agencies.

- Steering Committee members evaluated, analyzed, and presented options to existing traffic conditions, safety problems, accident history, drainage and flooding problems, and right-of-way constraints. MMS supported their ideas with preliminary cost estimates and preliminary constraints analysis.

- Steering Committee members discussed the pros and cons of 14 conceptual level sketches, depicting alternatives to existing roadway configuration and traffic control/calming features.

- Steering Committee members selected a subcommittee to identify improvements and opportunities for future continuous bicycle and pedestrian access along Pleasant Hill Road.

- The Steering Committee developed recommendations of preferred independent solutions to Pleasant Hill Road’s multiple issues.

- The Steering Committee took two items to the City's Traffic Safety Committee. 1) A stop sign at Boyd Avenue that was denied because of sight-distance problems, and 2) the "raised intersection" concept that was given preliminary approval for a single installation.

- The Steering Committee supported two Pleasant Hill Road Improvement items on the April 5, 1999 City Council Agenda that were approved (the Oak Park Boulevard Widening at Pleasant Hill Elementary and the Trial "Raised Intersection" at Cumberland Drive.) The raised intersection was installed in November 1999.

- The Steering Committee developed major portions of this "Pleasant Hill Road Corridor Concept Study".

- The Draft Corridor Concept Study was reviewed by the City's Traffic Safety Committee (TSC) on November 3 and December 1, 1999. The TSC voted on December 1, 1999 to support the proposed improvements as presented in the Draft Corridor Concept Study with a vote of 5-0-0.
The Pleasant Hill Road Corridor Concept Study is the result of 16 months of committed work by the residents of Pleasant Hill assembled as the Pleasant Hill Road Steering Committee. This Study represents maximized public involvement, a practical level of compromise, and recommendations built upon consensus.

1.3 Purpose of This Document

The purpose of this document is to provide the City Council of the City of Pleasant Hill and its related bodies with background information on the issues facing Pleasant Hill Road, and a set of recommendations to guide the Council's future decisions regarding improvements to Pleasant Hill Road.

1.4 Corridor Concept Study Summary

Many issues were raised during this Pleasant Hill Road Corridor Concept Study. It became apparent that one solution would not "solve" the problems that exist on the roadway. There has been a realization that solutions to the problems that face the users of Pleasant Hill Road lie partly in the hands of those users. Driving behavior and travel speed need to be controlled by the individuals in their cars, so that others can ride their bikes or walk their children to school without fearing for their safety. Additionally, there were many ideas that involve physical changes to the roadway and intersection design that could improve safety and encourage a reduction in speed to safe levels.

Guided by a list of objectives, the Pleasant Hill Road Steering Committee identified connections between the conflicts that exist along Pleasant Hill Road and some solutions. The Steering Committee pursued review with the City of Pleasant Hill Traffic Safety Committee regarding a stop sign at Boyd Road (which was denied) and the concept of "raised intersections", a traffic calming measure (which was approved).
A traffic study was conducted by TJKM in July 1998, that evaluated speeds, travel times, and delays, intersection levels of service, stop sign and signal warrants, and accidents. This study has corroborated the posted speed limits, and provides support to the Police Department for enforcing speed. The traffic study conclusions take into account the expected/potential growth of the area and remain as a reference document for future projects in the area.

**Pleasant Hill Road Steering Committee Objectives**

1. Improve safety particularly at Pleasant Hill Elementary School (Oak Park Boulevard / Pleasant Hill Road intersection.
2. Keep Pleasant Hill Road between Gregory Lane and Geary Road a two-lane road.
3. Reduce through traffic volume.
4. Slow traffic (short-term measures and long-term measures)
5. Address / Improve pedestrian and bicycle access.
6. Any design should include improving drainage and landscaping along the roadway corridor.

*Figure 2 - Steering Committee Objectives*

Improving school drop-off and child safety quickly made its way to the top of the Steering Committee’s priorities. The intersection of Pleasant Hill Road and Oak Park Boulevard was a main focus of the Traffic Engineer, who characterized the operation of the school drop-off during the peak hours as the worst he’s ever seen in his 30 years of experience. As a result of the Steering Committee’s work, an agreeable short-term solution, implemented in conjunction with the City of Pleasant Hill and the Mt. Diablo School District, was developed. A list of parameters to monitor the school drop-off solution’s effectiveness was developed, with a contingency plan for less than satisfactory performance.

Finally, integration of a safe and continuous pedestrian and bicycle route along Pleasant Hill Road can encourage a reduction in the resident’s dependence on their automobiles for neighborhood trips. The Steering Committee also suggested “no parking” zones, and the re-installation of the flashing “school zone” lights for added neighborhood safety. Proposed landscape elements will support the goals of the City of Pleasant Hill’s General Plan with regard to defining Pleasant Hill Road as an “Enhanced Corridor”.

The Steering Committee set out to develop recommendations to be implemented by the City of Pleasant Hill, with regard to Pleasant Hill Road. Careful attention was paid to ensuring that the improvements and guidelines proposed are consistent with the City of Pleasant Hill’s General Plan. Already, the Steering Committee Objectives have translated into improvements implemented by the Mt. Diablo School District at the Pleasant Hill Elementary School site:

- Designated parking and signage
- Increased traffic control and striping that improves drop-off/pick-up circulation
- Increased parent education on safety issues (access, drop-off zones, etc.)
In addition, the Steering Committee Objectives have translated into two projects presented before the Pleasant Hill City Council in April, 1999:

- The Oak Park Boulevard Widening at Pleasant Hill Elementary School
- The Installation of one "Raised Intersection" on Pleasant Hill Road at Cumberland Drive (north of Pleasant Hill Elementary School)

The final recommendations of the Steering Committee describe an overview "wish list" for improvements throughout the remainder of the Corridor. The recommended improvements for traffic calming, pedestrian and bicycle circulation, drainage improvements, and landscape amenities are intended to be implemented in phases. Further engineering design will be necessary to make the report's conclusions a reality.
Part Two

Corridor Concept Study Components
2.0 CORRIDOR CONCEPT STUDY COMPONENTS

2.1 Description of the Study Corridor

Pleasant Hill Road, in the City of Pleasant Hill, begins in the south at Geary Road as a two-lane road through a residential area. Pleasant Hill Road has been improved and widened to four lanes to the north and south (outside the city limits), but remains a two-lane "rural-feeling" road with varying widths along the study corridor ("The Corridor"). For the purpose of this Pleasant Hill Road study, the Corridor is bordered on the north by Gregory Lane/Grayson Road, and on the south by Geary Road. Within the Corridor, residential collector streets direct a large portion of the surrounding neighborhood auto trips onto Pleasant Hill Road. Residences along the Corridor have various setbacks from Pleasant Hill Road and, in some cases, possibly within the described right-of-way. The actual right-of-way of Pleasant Hill Road was not determined with this Corridor Concept Study, but as improvements are designed, specific research will be necessary to determine the right-of-way limits. The Steering Committee has included in its recommendations that future improvements should be designed with the priority of working around existing constraints, such as front yards and homeowner improvements, where possible.

