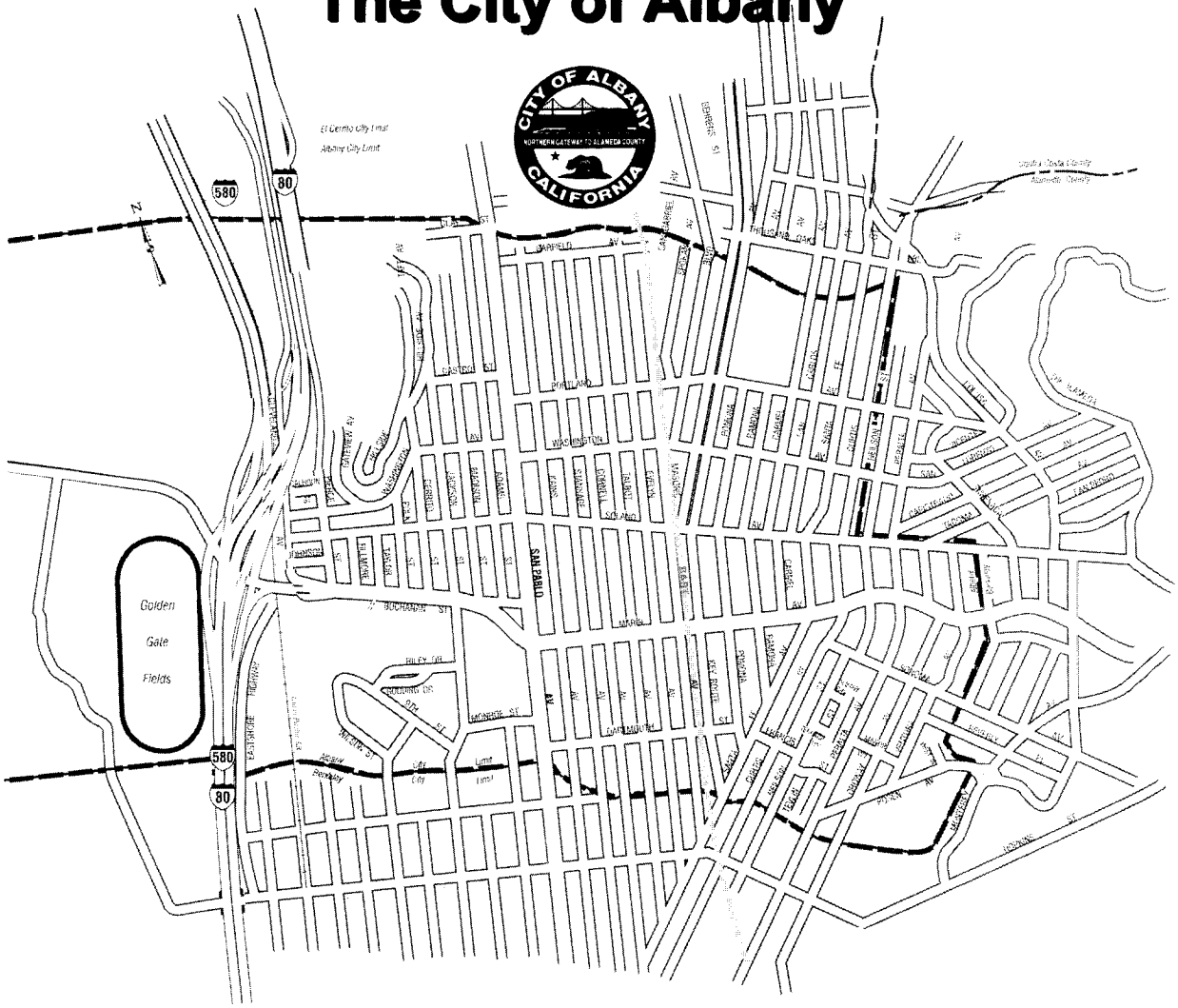
Appendices

TRAFFIC MANAGEMENT PLAN

for

The City of Albany



Prepared for

The City of Albany

Prepared by

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in coordination with

The City of Albany
Traffic and Safety Commission

APPENDIX A

Profiles of Specific Neighborhood Issues and Associated Data Analyses

1. Adams St. : Blind Pedestrian Safety

Blind pedestrian in crosswalk

Location

Adams St. and other streets near the Orientation Center for the Blind (located at the end of Adams St.)

Issue

It is difficult for blind persons to maneuver around the area. There is a paved pedestrian walkway that connects directly between the school and San Pablo Ave (mid-block between Carlson Blvd. and Brighton Ave.). However, there are no special traffic signal devices at the signalized intersections along San Pablo Ave. and the are no special warning signs for motorists denoting the possible presence of blind persons or pavements markings in the immediate vicinity of this school.

Data Analysis

Speed studies done in 1998 during the AM and PM hours for Adams St. between Castro and Washington indicate that at the 85th percentile measurement of vehicle speed, vehicles violate the posted speed limit of 25mph, traveling 29mph in the AM peak hour and 28mph in the PM peak hour.

The routes taken by students of the Orientation Center for the Blind vary throughout their eight month program. Most of the routes are in the area west of San Pablo Ave., north of Buchanan St., east of Cerrito St., and south of the school. Some lesson plans take the students east on Solano Ave., Portland Ave. or Brighton Ave. Other routes follow San Pablo north or to El Cerrito Plaza. Accident data for Adams St. indicates that from January 1994 to September 1997, the dates for which data on reported accidents was available, no accidents were reported on Adams St within three blocks of the school. No accidents were reported for Hillside Ave during this period. However, there was one pedestrian accident at each of the following four locations in the vicinity of the school : San Pablo/Brighton, San Pablo/Garfield, San Pablo/Castro, and San Pablo/Portland. No specific data is available concerning blind persons involved in these accidents.

The school has indicated that significant special treatments might be counterproductive to students's ability to learn to cope with a typical urban street environment, which is one of the key lessons the school is trying to teach its students.

One difficulty faced by the students is that it may be difficult to identify the transition between sidewalk and street where there are wheelchair ramps. In particular, inconsistent placement of ramps at different intersections presents a challenge in determining the location of the curb.

Major Findings

Speed on Adams St. in the vicinity of the Orientation Center for the Blind exceeds posted limits by a maximum of 4mph during the AM peak hour, when students are walking to school. The presence of vehicles exceeding the speed limit near the school for the blind indicates that risky behavior does occur at this location. Accident data near the school during the past 3½ years indicates a history of pedestrian accidents. There has been one pedestrian accident at each of the following intersections : San Pablo Ave. at Castro St., Garfield Ave. and Brighton Ave. There locations are on routes used by some blind students. This indicates that when students are taking routes on San Pablo Ave., they are crossing in an area where pedestrian accidents have occurred.

2. Adams St. : Congestion

Location
Adams St.

Issue
--Residents concerned about congestion problems.
--Residents concerned about impacts of local businesses, which block the street.

Data Analysis
Average Daily Traffic (ADT) for Adams St. from Solano Ave. to Washington Ave. is 1093 northbound vehicles (Adams St. is one-way).

One traffic lane provides a capacity of approximately 1900 vehicles/hr. Peak hour volume is approximately 10% of total ADT, or approximately 109 vehicles. Vehicle volumes would be approximately 5-6% of capacity in the peak hour on Adams St. therefore Adams St. is uncongested. However, original work by Donald Appleyard in the 1980's shows that a street with 1093 ADT means that traffic is just at the level where residents perceive that automobiles dominate the street and would be less comfortable with activities such as walking, bicycling and playing on this street.

In addition, residents gave testimony at Area 1 meetings that they have observed at various times vehicles being unloaded at local car dealerships and car repair locations causing streets to be blocked. Residents indicated that the most common times of day when the roadway was blocked were between the hours of 7:00-8:30 AM and 4:00-5:00 PM.

Major Findings
Traffic volumes on Adams St. during the peak periods are less than 6% of capacity. Therefore, Adams St. is generally uncongested. However, momentary blockages have been observed by residents who attribute many of these blockages to local businesses.

3. Adams St./Washington Ave. : Sight Distance

Location

Adams St./Washington Ave.

Issue

Sight distance is poor. The provision of on-street parking on the south side of Washington Ave. as well as the location of bushes on the southwest corner, make it difficult for motorists on the northbound Adams St. approach (stop controlled) to see vehicles coming from eastbound Washington Ave. (uncontrolled) without passing the stop bar in order to clearly see oncoming vehicles from the west, which do not have to stop.

Data Analysis

The northbound approach on Adams St. has poor sight distance towards the west. With the presence of parked cars on the south side of Washington Ave. sight distance from Adams is limited to 35 feet. This is substantially less than the 150 feet of stopping sight distance recommended on Table 201.1 of the Caltrans Highway Design Manual for a street with a 25mph design. Even without any cars parked close to the intersection the sight distance is 140 feet which is less than recommended.

Major Findings

Sight distance from the northbound approach at the intersection does not meet the Caltrans recommendations for stopping sight distance.

4. Adams St. : Speeding

Location

Adams St.

Issue

Speeding is encouraged by the one-way character of Adams St. (with curb-to-curb width of approximately 29.5 feet and parking on both sides). Speeding is seen as dangerous to children, pets and students at the nearby Orientation Center for the Blind. Speeding commuters may be using Adams St. as an alternate route from San Pablo Ave. and some local business customers may be speeding on Adams St. in the evening hours.

Data Analysis

Speed studies taken in 1998 during the AM and PM peak hours for Adams St. between Castro and Washington indicate that at the 85th percentile measurement of vehicle speed, vehicles violate the posted speed limit of 25mph, traveling 29mph in the AM peak hour and 28mph in the PM peak hour. Its highest 85th percentile speed was measured at 4mph over the speed limit during the AM peak hour.

Major Findings

The highest 85th percentile speed was measured at 4mph over the speed limit in the AM peak hour.

5. Buchanan St./Jackson St. : Child/Pedestrian Safety

Location

Buchanan St./Jackson St.

Issue

This location has high pedestrian activity by school children traveling to and from the existing Albany Middle School located on the south side of Buchanan St. at Jackson St. Assisted by a school crossing guard, children traveling between the school and San Pablo Ave. use the south crosswalk and cross Jackson St., while those traveling to and from areas north of Buchanan St. use the west crosswalk to cross Buchanan St. Residents expressed concern with child pedestrian safety becoming an even greater concern when this location becomes an elementary school. Residents were concerned that elementary school children would be less attentive and that more vehicular traffic would be generated arriving from north of the school.

Although there are pedestrian signal heads at this intersection, there are potential left turn phases (i.e., permissive left turn phasing on the east/west Buchanan St. and north/south Jackson St. approaches). Therefore, left turn vehicles from westbound Buchanan St. to southbound Jackson St., and from northbound Jackson St. to westbound Buchanan St., conflict with school children crossing the south and west crosswalks.

Data Analysis

During the period from 1994-1997, there were no reported accidents involving pedestrians or bicyclists at this location just north of the Albany Middle School. Two vehicular accidents occurred, which resulted in property damage only. Observation of this location indicates that there are serious conflicts between pedestrians and vehicles due to 1) the number of children and parents picking up children within a twenty-minute "window" in the AM and midday, mostly during a five minute period just before the start of school and a five minute period just after the end of school, coupled with 2) permissive left turn phasing on the east/west Buchanan St. and north/south Jackson St. locations.

This situation may contribute to risky behavior at this location immediately before and after school. There are a relatively large number of pedestrians at this location counted in the AM peak hour and in the midday at the end of the school day. In the AM peak period the largest number of vehicle/pedestrian conflicts occur at the south crosswalk. There were 184 pedestrians crossing the south crosswalk during this period. During the same period, a total of 145 vehicles made right turns and left turns across the south crosswalk. Observation confirms that many of these vehicles and pedestrians

arrive and leave during the fifteen minutes prior to and five minutes after the start of the school day. This concentration of vehicular and pedestrian activity in the AM peak hour could contribute to risky behavior as both vehicles and child pedestrians attempt to arrive at school on time.

A similar situation occurs in the midday peak, which includes the school closing time, when 307 pedestrians crossed at the south crosswalk; during the same period, 96 vehicles made left or right turns across the south crosswalk. Again, observations indicate that the majority of these pedestrians are schoolchildren leaving just after the end of the school day, and a high number of the vehicles making these movements are parents picking up children during the same concentrated period of time. As in the AM peak hour, this concentration of vehicular and pedestrian activity could contribute to risky behavior as vehicles and child pedestrians attempt to leave school as quickly as possible. Observations of this location during school starting and ending times indicates that risky behavior was occurring: vehicles made U-turns and stopped in travel lanes to drop off children at this location. Generally speaking, it was observed that there was not enough space to accommodate the pick-up and drop-off of children at this location.

Major Findings

Observations indicate that although there have been no accidents involving pedestrians at this location, the volume of pedestrians crossing both at the south and west approaches to this intersection, coupled with vehicles whose drivers are looking for both gaps in traffic and gaps in pedestrian crossings, and the concentrated arrival and departure times associated with the beginning and end of the school day, contribute to the potential for risky behavior at this location. In addition, risky behavior was observed in and around this location, including U-turns and stopping in travel lanes to drop off children without pulling over.

6. Buchanan St./Jackson St. : Southbound Left Turn Lane

Location

Southbound lane on Buchanan St. at Jackson St.

Issue

A left turn lane is needed. Traffic backs up, especially during morning hours when there is traffic from the Albany middle school.

Data Analysis

Traffic backs up on Jackson St. due to vehicles making a left turn from Jackson Street to Buchanan Street, during the AM peak hour. If there are any vehicles parked near the intersection it is often not possible for through or right turning traffic to pass cars waiting to turn left.

Major Findings

Traffic backs up on Jackson St. due to vehicles making a left turn from Jackson Street to Buchanan Street, during the AM peak hour.

7. Buchanan St. : Speeding

Location

Buchanan St.

Issue

Speeding as vehicles exit the freeway and travel in the eastbound direction (especially in the morning).

Data Analysis

Speed study done in 1997 during the off peak hour for Buchanan Ave. between the city limits and San Pablo Ave., indicate that at the 85th percentile measurement of the vehicle speeds, vehicles violate the posted speed limit of 25 mph. During the off- peak vehicles travel at 37 mph eastbound and 42 mph westbound. The highest 85th percentile speed was measured at 17 mph over the speed limit during the off peak.

Major Findings

Vehicles exceed the speed limit on Buchanan Ave. during the off-peak. The highest 85th percentile vehicle speeds exceed the posted speed limit by a maximum of 17mph.

8. Buchanan St./Marin Ave. Extension : Merging Problem

Location

Buchanan St./Marin Ave.

Issue

Merging problem at Marin Ave. extension into Buchanan St. The westbound Buchanan St. lane merges into the northern-most through lane on westbound Marin Ave. extension. Although there is currently a sign indicating a merge point ahead as well as a STOP sign for westbound Buchanan St., some motorists coming from westbound Buchanan St. do not realize they need to merge with traffic from westbound Marin Ave. extension, thus causing risky behavior.

Data Analysis

Accident data at this location during the period of 1994-1997, indicates that there were a total of four accidents at the Marin Ave. Extension and Buchanan St. All were vehicular accidents which did not involve pedestrians or bicyclists. A closer examination of the California Statewide Integrated Traffic Records System (SWITRS) records for these incidents indicates that these accidents were unrelated to the merging issue described above.

Major Findings

Although the most recent accident data do not support the issue that the merge point at Buchanan St. and the westbound Marin Ave. extension is problematic, observation of the geometrics indicates that this design could cause motorist confusion and could lead to potential conflicts and possibly collisions between merging vehicles.

9. Buchanan St./San Pablo Ave./Pierce St. : Bicyclist Safety

Location

Buchanan St./San Pablo Ave./Pierce St.

Issue

City of Albany Bicycle Study — Bicyclists find excessive speed to be dangerous in these locations.

Data Analysis

Buchanan St.: Speed studies taken in 1997 during the hours of 11:05-11:35 AM on Buchanan St. between San Pablo Ave. and the City limit indicate that at the 85th percentile measurement of vehicle speed, vehicle speeds exceed the posted speed limit of 25mph. In fact, speeds on Buchanan St. violate the speed limit by a higher margin than at any other location in the City. The 85th percentile measurement of vehicular speed was 42mph in the westbound direction and 37mph in the eastbound direction. Its highest 85th percentile speed was measured at 17mph over the speed limit during the AM peak hour.

San Pablo Ave.: Speed studies during 1997 and 1998 indicate that during the morning hours of 10am to 12pm and the afternoon hours of 2:10pm to 2:45pm 85th percentile traffic speeds on San Pablo Ave. North of Washington Ave. were at or near the posted speed limit of 35mph. During the morning time period, 85th percentile speeds were 36mph northbound and 35mph southbound. During the afternoon hour, speeds were 35mph northbound and 34mph southbound. On average the 85th percentile speed was consistent with the posted speed limit.

Pierce St.: Speed studies performed during 1998 on the AM and PM peak hours indicate the 85th percentile speeds were well over the posted speed limit of 25mph on Pierce St. just south of the Richmond/Albany border. At this location, speeds were 32mph northbound and 30mph southbound in the AM peak hour and in the PM peak, 34mph northbound and 33mph southbound. In the PM peak hour; the highest 85th percentile speed was measured at 34mph northbound, which is 9mph over the speed limit

A speed study conducted in 1997 during the PM peak hour on Pierce St. immediately north of Washington indicates that the 85th percentile speed, were 26mph northbound and 27mph southbound. This is the location where residential land use begins on the east side on Cleveland Ave.

Based on the speed studies, bicyclists' concerns regarding risky behavior by motorists traveling at excessive speeds appear to be confirmed on Buchanan St. and on Pierce St. south of the Richmond/Albany border (especially during the PM peak hour).

However, the speed studies do not confirm vehicles exceed the speed limit on San Pablo Ave. where the speed limit is generally observed, even during the relatively uncongested midday hours. In addition, speeds are somewhat elevated on Pierce St. immediately north of Washington Ave. where 85th percentile speeds up to 3mph over the posted speed limit were observed.

Major Findings

Bicyclist concerns appear to be justified on Buchanan St. and on the northernmost stretch of Pierce St. where vehicles exceed speed limits. Although vehicles do not tend to speed on San Pablo Ave., vehicles traveling at the 35mph speed limit, as well as high traffic volumes, may justify bicyclist safety concerns.

Accident data indicates that although risky behavior occurs on Buchanan St. and Pierce St. due to vehicles traveling over the speed limit, thus far this has not translated into bicycle accidents on these streets. There have been no bike accidents on Pierce St. or Buchanan St. between 1994 and 1997. However, six bike accidents have occurred on San Pablo Ave. San Pablo Ave. had the highest rate of accidents overall per million vehicles than on any other City street, therefore more bicycle accidents were reported on San Pablo during the same period.

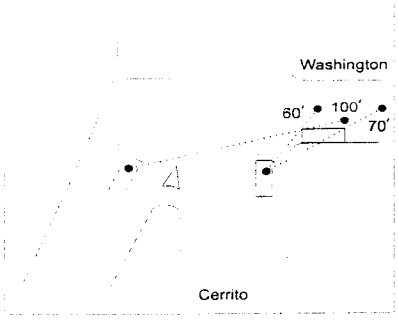
10. Cerrito St./Washington Ave. : Intersection Geometrics

Location

Cerrito St./Washington Ave.

Issue

Intersection geometrics is an issue at this location due to the acute angle created as northbound Cerrito St. meets Washington Avenue. Persons in vehicles on the northbound Cerrito St. approach (STOP sign controlled) must turn their heads more than 90° to the left when looking for vehicles on the eastbound Washington Ave. approach (STOP sign controlled). At the same time they have limited sight distance to the east where westbound vehicles on Washington Avenue are not STOP sign controlled.



Data Analysis

This is a three way STOP controlled intersection. Westbound traffic on Washington Avenue is not STOP controlled. From northbound Cerrito Street the sight distance to westbound Washington Avenue is 60 feet if a parked car is present on Washington Avenue and 70 feet without a parked car. From eastbound Washington Avenue the sight distance to westbound Washington Avenue is limited to 100 feet because of the slope of the hill.

Major Findings

The sight distance to westbound Washington Avenue from both eastbound and northbound traffic is less than the minimum stopping sight distance recommended by Table 201.1 of the Caltrans Highway Design Manual.

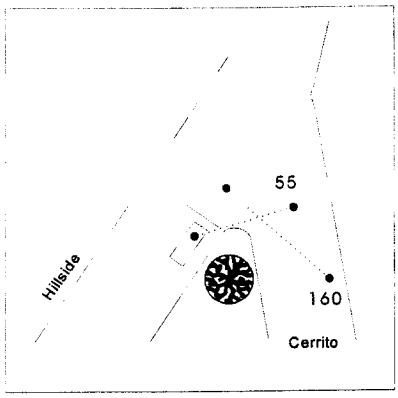
11. Cerrito St./Hillside Ave. : Intersection Geometrics

Location

Cerrito St./Hillside Ave.

Issue

Intersection geometrics is an issue at this 2 way STOP controlled intersection. The acute angle created as Cerrito St. meets Hillside Ave. makes it difficult for motorists on the north/eastbound approach of Hillside Ave. (STOP sign controlled) to see vehicles on the right coming up the hill from northbound Cerrito St. (uncontrolled).



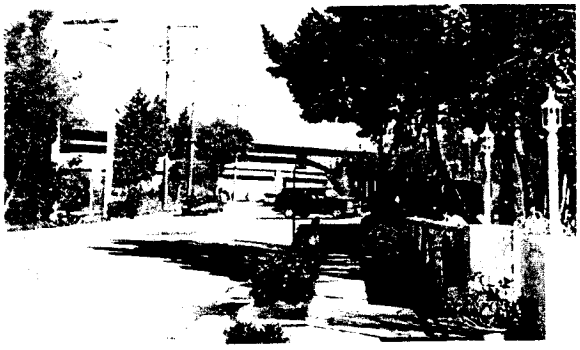
Data Analysis

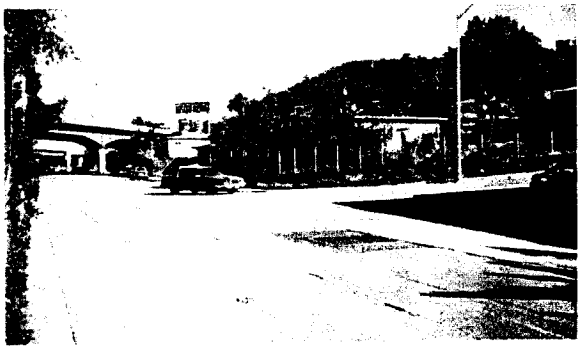
The sight distance from eastbound Hillside Ave. to northbound Cerrito St. is limited to 55 feet at the stop bar. However, this is less than the 150 feet stopping sight distance recommended by Table 201.1 of the Caltrans Highway Design Manual. From a point 35 feet past the stop bar, the sight distance is increased to 160 feet. Thus, the minimum allowable sight distance of 150 feet can be achieved by pulling out beyond the stop bar.

Major Findings

The sight distance at this location does not meet the 150 feet recommended by the Caltrans Highway Design Manual for stopping sight distance on a street with 25 mph design speed. However, if vehicles pull out 35 feet past the stop bar it is possible to meet the minimum of 150 feet stopping sight distance.

12. Cleveland Ave. at Washington Ave., Johnson St., Solano Ave., and Buchanan St. : Commute/Truck Cut-through Traffic





Location

Cleveland Ave. at Washington Ave., Johnson St., Solano Ave., and Buchanan St.

Issue

--Excessive left turns from southbound Cleveland Ave. onto the neighborhood streets. Vehicles are currently cutting through the residential neighborhoods to access Buchanan St. or San Pablo Ave. Similar to truck traffic, vehicles destined for Buchanan St. tend to access it from the north side via the neighborhood streets, rather than drive southbound to the end of Cleveland Ave., proceed under the Buchanan St. overpass, and access Buchanan St. from the south side.

--High truck traffic cutting through the neighborhoods from Cleveland Ave. Currently, Cleveland Ave. and Buchanan St. are designated truck routes. However, trucks have been observed cutting through the residential neighborhoods to access Buchanan St. from the north side, rather than drive southbound to the end of Cleveland Ave., proceed under the Buchanan St. overpass, and access Buchanan St. from the south side. When trucks cut through the neighborhoods, they turn left to either eastbound Solano Ave. or Washington Ave. Some truck drivers that may not be familiar with the area even turn left onto Johnson St. as well.

--The poor transition from southbound Cleveland Ave. to eastbound Buchanan St. encourages cut-through traffic to access Buchanan St. Vehicles destined for Buchanan St. from the Cleveland Ave. off-ramp tend to avoid the horizontal S-curve (located underneath the Buchanan St. overpass) by using the residential streets to access Buchanan St. from the north side instead.