The Corridor is intersected by two main east-west routes, Boyd Road and Oak Park Boulevard, that carry auto trips to and from Interstate 680 and BART connections. This Corridor Study is timely, in that, the I-680/Highway 24 interchange and freeway improvements are on schedule for completion in the year 2000.

Oak Park Boulevard intersects with Pleasant Hill Road at an awkward angle (not perpendicular). Pleasant Hill Elementary, the Play and Learn Daycare, the Pleasant Hill Recreation & Park District "School House" and the Oak Park Assembly of God church all rely on this intersection for their daily operation. Half of the southern portion of the Corridor (from approximately Whitfield Court to Diablo View Road) is outside the city limits, and under the jurisdiction of Contra Costa County.
2.2 Pleasant Hill Road Steering Committee

The City of Pleasant Hill hired MMS (supported by TJKM Transportation Consultants) to facilitate community workshops, and act as technical support on safety improvements proposed by a group of volunteer Pleasant Hill residents, assembled as the Pleasant Hill Road Steering Committee.
Guided by a list of objectives, the Steering Committee met seven times and discussed proposed solutions. The first two meetings held in June and July 1998, focused the discussion on the intersection of Pleasant Hill Road and Oak Park Boulevard. The third meeting held in August discussed traffic calming measures along Pleasant Hill Road and introduced the idea of the "raised intersection". The fourth meeting held in September, focused on short-term school drop-off improvements. The fifth meeting in October clarified the pedestrian and bicycle circulation ideas. The sixth meeting in November confirmed consensus of the Steering Committee and formalized the Oak Park Boulevard Widening Project and the Raised Intersection for review and approval by the Pleasant Hill City Council. The seventh meeting, held in September 1999, related the available funding to the recommended improvements. In addition to agreeing on phasing, the Steering Committee explored the idea of entry treatments and expressed preferences on the type of planting to be used.

2.3 Involvement of the City, Neighborhood Groups, and Affected Agencies

The number of agencies that would be affected by proposals along the Pleasant Hill Corridor is listed in Figure 4. By reviewing the various agencies' adopted and future plans, the Steering Committee was able to formulate realistic and agreeable recommendations for Pleasant Hill Road.

<table>
<thead>
<tr>
<th>Reviewing Agencies/Groups</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleasant Hill Road</td>
<td>◆ Community Members assembled specifically to propose improvements to the study corridor</td>
</tr>
<tr>
<td>Steering Committee</td>
<td></td>
</tr>
<tr>
<td>City of Pleasant Hill</td>
<td>◆ Public Improvements, Police Department</td>
</tr>
<tr>
<td>Mt. Diablo School District</td>
<td>◆ Pleasant Hill Elementary School (K-5) and Daycare</td>
</tr>
<tr>
<td>Contra Costa County</td>
<td>◆ Jurisdiction over a portion of the Corridor, Fire Protection District</td>
</tr>
<tr>
<td>Pleasant Hill Recreation &amp; Park District</td>
<td>◆ The &quot;School House&quot;, Onstage Theatre and community activities</td>
</tr>
<tr>
<td>Play and Learn Daycare</td>
<td>◆ Child Care Services</td>
</tr>
<tr>
<td>East Bay Bicycle Coalition</td>
<td>◆ Bicycle Advocacy Group</td>
</tr>
<tr>
<td>Oak Park Assembly of God</td>
<td>◆ Religious Services, Youth Programs</td>
</tr>
</tbody>
</table>

Figure 4 - List of Reviewing Agencies

City of Pleasant Hill

Public Works. The City Public Works Department will be responsible for coordinating the design and construction of the improvements proposed by this Corridor Study. The study to this point has been managed by Mario Moreno, overseen by the Public Works Director, Leary Wong, and further coordinated with the Public Information Officer, Louie Gonzalez. The Traffic Safety Committee has participated in this study by reviewing safety improvements (See Section 2.7 Review by the City of Pleasant Hill Traffic Safety Committee) and making recommendations to the City Council.

Police Department. Chief Michael Phalen, of the City of Pleasant Hill Police Department expressed concern with regard to using "speed bumps" as a method to reduce speed. The Steering Committee considered Chief Phalen's concerns, and, as discussed in Section 2.7,
"Review by the City of Pleasant Hill Traffic Safety Committee" of this Study, the design of "raised intersections" is much different than a "speed bump/hump". The "raised intersection" is considered more of a visual deterrent to speed rather than a physical one. In addition, it is designed for safe travel in excess of the posted speed. As with the Fire District, the Steering Committee and residents of the City of Pleasant Hill rely on the Police Department to maintain safe streets. But the Steering Committee considers the "raised intersections" as assistance to the Department in encouraging safe speeds in the school zone. The Police Department will remain responsible for enforcing speed limits and traffic safety on Pleasant Hill Road.

Mt. Diablo School District.

The Steering Committee and MMS worked directly with Dr. Robert Sillonis, Principal of Pleasant Hill Elementary, Richard Nicoll, Assistant Superintendent Administrative Services, and Fred Confetti, Transportation Supervisor of the Mt. Diablo Unified School District. The School District operates an elementary school (K-5) on-site. Additionally, a private daycare leases a building adjacent to the rear of the elementary school buildings. Pleasant Hill Elementary has historically had problems with traffic congestion around the facility related to dropping off and picking up students. The School District proposed a combination of on-site re-striping, expanded traffic enforcement during peak hours, and PTA parent education that would discourage unsafe drop-off from occurring, and improve traffic on the surrounding streets. With any change, bus drop-off must remain separate from parent drop-off.

The above described on-site improvements were installed in December 1998, and already have had the predicted, positive effect in the area.