Data Analysis

Cross-Cutting Traffic: During the AM peak period (7-9am), the following number of vehicles made left turns from southbound Cleveland to eastbound Washington, Solano, and Johnson:

Cleveland to Washington:	8 vehicles
Cleveland to Solano:	93 vehicles
Cleveland to Johnson	10 vehicles
Total of Vehicles Entering Neighborhood:	111 vehicles

The vast majority of all vehicles (approximately 70%) that traveled

southbound on Cleveland and arrived at the intersection of Cleveland and Washington continued directly southbound to the end of Cleveland Ave., and proceeded under the Cleveland overpass onto eastbound Buchanan.

However, as indicated above, a significant number of vehicles (approximately 30%) did make turns onto Washington, Solano, and Johnson. The vast majority of vehicles turned onto Solano Ave. from southbound Cleveland Ave. This would indicate that the community perception that the majority of vehicles traveling southbound on Cleveland Ave. turn onto neighborhood streets is not supported by the turning movement data. However, 30% of vehicles is a significant number, particularly on Solano Ave.

In order to estimate the destination of these cross-cutting vehicles, car following was used, where vehicles were followed to determine their ultimate destination. All of the vehicles followed turned onto Solano Ave. During the one-and-a-half hour car following exercise, with three staff members following vehicles which turned onto neighborhood streets, 15 vehicles were followed. Using the turning movement counts, assuming that the 93 vehicles which turned onto Solano Ave. during the two-hour peak period were evenly distributed over two hours, then during the one-hour car following procedure three-quarters of the 93 vehicles turning onto Solano Ave. constitutes the sampling frame. The sampling frame is therefore 3/4 of 93 vehicles (70 vehicles). Since 15 out of 70 vehicles were followed, the sample size is 21% of vehicles turning onto Solano Ave during one-and-one-half hours of the AM peak period.

The results of the car following exercise are as follows:

Seven of 15 vehicles followed made internal trips to destinations within the City of Albany (47% of all trips entering the neighborhood). One was made to a household within Area 1. The rest of the internal trips were made to businesses within the City: two trips were made to a paint store in Area 1 on San Pablo Ave. (these were the only trucks which were observed entering the area; these were light pickup trucks), and two were made to other businesses in Area 2 on Solano Ave (one to a copy shop and one to a convenience store). It is possible that the convenience store patron may have been ultimately destined outside of the City but this was not confirmed.

Eight of 15 vehicles made through trips to destinations outside of the City of Albany (53% of the vehicles observed entering the neighborhood). These vehicles were followed to the City limits to determine their path and to approximate their destinations. Three of the vehicles turned right on Pierce St., then left on Buchanan St., then entered I-80 westbound towards Oakland/San Francisco. These vehicles were avoiding construction traffic on I-80. Four of the vehicles remained on Solano Ave. and exited the City on Solano at the border with the City of Berkeley. One vehicle remained on Solano Ave., turned southbound on Santa Fe Ave., turned left on Marin Ave., and exited the City at the City of Berkeley.

Cross-Cutting Truck Traffic: Neighbors expressed concern that cross-cutting truck traffic is entering the neighborhood. Turning movement counts at the following intersections were performed by vehicle classification. UPS-type vehicles were the lightest trucks counted. The proportion of trucks of this type and heavier observed traveling southbound on Cleveland Ave. in the AM peak period, and turning onto neighborhood streets was as follows:

Cleveland to Washington:	1 truck
Cleveland to Solano:	3 trucks
Cleveland to Johnson	2 trucks
Total of Trucks Entering Neighborhood:	6 trucks

Of the total of 8 trucks traveling southbound on Cleveland Ave. in the AM peak hour the vast majority (6) entered the neighborhood, a total of 75% of all trucks observed. The other two trucks (25% of the total observed) continued southbound on Cleveland Ave., proceeded under the overpass at Buchanan, and continued eastbound on Buchanan.

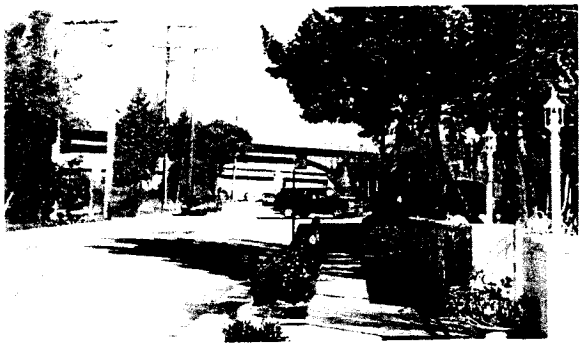
Major Findings

The car following results tend to confirm that a majority of vehicles entering the neighborhood are destined for locations outside of the City of Albany.

However, both the turning movement counts and the car following observations tend to contradict the observation by residents that the transition from Cleveland Ave. to westbound Buchanan via the underpass is so poor that most vehicles enter the neighborhood in order to turn eastbound on Buchanan. In fact, the vast majority of vehicles moving southbound on Cleveland Ave (70%) remain on Cleveland Ave., and travel via the underpass to eastbound Cleveland. Only a small percentage of vehicles observed in the car following exercise entered Buchanan St. via the neighborhood, but these vehicles turned right from Pierce St. and entered westbound
I-80.

The AM peak period turning movement counts confirm the neighborhood's concern that the majority of trucks traveling southbound on Cleveland enter the neighborhood rather than proceeding to Buchanan via the underpass at Cleveland and Buchanan. However, since no heavy trucks were observed by the car following team, it is unknown whether these trucks are destined for locations internal to the City of Albany, and perhaps the neighborhood (as might be the case for parcel delivery trucks, for example), or whether these trucks are truly cross-cutting the neighborhood in order to reach commercial destinations within the City of Albany or outside of the City.

13. Cleveland Ave. : Commuter Speeding in AM Peak



Location
Cleveland Ave.

Issue
Speeding cut-through vehicles use this street to avoid freeway traffic in the AM peak hour.

Data Analysis
Speed study done in 1997 during the off peak hour for Cleveland Ave. between Buchanan St. and City limits, indicate that at the 85th percentile measurement of the vehicle speed, vehicles exceed the speed limit of 25mph. During the off-peak, vehicles travel at 38 mph northbound and 38mph southbound. The 85th percentile speed exceeds the posted speed limit by 13mph.

Major Findings
The 85th percentile vehicle speed on Cleveland Ave. during the off peak hour exceeds the posted speed limit by 13 mph.

14. Jackson St., North of Buchanan St. : Child Pedestrian Safety

Location

Jackson St., north of Buchanan St.

Issue

It is difficult for school children to cross Jackson St. north of Buchanan St. Some school children walking to or leaving the Albany Middle School or Vista Elementary School need to cross Jackson St. at unsignalized intersections located north of Buchanan St. However, at Jackson St./Solano Ave. (a 4-Way STOP controlled intersection), there is a special "School Crossing STOP" sign located on the eastbound Solano Ave. approach and a school crossing guard.

Data Analysis

During the period from 1994-1997, there were no reported accidents involving pedestrians or bicyclists on Jackson St north of Buchanan St. Three accidents involving vehicles only occurred at the intersection of Jackson St. and Solano Ave., two of which resulted in injury to the vehicle occupants, and one of which was reported as involving property damage only. Observation of this location indicates that there is a concentration of child pedestrian movement during a twenty-minute "window" in the AM and midday. The highest concentration of students walking on this route occurs mainly mostly during the 15 minute period just before the start of the school day at Albany Middle School, and during a five to ten minute period just after the end of school.

In the AM peak period approximately 55 pedestrians walk southbound on Jackson St. at Solano Ave. In the midday "school peak" period which includes the end of the school day, approximately 77 pedestrians walk northbound on Jackson St. at Solano Ave.

The intersection of Jackson and Solano operates at Level of Service (LOS) B in the AM peak period. Although the intersection operates at an acceptable level of service for vehicular traffic, Solano Ave. carries the fourth highest ADT in the City. At the intersection of Jackson St. and Solano Ave., in the AM peak period, the east-west through movements on Solano Ave. total 355 vehicles during a two-hour peak period. This through movement on Solano constitutes the majority of vehicles which stop at this location and proceed across the north-south crosswalks on Jackson St. The total number of vehicles turning south (therefore crossing the north-south crosswalks) on Jackson St. from Solano Ave. is 172.

Video observation was conducted on Jackson Street near Vista

Elementary School and captured occurrences of risky behavior. Most of the risky behavior was associated with parents picking up and dropping off their children at Vista Elementary School. It is also reasonable to assume that risky behavior may be possible at other locations along this street due to the arrival of a substantial number of vehicles in the AM peak hour at the intersection of Jackson St. and Solano Ave. Most of the 55 pedestrians traveling southbound in the AM peak hour are likely to be schoolchildren, arriving during the short twenty-minute "window" near the beginning of the school day at Albany Middle School. Vista Elementary School does not appear to generate the same volumes of traffic. It is also reasonable to assume that a substantial portion of the 172 vehicles turning south onto Jackson St. from Solano Ave would also be destined for the school during the same "window" period, although the exact number cannot be determined from the data collected. Therefore, conflicts between vehicles and pedestrians during the short critical time period for southbound pedestrian movement would logically occur during the AM school arrival "window". This may contribute to the potential for risky behavior at this location due to the concentrated arrival time for child pedestrians and the substantial number of vehicles whose movements conflict with pedestrian movements.

The midday "school peak" period, which includes pedestrians and vehicles traveling during the period just before and just after the end of the Albany Middle School day, also has a substantial number of conflicting movements, although vehicle traffic volumes conflicting with the north-south pedestrian crossings are about 70% of the conflicting volumes in the AM peak period. However, the number of pedestrians traveling northbound on Jackson St. during the "school peak" period is larger than the number of southbound pedestrians in the AM peak. A total of 77 pedestrians traveled northbound during the "school peak".

It is likely that this situation also contributes to the potential for risky behavior in the "school peak" period, due to the concentrated arrival time for child pedestrians and the substantial number of vehicles whose movements conflict with pedestrian movements.

Major Findings

There have been no accidents involving any pedestrians at this location from 1994 through 1997. However, the volume of pedestrians in the AM peak and in the midday "school peak", coupled with the relatively large number of vehicles arriving at the Solano Ave. and Jackson St. intersection which cross the path of north-and-southbound pedestrians, contribute to the potential for risky behavior at this location.

15. Pierce St./Washington Ave. : Auto/Truck Volumes, Speeding

Location

Pierce St./Washington Ave.

Issue

High traffic volumes (including truck traffic) and travel speeds at this 2-way STOP controlled intersection. Since this intersection is located near the freeway ramps on Pierce St. and Cleveland Ave., vehicles use this intersection and cut-through the residential neighborhoods. There are STOP signs on the east/west Washington Ave. approaches only. Trucks are prohibited on both of these streets in this area.

Data Analysis

Traffic Volumes/Cross-Cutting Vehicles: The intersection of Washington and Pierce St. operates at LOS A during the AM and PM peak periods; movement of vehicles is free-flowing at this location during the peak periods. However, good intersection operations may indicate that this is an attractive travel route for cut-through commuters. Resident concerns described above are that cut-through traffic enters the neighborhood at this location.

Traffic volumes on Pierce St. at Washington Ave. are substantial in the peak periods. In the AM peak period, a total of 310 vehicles travel southbound on Pierce St. to this intersection. Southbound is the peak direction on Pierce during the AM peak period. Of these, 90% continue through the intersection southbound on Pierce St. Only 9% of these vehicles turn east on Washington, and 1% turn west on Washington in the AM peak period. Without a detailed origin-destination study of the vehicles entering the City on Pierce St., the percentage of cut-through vehicles originating outside of the City of Albany and continuing on to destinations outside of the City is not available. However, it is reasonable to assume that a large number of these vehicles would be headed for either Solano or Buchanan/Marin, whatever their ultimate destination. Most of these vehicles do not turn onto Washington and enter the neighborhood via that route.

Results are similar northbound on Pierce St. in the AM peak hour. A total of 285 vehicles arrive at the intersection of Washington Ave. And Pierce St. via northbound Pierce St. Of these, virtually all vehicles remain on Pierce St. (97%). Only 2% of vehicles turn west on Washington Ave., and 1% turn east on Washington.

There are very few vehicles traveling on Washington Ave. at all at this location. Of the total traffic volumes arriving at the intersection of Washington and Pierce St. in the AM peak hour, only 8% of vehicles arrive at this intersection via either westbound or eastbound Washington Ave. Most arrive at this intersection via Pierce St (92%). As noted above, very few vehicles turn onto Washington via Pierce.

In addition, since the peak hour volume on Washington Ave. is so low at this intersection, few vehicles turn onto Pierce St. from Washington.

The AM peak hour, at the intersection of Washington Ave. and Pierce St., most cut-through traffic would access city streets via Pierce St., since the through movement on Pierce St. is far and away the dominant direction of all travel through this intersection, and it provides an access point at both the I-80 ramp and on Pierce St. itself north of this intersection, and ready access to and from Solano and Buchanan/Marin south of this intersection. As noted, ultimate origins and destinations for travelers along Pierce St. are not known unless a detailed license plate survey or a car following exercise is conducted at this location. However, even without this data, it appears that resident concerns about cut-through traffic are validated for Pierce St. However, resident concerns about vehicles entering the neighborhood via Washington Ave., especially from the Cleveland off-ramp, does not seem to be validated by the direction of travel observed at the intersection of Washington Ave. and Pierce St.

Similar results were found in the PM peak period for this location, although the peak direction of vehicles is much more unbalanced on Pierce St. in the PM peak hour; in fact, there were almost four times as many vehicles traveling northbound through the intersection at Pierce and Washington as there are traveling southbound. There were 461 vehicles moving northbound through the intersection on Pierce in the PM peak. By comparison, 140 vehicles were moving southbound on Pierce through the intersection in the PM peak period. As is true in the AM peak hour, most vehicles moved northbound or southbound on Pierce, and very few vehicles traveled on Washington Ave., either moving through the intersection or turning onto Washington from Pierce.

Clearly in the PM peak hour there is significant traffic northbound; many of these vehicles are likely to be cross-cutting vehicles which did not originate nor are destined for locations within the City of Albany. Some may be commuters employed within the City who live north of the City. Regardless, most of these vehicles will have accessed Pierce from either Solano Ave. or Buchanan St. Although they are cross-cutting the residential portion of Pierce, and very likely the residential portion of Solano Ave. in order to access Pierce St. Compared to the volumes on Pierce, virtually no vehicles cross-cut through neighborhood streets on Washington Ave. in the PM peak hour.

Residential perceptions of street livability are tied in part to ADT, based on research by Donald Appleyard and other factors, such as travel speeds. ADT on Pierce St. was measured in 1998 at 5,032 vehicles per day. This volume of traffic in the range of speeds observed on Pierce St. indicates that residents would perceive that this street is highly traffic dominated, and that perceptions of the safety and comfort of activities such as walking, cycling, or playing on this street would be negative. ADT data is available for Washington Ave. east of San Pablo only. However, a comparison of the peak period traffic volumes

at the intersection of Pierce St. and Washington Ave. suggests that the ADT on Washington Ave. would be less than 500 vehicles per day. With the observed range of speeds, this section of Washington Ave. would generally be perceived as only moderately traffic dominated. However, the perceived safety and comfort of waling, cycling or playing on the street might be limited.

Truck Volumes: Truck volumes were measured during the AM and PM peak hours at Pierce St. and Washington Ave.. In the AM peak period, three trucks were observed turning right from eastbound Washington Ave. To Pierce St.. During the same period, one truck was observed turning eastbound on Washington Ave. from northbound Pierce St. and one truck was observed turning left from southbound Pierce St. to eastbound Washington Ave.. Therefore, a total of five trucks the size of a UPS van or larger were observed at this intersection during the two-hour AM peak period. Trucks constituted about half of one percent of the total number of vehicles arriving at this intersection in the AM peak period. In the PM peak period, one truck was observed turning north onto Pierce St. form eastbound Washington Ave., two were observed traveling north on Pierce St. and two more traveled south on Pierce St.. Thus, a total of five trucks were observed at this intersection accounting for less than half a percent of the total traffic in the two-hour PM peak period.

Although none of the trucks in the AM peak period made through movements at this intersection, which increases the possibility that they were making local deliveries, four trucks made through movements on Pierce St. in the PM peak period. This tends to confirm resident concerns about trucks traveling through the neighborhood on streets where trucks are prohibited.

Speeding: Washington Ave. -- Speed studies taken in the AM and PM peak hours in 1998 indicate that 85th percentile speeds on Washington Ave. Just east of Pierce St. were at or under the 25mph speed limit in the eastbound direction in both the AM and PM peak periods (25mph in the AM peak, and 22mph in the PM peak). Speeds were only slightly over the speed limit in the westbound direction in both the AM and PM peak periods (28mph in the AM peak and 27mph in the PM peak). As Washington Ave. approaches the crest of the hill, the speed limit is posted at 15mph. At this location the observed 85th percentile vehicle speeds would exceed the posted limit by as much as 10mph in the eastbound direction and 13mph in the westbound direction. However, given the narrow and curving nature of this section of Washington Ave. it is likely that vehicle speeds would be somewhat lower than at the point farther west where they were observed.

Pierce St. -- A speed study on Pierce St. between Albany Hill and the Albany/Richmond city limit performed in 1998 in the AM and PM peak periods show that 85th percentile vehicle speeds exceed the posted speed limit of 25mph by over 5mph at all time periods and in both directions. PM peak period speeds were higher than AM peak period speeds. In the AM peak period, 85th percentile speeds were 32mph

northbound and 30mph southbound. In the PM peak period, speeds were 34mph northbound and 33mph southbound. The highest 85th percentile speed was observed in the PM peak hour (9mph or over the speed limit).

Major Findings

Resident perceptions that relatively high volumes of traffic are cutting through the neighborhood in the AM and PM peak hour on Pierce St. appear to be confirmed. Additionally, resident perceptions that relatively high volumes of traffic are cutting through the neighborhood on Washington Ave, chiefly from Cleveland, are confirmed by the turning movement data collected at the intersection of Washington Ave. and Pierce St.

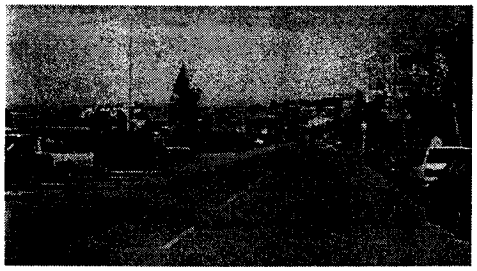
The traffic volumes and speeds on Pierce St. indicate that residents would perceive that this street is highly vehicle-dominated, and that perceptions of the safety and comfort of activities such as walking, cycling, or playing on this street would be negative. ADT data is not available for Washington Ave., but a comparison of the peak period traffic volumes at the intersection of Pierce St. and Washington Ave. suggests that the daily traffic volumes on Washington Ave. might lead to a perception of the street as moderately vehicle dominated .

Available truck volumes tend to confirm resident concerns that a few trucks do enter the neighborhood from Cleveland Ave. via Washington Ave., and that there are through truck trips on Pierce St. in the PM peak period.

Speed studies tend to confirm that for both Washington Ave. and Pierce St., AM and PM peak period 85th percentile speeds tend to exceed the posted speed limit. Speeds on Pierce St. in the PM peak period were the highest for the two streets.

16. Pierce Street: Bicyclists Safety

Location
Pierce Street



Issue
Bicyclists find excessive speed to be dangerous in these locations: Buchanan Street, San Pablo Avenue, Pierce Street.

Data Analysis
Vehicular speeds on Pierce Street exceed the posted speed limit in the northernmost section by a maximum of 9 mph in the PM peak hour.

Major Findings
Bicyclist concerns appear to be justified on Buchanan St. and on the northernmost stretch of Pierce St. where vehicles exceed speed limits. Although vehicles do not tend to speed on San Pablo Ave., vehicles traveling at the 35mph speed limit, as well as high traffic volumes, may justify bicyclist safety concerns.

Accident data indicates that although risky behavior occurs on Buchanan St. and Pierce St. due to vehicles traveling over the speed limit, thus far this has not translated into bicycle accidents on these streets. There have been no bike accidents on Pierce St. or Buchanan St. between 1994 and 1997. However, six bike accidents have occurred on San Pablo Ave. San Pablo Ave. had the highest rate of accidents overall per million vehicles than on any other City street, therefore more bicycle accidents were reported on San Pablo during the same period.

17. Pierce St. : Speeding

Location
Pierce St.

Issue
Since Pierce St. serves as a frontage road to the freeway, vehicles tend to speed between Central Ave. in the City of Richmond and Solano Ave.

Data Analysis
Within the Albany City Limits, residential housing units are primarily located on the east side of Pierce St. The curb-to-curb width is 51.5 feet with angled parking on the west side and parallel parking on the east side. Although there are signs that indicate the speed limit is 25mph, the wide and open view of this street encourages speeds in excess of 25mph. The speed study done in 1998 during the AM and PM peak hours for this portion of Pierce St. indicates that at the 85th percentile measurement, vehicles violate the posted speed limit of 25mph. During the AM peak vehicles travel at 32mph northbound and 30mph southbound. During the PM peak vehicles travel at 34mph northbound and 33mph southbound. The highest 85th percentile speed was measured at 7mph over the speed limit during the AM peak and 9mph over the speed limit during the PM peak.

Major Findings
Vehicles exceed the speed limit on Pierce St. during the AM and PM peak hours. The highest 85th percentile speed occurs during the PM peak (9mph over the speed limit).

18. Pierce St. (500 block) : Commuter Speeding/Traffic Volumes

Location

Pierce St. (500 block)

Issue

Increased vehicle volumes and speeds in the AM and PM peak hours cause dangerous pedestrian crossing conditions for bus patrons leaving the Gateview garage to cross the street to access the bus stop. Vehicles bound for I-80 in the evening exit onto Pierce and speed to Central where they reenter I-80. The reverse pattern occurs in the morning when the traffic is heading towards the Bay Bridge.

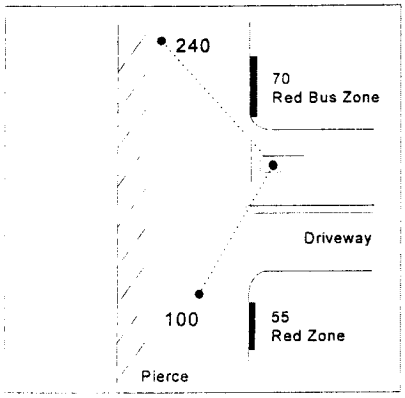
Data Analysis

The speed study done in 1998 for this section of Pierce St., indicates that during the AM peak vehicles travel at 85th percentile speeds of 32mph northbound and 30mph southbound. During the PM peak vehicles travel at 34mph northbound and 33mph southbound. The highest 85th percentile speed was measured at 7 mph over the speed limit during the AM peak and 9mph over the speed limit during the PM peak. The daily traffic volumes also observed in 1998 indicate over 2,600 vehicles per day traveling north and 2,400 vehicles per day traveling south on Pierce St.. These volumes also show that the southbound volumes on Pierce peak with about 220 vehicles per hour at about 6:00 PM with a secondary peak of almost equal magnitude occurring between 7:00 and 8:00 AM. This is contrary to the expectation that the southbound commute volumes would be greater in the AM peak on a frontage road to I-80. However, in the northbound direction traffic volumes peak substantially higher in the evening peak between 5:00 and 6:00 PM with almost 250 vehicles per hour. In the AM peak hour northbound traffic volumes are significantly lower with 150 vehicles per hour.

Major Findings

Vehicles speed on Pierce St. during the AM and PM peak hours. During the AM peak hour, speeds in the northbound direction are higher than speeds in the southbound primary commute direction. During the PM peak hour speeds in the northbound direction are still higher than in the southbound direction. The higher northbound speeds are most likely due to the downhill slope in that direction.

19. Pierce St. (500 block) : Sight Distance



Location

Pierce St. (500 block)

Issue

Sight distance problem for residents exiting gate at the Bridgewater Complex due to large vans, trucks, campers, etc. parking at the gate.

Data Analysis

From the stop bar at the exit lane there is 240 feet of sight distance to the north and 100 feet to the south. There is a fire hydrant with 55 feet of red curb to the south of the driveway and a bus stop with 70 feet of red curb to the north of the driveway. This prevents cars from parking near the intersection. Thus, there is more than adequate sight distance to the north. However, when buses use the bus stop, the sight distance to the north may be reduced substantially. The 100 feet of sight distance to the south does not meet the 150 foot stopping sight distance recommendation in Table 201.1 in the Caltrans Highway Design Manual. However, an exiting vehicle may pull out to the edge of the curb or beyond to substantially increase the sight distance.

Major Findings

The sight distance to the south at this location does not meet the 150 feet recommended by the Caltrans Highway Design manual for stopping sight distance on a street with a 25mph design speed. Sight distance to the north is adequate.

20. Polk St. : Speeding

Location
Polk St.

Issue
Speeding tends to be in the southbound direction as vehicles drive down the hill toward Buchanan St. Polk St. has a curb-to-curb width of approximately 29.5-feet with parking on both sides.

Data Analysis
The speed study done in 1998 during the AM and PM peak hours for Polk St. between Buchanan Ave. and Solano Ave., indicates that at the 85th percentile measurement of the vehicle speed, vehicles exceed the posted speed limit of 25mph. During the AM peak vehicles travel at 31mph northbound and 35mph southbound. During the PM peak vehicles travel at 32mph northbound and 34mph southbound. The highest 85th percentile speed was measured at 10mph over the speed limit during the AM peak and 9mph over the speed limit during the PM peak.

Major Findings
Vehicles exceed the speed limit on Polk St. during the AM and PM peak hours. The highest 85th percentile speeds were observed during the AM peak, where the 85th percentile of southbound speeds was 10mph greater than the speed limit.

21. San Pablo Ave./Marin Ave. : Child Pedestrian Safety

Location

San Pablo Ave./Marin Ave.

Issue

--Children traveling to and from the nearby schools are only allowed to use the south crosswalk to cross San Pablo Ave. (assisted by a school crossing guard).
--The high number of right-turn-on-red vehicles on all approaches at this intersection creates hazards for all pedestrians crossing the street.
--Traffic traveling eastbound needs a longer green time for through traffic; through traffic must wait while westbound traffic turning left goes first, so their through time is shortened so that only 8-10 cars go through.
--Vehicles turning from eastbound Marin Ave. extension to southbound San Pablo Ave. (during the green phase) conflict with school children crossing the south crosswalk (during the walk phase).
--Vehicles turning (during the red phase) from northbound San Pablo Ave. to eastbound Marin Ave. conflict with school children crossing the south crosswalk.
--Insufficient time for school children to cross San Pablo Ave. (i.e., a total of 20 seconds: 5 seconds of "walk" and 15 seconds of flashing "don't walk").

Data Analysis

During the period from 1994-1997, there were no reported accidents involving pedestrians and one reported accidents involving a bicyclist at this location just east of the Albany Middle School. Observation of this location indicates that there are conflicts between pedestrians and vehicles due to the concentration of child pedestrian and bicycle activity within a twenty-minute "window" in the AM and midday, mostly during a 5 minute period just before the start of school and a five minute period just after the end of school.

This situation may contribute to risky behavior at this location immediately before and after school, although no pedestrian accidents are recorded. There are a relatively large number of pedestrians in the AM peak hour and in the midday at the end of the school day. Vehicle/pedestrian conflicts involving schoolchildren would occur mainly at the south crosswalk since this is the school route with crossing guards. Resident concerns regarding this intersection were directed at the midday peak hour immediately after school. Videotaping and pedestrian counts were taken at this location during

the AM peak and midday peak hour. Field observation of pedestrian behavior was conducted in the AM peak period. During the AM peak period, a total of 388 pedestrians crossed at the south leg of the intersection. During the AM peak period, a total of 288 vehicles made right turns across Marin Ave. Of these 288 right turning vehicles, 170 vehicles made a right turn from eastbound Buchanan to southbound San Pablo and 118 vehicles made a right turn from northbound San Pablo to eastbound Marin. Concentrations of vehicular and pedestrian activity in the AM peak hour could contribute to risky behavior as both vehicles and child pedestrians attempt to arrive at school on time. However, no risky behavior or accidents were observed during the AM peak period.

During the midday "school peak", which includes the school closing time, many more pedestrians were counted crossing the south leg of the intersection. A total of 667 pedestrians crossed at the south crosswalk during the midday school peak; the majority of pedestrians crossed the intersection between 2:30pm and 4:00pm (570 pedestrians). Turning movements were not counted during the midday peak hour, however, videotaped observations of this intersection during the school peak indicate that although no risky behavior was observed (there were no sharp right turns observed while pedestrians were in the crosswalk, although there were some right turns made before or after platoons of pedestrians had crossed). Videotaping confirmed, however, that large groups of children, larger than seen in the AM peak hour, cross the intersection at each pedestrian phase in the hour after the Albany Middle School day is over. The large volume of pedestrian traffic, during this midday "school peak", could contribute to risky behavior as vehicles and child pedestrians attempt to leave school as quickly as possible. If large groups of children are crossing together, it is conceivable that right turns during the green phase may be blocked at the south crosswalk from time to time, and it is possible that some waiting motorists might make an aggressive right turn at this location. However, as noted, no risky behavior was videotaped on the day of observation at this location.

Major Findings

Observations indicate that there were no pedestrian accidents and one bicycle accident at this location. The single bicycle accident occurred in 1996; the bicyclist was traveling northbound on San Pablo on a Friday at 1:30 in the afternoon, and ran the red light, resulting in a collision with a vehicle traveling westbound on Marin Ave. This appears to be unrelated to the safety of schoolchildren at this location.

In the AM peak hour, the concentration of vehicular and pedestrian activity could contribute to risky behavior as both vehicles and child pedestrians attempt to arrive at school on time. No risky behavior or accidents were observed during the AM peak period. During the mid-day peak hour, the very large volume of pedestrian traffic, most of which is comprised of schoolchildren leaving just after the end of the school day, could contribute to risky behavior as vehicles and child pedestrians attempt to leave school as quickly as possible.

Videotaped observations of this location during school start and ending times indicates that although no risky behavior was occurring, the potential for this behavior exists.

22. San Pablo Ave./Marin Ave. : Motorist Right Turns on Red

Location

San Pablo Ave./Marin Ave.

Issue

--Lack of exclusive westbound right turn lane on Marin Ave. causes queues to develop in the shared through-right turn lane on the westbound Marin Ave. approach. The westbound approach is striped with one exclusive left turn lane, one through lane, and one shared through-right turn lane. No on-street parking is allowed on the north side of the street at this location. When a through vehicle is stopped in the shared lane, there is not enough roadway width to allow any vehicles to make right-turns-on-red. In some instances, impatient motorists cut through the existing Shell gas station to get to northbound San Pablo Ave.

--Pedestrians are at risk when crossing gas station driveways. This occurs when drivers make sudden turns into driveways immediately after crossing the intersection, especially following left turns.

Data Analysis

This signal controlled intersection currently operates at LOS D. AM and PM peak hour turning movement counts were conducted at the intersection of Marin Ave. and San Pablo Ave. in 1997. These counts indicate that 88 out of 706 westbound vehicles turn right at this intersection. An additional 173 vehicles turn left using the left turn lane. During the PM peak hour 19 out of 643 westbound vehicles turn right and an additional 113 vehicles turn left. Thus, of the total westbound approach volumes the AM right turns account for 10 percent and the PM right turns account for two and a half percent. There is not sufficient right of way available at this location to add another lane to the approach. Thus, the only way to have an exclusive right turn lane would be to convert the curb lane from a shared through and right turn lane to a right turn lane. The effect of this would be to transfer approximately seven or eight vehicles per signal cycle from the proposed right turn lane to the through lane. This would result in longer queues likely to spill back through the intersection of Marin Ave. and Kains Ave. Such queues would also be likely to block access to the left turn lane which is used by 20 percent of the AM approach traffic and 15 percent of the PM approach traffic. However, this would open up the right turn lane for use by an average of two and a half vehicles per cycle during the AM peak hour and less than one vehicle per cycle during the PM peak hour. These right turning vehicles could then turn onto San Pablo Ave. during the red phase as well as the green phase. Right turns on red would then be limited only by the availability of gaps in the through traffic on San

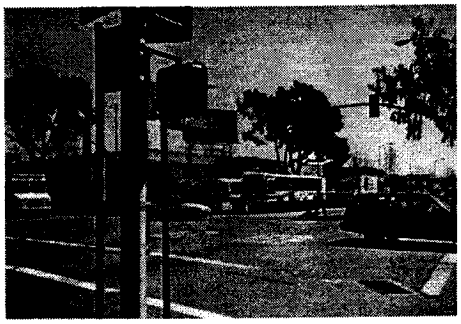
Pablo Ave. Long queues on the westbound Marin approach would also make it substantially more difficult for vehicles exiting the gas station to enter the through lane and proceed west on Marin Ave. Such vehicles might potentially block the right turn lane by pulling into that lane to wait for an opening in the through lane. The provision of a separate right turn lane specifically to allow westbound right turns on red would exacerbate the concerns of those who fear for the safety of pedestrians in the crosswalk during right turns on red.

Both pedestrians and drivers must take caution to each be aware of the other when crossing or entering gas station driveways. However, there is no record within the past four years of accidents involving pedestrians in gas station driveways. However, there is the potential for careless or risky behavior.

Major Findings

A separate right turn lane for westbound Marin Ave, would have greater negative effects on other traffic flow, causing delays and queuing which could obstruct traffic exiting the gas station. The additional right turns on red would detract from pedestrian feeling of safety and could promote risky behavior by drivers focused on finding gaps in the approaching traffic on San Pablo Ave.

23. San Pablo Avenue: Bicyclists Safety



Location
San Pablo Avenue

Issue
Bicyclists find excessive speed to be dangerous in these locations: Buchanan Street, San Pablo Ave., Pierce Street.

Data Analysis
Vehicular speeds on San Pablo Avenue were not found to exceed the posted speed limit of 35 mph.

Major Findings

Speed was not found to be an issue at this location, although data indicates that other concerns may exist.

24. San Pablo Ave. : Retime Traffic Signals

Location

San Pablo Ave.

Issue

Traffic signals along the San Pablo Ave. Corridor need to be re-timed. Within the City of Albany, there are a total of seven traffic signals located along San Pablo Ave. As a major arterial and a reliever route for the I-80 freeway, San Pablo Ave. carries a lot of traffic, particularly during the AM and PM peak periods.

Data Analysis

San Pablo Ave. is designated as State Route 123 and is under the jurisdiction of Caltrans. The traffic signals on San Pablo Ave. within Albany are part of a larger signal system extending both to the north and south. The cycle length is 100 seconds and favors San Pablo Ave. rather than cross streets like Marin Ave. and Solano Ave.

Major Findings

Since San Pablo Ave. is under the jurisdiction of Caltrans, they will maintain and control signal timings along San Pablo Ave.

25. San Pablo Ave./Solano Ave. : Pedestrian Safety

Location

San Pablo/Solano Ave.

Issue

Citizens want "no turn on red" sign to make corner safer for pedestrians

Data Analysis

The 1994-97 accident data was reviewed for any accidents involving pedestrians, where vehicles made right turns on red at the intersection of San Pablo Ave. and Solano Ave. There were two pedestrian accidents at this location. One occurred in 1996 and the other in 1997. Neither accident was caused by vehicles making a right turn movement on red. Although there was not a high number of accidents over the past four years, the potential for risky behavior exists due to the relatively high volume of pedestrian movements crossing San Pablo in the AM, mid-day and PM Peak hours and the corresponding high volume of right turns at the heavily traveled intersection.

Major Findings

Although the accident record shows no pedestrian accidents resulting from right turns on red there may be the potential for risky behavior due to the volume of pedestrian and right turn movements.

26. San Pablo Ave. : Pedestrian Crossing Time

Location
San Pablo Ave. corridor

Issue
Insufficient time for pedestrians to cross San Pablo Ave.

Data Analysis
In general, traffic signals along San Pablo Ave. provide approximately 20 seconds to cross San Pablo Ave., which has a curb-to-curb width of approximately 74 feet (four travel lanes, a center two-way left turn lane, and parking on both sides of the street). In addition there are three seconds of solid don't walk time before through traffic on San Pablo Ave. gets a green light. This amounts to an effective total of 23 seconds of time to traverse the width of San Pablo Ave. A typical walking speed of 4 feet per second would require 18.5 seconds to cross the street. However, 3.5 feet per second is a conservatively lower walking speed appropriate for both children and elderly persons. At this walking rate approximately 21 seconds would be required to travel from curb to curb across San Pablo Ave. This is less than the 23 seconds that are available. However, it would require the those pedestrians traveling at the minimum speed to leave the curb within the first two seconds of the green walk signal in order to completely clear the intersection in the given time.

The accident reports for the period from January 1994 to October 1997 indicate nine pedestrian accidents occurring along San Pablo Ave. Of these, the pedestrian was at fault in three of the accidents and two of the remaining accidents did not occur at crosswalks. The other four accidents occurred at crosswalks and involved pedestrians between the ages of 13 and 50. In two of these cases the driver was at fault even though the pedestrian was crossing in violation of the signal. In general, none of these pedestrian accidents were reported to be a direct result of insufficient crossing time provided by pedestrian signals.

Major Findings
Assuming a walking speed of 3.5 feet per second there is generally adequate time for pedestrians to safely cross San Pablo Ave. if they begin crossing near the beginning of the green walk phase.

27. San Pablo Ave./Solano Ave. : Pedestrian Safety

Location

San Pablo Ave./Solano Ave.

Issue

There are currently protected left turns on the north/south San Pablo Ave. approaches and permissive left turns on the east/west Solano Ave. approaches. Pedestrians crossing San Pablo Ave. do so concurrently with the east/west left turns from Solano Ave. to San Pablo Ave., resulting in pedestrian/vehicle conflicts.

Data Analysis

During the AM peak period the largest group of pedestrians were crossing Solano Ave, traveling northbound and southbound on San Pablo. However, the issue raised by residents is the potential danger to all pedestrians crossing the north and south crosswalks on San Pablo Ave., which may be caused by permissive left turn phasing across these crosswalks on Solano Ave.

During the period from 1994-1997, there were two reported accidents involving pedestrians at this location. Both accidents were listed as the pedestrian's fault. The first accident involved a pedestrian crossing eastbound on Solano against the red light and being hit by a southbound vehicle traveling on San Pablo Ave. The second accident has less detail available, however, it did involve a westbound vehicle making a left turn from Solano to San Pablo, hitting a pedestrian in the crosswalk and injuring the pedestrian. It is unknown why the pedestrian was listed at fault. However, this accident does illustrate the danger posed by conflicts between left turning vehicles on Solano and pedestrians crossing San Pablo.

The analysis of turning movements shows that during the AM peak period, a total of 53 pedestrians cross San Pablo either eastbound or westbound. During the same period, a total of 139 vehicles make a left turn from Solano Ave onto northbound or southbound Solano Ave.

In the midday "school peak" period, a total of 102 pedestrians cross San Pablo Ave. and 147 vehicles make left turns from Solano to San Pablo. In the PM peak period, a total of 51 pedestrians cross San Pablo Ave. and 175 vehicles make left turns from Solano Ave. to San Pablo Ave.

Major Findings

Observations indicate that one of two pedestrian accidents recorded at this intersection was related to the issue raised by residents, although the circumstances are not clearly reported. However, this accident, coupled with the high number of pedestrian and vehicle

movements opposing each other in the midday "school peak" could contribute to risky behavior at this location, especially if a high proportion of pedestrians are children, who might be more inattentive at this heavily traveled intersection. Some risk also exists in the AM and PM peak hour as well, since a significant number of vehicles do make left turns from Solano to San Pablo, although pedestrian volumes over the two-hour peak periods are relatively light at around 25 pedestrians per hour.

28. San Pablo Ave. : Center Left Turn Lane

Location

San Pablo Ave.

Issue

Two-way left turn lanes are dangerous vs. raised median islands are inconvenient. Within the City of Albany, center two-way left turn lanes along San Pablo Ave. are provided for left turn access to local businesses fronting the street. Some residents feel these types of lanes are dangerous, creating potential for head-on collisions. On the other hand, some residents prefer these turn lanes over raised medians with left turn pockets at intersections. The center two-way left turn lanes along San Pablo are seen by residents as causing excessive U-turns at downstream intersections, or increased travel times at upstream intersections as vehicles need to turn left and drive around the block.

Data Analysis

A summary of the accident data for San Pablo between Buchanan and the El Cerrito City limit for 1994-97 is shown below. The information underlined refers to accidents that may potentially be associated with the center two-way left turn lane along San Pablo Ave. According to Albany police, most of the broadside accidents at San Pablo are due to cars leaving their parking spots. Therefore, the percentage of accidents due to the center two-way left turn lane along San Pablo Ave. will not be much greater than 1.2% (the percentage of accidents due to head on collisions). There is only one non-injury head on collision out of 88 accidents at this location in four years. The two-way left turn lanes do not appear to present a great danger.

	Collision Type							
Accs. Type	**HON**	**B**	**S**	**R**	**HO**	**O**	**PED**	**Total**
Injury	0.0%	3.5%	5.8%	8.1%	0.0%	2.3%	1.2%	20.0%
Prop. Dam	1.2%	3.5%	38.4%	31.4%	3.5%	2.3%	1.2%	80.0%
Total	1.2%	7.0%	44.2%	39.5%	3.4%	4.6%	2.4%	100.0%
# of Accs.	1	6	38	34	3	4	2	88

HON= Head On B= Broadside S= Sideswipe
R= Rear-end HO= Hit Object O= Other
PED= Pedestrian/Vehicle Accidents

Major Findings

Based on the low rate of accidents attributable to the center left turn lane there does not appear to be a major safety problem associated with it.

29. San Pablo Ave./Monroe St. : Pedestrian Safety

Location

San Pablo Ave./Monroe St.

Issue

At this intersection, there are low levels of pedestrian activity by school children traveling through the University Village to and from the existing Albany Middle School. However, unlike the intersection of San Pablo Ave./Marin Ave. extension, where there is a school crossing guard during the periods before and after school, there are no crossing guards at this intersection.

Data Analysis

The existing traffic signal allows 20 seconds to cross San Pablo Ave. (approximately 5 seconds of "walk" and 15 seconds of flashing "don't walk"). An additional three seconds of solid don't walk is available before vehicles on San Pablo Ave. receive a green signal indication. This allows for a total of 23 seconds to cross from curb to curb. It should be noted that no pedestrian crossing is allowed on the north crosswalk, only the south crosswalk.

During the period from 1994-1997, there were no reported accidents involving pedestrians. However, there is a concentration of child pedestrian activity at this location, just as at all other school routes, during a twenty-minute "window" in the AM and midday, mostly during a 15 minute period just before the start of school and a five minute period just after the end of school. This situation may contribute to risky behavior at this location immediately before and after school, although no pedestrian accidents are recorded.

The number of pedestrians crossing the south leg of the intersection on San Pablo at Monroe builds throughout the AM, midday "school peak", and PM peak periods. Approximately 110 pedestrians make this movement in the AM peak period, 136 during the midday "school peak", and 182 during the PM peak hour. No turning movement counts were conducted for the midday "school peak", since existing AM and PM peak hour counts at this location were being used. This intersection carries about 1/6th of the pedestrian volume at Marin Ave. and San Pablo Ave. during the midday "school peak". However, 136 pedestrians, presumably mostly school children, at this location would be crossing San Pablo while vehicles making right turn movements from eastbound Monroe to southbound San Pablo Ave., move at the same time across the south crosswalk. The concentrated departure times for school children would probably indicate that the majority of these crossings are made during a short period of time. Therefore, pedestrians would conflict with vehicles during the midday school peak.

During the AM peak hour, where children are also present, pedestrian volumes total 110 persons, and the number of vehicles eastbound on Monroe making right turns onto southbound San Pablo Ave total 236 vehicles; a total of 112 vehicles make permissive left turn movements from San Pablo to westbound Monroe.

Major Findings

According to the SWITRS reports analyzed for the years 1994-1997, there were no pedestrian accidents at this location. However, there are relatively large volumes of traffic which cross the path of pedestrians in the south crosswalk on San Pablo Ave., which may indicate a potential for risky behavior.

In the AM peak hour, the concentration of vehicular and pedestrian activity could contribute to risky behavior; since 110 child pedestrians are arriving during a concentrated period of time in the south crosswalk across San Pablo, and a total of 236 vehicles in the AM peak period make right turns in the path of this crosswalk at the same time. This provides an opportunity for risky behavior at this location. Approximately 136 pedestrians were counted during the midday school peak at the south crosswalk; the number of vehicles crossing their path at the same time is unknown but given the high traffic volumes on San Pablo Ave. in general it is likely that this situation would also indicate that the potential for risky behavior exists at this location.

30. San Pablo Ave./ Washington Ave. : Pedestrian Safety

Location

San Pablo Ave./ Washington Ave.

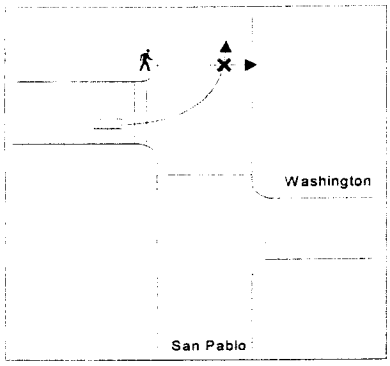
Issue

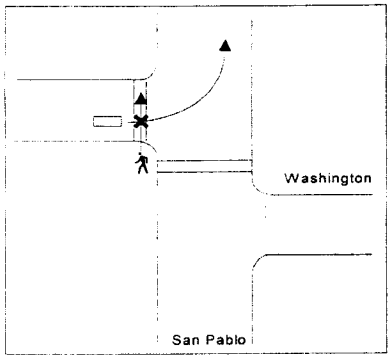
Existing signal timing plan does not allow enough time to cross San Pablo Ave.

Data Analysis

The curb-to-curb width of San Pablo Ave. is approximately 74 feet. The traffic signal allows about 23 seconds to cross San Pablo Ave. (about 8 seconds of "walk", 12 seconds of flashing "don't walk" and three seconds of solid "don't walk"). The typically assumed walking speed of four feet per second would require 18.5 seconds to cross San Pablo, while a more conservative speed of 3.5 feet per second would require about 21 seconds to cross the street. Field observations showed a variety of pedestrians able to comfortably walk across the street well within the allotted time. However, if a pedestrian were to step off the curb just as the 8 seconds of green time concluded, they would have only 15 seconds remaining to cross the street. Accident records from the past four years show three accidents involving pedestrians in this area, of which two were at this intersection. The one accident away from the intersection involved a pedestrian in the roadway. The accidents were not caused by lack of crossing time but by left-turn vehicles. One was due to the driver's obstructed vision. There is adequate crossing time overall at this location. Although pedestrian green "walk" time could be made shorter in order to encourage pedestrians to start across the street earlier.

Pedestrian accidents

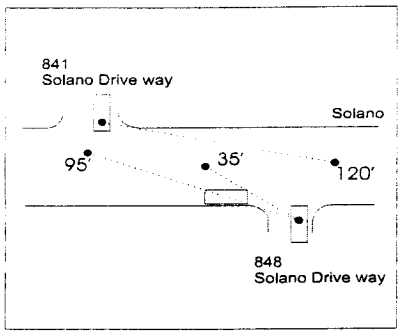




Major Findings

There is adequate crossing time overall at this location, however, pedestrian green walk time could be made shorter in order to encourage pedestrian to start across the street earlier.

31. Solano Ave., West of San Pablo Ave. : Speeding



Location

Solano Ave., West of San Pablo Ave.

Issue

Speeding over the hill in the eastbound direction on Solano Ave., with potential rear-end collisions with vehicles queued at Jackson St. The posted speed limit along the Solano Ave. hill is 15mph, with the crest of the hill located between Taylor St. and Polk St. Jackson St. (a 4-way STOP controlled intersection) is located at the bottom of the hill, two blocks east of Polk St. Since some vehicles may not know there is a STOP sign at the bottom of the hill, they speed over and down the hill in the eastbound direction and pick up enough speed that could prevent them from stopping safely at the back of a queue at Jackson St. A similar situation could occur in the westbound direction, since a STOP sign is also located at the bottom of the hill at Pierce St.

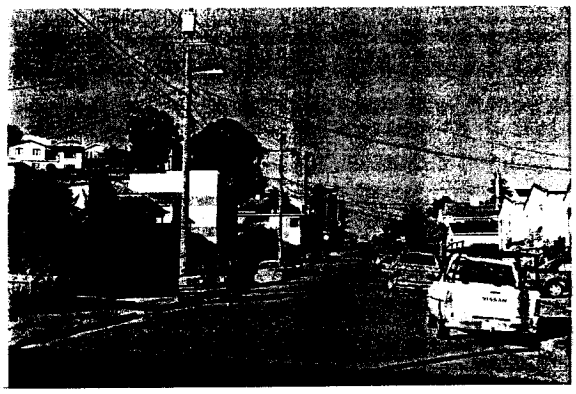
Data Analysis

The speed study done in 1998 during the AM and PM peak hours for Solano Ave. between San Pablo Ave and City limit, indicate that at the 85th percentile measurement of the vehicle speed, vehicles violate the posted speed limit of 25mph (15mph at the crest of the hill) during the AM peak hour. During the AM peak vehicles travel at 27mph eastbound and 28mph westbound. During the PM peak vehicles travel at 25mph eastbound and 25mph westbound. The highest 85th percentile speed was measured at 28mph during the AM peak.