![Pleasant Hill Elementary School](image)

Contra Costa County

Public Works. MMS coordinated with Contra Costa County Public Works Department. All roadway, bicycle and pedestrian improvements along the portion of Pleasant Hill Road in the County will have to be in compliance with County standards and regulations. Any design of the two-lane roadway or pedestrian facilities will be required to meet the County’s standards for roadway design and construction, and any design of bike lanes or paths will be required to meet the County’s minimum design widths.
Fire Protection District. According to Assistant Chief Bill Cullen, The Contra Costa County Fire Protection District considers Pleasant Hill Road a major response corridor and continues to oppose any physical barriers, which will restrict the Fire District's ability to provide the quickest emergency response (correspondence dated February 1, 1999). Because of the Fire District's concerns, the installation of physical barriers (bumps/undulations) along the route need to be carefully considered. It is generally agreed that each bump/undulation will add eight to ten seconds to travel time along the roadway, and therefore, current proposals only include the installation of one "raised intersection". (See 2.7 Review by the City of Pleasant Hill Traffic Safety Committee for specific information on "raised intersection" design).

In addition, the actual design of the "raised intersections" further minimizes this traffic calming device's negative effect on emergency response. The Steering Committee members continue to support the Fire District, and its primary mission of providing fire protection and emergency medical response within a three to four minute response time to the citizens of Contra Costa County. The Steering Committee also accepts the District's concerns related to the installation of physical barriers (bumps/undulations) as extremely valid. But the Steering Committee also believes that the safety benefits of installing a "raised intersection" are equally as important.

Pleasant Hill Recreation & Park District

The Steering Committee and MMS worked directly with Bob Berggren, General Manager and Dick Miller, Park Superintendent, of the Pleasant Hill Recreation & Park District. The District operates a theatre, classes, demonstrations, and hosts other community activities on the School House site, across Oak Park Boulevard from Pleasant Hill Elementary. There is an opportunity for widening Oak Park Boulevard, where the site is not currently developed. The Recreation District has agreed in concept to consider granting an amount of right-of-way to facilitate additional lane construction on Oak Park Boulevard. The design drawings of the Oak Park Boulevard Widening at Pleasant Hill Elementary School will be required to go before the Park District Board for a formal approval.

Recreation and Park's "Schoolhouse"
Play and Learn Day Care

Sue Howeling is the owner and operator of the Play and Learn Day Care, and was a member of the Steering Committee. The day care center operation is considered a major factor during the peak drop-off time. Opportunity for moving drop-off on-site like the elementary school, is limited because of the size of the day care site. Ms. Howeling has agreed to work with the parents of her students to eliminate illegal and unsafe drop-off practices with non-compliance resulting in parents being asked to take their child to another day care facility. Ms. Howeling has shown an eagerness to work with the City and its engineers in designing a drop-off lane on Pleasant Hill Road, in front of the day care. A small amount of landscaping may need to be removed, and minimal on-site improvements are expected in order to expand drop-off areas on-site and off Pleasant Hill Road. Coordination with Ms. Howeling and the day care operation/timing/needs will be a part of any project proposed at the site. Improvements in front of the day care would occur with the general improvements to Pleasant Hill Road, as part of the implementation of the Steering Committee recommendations.

East Bay Bicycle Coalition (EBBC)

The EBBC was invited to review the Corridor Concept Study and the issues facing this portion of Pleasant Hill Road. The EBBC has designated Pleasant Hill Rd. a bicycle route on their "East of the Hills Bicycle Transportation Map", yet describes Pleasant Hill Road as intimidating to bicyclists and pedestrians alike. The group supports any efforts to create a safe and comfortable environment along this route, and has offered to review roadway plans as they are available.
Oak Park Assembly of God

The Steering Committee and MMS worked directly with Bill Matthews, Pastor of the Oak Park Assembly of God Church. The church fronts along Oak Park Boulevard, adjacent to the easterly edge of Pleasant Hill Elementary. The church often uses the Pleasant Hill Elementary parking lot for overflow parking. The church would encourage any public improvement that would improve the current Pleasant Hill Road/Oak Park Boulevard intersection operation. Widening Oak Park Boulevard may involve some right-of-way dedication from the church property. The design drawings of the Oak Park Boulevard Widening at Pleasant Hill Elementary School will be required to go before the Church Board for a formal approval.

2.4 Traffic Behavior, Evaluation, and the Results of the TJKM Traffic Study

According to the traffic study undertaken by TJKM, as part of this Corridor Study, traffic volumes on Pleasant Hill Road do not show a pattern of growth over the past decade; the changes in traffic volumes appear to be mainly sensitive to construction on I-680 and changes in access that will ultimately stabilize once freeway construction is complete. In terms of traffic safety, the accident rates do not indicate abnormal accident rates, neither along Pleasant Hill Road nor at the intersections along Pleasant Hill Road.

Although traffic signals may be warranted at both Boyd Road and Oak Park Boulevard, traffic signals may not be the optimum solution at these locations. Speeds along Pleasant Hill Road have not changed in terms of the 85th percentile for several years; there remains the occasional gross speeder (some speeds were clocked above 55 mph in a 35 mph zone). In the review of traffic control and street design, attention should be given to physically controlling the speeds of vehicles.
Trucks do not seem to be a significant part of the traffic stream on Pleasant Hill Road. There is no easy way to walk to bus stops along Pleasant Hill Road because there is a lack of sidewalks and walkable shoulders along much of the route.

School parking and loading access (including the daycare center) is problematic and calls for an overall solution. There needs to be more separation of school access from through traffic, and especially more separation of pedestrian and bicycle traffic from school vehicle access traffic.

Because Taylor Boulevard is almost twice as fast a route as Pleasant Hill Road, further efforts to discourage "through traffic" from Pleasant Hill Road will probably prove futile. The real "through traffic" is the traffic running all the way north and south on Pleasant Hill Road from Gregory Lane to Geary Road. The remainder of the traffic is most likely traffic generated in the neighborhood and using Pleasant Hill Road as a "collector" to get to freeway and BART access routes. If all the "through traffic" were eliminated from Pleasant Hill Road, the average daily volume will still be about 11,000 vehicles per day.