Major Findings

Vehicles speed on Solano Ave. during the AM. The highest 85th percentile speed was measured at 28mph during the AM peak.

32. Washington Ave. : Speeding



Location
Washington Ave.

Issue
Speeding tends to be in the eastbound direction from the freeway to the hillside area. Washington Ave. has curb-to-curb widths of approximately 29.5 feet with parking on both sides.

Data Analysis
Speed studies done in 1997 and 1998 during the AM, PM and off-peak hours for Washington Ave. east of Pierce St., indicate that at the 85th percentile measurement of the vehicle speed, vehicles violate the posted speed limit of 25mph. During the AM peak vehicles travel at 25mph eastbound and 28mph westbound. During the PM peak vehicles travel at 22mph eastbound and 27mph westbound. During the off- peak vehicles travel at 32mph eastbound and 31mph westbound. The highest 85th percentile speed was measured at 3mph over the speed limit during the AM peak and 2mph over the speed limit during the PM peak. The highest 85th percentile speed was measured 7mph over the speed limit during the off peak.

Major Findings
The highest 85th percentile speeds observed at this location occurred in the off-peak eastbound (uphill direction). The highest speeds exceeded the speed limit by 7mph.

It should be noted that at the crest of the hill on Washington Ave. and the speed limit is 15mph. However, the specific speeds were not measured at this location.

33. Albany High School Area : Child Pedestrian Safety, Parking Problems

Location

Albany High School area streets

Issue

--Albany High School borders Key Route Blvd., Thousand Oaks Blvd., and Portland Ave., streets which also have relatively high traffic speeds. In addition, since Albany High School does not provide any off-street parking facilities, all students who drive to school must park in the neighborhood and walk to the school, crossing these busy streets. Recently, a student was hit on Portland Ave. as she stepped out from behind a parked car. Finally, jaywalking frequently occurs along Portland Ave.

--Residential permit parking with parking permits available to students should be the only parking allowed in the area of the high school/adult school. Unacceptable social behavior should be grounds for revoking permits.

Data Analysis

Parking: A parking occupancy study was conducted on Thousand Oaks Blvd., Portland Ave., Carmel Ave., Ramona Ave., Pomona Ave., and Key Route Blvd. in the vicinity of Albany High School. Results showed occupancies over 85% on Portland Ave. between Key Route Blvd. and Carmel Ave., and on Key Route Blvd. in the block. immediately adjacent to the school. There were extremely low parking occupancies on Thousand Oaks Blvd. and on Carmel Ave. adjacent to the high school. On the residential portion of Carmel Ave., Ramona Ave., and Pomona Ave., parking occupancy was generally higher than 50% but lower than 85%. Therefore the only streets adjacent to the high school which could be considered fully occupied are Portland Ave. between Key Route Blvd. and Carmel Ave., and Key Route Blvd. between Portland Ave. and Thousand Oaks Blvd., where parking occupancy counts indicate occupancies at or greater than 85%. It was also observed that parking on Key Route Blvd. one-half block south of Portland Ave. was fully parked; this is an extremely long block, therefore half-block on Key Route Blvd. south of the high school, with occupancies greater than 85%, could be considered as having a full parking occupancy as well.

It appears that parking occupancies were highest on the streets closest to entrances to the high school buildings. A large unoccupied parking

supply exists on Thousand Oaks Blvd. and on Carmel Ave. on the block face adjacent to the high school property. However, these are areas which are less immediately accessible to the current entrances to the high school buildings on the west and south side of the buildings. Not surprisingly, the greatest amount of parking is located to the west and south of the high school. These results validate resident concerns that on some streets there is heavy parking occupancy resulting from high school activity, and shows that parking occupancies adjacent to the high school are unbalanced; some areas have significant parking capacity available and some streets are heavily parked. Once construction of the new high school is completed it is anticipated that there may be some shift in the most densely parked areas. However, the greatest parking occupancy will be located closest to the new entrances.

Traffic speeds: Traffic speeds immediately adjacent to the high school were measured on Thousand Oaks Blvd. between Ramona and Pomona, and on Portland Ave. between Ramona and Pomona in 1998. Speeds were recorded in the afternoon, including the periods where students would be leaving the high school grounds (12:15-1:15 for lunch, and 2:00-3:15 at the end of the school day). On Portland, speeding at least 5mph over the posted speed limit was observed during both of these time periods. At lunchtime, 85th percentile speeds were 30mph eastbound on Portland and 31mph westbound on Portland. At the end of the school day, speeds were slightly higher--31mph on eastbound Portland and 33mph on westbound Portland.

On Thousand Oaks Blvd., 85th percentile traffic speeds were 28mph eastbound and 29mph westbound during the lunch period; this is less than 5mph over the posted speed limit. At the end of the school day, however, 85th percentile speeds are 31mph eastbound and 31mph westbound.

Videotaped observation of street activity: It was observed during the AM and PM school peak that streets to the south and west of the high school do not have enough capacity for vehicles to drop off children--in the morning and afternoon peak periods at the beginning and end of school parents drop off and pick up children without pulling over (a risky behavior), causing traffic to back up around the high school. In addition, other risky behaviors on the part of either parents or students include U-turns in the middle of the streets adjacent to the high school. Rude student behavior was not observed during the videotaping.

Accident data: Accident data indicates during the period 1994-1997, that in the vicinity of the high school, there was only one pedestrian accident which occurred at the intersection of Ramona and Portland.

Major Findings

The data validates resident concerns that on some streets there is heavy parking occupancy resulting from high school activity, and shows that parking occupancies adjacent to the high school are unbalanced; some areas have significant parking capacity available

and some streets are heavily parked. In addition, resident concerns regarding speeding near the high school are confirmed on Portland Ave., and confirmed at the end of the school day on Thousand Oaks Blvd. These would be representative streets, so it is likely that some speeding may be occurring on other streets adjacent to the high school.

Videotaped observation of the street activity around the high school during critical periods also validates resident concerns regarding risky behavior and blocked traffic. This evidence, coupled with observed vehicle speeding on adjacent streets, leads to the conclusion that risky behavior is occurring which could result in pedestrian accidents; one pedestrian accident did occur from 1994-1997, which tends to bear out this potential.

34. BART Bicycle Trail : Mid-block Crossings

Location

BART bicycle trail crossings at Brighton Ave., Portland Ave., and Washington Ave.

Issue

The bike/walking path under the BART tracks along Masonic Ave. is misaligned. Instead of crossing the street at the intersections, the path crosses mid-block just east of the intersections. Although there are signs posted, drivers are often unprepared to encounter a bicyclist or pedestrian at this location. In order to alleviate this problem, the path should be reconfigured to cross the street at the intersection.

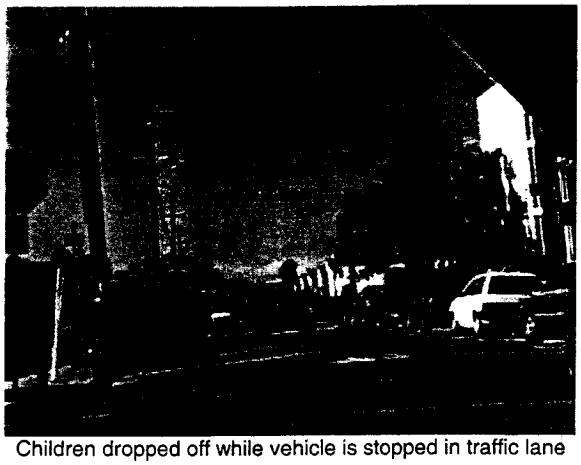
Data Analysis

SWITRS accident data for the years from 1994 to 1997 were reviewed to identify any accidents occurring on Brighton Ave., Portland Ave., or Washington Ave. within 100 feet to the east of Masonic Ave. There were seven reported accidents at these locations not involving bicycles. However, there was one accident reported on Brighton Ave. 110 feet east of Masonic Ave., involving a bicycle entering traffic. However, this appears to be unrelated to the mid-block bicycle trail crossing which is set 20 feet east of Masonic Ave. Thus, no quantifiable safety problem exists. However, even though STOP signs for bicyclists are located on the trail at each crossing and signs on the cross streets warn motorists of the crossings, the mid-block location of the bicycle crossings contributes to the possibility of risky behavior since drivers may not expect this crossing at this location.

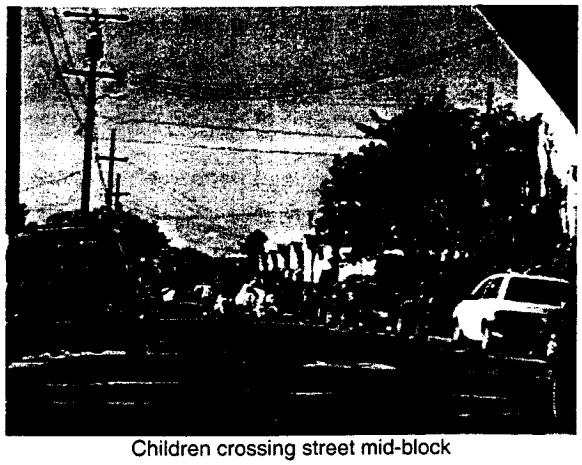
Major Findings

Although no bicycle accidents have occurred at the mid-block crossings along the BART trail, the placement of the trail crossings at mid-block creates the possibility of risky behavior as drivers may not expect a mid-block bicycle so close to a crosswalk, even though bicyclists are supposed to observe the STOP signs on the BART trail.

35. Brighton Ave. near McGregor Primary School : Child Pedestrian Safety



Children dropped off while vehicle is stopped in traffic lane



Children crossing street mid-block

Location

Brighton Ave. near McGregor Primary School

Issue

--Passenger unloading for school children should not be allowed and a no stopping or no parking zone should be put there.

--McGregor Primary School children have a difficult time crossing Brighton Ave., which has relatively high traffic speeds.

--Addition of a new Middle School may increase problems and congestion.

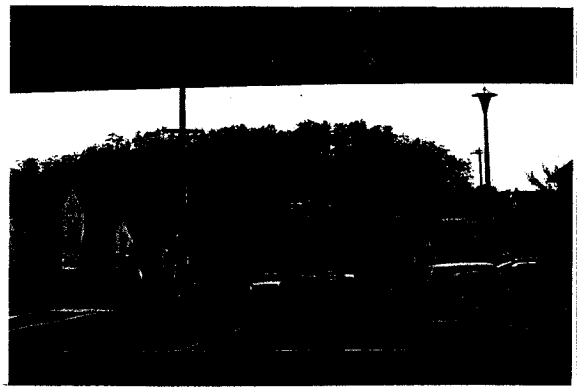
Data Analysis

Accident data from the SWITRS reports for the years 1994-1997 were reviewed to identify any safety problems near McGregor School on Brighton Ave., Spokane Ave. and San Gabriel Ave. The reports showed no pedestrian accidents on any of these roadways. Traffic speeds collected in 1998 showed 85th percentile speeds on San Gabriel Ave. ranging from 24 to 28 miles per hour depending on time of day and direction of travel. On Brighton Ave. the 85th percentile speeds ranged from 29 miles per hour in the AM peak to 31 miles per hour in the eastbound direction for the PM peak. All of these speeds exceed the posted limit of 25 miles per hour. The new Middle School will bring more pedestrians to the area, increasing the potential for risky behavior.

Major Findings

The highest observed 85th percentile speed was 6mph over the posted speed limit in the PM peak hour. There were no pedestrian accidents on Brighton Ave. at Spokane or at San Gabriel which are locations in the vicinity of the school.

36. Brighton Ave. between San Pablo Ave. and Cornell Ave : Speeding



Location

Brighton Ave. between San Pablo Ave. and Cornell Ave.

Issue

Excessive speeding causes hazards to pedestrians and other drivers. East/west streets in this area are 35 to 45 feet wide, with short block lengths (approximately 200 feet). Cross streets are STOP controlled. Residents suggest more speed limit signs. Speeding is a hazard to the new middle school.

Data Analysis

A speed study done in 1998 during the AM and PM peak hours on Brighton Ave. between San Pablo Ave. and Cornell Ave., indicates that the 85th percentile vehicle speeds violate the posted speed limit of 25mph. During the AM peak hours vehicles travel at 32mph eastbound and 31mph westbound. During the PM peak hours vehicles travel at 30mph eastbound and 30mph westbound. The highest 85th percentile speed was measured at 7mph over the speed limit during the AM peak hours and 5mph over the speed limit during the PM peak hours. If speeding continues after the school is built, there will be danger to students crossing the streets. Congestion will also occur due to the increase of pedestrians crossing the streets.

Major Findings

Vehicles exceed the speed limit on Brighton Ave. during the AM and PM peak hours. The highest 85th percentile speed at this location was measured at 7mph over the speed limit.

37. Carmel Ave. between Solano Ave. And Washington Ave. : Speeding

Location

Carmel Ave. between Solano Ave. and Washington Ave.

Issue

Dangerous speeding vehicles; residents suggest speed humps; danger seen to children and pets in the street.

Data Analysis

A speed study done in 1998 during the AM and PM peak hours on Carmel Ave. between Solano Ave. and Washington Ave., indicates that the 85th percentile of vehicle speeds violates the posted speed limit of 25mph. During the AM peak hours vehicles travel at 28mph northbound and 30mph southbound. During the PM peak hours vehicles travel at 30mph northbound and 27mph southbound. The highest 85th percentile speed was measured at 5mph over the speed limit during the AM peak hours and PM peak hours.

Major Findings

The highest observed 85th percentile speed on Carmel Ave. between Solano and Washington was 5mph over the posted 25mph speed limit.

38. Garfield Ave. : Speeding

Location
Garfield Ave.

Issue
Vehicle speeds along Garfield are relatively high. In general, east/west streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). All cross streets are STOP controlled, except for Masonic Ave. and San Pablo Ave.

Data Analysis
According to the speed survey done in 1998, during the AM peak hour the 85th percentile vehicle speed is 31mph westbound and 30mph eastbound. During the PM peak the 85th percentile vehicle speed is 33mph eastbound and 33mph west bound. The speed limit posted is 25mph. The highest 85th percentile vehicle speed was measured at 8mph over the speed limit during the PM peak hours.

Major Findings
The highest 85th percentile vehicle speed was 8mph over the speed limit during the PM peak hours.

39. Kains Ave./Solano Ave. : Wrong Way Driving on Kains Ave.

Location

Kains Ave./Solano Ave.

Issue

Kains Ave. is a one-way, southbound roadway. Vehicles travel the wrong way (northbound) on Kains Ave. from Solano Ave. This seems to be done to access one of the driveways or parking lots in the block between Solano and Washington, but not to avoid the intersection of Solano/San Pablo. Kains Ave. is clearly marked as a one-way southbound street, with dual DO NOT ENTER signs, dual ONE WAY signs, and a westbound NO RIGHT TURN sign.

Data Analysis

The intersection of Solano Ave. and Kains Ave. was observed to determine potential causes of wrong way traffic on Kains Ave. Four vehicles made an illegal left turn, two vehicles were residents and two vehicles turned behind the building at the north west corner of Kains Ave. and Solano Ave. Three other vehicles made an attempt to make a left turn, but were blocked by oncoming traffic.

Major Findings

Observations show that vehicles do turn onto Kains Ave. from Solano Ave. traveling the wrong way.

40. Key Route Blvd. at City Limits (El Cerrito) : Commuter Traffic Volumes

Location

Key Route Blvd. at the El Cerrito City limits

Issue

Should be blocked off by a parkway to decrease commuter traffic on Key Route Blvd.

Data Analysis

Key Route Boulevard is designated as a minor arterial roadway. Daily roadway traffic volumes for Key Route Boulevard were collected in 1998. There were 2,185 northbound and 2,292 southbound vehicles observed to use Key Route Boulevard during a 24 hour weekday period. Peak hour and peak direction volumes on Key Route are roughly 10 to 13 percent of the daily traffic volumes. A typical peak hour volume is approximately 10 percent of the daily traffic volume. Thus, Key Route does not exhibit substantially greater than normal peaking characteristics such as would be expected on a roadway carrying heavy commuter volumes.

Major Findings

Peak hour and peak direction volumes on Key Route are roughly 10 to 13 percent of the daily traffic volumes. A typical peak hour volume is approximately 10 percent of the daily traffic volume. Thus, Key Route does not exhibit substantially greater than normal peaking characteristics such as would be expected on a roadway carrying heavy commuter volumes.

41. Key Route Blvd. : Speeding

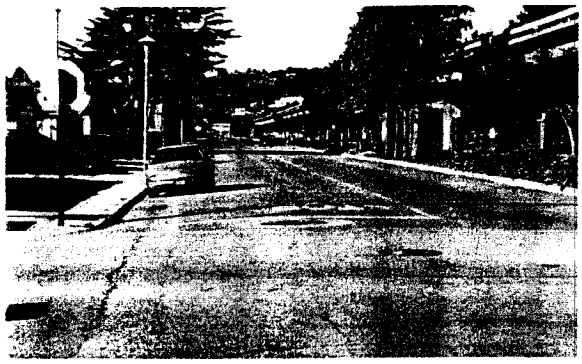
Location
Key Route Blvd.

Issue
Speeding occurs on Key Route Blvd.

Data Analysis
Key Route Blvd. is a two-way roadway, divided by a center median. The roadways are 30 feet wide with a single travel lane and parking on both sides. The median is approximately 15 feet wide. In 1997, speed surveys conducted between 2:35 and 3:20 PM show an 85th percentile speed of 30mph in the northbound direction and 32mph in the southbound direction. The posted speed in this location is 25mph. The combination of one-way traffic, unoccupied parking (especially in the center), approximately 700 foot blocks, and a wide travel lane makes this street more conducive to speeding.

Major Findings
The maximum observed 85th percentile speed was 7mph over the posted speed limit.

42. Masonic Ave. : Speeding



Location
Masonic Ave.

Issue
Speeding occurs on Masonic Ave. It is approximately 40 feet wide with parking on both sides of the street. In general, blocks are over 500 feet long. Along the east side of the street is the BART tracks and the greenway, which makes Masonic appear to be much wider than it actually is. Vehicles drive on the wrong side when turning from Brighton.

Data Analysis
On Masonic Ave. between Brighten and Garfield, the 85th percentile speeds in the AM peak hour were observed at 33mph northbound and 31mph southbound. In the PM peak speeds were observed at 33mph northbound and 34mph southbound. The maximum observed 85th percentile speed exceeded the 25mph speed by 9mph.

Major Findings
The maximum observed 85th percentile speed exceeded the 25mph speed limit by 9mph.

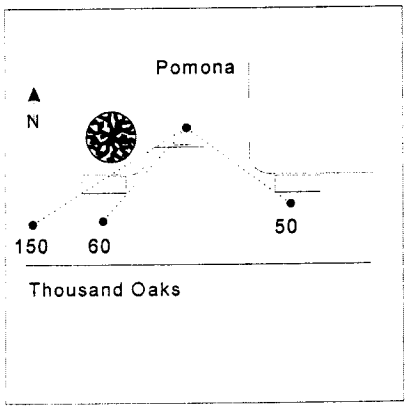
43. Pomona Ave./Thousand Oaks Blvd. : Sight Distance

Location

Pomona Ave./Thousand Oaks Blvd.

Issue

Southbound Pomona has a T-intersection with Thousand Oaks Blvd. on the north side of Albany High School. In general, speeds are relatively high on Thousand Oaks Blvd. To the west, a large tree and parked cars tend to block the view to Thousand Oaks Blvd., resulting in poor sight distances. This makes entering the intersection difficult.



Data Analysis

From the stop bar on the southbound approach of Pomona Ave. there is limited sight distance to both approaches on Thousand Oaks Blvd. To the west there is a sight distance of 60 feet if parked cars are present. Without a parked car this increases to 150 feet which is adequate to meet the 150 feet recommended by the Caltrans Traffic Manual. This sight distance is restricted in part due to a tree near the intersection. To the east there is 50 feet of sight distance if parked cars are present. Without parked cars there is a clear line of sight to the east which meets the recommended sight distance.

Major Findings

To the west, sight distance is less than that recommended by the Caltrans Traffic Manual only if parked cars are present, due to vegetation.

To the east, parked cars limit sight distance to 60 feet. However, without parked cars, a clear line of sight which meets Caltrans design standards is possible.

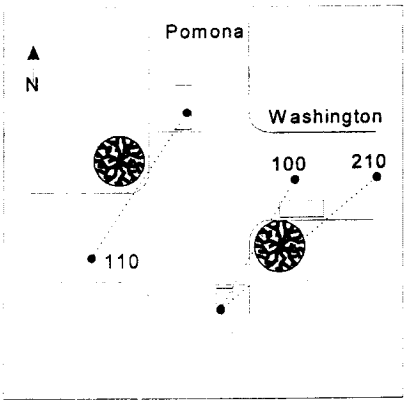
44. Pomona Ave./Washington Ave. : Intersection Geometrics, Sight Distance

Location

Pomona Ave./Washington Ave.

Issue

The intersection of Pomona/Washington is currently misaligned. This is a 2-way STOP controlled intersection. Pomona St. (north-south) is STOP controlled, while Washington (east-west) is uncontrolled. Vehicles on Washington are forced to "jog" to the left to continue on the street. Due to the poor sight lines (plus the presence of trees and bushes), vehicles on Pomona are forced to venture out into the intersection in order to see oncoming vehicles. With the high speeds on Washington, vehicles on Pomona find it difficult to safely enter the intersection.



Data Analysis

The sight distance from the southbound stop bar on Pomona Ave. to the west on Washington Ave. is 110 feet. However, most of this distance is along Pomona Ave. and not Washington Ave. In order to be able to get a good view to the west a vehicle must pull forward about 45 feet past the stop bar. From the south a vehicle at the stop bar has a sight distance of 100 feet to the east if there is a parked car on Washington Ave. Without a parked car, the sight distance increases to 210 feet. Only without a parked car does the distance meet the recommended minimum of 150 feet for stopping sight distance. At this intersection in particular, the angle from which approaching traffic is observed allows for less stopping distance than the measured sight distance.

Major Findings

Sight distance is generally inadequate at this location and may encourage risky behavior by drivers who do not take adequate care to check for cross traffic before entering the intersection.

45. Portland Ave. : Speeding

Location
Portland Ave.

Issue
Vehicle speeds along Portland Ave. are relatively high. In general, these streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). Most perpendicular streets are STOP controlled.

Data Analysis
According to the speed survey done in 1998, during the mid-day peak hour the 85th percentile speed westbound is 31mph and eastbound is 31mph. The speed limit posted is 25mph on Portland Ave., and 85th percentile speeds exceed this limit by 6mph.

Major Findings
The 85th percentile speeds on Portland Ave. exceed the 25mph posted speed limit by 6mph.

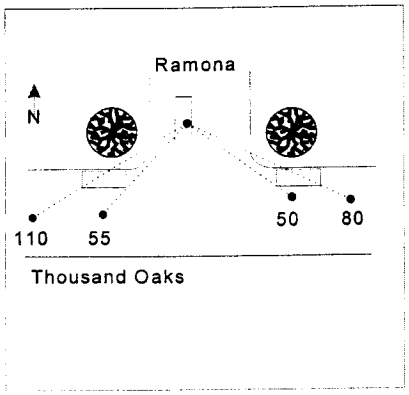
46. Ramona Ave./Thousand Oaks Blvd. : Speeding, Sight Distance

Location

Ramona Ave./Thousand Oaks Blvd.

Issue

Southbound Ramona has a T-intersection with Thousand Oaks Blvd. on the north side of Albany High School. In general, speeds are relatively high on Thousand Oaks Blvd. To both the east and the west, trees, bushes and parked cars tend to block the view to Thousand Oaks Blvd., resulting in poor sight distances. This makes entering the intersection difficult.



Data Analysis

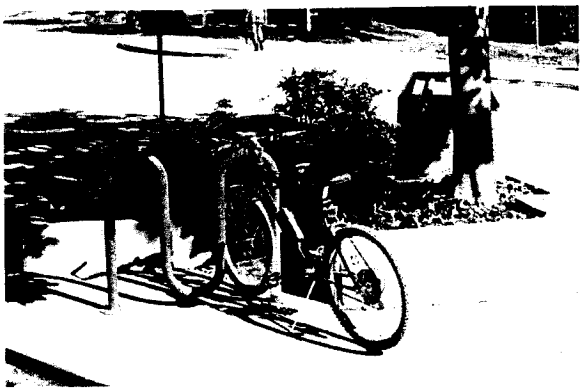
Radar speed data was collected on Thousand Oaks Blvd. in 1998. Since potential speeding by students during their lunch period was a concern, speed surveys were conducted between 12:15 and 1:15 PM. For this time period the 85th percentile speed in the eastbound direction was 28mph and 29mph in the westbound direction. During the period from 2:00 to 3:15 PM the 85th percentile speed in both directions increases to 31mph. Sight distance from the stop bar on the southbound approach of Ramona Ave. is limited by trees and bushes. The sight distance to the west is 55 feet with the presence of parked cars and 110 feet without parked cars. To the east there is 50 feet of sight distance if cars are parked near the intersection and 80 feet if there are no parked cars. None of these sight distances meet the Caltrans recommendation of 150 feet for streets with a 25mph design speed.

Major Findings

The maximum observed 85th percentile speed was 6mph over the posted speed limit.

Sight distance both east and west on Thousand Oaks Blvd. from the stop bar on Ramona Ave. is inadequate.

47. San Pablo Ave. at Solano Ave. : Bicycle/Vehicle Conflicts



Location

San Pablo Ave. at Solano Ave.

Issue

Difficult for bicyclists to travel through this intersection due to heavy vehicle traffic

Data Analysis

Analyzing the 1994-97 accident data, there were total of 51 accidents reported at this intersection of which two involved a bicycle and a vehicle. However, with high ADT on both San Pablo Ave. and Solano Ave., there is a higher possibility of conflicts occurring between vehicles and bicycles.

Major Findings

Analyzing the 1994-97 accident data, there were total of 51 accidents reported at this intersection of which two involved bicycle and a vehicle. However, with high ADT on both San Pablo Ave. and Solano Ave., there is a proportionately higher probability of conflicts occurring between vehicles and bicycles.

48. San Gabriel Ave. between Brighton Ave. And Portland Ave. : Speeding

Location

San Gabriel Ave. between Brighton Ave. and Portland Ave. (North end)

Issue

Request for speed humps to mitigate speeding traffic. Cul-de-sac to preclude through traffic on this street. There is also a new proposed Middle School nearby which may increase problems and congestion.

Data Analysis

A speed study done in 1998 during the AM and PM peak hours on San Gabriel Ave. between Brighton Ave. and Portland Ave., indicates that 85th percentile of vehicles violate the posted speed limit of 25mph. During the AM peak hour vehicles travel at 27mph northbound and 26mph southbound. During the PM peak hour vehicles travel at 24mph northbound and 28mph southbound. The highest 85th percentile speed was measured at 2mph over the speed limit during the AM peak and 3mph over the speed limit during the PM peak. Findings indicate there is no excessive speeding on San Gabriel Ave. However, the potential for risky behavior may increase with the increase in child pedestrians due to the new Middle School nearby.

Major Findings

Vehicles exceed the speed limit on San Gabriel Ave. during the PM peak hours. The highest observed 85th percentile speed was measured at 3mph over the posted speed limit. However, the presence of the new school near this location may increase the potential for risky behavior in the future.

49. Santa Fe Ave. : Speeding

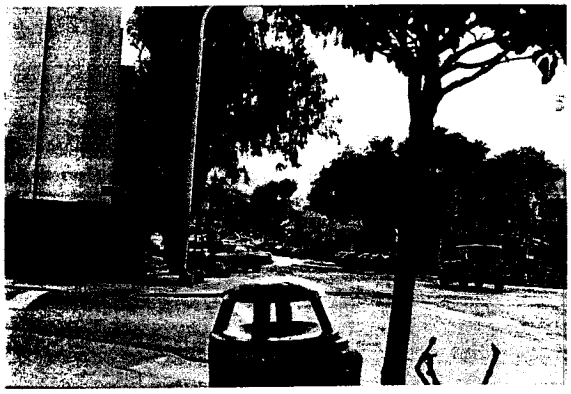
Location
Santa Fe Ave.

Issue
Speeding occurs on Santa Fe Ave., which is a minor arterial, approximately 35 feet wide, with parking on both sides of the street. From Solano, there is a mild downslope to the north, which leads to increased speeds. The blocks on Santa Fe are also long, approximately 700 feet.

Data Analysis
A speed study done in 1997 during the PM peak hour on Santa Fe Ave. between Marin Ave. and the El Cerrito city limit indicates that the 85th percentile vehicle speeds violate the posted speed limit of 25mph. During the PM peak hour vehicles travel at 30mph northbound and 31mph southbound. The highest 85th percentile speed exceeded the posted speed limit by 6mph.

Major Findings
Vehicles exceed the speed limit on Santa Fe Ave. The maximum observed 85th percentile speed exceeded the posted speed limit by 6mph.

50. Solano Ave., East of Masonic Ave. : Traffic Volumes, Speeds Affecting Bicycle Safety



Location

Solano Ave., East of Masonic Ave.

Issue

The recent City of Albany Bicycle Study stated that on Solano Ave. narrow sidewalks are used by cyclists who must use them because of the street's high traffic volumes and speeds.

Data Analysis

Speed studies done in 1998 during the mid-day peak hours for Solano Ave. east of Masonic Ave., indicate that at the 85th percentile measurement of vehicle speeds, vehicles do not violate the posted speed limit of 25mph. During the mid-day peak vehicles travel at 25mph eastbound and 25mph westbound. The vehicle counts for Solano Ave. indicate that there is a relatively high ADT. The table below is the accident data for 1994-97 on Solano Ave. east of Masonic. There is a high percentage of bike and pedestrian accidents.

	Collision Type								
Acc. Type	**HON**	**B**	**S**	**R**	**HO**	**O**	**PED**	**Bike**	**Total**
Injury	4.0%	8.0%	4.0%	20.0%	0.0%	56.0%	16%	28.0%	92%
Prop. Dam	0.0%	4.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8%
Total	4.0%	12.0%	8.0%	20.0%	0.0%	56.0%	16%	28.0%	100.0%
# of Acc.	1	3	2	5	0	14	4	7	25

HON= Head On B= Broadside S= Sideswipe
R= Rear-end HO= Hit Object O= Other
PED= Pedestrian/Vehicle Accidents

Major Findings

Vehicles do not speed on the Solano Ave., but there is a high volume of vehicles that travel on Solano Ave. and relatively high number of bicycle and pedestrian accidents.

51. Solano Ave./Santa Fe Ave. : Traffic Diverted to Curtis St.

Location
Solano Ave./Santa Fe Ave.

Issue
At the signalized intersection of Solano Ave./Santa Fe Ave., substantial queues tend to develop along westbound and eastbound Solano Ave. As a result, westbound vehicles tend to turn off Solano Ave. onto Curtis St. and then continue onto Washington Ave. or other east-west streets. This diversion leads to increased volumes and higher speeds on Curtis St., which is a narrow (30 feet wide) and quiet residential street.

Data Analysis
Turning movements were collected at the intersections of Solano and Curtis St. and Washington at Curtis St. to determine the number of vehicles diverted from Solano Ave. onto northbound Curtis St., and from there to westbound Washington Ave. in the PM peak hour. In the PM peak period, 22 vehicles made a right turn onto northbound Curtis St. from westbound Solano Ave. However, the vast majority (422 vehicles) remained on Solano Ave. A total of 20 vehicles turned left onto westbound Washington from northbound Curtis St. This indicates that during the two-hour PM peak period, around 10 vehicles per hour are likely to have been cut-through traffic diverted from Solano Ave. This represents 28% of all vehicles traveling on Curtis St. during the PM peak period (20 out of a total of 70 vehicles during a two hour period).

Major Findings
The number of vehicles traveling on Curtis St. during the PM peak period is very small (approximately 45 vehicles per hour). Of these, approximately 10 vehicles per hour appear to be making the cut-through movement described by residents. However, virtually all westbound vehicles on Solano Ave. (482) remain on Solano Ave. and pass through the intersection at Solano and Santa Fe. Therefore it does not appear that a significant amount of cut-through traffic is occurring at this location.

52. Thousand Oaks Blvd. : Speeding

Location
Thousand Oaks Blvd.

Issue
Vehicle speeds along Thousand Oaks Blvd. are relatively high. In general, these streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). Most perpendicular streets are STOP controlled.

Data Analysis
According to the speed survey done in 1998, during the mid-day peak hour the 85th percentile speed westbound is 31mph and eastbound is 31mph. The speed limit posted is 25mph on Thousand Oaks Blvd., and 85th percentile speeds exceed this limit by 6mph.

Major Findings
On Thousand Oaks Blvd., 85th percentile speeds exceed the posted speed limit of 25mph by 6mph.

53. Washington Ave./Masonic Ave. : Bicycle, Pedestrian, Motorist Safety

Location
Washington Ave. and Masonic Ave.

Issue
Petition for a four way stop at this location due to residents' observation of accidents and need to slow down traffic for the safety of pedestrians, bicyclists, and automobile drivers.

Data Analysis
A four way stop has already been installed at this location by adding stop signs on Washington Avenue. Each corner has a stop sign with a supplementary "4 way" sign beneath it.

Major Findings
A STOP sign has been installed.

54. Washington Ave. : Speeding

Location
Washington Ave.

Issue
Vehicle speeds along Washington Ave. are relatively high. In general, these streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). All cross streets in this area, except San Pablo Ave. are STOP controlled.

Data Analysis
Speed studies done in 1997-98 during the AM and PM peak hours for Washington Ave. east of San Pablo Ave., indicate that at the 85th percentile measurement of the vehicle speed, vehicles violate the posted speed limit of 25mph. During the PM peak hours vehicles travel at 33mph eastbound and 31mph westbound. The highest 85th percentile speed was measured at 8mph over the speed limit during the PM peak hours.

Major Findings
The highest 85th percentile speed was measured at 8mph over the speed limit during the PM peak hours.

55. Community Center Parking Lot : Cut-through Traffic

Location

Community Center parking lot

Issue

Community center parking lot used as shortcut; vehicles driving too fast through the parking lot.

Data Analysis

Two vehicles were videotaped cutting through the Community Center Parking lot during a single hour (5:15-6:15) during the PM peak period. They entered the parking lot by making a left turn on Marin to northbound Evelyn, turning right at the Community Center, and then making a left turn and continuing northbound on Masonic. These vehicles did not speed through the parking lot. This cut-through movement appears to avoid the left turn at Masonic and Marin. This intersection operates at LOS B during the PM peak hour, so it is unlikely that a significant number of northbound vehicles would avoid this left turn during the PM peak hour; turning movements at this intersection in the PM peak indicate that 36 vehicles make this left turn. If two vehicles avoided the eastbound left turn on Marin Ave. to northbound Masonic Ave., then about 5% of all vehicles desiring to make this movement actually avoided turning left at Masonic and turned left at Marin instead.

Major Findings

Virtually no vehicles were detected cutting through the Community Center parking lot in the PM peak hour. The two vehicles that were observed traveled at slow speed through the parking lot, and were ultimately headed northbound on Masonic Ave., and therefore used the Community Center lot to avoid the left turn at Marin and Masonic. However, the PM LOS for this intersection is very good (LOS B), and the vast majority of drivers desiring to travel northbound on Masonic Ave. from Marin Ave. make a left turn at the intersection of Marin and Masonic.

56. Curtis St. : Speeding

Location
Curtis St.

Issue
Speeding occurs on Curtis St. despite the narrow roadway and the proximity of Marin Elementary School. Heading south from Marin School and the stop controlled intersection with Sonoma Ave., Curtis St. initially slopes downhill then slopes back up as it approaches Berkeley. This general dip in the roadway promotes speeding as it is easier to accelerate downhill and drivers feel comfortable that the uphill section will make it easy for them to stop.

Data Analysis
A speed study done 1997 during the PM peak hour on Curtis Ave. South of Sonoma Ave., indicates that at the 85th percentile of vehicle speeds, vehicles violate the posted speed limit of 25 mph. During the AM peak hour, vehicles travel at 30 mph northbound and 32 mph southbound. During the PM peak hour ,vehicles travel at 33 mph eastbound and 32 mph westbound. The highest 85th percentile speed was measured at 7 mph over the speed limit during the AM peak hour and 8 mph over the speed limit during the PM peak hour.

Major Findings
Vehicles exceed the speed limit on Curtis Ave. during the AM and PM peak hours. The highest 85th percentile vehicle speed recorded was 8mph over the posted speed limit.

57. Dartmouth St./Talbot Ave. : Pedestrian Safety/Stop Sign

Location

Dartmouth St./Talbot Ave.

Issue

There is a small children's playground on the northwest corner of Dartmouth St./Talbot Ave. Many vehicles pass by on Dartmouth St., including cut-through traffic from San Pablo Ave. traveling to Marin Ave. by way of Dartmouth St. and Masonic Ave. Residents would like a 4 way STOP here.

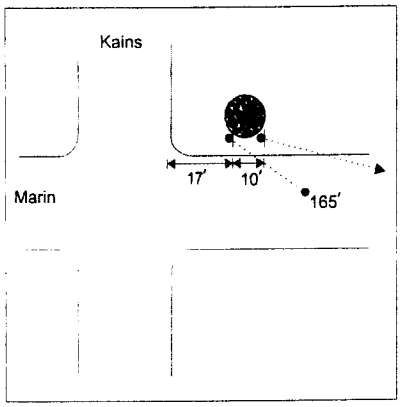
Data Analysis

AM and PM peak hour turning movement volumes were observed at this location in 1998. During the AM peak hour Dartmouth Street carried 145 vehicles, while Talbot Ave. carried 62 vehicles. During the PM peak hour there were 118 vehicles on Dartmouth Street and 55 vehicles on Talbot Ave. This is substantially less than the Caltrans minimum volume warrants for a multi-way stop sign as identified in the Caltrans Traffic Manual. Another acceptable warrant would be to identify five turning or right angle accidents at the intersection within a twelve month span. Accident data from the Statewide Integrated Traffic Records System (SWITRS) report for the years 1994 through 1997 shows no reported accidents at the intersection of Dartmouth Street and Talbot Ave. Thus, a multi-way stop is not warranted by quantitative measures. However, because of the presence of the playground, there is the possibility of small children crossing Dartmouth Street unaccompanied by an adult. This would be the type of risky behavior likely to increase the possibility of an accident.

Major Findings

This intersection does not meet the warrants for a four way STOP. However, the presence of the playground and children crossing the street introduces the possibilities of risky behavior.

58. Kains Ave./Marin Ave. : Inadequate Signage



Location
Kains Ave./Marin Ave.

Issue
Inadequate warning of one-way streets. "No right turn" sign on north leg of the intersection should be placed further east for better visibility.

Data Analysis
The westbound sign indicating the one way nature of Kains Avenue is currently located 17 feet east of the corner. The sign can be seen by approaching vehicles 165 feet east of the sign. A recently removed tree branch may previously have restricted the view of the sign.

Major Findings
The westbound sign indicating the one way nature of Kains Ave. can be seen by approaching vehicles 165 feet east of the sign. A recently removed tree branch may previously have restricted the view of the sign. This is adequate visibility.

59. Marin Ave./Santa Fe Ave. : Pedestrian Safety

Location

Marin Ave./Santa Fe Ave.

Issue

There are pedestrian crossing problems all along Marin Ave., especially near Marin School at Santa Fe Ave. Residents want Marin signals to be coordinated in favor of pedestrians. Need safety island in middle of Marin for pedestrian crossing.

Data Analysis

The accident records for the period from 1994 to 1997 indicate that there have been two pedestrian accidents along Marin Ave. In 1995 at the intersection of Cornell Ave. and Marin Ave. an 83 year old man was struck in the crosswalk and visibly injured by a vehicle traveling west at unsafe speed and passing improperly. Inattention also contributed to this accident. Another accident occurred in 1996 involving a 92 year old man crossing Peralta Ave. in the crosswalk. He sustained visible injuries when struck by a southbound vehicle turning right onto Marin. The cause of the accident was listed as inattention on the part of the driver. This may indicate that drivers crossing or turning onto Marin Ave. may engage in risky behavior by looking for gaps in vehicular traffic on Marin Ave. without simultaneously checking for pedestrian traffic.

The following table is a summary of the accident data on Marin Ave.:

	Collision Type								
Acc. Type	**HON**	**B**	**S**	**R**	**HO**	**O**	**PED**	**Bike**	**Total**
Injury	2.7%	20.3%	4.1%	8.1%	1.4%	13.5%	2.7%	10.8%	51%
Prop. Dam	1.4%	13.5%	12.2%	17.6%	5.4%	0.0%	0%	0.0%	49%
Total	4.1%	33.8%	16.2%	25.7%	6.8%	13.5%	2.7%	10.8%	100.0%
# of Accs.	3	25	12	19	5	10	2	8	77

HON= Head On B= Broadside S= Sideswipe
R= Rear-end HO= Hit Object O= Other
PED= Pedestrian/Vehicle Accidents

Major Findings

Of the two pedestrian accidents occurring on Marin Ave. only one involved a pedestrian crossing Marin Ave. The other involved a pedestrian crossing in a crosswalk at a signal controlled intersection. Both accidents were the fault of the driver and involved senior citizen pedestrians in crosswalks.

60. Solano Ave. : Drivers Do Not Yield to Pedestrians

Location
Solano Ave.

Issue
Drivers ignore pedestrians at crosswalks and don't yield right of way

Data Analysis
The 1994-97 accident data and Solano Ave was analyzed for accidents involving pedestrian and bicyclists.

On Solano Ave., there were ten pedestrian accidents observed and 14 bicycle accidents observed

On street observations made on Solano Ave. and Marin Ave, indicate that there are cases where drivers to not yield to pedestrians.

Major Findings
On Solano Ave., there were ten accidents observed which involved pedestrians, and 14 accidents which involved bicyclists.

On-street observations made on Solano Ave. indicate that there are cases where drivers do not yield to pedestrians.

Accident data and other data and observations may indicate a need for additional pedestrian and bicycle safeguards.

61. Marin Ave.: Drivers Do Not Yield to Pedestrians

Location
Marin Ave.

Issue
Drivers ignore pedestrians at crosswalks and don't yield right of way

Data Analysis
The 1994-97 accident data on Marin Ave. was analyzed for accidents involving pedestrian and bicyclists.

On Marin Ave., there were two accidents observed which involved pedestrians and eight accidents which involved bicyclists.

On street observations made on Marin Ave, indicate that there are cases where drivers to not yield to pedestrians.

Major Findings
On Marin Ave., there were two accidents observed which involved pedestrians, and eight accidents which involved bicyclists.

On-street observations made on Marin Ave. indicate that there are cases where drivers do not yield to pedestrians.

Accident data and other data and observations may indicate a need for additional pedestrian and bicycle safeguards.

62. Marin Ave./Ramona Ave. : Stop Signs

Location
Marin Avenue/Ramona Avenue

Issue
Stop signs have been requested for Marin at this location

Data Analysis
A four-way STOP may be warranted if : 1) a traffic signal is needed and the STOP sign is an interim measure, 2) there have been five or more reported accidents in a two year period, preventable by STOP sign, 3) on through streets where within a two year period, there were at least 1.5 accidents per million entering vehicles, and all were preventable by a STOP sign, or 4) when at least 500 vehicles enter the intersection for any eight hours of a typical day and the combined vehicular and pedestrian volumes from the minor street averages at least 200 per hour for the same eight hours. This location fails to meet any of the warrants and therefore, does not need stop signs on Marin.

Major Findings
Stop signs are not warranted on Marin Ave.

63. Marin Ave./Santa Fe Ave. : Turns at High Speed

Location

Marin Ave./Santa Fe Ave.

Issue

Northbound drivers turn east on Marin; position of crosswalk and wide curve of sidewalk allows vehicles to turn fast at this location on a green light.

Data Analysis

There is 47 feet from the stop bar on the south leg of Santa Fe Ave. to the crosswalk at the east leg of Marin Ave. The curb return radius is not the cause of vehicles making unsafe turns. Instead, the crosswalk at the east leg of the intersection is offset, and this creates space for right turning vehicles to accelerate as they approach the crosswalk.

Major Findings

The crosswalk at the east leg of the intersection is offset, and this creates space for right turning vehicles to accelerate as they approach the crosswalk.

64. Marin Ave. : Sight Distance

Location

Marin Ave.

Issue

Large vehicles parking on Marin near cross streets create sight distance problems. Such vehicles include vans, sport utility vehicles and a variety of large trucks.

Data Analysis

Observation of parking on Marin Ave. supports the assertion that large vehicles often park near intersections where their presence can restrict the sight distance of vehicles on the cross streets. This has the potential to cause risky behavior by drivers if they pull out from a side street without carefully checking for approaching traffic on Marin Ave. In order to avoid risky behavior and check for approaching traffic, the vehicle on the cross street must advance far enough beyond the stop bar to be able to see clearly in both directions. If the vehicle blocking their view is of sufficient size, they may need to pull out far enough to obstruct a through lane on Marin Ave. before they are able to see any cross traffic.

Major Findings

Large vehicles parked near the corner of intersections along Marin Ave. have the potential to obscure sight distance of vehicles on the cross street. This may reduce the sight distance for the cross street to less than the 150 feet recommended by the Caltrans Highway Design Manual for the stopping sight distance on a street with a 25 mile per hour design speed.

65. Marin Ave./Peralta Ave. : Increase Vehicular Crossing Time

Location

Marin Ave./Peralta Ave.

Issue

Green Time at Peralta Ave. is only 6 seconds and on Marin is 90 seconds.

Data Analysis

The Marin Avenue Signal Timing Study provides for greater preference for cross streets along Marin Avenue. It recommends that the green phase for Peralta Avenue operate with an initial minimum of six seconds. This could then be increased by means of vehicle actuation over detector loops to as much as 24 seconds of green time. Additionally, this intersection has pedestrian actuation which can call for a combined walk and don't walk duration of 27 seconds. Thus, it is possible that a single vehicle crossing Marin will receive a 24 second green phase if the pedestrian button is pushed. The crossing time on the west side crosswalk of Marin Avenue is 6 seconds of walk time and 15 seconds of flashing don't walk. The crossing time on the south side crosswalk of Peralta Avenue is 7 seconds of walk time and 13 seconds of flashing don't walk.

Major Findings

The Marin Avenue Signal Timing Study provides for greater preference for cross streets along Marin Ave. with vehicle actuation the green time can be as high as 24 seconds. It is also possible that a single vehicle crossing Marin will receive a 24 second green phase if the pedestrian button is pushed.

66. Marin Ave./Santa Fe Ave. : Child Pedestrian Safety

Location

Marin Ave./Santa Fe Ave.

Issue

--Drivers turning right on a red light at this location refuse to yield to pedestrians including children in the crosswalk or preparing to enter on the green light--prohibit right turns on red at this location

.

--Increase monitoring of this location for unsafe driving behavior endangering children walking.

--School Crossing signs should be posted

--Add a second crossing guard at this location due to width of Marin and need for children to cross Santa Fe as well.

--School Crossing signs and a No Right Turn on Red sign should be installed

--A deadly combination of speeding commuters and parents loading children while double-parking and remaining in their vehicles occurs at this location.

Data Analysis

Traffic speeds: Traffic speeds on Marin Ave. and on Santa Fe Ave. were measured during the PM peak periods. These streets are immediately adjacent to the Marin School. On Marin, speeding at least 5mph over the posted speed limit was observed during both of these time periods. The 85th percentile speeds on Marin were 35mph eastbound on Marin and 36mph westbound on Marin. The 85th percentile speeds on Santa Fe Ave were 30mph on southbound Santa Fe Ave. and 31mph on southbound Santa Fe Ave.

Videotaped observation of street activity: It was observed during the AM and afternoon school peak that Santa Fe Ave. is the main drop-off point for children. A great deal of risky behavior was observed. In the morning and afternoon peak periods at the beginning and end of school parents drop off and pick up children without pulling over (a risky behavior), causing traffic to back up on Santa Fe. Even more risky, however, is the propensity for parents to let their children off in the travel lane on the west side of Santa Fe, allowing them to cross mid-block against oncoming speeding vehicles. A near accident was observed on Santa Fe Ave. in the AM peak hour when a child was let out on the right side of a van parked in the travel lane, and allowed to cross into traffic mid-block. The child was nearly hit by a southbound vehicle, which braked hard to avoid the collision. In addition, it was observed that vehicles making northbound right turns from Santa Fe Ave to eastbound Marin Ave. were able to accelerate due to the fact that the east crosswalk on Marin is approximately 47 feet from the stop

bar on Santa Fe. This created a situation where drivers had room to accelerate while making the right turn, while children were crossing the east crosswalk. No accidents or near accidents were observed, however.

Accident data: Accident data indicates that during the period 1994-1997, no pedestrian accidents occurred at or near the intersection of Marin Ave. and Santa Fe Ave.

Major Findings

Speed survey data validates resident concerns that risky behavior is occurring at the Marin School; speeds are 5mph over the posted speed limit in the vicinity of the school on Marin and Santa Fe. Videotaped observation of the street activity around the school during critical periods also validates resident concerns regarding risky behavior, including loading children in traffic lanes in mid-block, and blocked traffic. This evidence, coupled with observed vehicle speeding on adjacent streets, leads to the conclusion that risky behavior is occurring which could result in pedestrian accidents although no pedestrian accidents were recorded from 1994-1997.