The City engineers advised the Steering Committee that retaining Pleasant Hill Road as a two-lane roadway instead of four lanes, as it is to the north and south, may limit future traffic capacity and level of service along the two-way section of the roadway. As eastern Contra Costa County continues to grow, traffic impacts from regional growth are likely to be felt at a local level resulting in increased traffic on local roads. In particular, traffic projections for Interstate 680 show that slower moving traffic and back-ups will likely occur on the freeway as regional growth continues. Back-ups along I-680 could result in increased traffic on local roads as commuters look for "short-cuts". Increased traffic on this two-lane section of Pleasant Hill Road could result in congestion, delays in accessing driveways and difficulty in making left turns onto and off of the Corridor.

2.5 Speed and Speed Enforcement Along the Corridor

Speed Studies

One of the primary concerns of the community served by Pleasant Hill Road is excessive speed. The design team's traffic engineer (TJKM) surveyed speeds for all vehicles over a 48-hour period in June, 1998. Speed studies were taken at two locations with speed detectors on Pleasant Hill Road several blocks south of Gregory Lane and several blocks north of Geary Road. Speeds were monitored for each direction separately. About 25,000 vehicles were monitored near Gregory Lane and 22,000 vehicles were monitored near Geary Road, so the sample was extensive at both locations.

The result of the speed study was so striking that a follow-up speed study was undertaken with different types of speed detectors. The second study confirmed the first: some drivers travel over 60 mph on Pleasant Hill Road, and they do this at all times during the day, not just late at night or early in the morning. Approximately 30 vehicles daily exceed 50 mph, and from two to five exceed 60 mph daily. One vehicle was clocked at over 70 mph just after 1:00 p.m. in the afternoon.
It is an understatement to say that these speeds represent a hazard to all traffic, bicycles, and pedestrians on Pleasant Hill Road. Some driveways, intersections and vertical curves on Pleasant Hill Road have restricted sight-distance that results in localized design speed consistent with the 30-35 mph speed limits. In short, a driver traveling at 50 mph or more on Pleasant Hill road cannot stop in time to avoid hitting a car leaving a driveway or intersection along the study area where the safe stopping sight-distance is under 35 mph.

* * *

In city after city, however, studies have shown that traffic enforcement, while effective in the short term, cannot permanently slow traffic in the long term without continuous and visible police presence. Few, if any cities, have the resources to provide the necessary levels of enforcement to permanently lower excessive speeds. This is why engineering solutions to “calm” traffic flows have been developed over the past two decades.

Based on the information collected to evaluate the safety record of Pleasant Hill Road, the traffic study conducted by the traffic engineer (TJKM) for this Pleasant Hill Road Corridor Concept Study concluded that the 35 mph limits are enforceable because the 85th percentile speeds are between 35-40 mph, and the accident rates are average. The 30-mph limits are probably not enforceable because the 85th percentile speeds are above 35 mph and there is no unusually high accident rate within the 30-mph section. There are no other conditions that are not “readily apparent to the driver” in order to justify lowering prima facie limits more than five mph below the 85th percentile speeds.

This traffic and speed study data is consistent with the city’s data in their engineering and traffic study, and this is the basis for the establishment of the speed limits on Pleasant Hill Road. It is the Steering Committee’s desire to have increased police enforcement of speeding and to have one consistent speed limit designated along this residential stretch of Pleasant Hill Road with the speed limit being reduced near the school during school hours.

Public Meeting with the Police Department

The residents along Pleasant Hill Road want increased police visibility and enforcement of the speed laws. In an appreciated effort to discuss the process of speed enforcement, the Police Department invited the members of the Steering Committee to a public meeting on January 13, 1999.

Lt. Jack Harper, head of the Police Department's Patrol Division, explained the different methods of speed enforcement available to them.

* Estimates: the least popular and hardly ever used because they are easily dismissed in court.
* Pacing: involves pacing a vehicle within a reasonable time to observe its speed. It is utilized, but is not considered as effective as radar because the officer has to monitor his/her own speed, as well as the target vehicle.
• Radar: the easiest and most accurate type of enforcement. The courts and enforcement officers favor this method.

Chief Mike Phalen highlighted the fact that radar and pacing enforcement requires that a Traffic Engineering Study with a speed survey is completed every five years. The speed limit is based on the 85th percentile speed, which is obtained from the speed survey. The enforcement of this 85th percentile speed is established by the courts and not by the City. Each time a citation is contested in court, the judge requests the 85th percentile speed and the questions the validity of the speed survey.

There remains no specific figure or level of tolerance before a citation is given, but the Chief would discuss the concerns of the residents, and request that the enforcement officers reduce their tolerance level, even if the courts may dismiss some of the citations. They will also consider stopping speed violators and leave them with a warning, via a flyer, rather than a citation. In addition, community designed signage, a decoy police car, and placement of either an unmarked or a marked radar trailer should help to enforce speed along the corridor.

The issue of traffic calming was discussed with the Chief, who admitted to not being in favor of humps, bumps, or other undulations. The residents urged a second look at the benefit of a "raised intersection", and highlighted the differences between a traditional speed hump/bump and the "raised intersection". Although the Chief did not change his mind regarding the raised intersection, he did explain that he was pleased that the City's main concerns are related to traffic issues rather than violent crimes.

2.6 Pedestrian and Bicycle Conditions Along the Corridor

The importance of providing safe, convenient, and effective circulation for bicyclers and pedestrians throughout all of Pleasant Hill is acknowledged in various sections of the City’s General Plan. Sidewalks and pedestrian paths exist only intermittently along portions of Pleasant Hill Road and the lack of a continuous pedestrian path throughout the Corridor warrants improvement. The Contra Costa County General Plan designates Pleasant Hill Road from Geary Road to Oak Park Boulevard as a bike route, which then connects to the Canal Trail location east of Pleasant Hill Road. The City's General Plan acknowledges that the bicycle circulation network throughout Pleasant Hill is fragmented, but does not designate Pleasant Hill
Road as a bike route within the Corridor. The Steering Committee, however, does recommend that Pleasant Hill Road be considered as a bike route, which will likely require shared bike and pedestrian pathways along portions of Pleasant Hill Road within the Study area.

Opportunities for bicycle and pedestrian facilities along the Corridor vary greatly because of the varied width of the road right-of-way and physical constraints that exist along the edge of the roadway such as driveways, retaining walls, mailboxes, and landscaping. The Steering Committee has included in its recommendations that future pedestrian, bicycle, and road improvements should be designed to work within the existing road right-of-way and work around existing constraints. Within the Corridor, Pleasant Hill Road exhibits the narrowest cross section (38.5 feet) near Hedaro Court and the widest cross section (88.5 feet) near Boyd Road. See Figures 5 and 6 for roadway sections showing the existing conditions in these areas.