67. Marin Ave./Masonic Ave. : Child Pedestrian Safety

Location

Marin Ave./Masonic Ave.

Issue

Increased pedestrian green times are needed for children crossing at Masonic Ave./Marin Ave. A class sized group of children with two adult supervisors were observed by residents as being unable to cross completely within the allotted pedestrian green time.

Data Analysis

This signal controlled intersection has pedestrian actuation buttons on all corners for the crosswalks across Marin Ave. The crossing time on the east and west crosswalks across Marin Ave. is 7 seconds of walk time and 13 seconds of flashing don't walk. The *Marin Ave. Signal Timing Study* recommends 10 seconds of walk duration and 12 seconds of don't walk duration The crossing time was based on a walking speed of 3.5 feet per second to cross Marin Ave. from curb to curb. This provides somewhat more time than the typically assumed walking rate of four feet per second. The crossing time on the north and south crosswalks on Masonic Ave. is 62 seconds of walk time and 10 seconds of flashing don't walk. There is no pedestrian crossing button for this crosswalk.

Major Findings

There is more than enough crossing time for pedestrians crossing Masonic Ave. (62 seconds of walk time and 10 seconds of flashing "don't walk"). The crossing time on the east and west crosswalks across Marin Ave. is 7 seconds of walk time and 13 seconds of flashing don't walk. The *Marin Ave. Signal Timing Study* recommends 10 seconds of walk duration and 12 seconds of don't walk duration. Therefore, for the crosswalk across Marin Ave., there would be adequate crossing time at a rate of 3.5 feet per second if pedestrians begin to cross before the end of the green phase. There is no record of a pedestrian accident at this intersection for the past four years.

68. Marin Ave. and Santa Fe Ave. : Speeding, Endangering Bicyclists

Location

Marin Ave. and Santa Fe Ave.

Issue

Bicyclists find excessive speed to be dangerous on both Marin Ave. and Santa Fe Ave., south of Marin Ave.

Data Analysis

Analyzing the speed survey done in 1998, on Marin the 85th percentile vehicle speed was 35 mph eastbound and 36 mph westbound during the PM peak hour. On Santa Fe Ave. south of Marin Ave. the 85th percentile vehicle speed was observed at a maximum of 36mph during the AM peak hour in the southbound direction. The following tables are summaries of accident data for 1994-97. On Marin there were eight accidents involving bicyclists and on Santa Fe there were two accidents involving a bicyclist.

Marin Ave.

	Collision Type								
Acc. Type	HON	B	S	R	HO	O	PED	Bike	Total
Injury	2.7%	20.3%	4.1%	8.1%	1.4%	13.5%	2.7%	10.8%	50%
Prop. Dam	1.4%	13.5%	12.2%	17.6%	5.4%	0.0%	0.0%	0.0%	50%
Total	3.9%	32.5%	15.6%	24.7%	6.5%	16.9%	2.6%	13%	100.0%
# of Accs.	3	25	12	19	5	10	2	8	74

Santa Fe Ave. South of Marin Ave.

	Collision Type								
Acc. Type	HON	B	S	R	HO	O	PED	Bike	Total
Injury	0%	25%	0%	25%	0%	0%	0%	50%	100.0%
Prop. Dam	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	0%	25%	0%	25%	0%	0%	0%	50%	100.0%
# of Accs.	0	1	0	1	0	0	0	2	4

HON= Head On B= Broadside S= Sideswipe
R= Rear-end HO= Hit Object O= Other
PED= Pedestrian/Vehicle Accidents

Major Findings

On Marin Ave., the maximum 85th percentile speed observed was 36mph, 11mph over the posted speed limit. On Santa Fe Ave., the maximum 85th percentile speed observed was 36mph, 11mph over the posted speed limit. There were 8 accidents on Marin Ave. involving bicyclists and two accidents involving bicyclists on Santa Fe Ave. This indicates that bicyclist concerns are borne out by the data analysis, especially on Marin Ave.

69. Marin Ave. : Speeding

Location
Marin Ave.

Issue
On Marin Ave. westbound at The Alameda in Berkeley, 2 lanes become 4 lanes. By the time westbound traffic reaches Albany this promotes speeding as people try to make up time. Synchronize lights on Marin Ave. to reduce speeding. Nobody obeys the posted limit.

Data Analysis
A speed study done in 1997 during the PM peak hour for Marin Ave. between Buchanan St. and the city limit, indicates that at the 85th percentile measurement of vehicle speeds, vehicles violate the posted speed limit of 25 mph. During the PM peak hour vehicles travel at 35 mph east bound and 36 mph west bound. The highest 85th percentile speed was measured at 11 mph over the speed limit during the PM peak hour.

Additional speed surveys performed in 1998 on Marin between Peralta and Tulare showed 85th percentile speeds as high as 37mph eastbound and 35mph westbound.

Major Findings
Vehicles exceed the speed limit on Marin Ave. during the PM peak hour. The highest 85th percentile speed was measured at 12 mph over the speed limit during the AM peak hour in 1998.

70. Marin Ave./Talbot Ave. : Child Pedestrian Safety

Location

Marin Ave./Talbot Ave.

Issue

Residents want pedestrian activated signal at Talbot Ave./Marin Ave. because of children crossing.

Data Analysis

This intersection currently has two way STOP control on Talbot Ave. and no control on Marin Ave. Crosswalks are marked and signs on Marin Ave. indicate them as school crossings. During school periods a crossing guard is present on the west crosswalk across Marin Ave. Pedestrian counts were collected at this intersection for the AM, afternoon and PM peak hours. The peak volumes crossing each crosswalk for each period are as follows:

Period	North Leg	East Leg	South Leg	West Leg
AM	11	0	65	1
Afternoon	39	0	119	19
PM	9	3	28	6

The highest pedestrian volumes at this location were on the south crosswalk with a few additional pedestrians on the north crosswalk. Both of these approaches are STOP controlled. The east and west crosswalks across Marin Ave. carry substantially fewer pedestrians.

SWITRS accident records indicate no reported accidents involving pedestrians at this location.

Major Findings

The highest pedestrian volumes at this location were on the south crosswalk with a few additional pedestrians on the north crosswalk. Both of these approaches are STOP controlled. The east and west crosswalks across Marin Ave. carry substantially fewer pedestrians. Crossing guards are present at this location during school start/stop times. There were no reported accidents at the location which involve pedestrians. Given these child pedestrian safety appears to be adequate.

71. Marin Ave./Cornell Ave. : Child Pedestrian Safety

Location

Marin Ave. /Cornell Ave.

Issue

Residents want pedestrian activated signal at Cornell Ave./Marin Ave. because of children crossing.

Data Analysis

This intersection currently has two way STOP control on Cornell Ave. and no control on Marin Ave. Crosswalks are marked and signs on Marin Ave. indicate them as school crossings. During school periods a crossing guard is present on the east crosswalk across Marin Ave. Pedestrian counts were collected at this intersection for the AM, afternoon and PM peak hours. The peak volumes crossing each crosswalk for each period are as follows:

Period	North Leg	East Leg	South Leg	West Leg
AM	38	40	115	3
Afternoon	35	36	195	7
PM	31	9	27	3

The greatest volumes occurred on the south crosswalk across Cornell Ave., which is STOP sign controlled. Substantially lower volumes were observed on the north and east crosswalks. The north crosswalk is also STOP controlled and the east crosswalk has a crossing guard present to stop traffic on Marin Ave. while children cross the street.

SWITRS accident records indicate one reported accident involving pedestrians at this location (not a child).

Major Findings

The most substantial pedestrian volumes at this intersection occur on the south crosswalk, which is STOP sign controlled. The east crosswalk which crosses Marin Ave. and serves children traveling to Cornell School is controlled by a crossing guard during the periods when school children are present. SWITRS accident records indicate one reported accident involving pedestrians at this location (not a child).

72. Masonic Ave. : Speeding

Location
Masonic Ave.

Issue
--Vehicles tend to speed after passing the Berkeley speed humps located on a relatively narrow roadway. The northernmost speed hump is ironically placed on an already arched section of roadway (possibly over a culvert for a stream) making it quite a significant hump. The roadway then opens up as it enters Albany and vehicles accelerate due to the higher design speed on the Albany section of Masonic. The street also feels wider here because of the green belt and pedestrian/bike trails along the BART right-of-way on the east side of Masonic Ave. This wide open feeling contributes to higher vehicle speeds.
--Speeding between Marin and Berkeley is intimidating.

Data Analysis
Speed studies done in 1997 and 1998 during the AM, PM and off peak hours on Masonic Ave. between Dartmouth Ave. and the city limit, indicate that at the 85th percentile of vehicle speeds, vehicles violate the posted speed limit of 25mph. During the AM peak hour vehicles travel at 30mph northbound and 31mph southbound. During the PM peak hour vehicles travel at 29mph northbound and 30mph southbound. During the off peak hour vehicles travel at 31mph northbound and 32mph southbound. The highest 85th percentile speed was measured at 6mph over the speed limit during the AM peak hour, 5mph over the speed limit during the PM peak , and 7mph over the speed limit during the off peak hour.

Major Findings
Vehicles exceed the speed limit on Masonic Ave. The highest 85th percentile speed was measured at 7mph over the posted speed limit.

73. Ordway Ave. (900 and 1000 blocks) : Speeding

Location

Ordway Ave. (900 and 1000 Blocks) between Sonoma Ave. and Posen St.

Issue

Discussion of lane channelization, speed humps, and lane dividers by residents in letter to City. Residents report speeds from 35 to 45 mph on Ordway Avenue. A demonstration traffic calming channelization project was request by residents of the 900 block of Ordway Avenue. Residents of the 1000 block of Ordway Avenue inquired if speed tables could be installed.

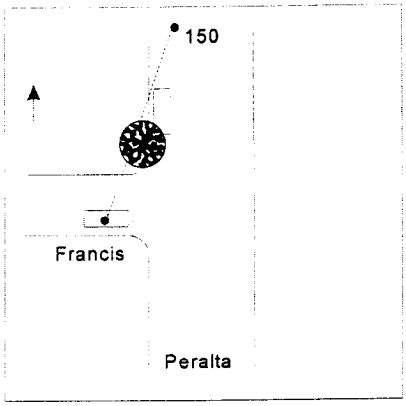
Data Analysis

Speed study done in 1998 during the AM and PM peak hours on Ordway Ave. between Sonoma Ave. and Posen Ave., indicates that at the 85th percentile of vehicle speed, vehicles violate the posted speed limit of 25 mph. During the AM peak hour vehicles travel at 30 mph northbound and 32 mph southbound. During the PM peak hour vehicles travel at 30 mph northbound and 33 mph southbound. The highest 85th percentile speed was measured at 7 mph over the speed limit during the AM peak hour and 8 mph over the speed limit during the PM peak hour.

Major Findings

Vehicles exceed the speed limit on Ordway Ave. The highest 85th percentile speed was measured at 8mph over the posted speed limit.

74. Peralta Ave./Francis St. : Sight Distance



Location

Peralta Ave./Francis St.

Issue

Sight distance is an issue at this location due to vertical curves, parked cars and physical obstructions. This makes it particularly difficult to make a left turn from Francis St. onto Peralta Ave.

Data Analysis

To the southbound approach on Peralta Ave., the sight distance is 150 feet from the centerline of the eastbound Francis St. crosswalk. However, sight lines are interrupted by trees, plantings, and parked vehicles.

Major Findings

From the stop bar, sight distance was 150 feet. This meets the 150 feet stopping sight distance recommended in Table 201.1 of the Caltrans Highway Design Manual.

75. Pomona Ave. : Speeding

Location
Pomona Ave.

Issue
Speeding on Pomona Ave. The long blocks and straight wide streets tend to promote speeding in this area.

Data Analysis
A speed study done in 1998 during the AM and PM peak hours on Pomona Ave. between Marin Ave. and Dartmouth St., indicates that the 85th percentile of vehicle speeds, violates the posted speed limit of 25 mph. During the AM peak hour vehicles travel at 33 mph northbound and 33 mph southbound. During the PM peak hour vehicles travel at 32 mph northbound and 34 mph southbound. The highest 85th percentile speed was measured at 8 mph over the speed limit during the AM peak hour and 9 mph over the speed limit during the PM peak hour.

Major Findings
Vehicles exceed the speed limit on Pomona Ave. The highest 85th percentile speed was measured at 9mph over the posted speed limit.

76. San Pablo Ave. : Wrong-way Bicycle Travel

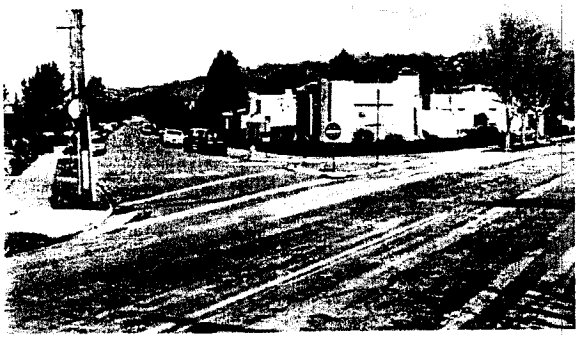
Location
San Pablo Ave.

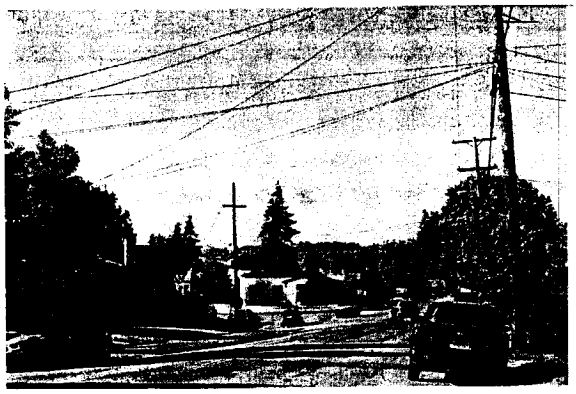
Issue
Bikes ignore traffic control, ride wrong way on San Pablo Ave.

Data Analysis
Analysis of the 1994-97 accident data for incidents occurring due to bicycles riding on the wrong side of the street on San Pablo Ave., shows there were no such accidents during the four year period out of six total bicycle accidents.

Major Findings
Analysis of the 1994-97 accident data for incidents occurring due to bicycles riding on the wrong side of the street on San Pablo Ave., shows there were no such accidents during the four year period out of six total bicycle accidents.

77. Santa Fe Ave. at Pomona Ave., Ramona Ave., and Key Route Blvd. Intersection Geometrics





Location

Santa Fe Ave. at Pomona Ave., Ramona Ave., and Key Route Blvd.

Issue

Confusing geometrics at the intersections of Santa Fe Ave. with Pomona Ave., Ramona Ave., and Key Route Blvd. The intersection of Santa Fe Ave./Pomona Ave. currently has raised medians and islands on Pomona Ave. as well as signs which make it less confusing than the other intersections.

Data Analysis

Observations of intersection geometrics and driver behavior indicates that the current channelization of vehicles causes potential driver confusion, especially for northbound vehicles on Santa Fe Ave. turning left at the island.

Major Findings

Observation of these intersections indicates that the current configuations cause potential driver confusion, especially for northbound vehicles on Santa Fe Ave. turning left.

78. Santa Fe Ave. at Ramona Ave., Pomona Ave. And Key Route Blvd. Child Pedestrian Safety

Location

Santa Fe Ave. at Pomona Ave., Ramona Ave. and Key Route Blvd.

Issue

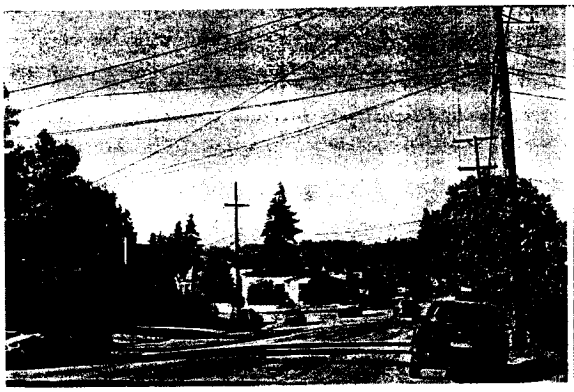
Dangerous conditions for school children and others crossing at this location.

Data Analysis

A review of accident data from 1994-1997 showed no pedestrian accidents at any of these intersections. However, the confusing intersection configurations may distract drivers and cause risky behavior.

Major Findings

No accidents were reported at these intersections. However, there is the potential for risky behavior.



79. Santa Fe Ave. at Marin School : School Employee Parking

Location

Santa Fe Ave. at Marin School

Issue

Do not allow school employees to park on Santa Fe Ave.

Data Analysis

Marin School does not have any off street parking facilities. Thus all school employees who drive to work must find on-street parking. The school is adjacent to parts of Santa Fe and Marin Avenues and Curtis Street. Observation of these streets between 10:30 and 11:00 AM on a school day showed the 60 out of 93 parking spaces were occupied for an occupancy rate of 65 percent. On Santa Fe near the school, the occupancy rate was 78 percent. The occupancy rate of other nearby streets that might be used by school employees was 39 percent.

Major Findings

The parking occupancy on Santa Fe Avenue on the block adjacent to the school was 78 percent. This is less than 85 percent occupancy which is generally considered to be full occupancy.

80. Santa Fe Ave. Between Marin Ave. and Gilman St. : Speeding

Location

Santa Fe Ave. Between Marin Ave. And Gilman St.

Issue

Speeding occurs on the long straight portion of Santa Fe Ave., which is uninterrupted by STOP signs and which passes by Marin Elementary School. This has led to requests for stop signs or other traffic control devices at this location. Additional enforcement has also been requested.

Data Analysis

A speed study done in 1997 during the PM peak hour on Santa Fe Ave. between Ramona and Francis St., indicates that the 85th percentile of vehicle speeds, violates the posted speed limit of 25 mph. During the PM peak hour between Ramona and Francis St., vehicles travel at 36 mph northbound and 34 mph southbound. The 85th percentile speed exceeds the posted speed limit by 9 mph. The highest 85th percentile speed was measured at 11 mph over the speed limit northbound in 1997. This speed study was repeated in the AM and PM peak hour in 1998 on Santa Fe Ave. between Ramona and Pomona. The southbound highest 85th percentile speed measured at that time was also 11mph over the posted 25mph speed limit.

Major Findings

Vehicles exceed the speed limit on Santa Fe Ave. The highest 85th percentile speed measured was 11mph over the speed limit.

81. Solano Ave. Area from Key Route Blvd to Ventura Ave. : Residential Permit Parking

Location

Solano Ave. from Key Route Blvd. to Ventura Ave.

Issue

Permit parking within one block of Solano Ave. to avoid conflicts between commercial employee/patrons and residents.

Data Analysis

Evening parking occupancy surveys were done for this area. The evening survey shows residential parking as well as the peak commercial patronage. South of Solano Ave. the average observed evening occupancy rate was 60 percent on side streets between Marin Ave. and Solano Ave. Average parking occupancy exceeds 80% only at Ordway Ave. between Solano and Marin (85%). North of Solano Ave. but south of Washington Ave., the parking occupancy rate was 51 percent. On Solano Ave. the parking occupancy was 91 percent. However, east of Ramona Ave. the occupancy rate on Solano Ave. was 97 percent with most blocks 100% occupied.

Major Findings

Parking occupancies are significantly high on Solano Ave. during the weekday evening survey period (up to 97% occupancy east of Ramona Ave.) However, residential parking occupancy exceeded 80% on only one side street : Ordway Ave. from Solano to Marin (85% occupancy).

82. Solano Ave./ Ventura Ave. : Sight Distance

Location

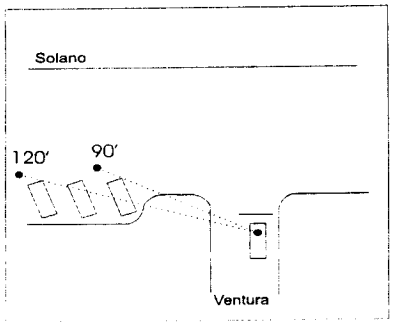
Solano Ave./Ventura Ave.

Issue

Parking too close to the intersection causes sight distance problems.

Data Analysis

The sight distance from the northbound Ventura Avenue stop bar to the eastbound Solano Avenue approach is 90 feet, if a car is parked in the first stall to the west of the intersection. Even if the first two stalls are empty, the sight distance only increases to 120 feet which is still less than the 150 feet stopping sight distance recommended by Table 201.1 of the Caltrans Highway Design Manual. It is necessary to pass the stop bar and pull up to the edge of the curb bump-out to clearly see traffic on Solano Avenue.



Major Findings

The sight distance from the northbound Ventura Avenue stop bar to the eastbound Solano Avenue approach is 90 feet. Even if the first two stalls are empty, is necessary to pass the stop bar and pull up to the edge of the curb bump-out to clearly see traffic on Solano Avenue.

83. Sonoma Ave. : Speeding due to Cut-through Traffic

Location
Sonoma Ave.

Issue
--Seen as a cut through traffic route for commuters avoiding Marin
--Severe speeding problems observed by residents make crossing dangerous; residents requested "Slow Down" signs on Sonoma as is posted on other streets in the area.
--Speeding vehicles due to cut-through Berkeley traffic; requested stop signs or other devices to slow traffic.

Data Analysis
A speed study done in 1998 during the AM and PM peak hours for Sonoma Ave. between Ordway Ave. and Ventura Ave., indicates that at the 85th percentile measurement of vehicle speeds, vehicles violate the posted speed limit of 25 mph. During the AM peak hour vehicles travel at 31 mph eastbound and 33 mph westbound. During the PM peak vehicles travel at 31 mph eastbound and 35 mph westbound. The highest 85th percentile speed was measured at 8 mph over the speed limit during the AM peak and 10 mph over the speed limit during the PM peak.

Major Findings
Vehicles exceed the speed limit on Sonoma Ave. during the AM and PM peak. The highest 85th percentile speed was measured at 10mph over the speed limit.

APPENDIX B

Transit Preference Policy (City of Albany)

TRANSIT PREFERENCE POLICY

It is the policy of the Albany City Council to encourage and promote the use of public transit. The Community Development & Environmental Resources Department and the Traffic & Safety Commission will work to develop a preferential transit street system recommending methods of expediting transit service on duly designated "transit" streets. Public transit in and through Albany transports a significant number of citizens daily, improves mobility, and reduces air pollution by reducing the need for private automobiles.

The lack of a satisfactory transit system has disproportionately negative impacts on children, seniors, and others who, for whatever reason, are unable or willing to drive. Satisfactory transit systems provide a reduction in modes of the number of human injuries and fatalities resulting from automobile accidents.

Shifting modes of transportation from private vehicles to public transit would reduce the need for parking and would thus reduce the cost of housing and economic development. Additionally, it would reduce individual transportation expenditures, freeing up personal resources for other needs, such as housing and health care. Encouraging use of public transit would reduce heavy automobile traffic on major arterials, helping to break down mobility barriers to people on foot and on bicycle, especially children. Increased use of of public transit also provides environmental benefits including a reduction in traffic congestion and air pollution.

Public transit must provide increased speed and regular frequency to encourage greater use of public transit and increase fare box revenues. A major factor reducing transit speed is transit vehicle competition with private automobiles and other preemptions of space on publicly owned and maintained city streets. Certain traffic engineering techniques such as creation and enforcement of exclusive transit lanes, synchronization of traffic signals to transit speed, extension of bus stop curbs out to the traveled transit lane, and the use of signal preemption devices improve the speed of transit travel. Improvements to public transit infrastructure increase the attractiveness and use of public transit by making it safer, more convenient, and more comfortable.