![Diagram of Narrowest Roadway Section](image)

**Figure 5 - Pleasant Hill Road Narrowest Existing Section at Hedaro Court**

![Diagram of Widest Roadway Section](image)

**Figure 6 - Pleasant Hill Road Widest Existing Section near Boyd Road**

McGill Martin Self, Inc., October 1999
2.7 Review by the City of Pleasant Hill Traffic Safety Committee

Stop Sign at Boyd Road

On August 5, 1998, the City of Pleasant Hill Traffic Safety Committee reviewed the Steering Committee’s recommendation to install a stop sign at Pleasant Hill Road at Boyd Road. A stop sign was one idea under consideration to get cars to slow down. The stop sign was denied by the Traffic Safety Committee, based on concerns of local residents and conclusions that the intersection is not a safety problem. In addition, a stop sign located at the intersection may actually cause rear-end collisions because of the “hump”/visibility problem at the intersection (Pleasant Hill Road has a vertical curve that reduces sight distance to the north of Boyd Road). The Traffic Safety Committee concluded that a stop sign located at this intersection may cause more harm than benefit.

“Raised Intersections”

The "raised intersection" traffic calming technique was first reviewed by the Traffic Safety Committee on September 2, 1998. Construction of a "raised intersection" involves raising the pavement in the middle of the roadway intersection two to three inches and installing a combination of patterned pavement, crosswalk striping, signage, and finished curbs and shoulders. The Traffic Safety Committee agreed to consider the concept, and requested that the traffic engineer return with more information on other cities’ experience with this traffic calming technique, and a suggestion where a “trial” intersection(s) could be installed to test it’s effectiveness on Pleasant Hill Road.

On October 7, 1998, City staff presented the experience of Seattle, Washington, San Leandro, California, and Howard County, Maryland. It was noted that Seattle and San Leandro’s raised intersection installations were in conditions not similar to Pleasant Hill Road, and that Howard County’s raised intersection installations were in conditions very similar to Pleasant Hill Road.

The Seattle installation was on a residential access street with a traffic volume of less than 1,500 cars daily, and the curb-to-curb width of the intersecting streets was only 25 feet. The Seattle program emphasizes traffic circles because they are less costly, and they provide speed reductions on residential streets similar to speed humps and raised intersections. San Leandro tried similar traffic circles on residential streets, and they were removed after a trial period because of issues of pedestrian safety.
Howard County, Maryland, has installed twelve raised intersections with varying design characteristics, and the Traffic Engineering Division considers them to be almost completely successful, with many benefits. The County emphasized that the raised intersections were part of a total system of traffic calming devices in the community, and additional traffic calming devices such as speed tables ("raised intersections" between intersections), elongated speed humps, and traffic chokers were also used in conjunction with the raised intersections.

The intersection of Tamar Drive and Major Lane, in Howard County, was of particular interest and similarity to our current study of Pleasant Hill Road. Tamar Drive is a through street with 11,000 vehicle trips daily and a school is located at the intersection. The raised intersection was installed because the school guard had trouble safely crossing the children across Tamar Drive; drivers were speeding and also violated pedestrian right of way, and enforcement did not seem to be effective in reducing these problems.

Howard County considered a roundabout as an alternative, and decided to use the raised intersection due to pedestrian safety concerns with the roundabout. The raised intersection has performed as desired, and there has only been one claim, which was denied. (A corvette owner filed a claim for suspension damage when he traveled through the intersection far above the speed limit. The intersection permits 20 to 25-mph speeds.) The ramp slope at the intersection of Tamar Drive and Major Lane, in Howard County, is 1:10, which is far steeper than our traffic engineer was suggesting for raised intersections on Pleasant Hill Road.
Several Traffic Safety Committee Members feel that a raised intersection is the same as a "speed bump". However, the "raised intersection" proposed is very different from a speed bump/hump. The "raised intersection" is considered more of a visual deterrent to speed, rather than a physical one. The "raised intersection" is a gradual slope: a 12-foot ramp that rises only two inches above the roadway surface, less than 1.4% slope. (For reference, roadway design requires a 2% cross slope for drainage purposes.) In addition, the "raised intersection" is designed for safe travel in excess of the posted speed.
Our traffic engineer believed that there is sufficient reason for Pleasant Hill to install one raised intersection. The installation will need to be monitored for any negative effects, and for its effect at reducing speed. If it is considered a success, additional "raised intersections" may be considered. For the purpose of this study, a "raised intersections" between intersections is considered a speed table. The traffic engineer described that, in order to control speeds along the entire corridor, a maximum spacing of 600 feet between "raised intersections" was required (300 - 1000 feet may be effective). This multiple installment may not be preferable, but rather a variety of other traffic calming devices working with the one "raised intersection".

With the support of the project traffic engineer and the Traffic Safety Committee, the Steering Committee recommended that a single "raised intersection" be installed at the intersection of Cumberland Drive and Pleasant Hill Road, north of Pleasant Hill Elementary School.

Figure 10 - Conceptual "Raised Intersection" Detail

Traffic Safety Committee Vote of Support for the Corridor Concept Study

The draft Corridor Concept Study was reviewed by the Traffic Safety Committee on November 3, 1999 and December 1, 1999. The Committee voted on December 1, 1999, to support the proposed improvements as presented in The Study with a vote of 5-0-0. Police Chief Phalen stated that while he supports the recommendations of The Study, he is withholding support for the use of raised intersections until complete data regarding their effectiveness is available.
Part Three

The Corridor Concept Study
Conclusions
3.0 THE CORRIDOR CONCEPT STUDY CONCLUSIONS

3.1 Projects Initiated

The Steering Committee discussions provided the impetus for three improvement projects that have already been completed or are currently in the process of being implemented. These three projects are described as:

I. On-Site Improvements at Pleasant Hill Elementary School
II. Oak Park Boulevard Widening at Pleasant Hill Elementary School
III. Installation of a "Raised Intersection" on Pleasant Hill Road and Cumberland Drive, north of Pleasant Hill Elementary School

I. Complete to Date: On-Site Pleasant Hill Elementary School

The Mount Diablo Unified School District proposed the following on-site improvements that were installed in December 1998. These improvements provide recognizable relief to the previous drop-off traffic congestion that occurred off-site. It is not a complete fix, but it represents a commitment by the School to improving the circulation of the intersection and increasing safety for the students going to and coming from school.

The School District made the following improvements on-site Pleasant Hill Elementary School in December 1998. The improvements included:

- Re-striping their parking lot in order to direct drop-off traffic to circulate on-site rather than congesting streets off-site. The striping created two entry lanes and one exit lane.
- Designating the parking along the south side of the drop-off lanes as staff parking (to reduce visitor traffic interference with drop-off traffic at peak time).
- Redirecting all buses to enter the property at the same driveway (Lane configuration adjacent to the school will continue to allow a separation between auto and bus drop-off).
- Making the exit onto Oak Park Boulevard a “right-turn only” during peak times.
- Increasing traffic control individuals present during the peak times (at least initially).
- Enlisting the assistance of the PTA for parent education on drop-off procedures.

![Designation of Staff Parking](image1)

![Installation of four-foot fence](image2)
The City of Pleasant Hill installed the following interim items to complement the efforts of the Mount Diablo School District:

- A four-foot cyclone fence was installed in front of Pleasant Hill Elementary to discourage drop-off directly on Pleasant Hill Road and direct all pedestrians to the striped crosswalks. The fence was installed beginning near the entrance driveway to Pleasant Hill Elementary (allowing safe sight-distance) and ends at the District property at the western property limit (next to Play and Learn Daycare). This fence eliminates the school bus entrance driveway located on Pleasant Hill Road.
- In addition, the City installed a "No Left Turn Allowed" (during the a.m. peak) signage at the Pleasant Hill Elementary driveway exit.

Many Steering Committee members expressed that safety around the school has already been positively affected by these changes as well as by increased public awareness of traffic and safety problems, and parental education about drop-off procedures.

II. Approved by the City Council on April 5, 1999: Oak Park Boulevard Widening at Pleasant Hill Elementary School (See Figure 11)

The concern for student safety became the most urgent of the issues debated by the Steering Committee. This is easily recognizable in each project that has been described so far, and remains a focus in the overall recommendation of this study. Environmental review was completed for the Oak Park Boulevard Widening at Pleasant Hill Elementary Project and authorization of the design contract was approved by the City Council. The Widening Project elements include:

- Construction of extra width for Oak Park Boulevard between Oak Park Assembly of God and the Pleasant Hill Recreation & Park property to accommodate a longer left-turn lane into the Pleasant Hill Elementary and a westbound through travel lane (tree removal and replacement may be required).
- Construction of extra width for Pleasant Hill Road to Oak Park Boulevard to accommodate a dedicated right-turn lane (northbound may require the construction of a retaining wall with guardrail because of elevation differences).
- The resulting eastbound lane on Oak Park Boulevard (at Pleasant Hill Road) to be at least 18-feet wide to allow concurrent right turns into Pleasant Hill Elementary and through eastbound travel.
- A four to six-foot vinyl-covered cyclone fence will be permanently installed in front of Pleasant Hill Elementary, in place of the temporary fence installed by the City in December 1998.
- Permanent, low maintenance landscaping will be installed to further "soften" the visual presence of this fence along the roadway.
- The Pleasant Hill Elementary School driveway will be relocated to the north and will be wide enough to accommodate the striped lanes on-site.
- Removal and replacement of up to 13 trees along Oak Park Boulevard. All trees removed will be replaced at a 1:1.5 ratio.
- Class II bicycle lanes will be added to this portion of the Oak Park Boulevard roadway.
Figure 11 - Oak Park Boulevard Widening at Pleasant Hill Elementary School

McGill Martin Self, Inc., February 1999
III. Approved by the City Council on April 5, 1999: Installation of a "Raised Intersection" on Pleasant Hill Road and Cumberland Drive, north of Pleasant Hill Elementary School (See Figure 11 for intersection location, See Figures 7 - 10 for details).

The idea of the "raised intersection" has not been without controversy, but its proponents remain convinced that it will be an effective measure at reducing speed along the route. Monitoring the effectiveness of the installation has been made a component of the project and is described below.

Figure 12 - "Raised Intersection" Presented at the April 5th City Council Meeting

McGill Martin Self, Inc., February 1999
Performance Standards for the Raised Intersection

The primary issue is whether the raised intersection directly reduces speeds through the Corridor as the driver approaches the all-way stop at Oak Park Boulevard/Pleasant Hill Road intersection. In addition, the effect on whether trucks and fire equipment can negotiate the raised intersection at appropriate speeds will be measured. The traffic engineer expects a five to six-mph reduction of speed between Cumberland Drive and Oak Park Boulevard and ten-mph reduction of speed specifically at the "raised intersection" installed at Cumberland Drive.

In order to determine the effectiveness of "raised intersections" as traffic-calming features, a change has to be detected. Visually, if it is obvious that traffic is traveling safer and slower through these intersections, then it can be considered a success. If it cannot be determined visually, speed checks can be conducted during the peak times, and performance tests can be conducted by both emergency response departments (Fire Department and Ambulance Services) and by other larger vehicles with multiple axles.

3.2 Final Recommendations of the Steering Committee

The final Steering Committee meeting was held on September 22, 1999. The purpose of the meeting was to review and gain consensus for conceptual designs that achieve the previously agreed upon objectives for safety improvements and traffic calming along the Corridor. Specifically, a Traffic Calming Plan, Pedestrian Enhancement Plan, and Conceptual Typical Roadway Cross Sections were presented at the meeting. These concept plans were prepared by MMS based upon concepts discussed throughout the process. The plans were mailed to the Steering Committee members along with the meeting announcement to solicit comments and input prior to the meeting.

In addition to discussing conceptual designs and recommendations for traffic calming, the Public Works Department presented a potential Phasing Plan to implement the recommendations. The City Council has allocated a budget of approximately $1.2 million to fund safety improvements along the Corridor, including design and construction costs. Cost estimates prepared by the City's engineering division show that the improvements recommended in this report will exceed the allocated budget. Based on this, a Phasing Plan showing how the improvements could be implemented in various phases was presented and discussed by the Steering Committee.

Presented below are the recommendations discussed throughout the process of this Study and agreed to by the Steering Committee at the final meeting. These recommendations are presented below following the appropriate stated Objectives, as listed originally in Figure 2. A discussion of how these improvements might best be phased given the current budget, follows this section of the report.

OBJECTIVE #1: Improve safety particularly near Pleasant Hill Elementary School.