The Transit Preference Policy of the City of Albany encourages and promotes the use of public transit among Albany residents and expedites the free and unfettered movement of transit vehicles on designated "transit streets". The Department of Community Development & Environmental Resources, in constructing and maintaining the City's transportation infrastructure, shall resolve any conflicts between public transit and single occupancy vehicles on City streets in favor of the transportation mode that provides the greatest mobility for people rather than vehicles, giving due consideration to the environmental, economic, health, and social equity impacts of the conflicting mode choices. Additionally, the The Department of Community Development & Environmental Resources, in cooperation with the Traffic & Safety Commission, will develop a complete system of transit preferential streets and associated transit-oriented improvements to be incorporated in a

Transit Preferential Plan. The City Council will review the Plan and adopt it by resolution for inclusion in the circulation element of the City of Albany General Plan. As part of the planning process, the The Department of Community Development & Environmental Resources and the Traffic & Safety Commission will consider and incorporate in the Plan, as appropriate, various methods of expediting transit services on the designated streets and encouraging greater transit use, including but not limited to the following:

1. Creation of exclusive bus lanes
2. Restriction of automobile turning movements that conflict with transit vehicles
3. Synchronization of traffic signals to the speed of transit vehicles rather than automobiles
4. Use of signal preemption devices for transit vehicles
5. Extension of bus stop curbs out to the travel transit lane
6. Enforcement of regulations against double parking and parking in bus stops
7. Optimization of bus stop locations and design, considering factors such as bus operations and passenger safety
8. Posting and maintenance of transit schedule information at bus stops
9. Bus stop improvements such as benches and shelters
10. Public infrastructure improvements such as curb cuts that are necessary to give pedestrians access to the transit system

APPENDIX C

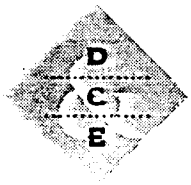
Bicycle Master Plan Final Draft

BICYCLE MASTER PLAN

FINAL DRAFT

CITY OF ALBANY

JANUARY, 1997



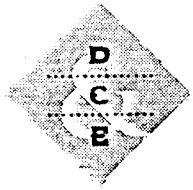
PREPARED BY
DESIGN, COMMUNITY & ENVIRONMENT

BICYCLE MASTER PLAN

FINAL DRAFT

CITY OF ALBANY

JANUARY, 1997



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FEHR & PEERS ASSOCIATES

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1 INTRODUCTION

This Bicycle Master Plan has been prepared by the City of Albany Bicycle Advisory Committee (BAC). It represents the Committee's recommendation for bicycle enhancements within Albany and reflects the Committee's belief that bicycles play a major role in the movement of people throughout Albany and the Bay Area. Through physical improvements, education programs and public outreach, bicycles can play an even larger role in moving people, thus reducing potential traffic congestion, air quality impacts, and noise impacts, and leading to an improved quality of life.

Albany is an ideal location for bicycling. The terrain is predominantly flat with grades on most streets of less than one percent. The climate of the area is also optimal with annual average temperatures of about 65 degrees Fahrenheit and infrequent rainfall. The city is fairly dense with a land area of approximately one square mile supporting 17,300 persons; this population is projected to grow to 18,000 by the year 2015. The city also supports 4,260 jobs with job growth projected to grow to 6,820 by the year 2015. In Alameda County, 35 percent of the population is under the age of 24 years and 69 percent is under the age of 44 years. Within Albany, it is likely that an even larger percentage of the population consists of younger adults due to the attractiveness of the public schools, which attract young families to the city. These relatively young people represent a large pool of potential bicycle riders.

The BAC recommends that this Plan be incorporated into the Circulation Element of the City's General Plan and the City's Citywide Transportation Analysis. These actions will encourage the development of a comprehensive bicycle network with safe and convenient bikeways and bicycle parking facilities.

A major component of the Plan is education. One of the keys to increasing bicycle ridership and the safety of bicyclists will be to educate the riding public on the "rules of the road" for cyclists and proper precautions for cyclists. The Committee believes that this education should begin in the school systems and continue through public outreach efforts.

This Plan seeks to identify opportunities to maximize the use of bicycling for local-area and longer trips. A key strategy to maximize local trip potential is the provision of safe and convenient bicycle parking at major destinations. A key to maximizing longer trips is to integrate local bikeways into the regional bikeway system. Therefore, both parking and regional connections are key elements of this Plan.

2 EXISTING SETTING AND CONSTRAINTS

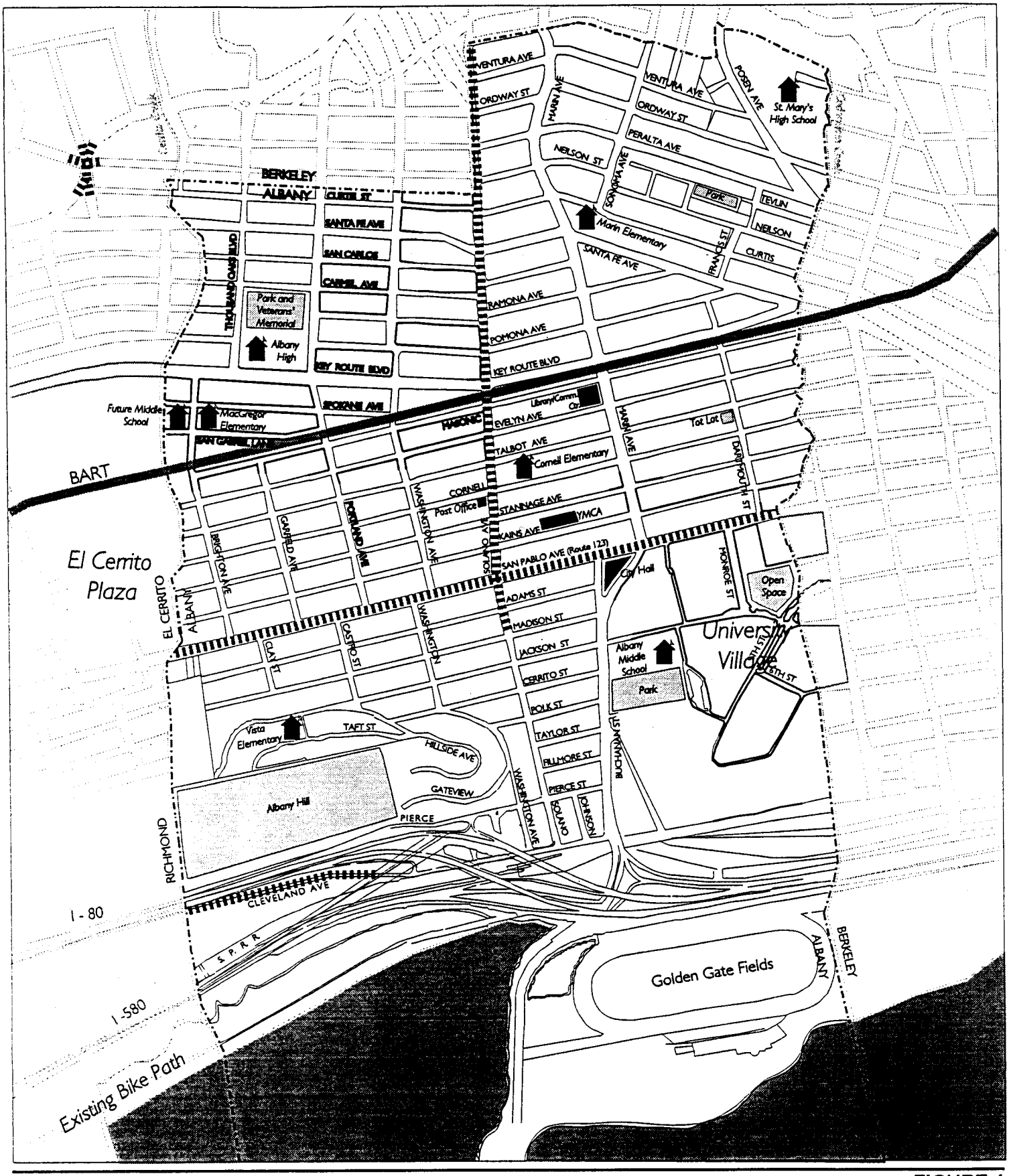
A. Existing Setting

Albany is a largely residential, bayside community located in Alameda County, bordered on its south and east sides by the city of Berkeley and the cities of El Cerrito and Richmond to the north. The community's most striking physical characteristic is Albany Hill, a tree-covered hill that rises up on the west side of town from mostly flat immediate surroundings. Cerrito Creek and Codornices Creek trace the north and south city limits, respectively. Albany is located within convenient proximity to the University of California at Berkeley.

The major surface roadways in Albany are San Pablo Avenue, running north-south, and Solano Avenue, Marin Avenue and Buchanan Street, running east-west. Most of the city's other roadways cross these streets in a roughly grid-like pattern, connecting with surrounding communities. Secondary streets are Masonic Avenue, Washington Street, Santa Fe Avenue, and Pierce Street.

The elevated Bay Area Rapid Transit (BART) line runs north-south through Albany, although there are no stations in the city. The Interstate 80/580 interchange is also within the Albany city limits, and it, together with the freeways, is a barrier between most of Albany and the San Francisco Bay front. The Southern Pacific Railroad roughly parallels these freeways in Albany.

Figure 1 shows major bicycling destinations in Albany as identified by the Bicycle Advisory Committee. There are six public schools in the Albany Unified School District. Four are elementary schools, one is a middle school, and one is a high school. A new middle school is also planned, which will allow the current middle school to be converted to another elementary school. Private St. Mary's High School is also in Albany. There are several public parks and open space areas in the city, as well as the open space atop Albany Hill. Other important public and quasi-public facilities within the city limits include the Veterans Memorial Building, a library and community center, a YMCA, the Post Office and City Hall.



School

Retail/Commercial Area

FIGURE 1

MAJOR BICYCLE DESTINATIONS

The city's major retail and commercial areas are largely clustered along the Solano and San Pablo Avenue corridors. The San Pablo Avenue commercial corridor is anchored on its north and south ends, respectively, by El Cerrito Plaza, a major shopping center in El Cerrito, and University Village, a housing development for UC Berkeley students with families. Smaller commercial areas in and around Albany occur along Cleveland Avenue and Eastside Highway and just northeast of the city limits in Kensington. Golden Gate Fields, a horse-racing track, is along the waterfront.

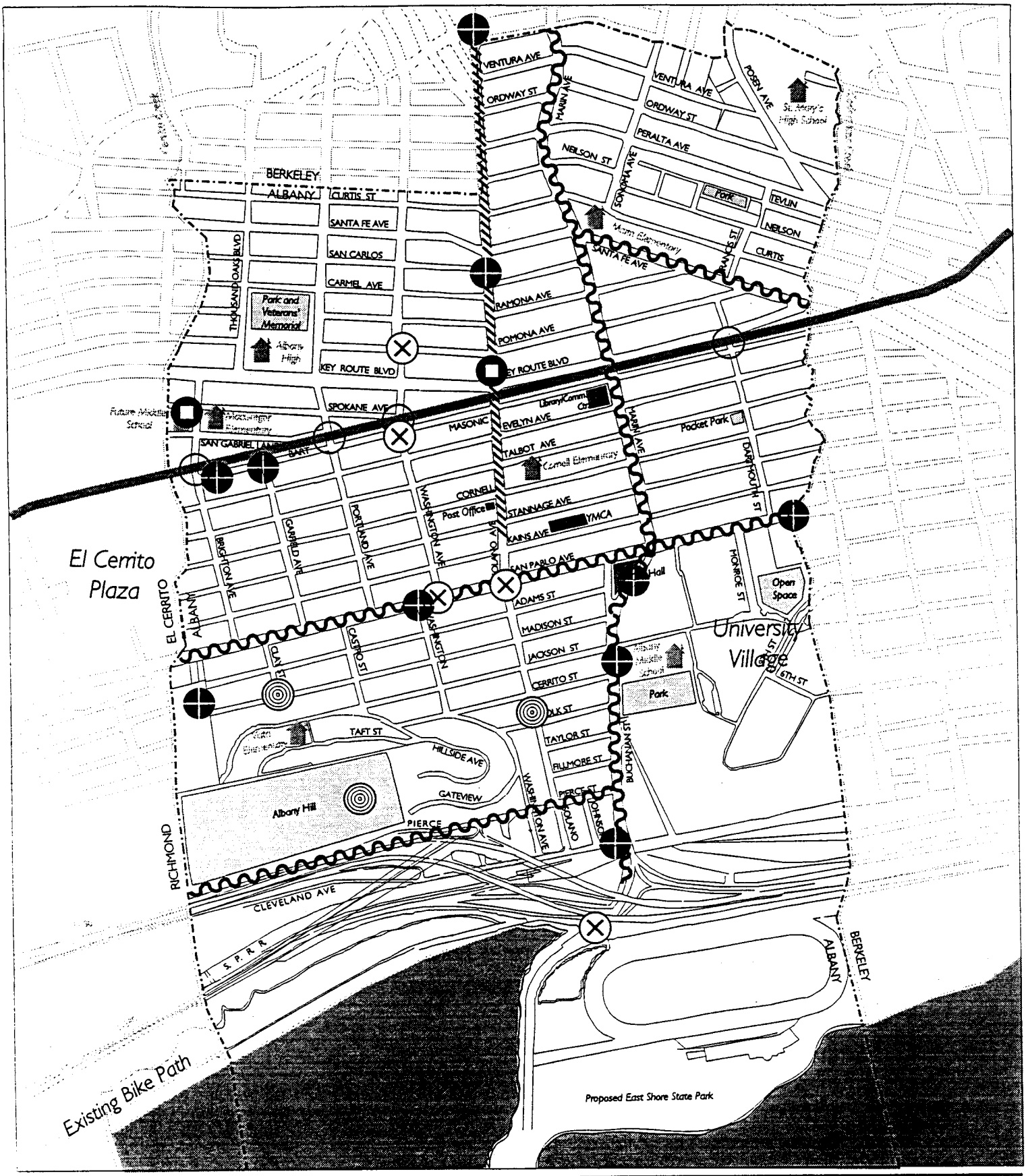
B. Bicycling Constraints

Figure 2 shows existing constraints for bicyclists in Albany. These have been identified by the City's Bicycle Advisory Committee and other residents at public cycling workshops, and through community surveys.

1. Vehicle Hazard.

There are a number of locations throughout Albany where bicyclists face considerable risks due to hazards from motor vehicles. Identified locations and hazards are as follows:

- The 580-80 Highway interchange coupled with the Buchanan Street freeway on-ramp creates a very difficult passage for bicyclists trying to reach the bay front.
- The corner of San Pablo Avenue and Solano Avenue is a heavily traveled intersection, making bicycle transportation difficult.
- High traffic volumes and speeds on Marin Avenue, Buchanan Street, San Pablo Avenue, Pierce Street, and Santa Fe Avenue present safety risks for bicyclists.
- Unlike parallel parking, diagonal parking reduces the motorists' ability to see oncoming bicyclists, since, with diagonal parking, motorists back directly out into traffic. There is diagonal parking in Albany on Solano Avenue west of San Pablo Avenue. This presents a constraint to safe bicycle transportation.



Vehicle Hazard (difficult crossing, hazardous interchange or intersection, bad corner)

Design and Connectivity (tunnel, no thruway, narrow street section, stairs)

Roadway Conditions Hazard (broken sidewalk, bad pavement, dangerous surface)

BART Trail Intersection Offset

Speeding

Diagonal parking

Hill

FIGURE 2

BICYCLING CONSTRAINTS

CITY OF ALBANY
BICYCLE PLAN

2. **Design and Connectivity.**

The following roadways and streetscapes in Albany are designed in ways that impede or complicate bicycle transportation:

- BART trail crossings at Brighton Avenue, Portland Avenue and Washington Avenue are designed poorly, creating an unsafe crossing for trail users.
- Sidewalks on parts of Solano Avenue east of Masonic Avenue are too narrow to safely accommodate cyclists. Although cyclists are discouraged from using sidewalks, they sometimes use them on Solano Avenue because of the street's high traffic volumes and diagonal parking. With the existing narrow sidewalks, this situation can be dangerous for both pedestrians and cyclists.
- A flight of stairs at the corner of Cleveland Avenue and Buchanan Street forces cyclists to dismount when riding on this route, which makes it inconvenient for cycling.

3. **Roadway Conditions Hazard.**

The following physical conditions of some roadways in Albany make those roadways inconvenient or unsafe for bicycle traffic:

- The segment of Solano Avenue between Key Route Boulevard and Pomona Avenue has rough pavement.
- The north side of Brighton Avenue from Masonic to Key Route Boulevard has a gravel-strewn surface.
- There is no lighting on the BART trail, making it dangerous for bicycling or walking at night.

4. **Hills.**

Albany Hill creates steep grades that may be difficult for the average bicyclist. These grades occur at the tops of Gateview and Hillside Avenues, at the intersection of Madison and Clay Streets, and along a large portion of the westernmost part of Solano Avenue.

5. Long Signals.

Long traffic signals can make bicycle travel difficult. Efficient bicycle travel is predicated on the idea of maintaining momentum. Places where bicyclists are forced to slow to a complete stop present constraints to improved bicycle circulation. In Albany, no signals are activated by bicycles, which can lead to long waits for bicyclists.

3 GOALS, OBJECTIVES AND STANDARDS

This chapter contains the recommended policy framework for bicycle planning in Albany. It includes nine bicycle transportation goals, each of which are followed by specific proposed objectives that should be carried out by the City. The final section of this chapter includes recommended implementation standards for bicycle facilities, maintenance programs, and bicycle education efforts.

A. Transportation Goals and Objectives

Goal 1: Support bicycling and the development of a comprehensive bicycle transportation system as a viable alternative to the automobile.

Objectives:

1.1 Evaluate the Plan regularly (every two to five years), and update it as necessary.

1.2 Continue to ensure that the Plan is consistent with all existing regional, state, and federal policy documents.

1.3 Incorporate this Bicycle Master Plan into the City's General Plan.

1.4 Encourage infill development concepts whose goal is the reduction of automobile use for short commute, shopping, and recreation trips.

Goal 2: Use available state and federal funding for bicycle improvements in Albany.

Objectives:

2.1 Identify current regional, state, and federal funding programs, along with specific funding requirements and deadlines.

2.2 Pursue multi-jurisdictional funding applications with neighboring cities.

2.3 Maintain a prioritized list of desired bicycled improvements and their estimated costs, and identify appropriate funding sources for each proposal.

2.4 Include the identified bikeway and pedestrian improvements in the City's Capital Improvement Plans.

2.5 Encourage the maintenance of reliable local, regional, and state funding sources which can be used to leverage federal funds.

Goal 3: Improve upon existing bikeway facilities and programs in Albany.

Objectives:

3.1 Develop the system of bike paths, lanes and routes proposed in this Plan.

3.2 Encourage the use of existing natural and manmade corridors such as creeks, railroad right of ways, and other open space corridors for bike path and trail alignments, as shown in this Plan.

3.3 Maintain and improve existing bicycle education programs in Albany.

3.4 Conduct bicycle counts and other surveys whenever needed to gauge the effectiveness of various improvements and programs.

Goal 4: Develop a bicycle system that meets the needs of commuter and recreation users, helps reduce vehicle trips, and links residential neighborhoods with regional destinations.

Objectives:

4.1 Develop a commuter route system connecting residential neighborhoods and regional employment areas, multi-modal terminals, schools, and shopping areas.

4.2 Develop a recreational system that uses lower volume streets, off-street bike paths, and serves recreational destinations.

4.3 Develop incentives that will encourage people to bicycle to work.

4.4 Balance the needs for user convenience and user safety in bikeway design. Where needed, develop a dual system which serves both the experienced and inexperienced bicyclist and separates pedestrians, roller bladers, and bicyclists.

4.5 Emphasize Class I (bike paths) and Class II (bike lanes) over Class III (bike routes) wherever feasible.[1]

4.6 Continue to work to address barriers to bicycling, such as the lack of secure bicycle parking and signals that do not detect bicycles.

4.7 Encourage development concepts and standards such as mixed-use and neighborhood-serving retail and employment opportunities.

Goal 5: Maximize multi-modal connections to the bicycle system.

Objectives:

5.1 Develop bikeways that are consistent with and complement Albany's Transit First Policy.

[1] Note: These types of bikeways are defined in Chapter 4.

Goal 6: Improve bicycle safety in Albany.

Objectives:

6.1 Monitor bicycle and pedestrian-related accident levels annually, and target a ten percent reduction over the next 20 years.

6.2 Develop a comprehensive bicycle education program that is taught to all school children in Albany.

6.3 Maintain systems for reporting and responding to maintenance problems on the existing bikeway, trail and pedestrian system.

6.4 In applications for funding, incorporate lighting and emergency call boxes along Class I bike paths carrying high numbers of commuters.

6.5 Maintain a schedule for maintenance and cleaning (street sweeping) of bicycle facilities.

Goal 7: Develop detailed bicycle facility improvement proposals.

Objectives:

7.1 Develop detailed implementation information on each recommended project in this Plan, including length, classification, adjacent traffic volumes and speeds, environmental impact, activity centers served, cost, and overall feasibility.

7.2 Develop cross sections and plans for the design of trails, sidewalks, bike paths and lanes that meet state and federal standards (including ADA requirements). Develop street cross sections which show how bike lanes may be placed on streets.

Goal 8: Encourage public participation and creation of an ongoing Advisory Committee.

Objectives:

8.1 Maintain the Albany Bicycle Advisory Committee (BAC) as a forum for ongoing discussions concerning bicycle issues. The BAC should be involved in monitoring implementation, funding, and updating the Plan on a regular basis.

8.2 Identify a Bicycle/Pedestrian Coordinator in Albany whose responsibility is to (a) provide support to the BAC, (b) act as a liaison to the City, (c) complete funding applications, and (d) provide interdepartmental coordination.

8.3 Maximize public involvement in the planning process through workshops and other means.

Goal 9: Develop a coordinated strategy to encourage bicycling in Albany.

Objectives:

9.1 Develop and update a user-friendly bikeway map for public distribution that shows existing bicycle facilities.

9.2 Sponsor annual bicycle events such as Bike-to-Work Day and adult safety courses in conjunction with other regional efforts.

9.3 Provide information about the advantages and opportunities afforded by the Bicycle Transportation System to promotion groups which may help publicize the system.

9.4 Coordinate efforts with the Chamber of Commerce, Solano Avenue Association, neighborhood associations, and local media.

B. Implementation Standards and Actions

Bicycle Facility Design

1. All new bicycle facilities should conform to Caltrans Design Manual Chapter 1000 standards, unless superseded by City or County guidelines (on non-state facilities).

2. All bike paths (Class I) should be designed to meet minimum Caltrans standards, which are 12 feet but may be reduced to 8 feet in constrained areas.

3. All bike lanes (Class II) should be designed to meet minimum Caltrans standards, which are minimum of 4 feet with 6 feet desirable for high trafficked and/or high speed streets.

4. All bike routes (Class III) should be improved to provide, at a minimum, a 12 foot wide curb lane on collectors and a 14 foot wide curb lane on arterials. If this is not feasible, speed limits should be a maximum of 35 miles per hour. If this is not feasible, an alternate route for less experienced bicyclists should be provided and signed.

5. Bicycle loop detectors should be installed on the bikeway system at all arterial/arterial and arterial/collector signalized intersections.

6. Where bicycle and pedestrian traffic is expected to exceed 200 persons/hour, encourage a minimum width of 12 feet on multi-use trails and a combined width of 12 feet for bicycle lanes and sidewalks.

Bicycle Parking

7. All public facilities such as libraries, government centers, parks, schools, and transit centers should provide bike racks, preferably in a covered location.

8. An ad-hoc bicycle committee should be established to review the planned improvements to Solano Avenue and San Pablo Avenue with regard to bicycle parking. The ad-hoc committee's involvement is expected to take place during the design phases of the project, prior to final design approval.

9. Covered bike racks, or bicycle lockers should be provided at all places of employment at the rate of one space per 30 full time employees.

Showers

10. Any development or redevelopment over 50,000 square feet of gross leasable area (GLA) or 150 employees should be required to provide one shower and locker facility per 100 employees.

Maintenance

11. The bikeway maintenance and improvement log should be maintained in the Public Works Department where all observed hazardous conditions are recorded and scheduled for replacement or repair.

Education

12. The City should maintain examples of bicycle education plans at the Community Planning Department at City Hall and at the public library. These reference materials would be available for use by city employers and the public at-large.

13. Bicycle education courses should be provided for all elementary school children.

14. The City should work with the Albany Unified School District to develop a bicycle education program.

4 PROPOSED BICYCLE SYSTEM

A. Bikeways

This Plan proposes a system of Class I, II, and III bicycle facilities that would provide bikeways throughout Albany, in addition to connecting bikeways of surrounding communities, as shown in Figure 3. The city's bicycling network is also proposed to provide safe links to area schools and civic facilities.

1. Class I Bike Paths

Under this Plan, there would be four major Class I alignments. Class I bikeways, also known as bicycle paths, have exclusive rights-of-way separated from roads.

- An existing Class I trail already runs beneath the BART line and provides a largely unimpeded north-south route for bicyclists. Lighting should be added to this path to make nighttime bicycling more safe. In addition, the trail's crossings at Washington, Portland and Brighton Avenues should be improved.
- The proposed Class I bikeway along the Bay front would provide a unique opportunity for bicyclists. This facility is being constructed as part of Caltrans' work on Interstate 80.
- Two additional Class I bikeway should run alongside Cerrito and Codornices Creek, providing bicyclists with a valuable connection to these natural features.