As described previously in Section 3.1 of this report, three projects are underway which directly address this objective. See Section 3.1 and Figures 7 - 12.
OBJECTIVE #2: Keep Pleasant Hill Road between Gregory Lane and Geary Road a two-lane road.

Pleasant Hill Road to the north and south of the Corridor has been widened to four lanes. Both limits of the Corridor are signalized with high traffic activity because commercial and multi-family uses exist near the intersections. The Corridor is predominantly developed with single-family residential uses and is only two lanes instead of four, which results in this part of Pleasant Hill Road having a more rural or country road character and a lower volume of traffic than other parts of Pleasant Hill Road to the north and south.

The recommendation of the Steering Committee is that future improvements along the roadway should maintain the two-lane configuration. There is no support from the Steering Committee to widen the Corridor roadway to add additional driving lanes.

OBJECTIVE #3: Reduce the volume of through-traffic along the Corridor.

The traffic study concluded that traffic volumes along the Pleasant Hill Road Corridor do not show a pattern of growth over the past decade. It was also discovered that the residents themselves who live along the Corridor generate the majority of the daily trips (11,000 of the 12,000 daily trips). Increased traffic volumes along the Corridor in the past few years appear to be primarily related to the construction of additional lanes and changes to the interchanges along Interstate 680, with commuters seeking alternative routes to bypass construction delays.

To encourage commuter and through-traffic to use the roadways, which are designated to carry through-traffic, namely I-680 and Taylor Boulevard, rather than Pleasant Hill Road, the Steering Committee recommends the following improvements:

- Install additional signage at the intersections of Geary Road/Pleasant Hill Road and Gregory Lane/Pleasant Hill Road to direct traffic traveling through the area to use Taylor Boulevard and I-680.
- "Gateway" improvements should be designed and built at both ends of the Corridor to visually show drivers that they are entering a more rural section of Pleasant Hill Road and to passively encourage traffic calming. The Committee also hopes that gateways will discourage through-traffic and commuters from using this part of Pleasant Hill Road. The gateways could include a raised median with planting, a tapered or narrower roadway to signify a transitional area, accent paving at the crosswalk, and a corridor entry sign. See Figure 13. A conceptual sketch for the southern gateway was provided by a resident. See Figure 14. Although the actual design of the gateways need to be resolved, based on physical conditions and available funding, it was agreed by the Steering Committee that creating gateways by enhancing the natural elements and maximizing landscaping at both entries to the Corridor is desired.
- Installation of community-designed signs at the proposed gateways that announce that the driver is now entering the Pleasant Hill Road Corridor and the residents appreciate them slowing down. See illustration on Page 18.
- Installation of traffic-calming measures discussed under Objective #4, below, to further discourage pass-through trips through the Corridor.
Figure 13 - Gateway Concept - Plan View

McGill Martin Self, Inc., October 1999
Figure 14, Conceptual Sketch of Southern Gateway, Drawn by Resident
OBJECTIVE #4: Reduce the speed of traffic along the Corridor

At the Steering Committee meetings held throughout the duration of this study, the Committee considered several ways to reduce travel speeds and 'calm' traffic along the Corridor. The Committee carefully considered many different ways to accomplish this goal while still insuring that the roadway design would allow adequate, safe response time for police and fire emergency vehicles.

Traffic-calming measures recommended by the Steering Committee are listed below and are shown on the Traffic Calming Plan, Figure 15.

♦ Install a series of traffic-calming measures that create a traffic-calming corridor between Cumberland Drive and Lucinda Lane. In addition to the improvements which have been completed or are underway near Pleasant Hill Elementary School other improvements in this traffic-calming corridor include:
  a. Restrip the lanes of the roadway to narrow the lane width from twelve feet to ten feet and install a landscaped or striped median between the travel lanes, when adequate width is available.
  b. Install a raised landscaped median island in the center of the roadway near Cumberland Drive (south) to replace the existing striped median.
  c. Install a designated drop-off zone in front of the day care center with landscaping and a sidewalk along the street frontage, as shown on Figure 16. A striped median island and striped bike lane are also recommended near the day care center to improve safety in this area.
  d. Replace the existing drainage swales along the west side of the roadway from Cumberland Drive to Ackley Court with underground drainage, repair the pedestrian paths, and provide a landscaped buffer instead of the drainage swales.
  e. Provide a pedestrian pathway along the Recreation & Parks property from Oak Park Boulevard to Wendell Lane.
  f. Add striped bike route lanes and signage to this area.
  g. Replace the existing barricades located at the intersection of Wendell Lane and Pleasant Hill Road with landscaped elements.
  h. Enhance the pedestrian bridge located north of Lucinda Lane.

♦ Consider designating one consistent speed limit along the Corridor, except at the School where the speed limit is reduced during school hours.

♦ Continue consistent enforcement of the speed limit along the Corridor by the Police Department.

♦ Include additional signage of school zones, crosswalks, and community-designed signs.

♦ Install a traffic-calming device at Boyd Road and Pleasant Hill Road. This could include changing the elevation of the pavement in and near the intersection to improve the sight-distance and installing a four-way stop, or installing a raised intersection or installing a "round-about".

♦ Create "gateways" at both ends of the Corridor. Refer to Figures 13 and 14.
Figure 15, Traffic Calming Plan

McGill Martin Self, Inc., October 1999
Figure 16, Improvements near the Child Care Center

McGill Martin Self, Inc., October 1999
Figure 17, Traffic Calming Corridor from Karol Lane to Wood Creek Place

McGill Martin Self, Inc., October 1999
Install a traffic-calming corridor between Karol Lane and Wood Creek Place. See Figure 17. This will involve narrowing the width of the travel lanes and constructing landscaped medians in the center of the roadway with landscaped planting beds along the sides of the roadway between the road and the sidewalk. The existing pedestrian crossing at the creek should be enhanced and a landscaped planter installed between the pedestrian path and the roadway. With all proposed landscaping, the type of trees and shrubs selected will need to insure that drivers' sight distance is not impaired.

**OBJECTIVE #5: Improve pedestrian and bicycle access along the Corridor.**

Pedestrians and bicycles should be able to travel safely along Pleasant Hill Road, not just cars. The Steering Committee recommended several ways to improve pedestrian and bicycle safety but stressed that such improvements should be done within the existing road right-of-way and working around existing physical constraints, such as driveways, mailboxes and landscaping.

Pedestrian and bicycle improvements recommended by the Steering Committee are listed below and are shown on the Pedestrian and Bicycle Enhancement Plan, Figure 18.

- Provide a continuous pedestrian path, four feet wide, along the east side of the roadway. This will require the enhancement of several existing pedestrian crossings over existing creeks so that the crossings can be safely used by pedestrians. Providing a continuous pedestrian pathway will also require that some new sections of path be installed to connect to the existing segments of pedestrian paths that exist intermittently along the east side of the roadway.

- Repair the existing pedestrian path along the west side of the road in areas where needed.

- **Install an asphalt curb to separate the roadway from the pedestrian path, when feasible.**

- Repair the existing pedestrian bridge between Diablo View Road and Barnett Terrace.

- Enhance three existing crossings over existing creeks in order to create a continuous pedestrian pathway along the east side of the roadway.

- Provide signage along Pleasant Hill Road to direct people to the existing pedestrian/bicycle trail that is located along the Contra Costa Canal.

- Install a pedestrian bridge over the canal at Bridge Road to make access to the trail easier for residents west of the canal, as the trail is on the east side of the canal.

- Provide a bike route along the Corridor. In some areas the pedestrian paths on the east and/or west sides of the roadway will need to be shared for pedestrian and bicycles. This may require changes to City regulations to allow bicycles to use pedestrian paths.

- **Install pedestrian-oriented lighting along the Corridor, when feasible.**
- Stripe additional crosswalks at Boyd Road and at Kavel Lane.
- Install a pedestrian pathway that meanders slightly along the Recreation & Parks property.

*Figure 18, Pedestrian and Bicycle Enhancement Plan*

McGill Martin Self, Inc., October 1999
OBJECTIVE #6: Improving drainage and landscaping along the Corridor.

The passage of time has resulted in aging infrastructure and under-designed improvements. The Corridor is in need of some repair and updating, as described in the following recommendations by the Steering Committee:

- Pleasant Hill Road is affected by heavy runoff during the rainy season. The final design of the improvements recommended in this Study and any routine roadway maintenance improvements should address runoff sources and provide drainage improvements that will help control the volume of runoff and flooding problems along the Corridor.
- Improve landscaping wherever possible along the Corridor, such as in the proposed gateways, medians and near the pedestrian bridges. Insure that all new landscaping is designed to maintain adequate sight distance for drivers.
- Provide landscaped separation between the pedestrian and the travel lanes (two to four feet wide), when possible.
- Provide landscape elements in lieu of the existing barricade at Wendall Lane.
- Undertake routine maintenance of roadway and repair damaged pavement areas, where necessary.
- Evaluate the process and available funding sources for removing utility poles and undergrounding existing overhead wires. Implement, if feasible, within existing cost and space constraints.
3.3 Cost Estimate and Proposed Phasing Plan

The City Engineer has advised that the current funding allocated for Pleasant Hill Road safety improvements is $1.2 million, including construction and engineering costs. The improvements currently underway near Pleasant Hill Elementary School and the improvements recommended in this report are estimated by the City's engineering division to be $3-4 million. Because this exceeds the current funding, the Steering Committee in conjunction with the City engineers and MMS have established a proposed phasing program with the priority projects being identified in the earliest phases. The phasing plan is shown on Figure 19 and briefly described below.

The Steering Committee strongly encourages the City to pursue additional funding from other City budgets and grant funds.

Phase I

The Steering Committee recommended that the first phase improvements should by directed toward completing the traffic and pedestrian safety improvements recommended for the area near Pleasant Hill Elementary School, and at Boyd Road. Therefore, the recommended Phase I improvements include: installing the traffic-calming corridor between Cumberland Drive and Lucinda Lane. Figure 20 shows a typical cross section of roadway.

Install traffic-calming improvements at Boyd Road.

Improvements already approved near Pleasant Hill Elementary School are also included in the first phase.

Coordination with the Water District regarding a new pedestrian bridge at Bridge Street should be initiated in Phase I.

The estimated cost for Phase I improvements is $800,000-$900,000. This is a 'ballpark' estimate prepared by the City's engineering division; the cost will vary depending on the final traffic-calming device chosen at Boyd Road.

Phase II

Install the traffic-calming measures and pedestrian safety improvements between Boyd Road and Cumberland Drive. Figure 21 shows a typical roadway cross section and Figure 17 shows the recommended improvements from Karol Lane to Wood Creek Place. A new pedestrian bridge on Bridge Street to access the Contra Costa Canal trail is included in this phase. Coordination with the Water District regarding required permits should be initiated with Phase I.

Phase III

Install gateway improvements at the southern and northern ends of the Corridor, and repair the existing pedestrian bridge located between Diablo View and Barnett Court.
Phase IV

Install pedestrian access improvements, roadway repair, and County suggested improvements in the area between Lucinda Lane and Diablo View Road. Figure 22 shows a typical roadway cross section in this area.

Phase V

The final phase of roadway safety improvements as recommended by the Steering Committee includes the area north of Boyd Road to the northern end of the Corridor. The proposed improvements are relatively minor and are primarily needed to provide parking and improve pedestrian and bicycle safety on the west side of Pleasant Hill Road. Figure 23 shows a typical roadway cross section.
Figure 19, Phasing Plan

McGill Martin Self, Inc., October 1999
Phase IV

Install pedestrian access improvements, roadway repair, and County suggested improvements in the area between Lucinda Lane and Diablo View Road. Figure 22 shows a typical roadway cross section in this area.

Phase V

The final phase of roadway safety improvements as recommended by the Steering Committee includes the area north of Boyd Road to the northern end of the Corridor. The proposed improvements are relatively minor and are primarily needed to provide parking and improve pedestrian and bicycle safety on the west side of Pleasant Hill Road. Figure 23 shows a typical roadway cross section.
Figure 20, Typical Roadway Section from Lucinda Lane to Cumberland Drive

McGill Martin Self, Inc., October 1999

Note: The AC path and the bike lane/route are shared between Lucinda Lane and El Rancho Drive.
Figure 21, Typical Roadway Section from Cumberland Drive to Boyd Road

Δ Note: The area shown as parking/bike route also contains existing and potential parking areas.
Figure 22, Typical Roadway Cross Section from Diablo View Road to Lucinda Lane

McGill Martin Self, Inc., October 1999
Figure 23, Typical Cross Section from Boyd Road to Gregory Lane

McGill Martin Self, Inc., October 1999