2. Class II Bike Lanes

Marked by stripes on the street, Class II bikeways lie within the paved area of roadways and provide preferred but not exclusive use to bicyclists. In Albany, Class II facilities should run north-south the length of Peralta Avenue, Santa Fe Avenue, Pierce Street, and the Eastshore Frontage Road, as well as the portion of Jackson Street from the Berkeley border to Solano Avenue. Washington Avenue, from the east border with Berkeley to Jackson Street, and Marin Avenue should accommodate east-west Class II facilities.

To accommodate Class II bike lanes, Marin Avenue should be converted from two lanes of traffic in each direction to one eleven-foot travel lane each way,

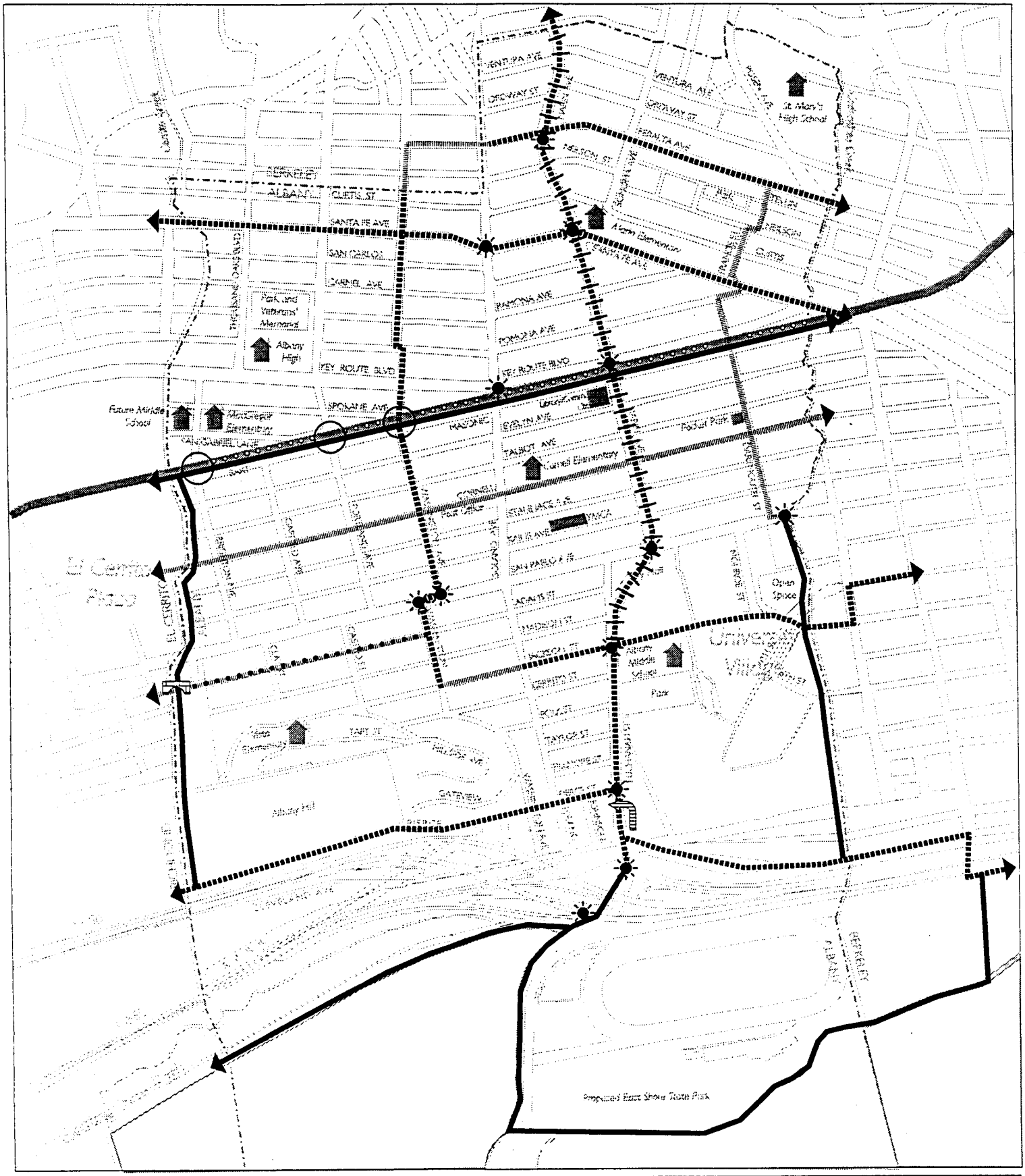
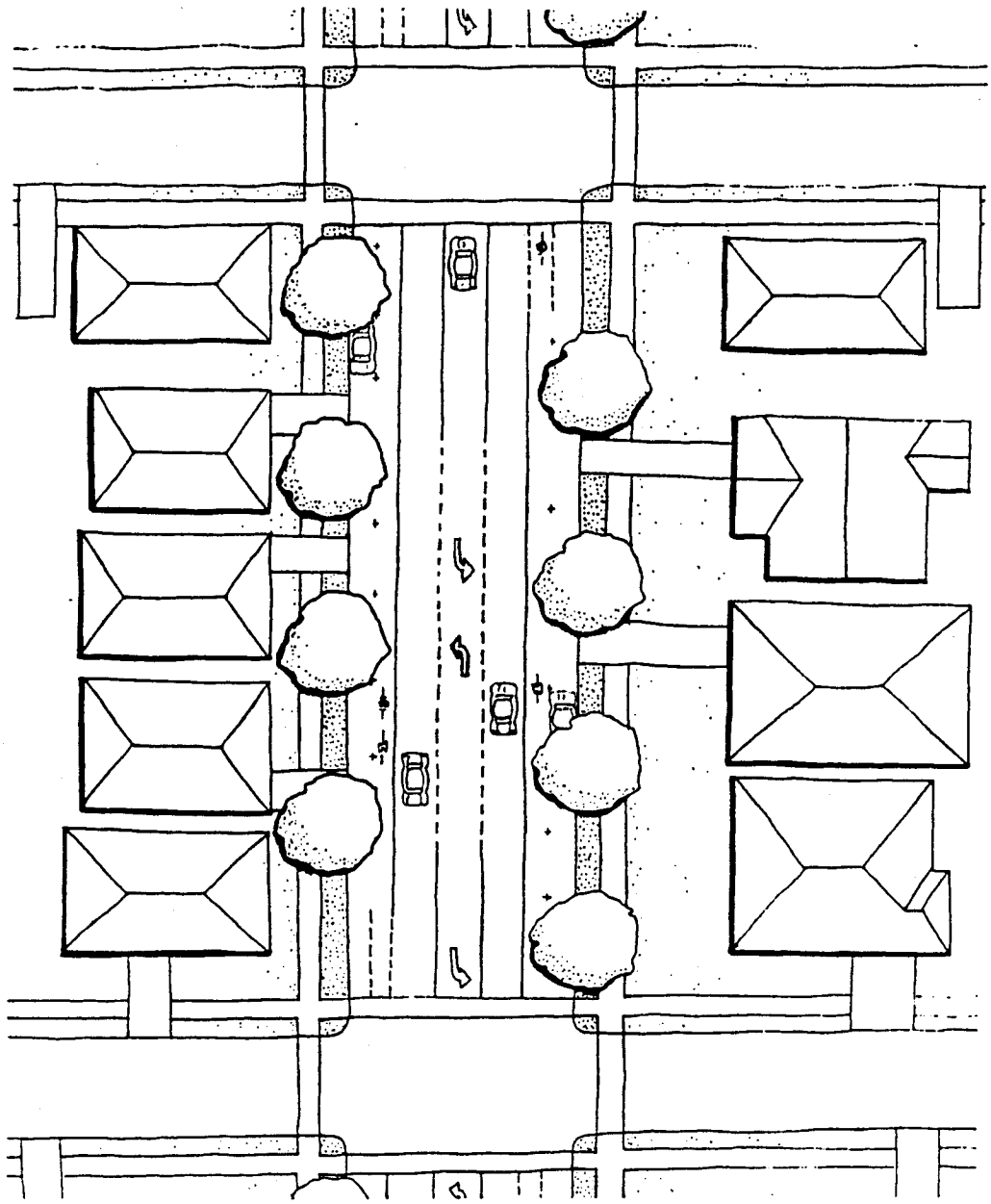
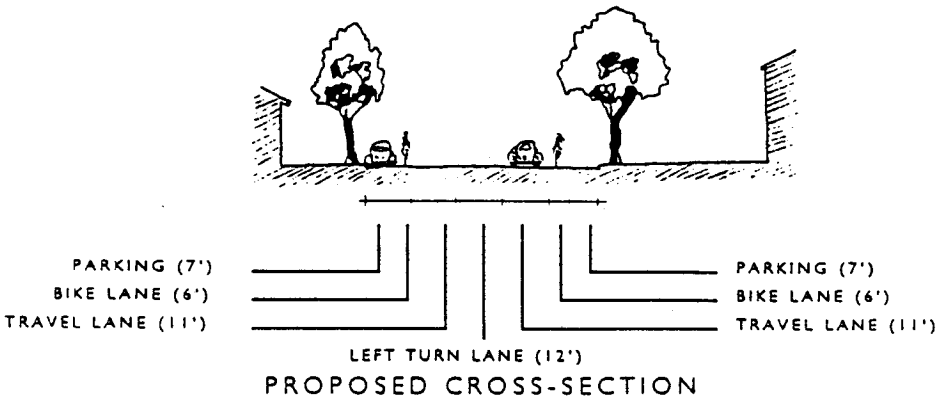


FIGURE 3

PROPOSED BICYCLE SYSTEM

CITY OF ALBANY
BICYCLE PLAN





PROPOSED CROSS-SECTION

FIGURE 4

CONCEPTUAL MARIN AVENUE ENHANCEMENTS

provided that traffic operations studies prove this feasible. A shared left turn lane should also be added. On either side of the street, a seven-foot parking aisle would be retained. This would leave room for six-foot bike lanes on both sides of the street. A conceptual drawing is shown in Figure 4.

3. Class III Bike Routes

Class III facilities share traffic lanes with motor vehicles and are designated only by signs, not stripes. The following Class III facilities should be created to provide marked, through access in areas with little vehicle traffic:

- One Class III bike route should run north-south along Cornell Avenue.
- Another route should begin at Jackson Street and Solano Avenue and run north to Washington Avenue. It should connect via Washington Avenue to a bike boulevard on Adams Street.
- A Class III facility should run east-west along Francis Street from Peralta Avenue to Pomona Avenue. At Pomona and Dartmouth Avenues, it should run west to San Pablo Avenue, bear north for approximately a half a block, and connect to the new Class I bike trail along Codornices Creek.
- A final Class III facility is proposed to connect to the Washington Avenue and Peralta Avenue Class II facilities. It would occur outside the Albany city limits in Berkeley.

4. Bike Boulevards

Bike boulevards are streets that have low vehicle traffic and are designed to give preference to bicycles over motor vehicles. They can be developed either as Class II facilities with striped bike lanes or as Class III facilities without lanes. In either case, the key attribute of bike boulevards is that they are designed in such a way that motor vehicles do not use it in high volumes or at high speeds.

A bike boulevard is proposed under this Plan for the section of Adams Street between Washington Street and the city's northern border with El Cerrito. This Class III facility, the Adams Street Bike Boulevard, would connect to a new bicycle bridge over Cerrito Creek, linking Albany to Carlson Boulevard.

The new bridge would also facilitate a connection between the School for the Blind in Albany and El Cerrito Plaza.

B. Connections to Other Communities

Proposed new facilities under this Bicycle Master Plan will facilitate better bicycle connections from Albany to the communities surrounding it. These connections are indicated with bold arrowheads on Figure 3 and are described as follows:

- The Class I BART bicycle trail already connects to El Cerrito to the north and Berkeley to the south.
- The planned Class I Bay Trail facility running along the bayfront will create linkages between Albany and Richmond to the north and Berkeley to the south.
- Improvements on Marin Avenue would connect to Berkeley, where similar improvements could also occur.
- The Class II facility along Jackson Street would run through University Village to Ninth Street in Berkeley. A new bridge would cross Codornices Creek at the city limits.
- The proposed bike boulevard along Adams Street and new bridge over Cerrito Creek would facilitate linkages between Albany and El Cerrito to the north.
- The Class II facility proposed for Peralta Avenue would continue into Berkeley.
- The Santa Fe Avenue Class II bike lane would create a direct connection between Albany and El Cerrito/Kensington to the north and Berkeley to the south.

- The Pierce Street Class II bike lane would connect Albany bicyclists from Buchanan Street north to Richmond. Similarly, the Eastshore Highway Class II bike lanes would improve movement of bicyclists from Buchanan Street south to Berkeley.
- The Cornell Avenue Class III bike route would provide a direct connection from Albany north to El Cerrito Plaza and south to Berkeley.

C. *System Improvements*

A number of improvements are proposed under the Bicycle Master Plan to make bicycle transportation in Albany safer and easier. These improvements would come in the form of bicycle bridges, bicycle-actuated traffic signals, modified BART trail street crossings, trail lights, and other location-specific modifications. Specifically, improvements under the Plan are as follows:

- A bicycle bridge should be built at the north end of Adams Street to span Cerrito Creek and open that route up to bicyclists traveling to and from El Cerrito.
- Another bicycle bridge may be built at the south end of Jackson Street to cross Codornices Creek, opening up that route to bicyclists traveling to and from Berkeley.
- Bicycle-actuated signals that would activate when bicyclists reached the intersection should be added at the following intersections:
  - Peralta and Marin Avenues,
  - Santa Fe and Marin Avenues,
  - Key Route Boulevard and Marin Avenue,
  - San Pablo and Marin Avenues,
  - San Pablo Avenue and Dartmouth Street (merging into the Class I facility along Codornices Creek),
  - Santa Fe and Solano Avenues,

- Key Route Boulevard and Solano Avenue, and
- San Pablo and Washington Avenues.

A bicycle-actuated left-turn signal should also be provided for the left-turn movement from eastbound Buchanan Street to northbound Pierce Street. A signal should also be provided at the crossing under the 580/80 interchange.

- The intersection of Washington Street and San Pablo Avenue should be signalized and modified in order to facilitate bicycle traffic moving between the two disconnected parts of Washington Street on either side of San Pablo. With the proposed changes, eastbound bicycles traveling on Washington Street would be able to make a right turn onto San Pablo and proceed to the signalized intersection. The new signal should be bicycle-actuated, and a new crosswalk should be added to the south side of the intersection to create a safe crossing for bicyclists wanting to continue traveling east on Washington. Westbound bicyclists on Washington Street would be able to take advantage of the new signal and the existing crosswalk on the north side of the intersection. After crossing San Pablo, those bicyclists would travel south briefly and then enter a newly restriped parking lot to continue west. At the west side of the parking lot, bicyclists would then merge onto Kains Avenue, travel northward briefly, and then cross lightly traveled Washington Street to continue west. A diagram of these proposed improvements is shown in Figure 5.

D. Bicycle Parking

Bicycle parking facilities should be provided in commercial areas. Secure bicycle parking can encourage the use of bicycles, reducing the risk of theft for potential bicycle commuters and recreationists. At a minimum, installation of new bicycle parking is recommended along the major commercial corridors of Solano Avenue and San Pablo Avenue. Additional locations where increased bicycle parking facilities could be provided include employment centers,

transit centers, and park and recreation facilities. Though exact locations for bicycle parking are not mandated under this Plan, potential locations for new facilities are provided in Appendix B.

E. Education and Encouragement

Education goes hand-in-hand with encouraging cycling. For example, a bicycle commute day encourages more people to ride for commute purposes, and programs can also teach urban riding skills and the importance of wearing a helmet. Teaching children cycling skills builds their confidence as riders and encourages them to ride both now and in the future.

The following are ideas that could be implemented to raise awareness and educate the community. Many of these methods have proven successful in other Bay Area communities. As suggested in Chapter 3, Section C, the City should develop a coordinated bicycle education program in conjunction with the Albany Unified School District. The elements described below could be incorporated into such program.

1. Youth Education

- Develop elementary, middle, and high school curricula to ensure that all school age children receive cycling education and encouragement.
- Ensure that all bicycling children in Albany under the age of 16 have access to approved bicycle helmets at a nominal cost, or free of charge.
- Promote and encourage bicycle-related education including repair and maintenance classes, safe bicycle handling classes, and fun and educational field trips.
- Distribute appropriate informational materials to all schools in conjunction with bicycle educational campaigns during the year.

- Develop and implement a bicycle safety component for incorporation into high school driver education programs.

2. Adult Education

- Encourage and support local bicycle shops in promoting bicycle related classes such as repair and maintenance, effective cycling skills, and rides.
- Publicize behaviors that can help cyclists avoid common crashes.
- Publicize the importance of wearing a bicycle helmet to adults.
- Develop a "Share the Road" campaign where motorists and bicyclists publicly pledge to share the road.
- Distribute informational brochures regarding bicycle safety to bicycle shops and at public events.
- Develop a public service advertising campaign that targets cyclists with bicycle safety messages.
- Publicize information regarding bicycle security measures, such as proper locking techniques.

3. Motorist Education

- Work with utility companies to provide an insert into mailings describing cyclists' right to the road and describing how motorists should safely operate vehicles around cyclists.
- Work for inclusion of motorist-bicyclist safety information in defensive driving courses.

Figure 5: Reconfiguration of San Pablo Avenue at Washington Street

- Create a public service campaign that focuses on courtesy when operating around bicyclists.

- Develop a "Share the Road" campaign where motorists and bicyclists publicly pledge to share the road.

4. Other Education

- Implement Bicycle Friendly Businesses Program.

- Enforce traffic rules for bicyclists and motorists.

- Work with City maintenance and utility crews so they better understand the needs of bicyclists.

5. Encouragement

- Create events such as "bicycle to the grocery store" days, when cyclists get vouchers for, or coupons off items in the store, or "bicycle to the movies" days, when cyclists receive free popcorn ,or a discount on a movie or refreshments.

- Create public service announcements on Albany cable channel to promote the health and livability benefits of bicycling.

- Hold an annual Bike Fest as an event to encourage residents to replace one car trip a week with a bicycle trip.

- Promote and publicize new and existing education and cycling encouragement efforts by community groups and businesses.

- Develop and implement a public education campaign to encourage bicycling, such as ads on movie screens, city benches, videos on Albany cable channel, and signs along bike routes.

- Develop measures to reduce bicycle theft, such as a program to subsidize the purchase of locks and provide instructions for proper locking techniques.

5 IMPLEMENTATION

A. Funding Sources

In order to implement the improvements recommended in this Bicycle Master Plan, a combination of federal, state, and local funds could be utilized. The primary local funds available to the City of Albany are Transportation Development Act (TDA) Article 3 funds, which are distributed by the Alameda County Congestion Management Agency. The amount the City of Albany can expect from this and other local funding sources is expected to be approximately $50,000 per year.

In addition to TDA funds, there are a variety of federal, state, and other local sources which can be utilized for the project. These include Intermodal Surface Transportation Efficiency Act (ISTEA) funds, which constitute the major federal funding source, and several state sources, including California Bicycle Transportation Act funds and California Energy Commission Transportation Demand Management Program funds. ISTEA is up for reauthorization in 1997, and could be changed or eliminated by the federal government. Further detail on these funding sources can be found in the *Guide to Bicycle Program Funding in California* (April 1995), which is published by the Planning and Conservation League Foundation.

Most of the federal or state funding sources require the implementing agency to provide a funding "match." That is, the City would need to provide a percentage of the funds for a given project in order to qualify for the programs. In most cases, the required "match" is 20 percent. Matching funds could be taken from the TDA Article 3 funds described above. Thus, with $50,000 in TDA funds assumed to be available, matched with $200,000 from outside sources, the total amount that could be available to the City of Albany for bicycle system improvements is $250,000 per fiscal year.

B. Costs and Priorities

This section identifies the projects foreseen in this Plan by cost and priority. In the following tables, individual improvements are grouped into projects, with costs assigned to them. The projects are prioritized based on their importance as identified by the Bicycle Advisory Committee.

Table 1 provides a listing of projects that should be sponsored by the City of Albany using the funding sources described above. The fiscal year that these projects could be funded, if grant applications are successful, is also shown. The estimated project dates have been calculated assuming that the City would annually appropriate $50,000 from TDA and other local funds and would acquire matching funds from various federal and state sources, for a total of $250,000 each fiscal year. If the assumed local TDA funds could not be used within a given fiscal year, it is assumed that these funds would roll-over and be available as a match for projects in the next fiscal year.

Table 1 assumes that the first year for bicycle projects will be fiscal year 1997-1998. Because the top priority project costs more than $250,000, these funds would be rolled over in the first year in order to secure enough funding for project implementation.

Table 2 describes projects that are not prioritized because they are anticipated to be included in projects that would not be funded by the City. The estimated costs of these projects, and the responsible agency for each project, are also given in Table 2.

TABLE 1 **BICYCLE SYSTEM IMPROVEMENTS AND PRIORITIES**

Priority	*Description*	*Total Length (in feet)*	*Projected Total Cost*	*Local Funding (20%)*	*Projected Fiscal Year*
1	Marin Avenue Enhancements; Buchanan Street Class II Lane; and Bike Detector at Marin and San Pablo	8,000	$437,000	$87,400	1998-1999
2	BART Trail Improvements (including lighting, bike detectors at Marin and Solano, and reconfigured offsets at Brighton, Portland and Washington)	7,600	$120,000	$24,000	1999-2000
3	Jackson and Adams Street Cross-Town Bikeway (including Adams Street Bike Boulevard, Jackson Street Class II Lanes and Class III Route enhancements, and Cerrito Creek and Codornices Creek bicycle bridges)	6,700	$176,000	$35,200	1999-2000
4	Santa Fe Avenue Class II Lane; and Bike Detectors at Marin and Solano Avenues	5,700	$62,000	$12,400	2001-2002
5	Washington Street Class II Lane; and San Pablo Avenue and Washington Street Reconfiguration (including new signal)	4,800	$191,000	$38,200	2001-2002
6	Peralta Avenue Class II Lane; and Bike Detectors at Peralta and Marin	3,200	$34,000	$6,800	2002-2003
7	Cornell Avenue Class III Route	5,900	$19,000	$3,800	2002-2003
8	Pierce Street Class II Lane; and Bike Detectors at New Pierce and Buchanan Signal	3,900	$39,000	$7,800	2002-2003

TABLE 2 **UN-PRIORITIZED BICYCLE SYSTEM IMPROVEMENTS**

Description	*Responsible Agency*	*Status*	*Length (in feet)*	*Projected Cost*
Codornices Creek Class I Path; Dartmouth and Francis Class III Route; and New Signal at Dartmouth Street and San Pablo Avenue.	UC Berkeley	To be implemented as part of the UC Village project	7,000	$542,000
Cerrito Creek Class I Path	Future El Cerrito Plaza Developer	To be implemented as part of the El Cerrito Plaza project	3,800	$471,000
Eastshore Frontage Road Class II Lane	Caltrans	Already underway as part of I-80 HOV Lane and Bay Trail Project	1,900	$18,000
Bay Front Class I Path	State of California, Golden Gate Fields, and/or Catellus Development Corporation	Contingent on the future of Golden Gate Fields	10,000	$1.2 million

APPENDIX A: COMPLIANCE WITH STATE BICYCLE LANE ACCOUNT REQUIREMENTS

California law requires that bicycle plans prepared by local jurisdictions include eleven distinct components in order to qualify for funding from the State Bicycle Lane Account (BLA) under the California Bicycle Transportation Act. This appendix details how this plan conforms to the State's requirements.

a. Estimated Number of Existing and Proposed Bicycle Commuters

The number of commuters in Albany was quantified by the 1990 Census as approximately 8,300 persons. The census also shows a 5% mode share for bicycles, which means that Albany is estimated to have 415 bicycle commuters. Through current planning efforts and encouragement of bicycle commuting, the City could hope to increase the bicycle commuting percentage to ten percent. With this increase, and assuming the total number of commuters within the city will not dramatically change, Albany would have approximately 830 future bicycle commuters.

b. Land Use and Population Density (map and description)

The City of Albany General Plan includes a map and description of land uses, in addition to information on population and density. The General Plan is hereby incorporated into the City's Bicycle Plan by reference.

c. Existing and Proposed Bikeways (map and description)

The existing bikeways within the Albany are described in Chapter 2 and Figure 1 of this Plan. Proposed bikeways are described in Chapter 4, and shown on Figure 3.

d. Existing and Proposed End-of-Trip Bicycle Parking Facilities (map and description)

Bicycle parking facilities are currently provided in Albany in various locations, including some of the major destinations shown in Figure 1. This Plan includes standards for development of additional bicycle parking, and outlines potential locations for these facilities. Specifically, the Plan suggests that covered bike racks or bicycle lockers should be provided at all places of employment at the rate of one space per 30 full

time employees. Additionally, it is suggested that bicycle parking facilities are to be provided in areas with the potential for high volumes of bicycle use, including along Solano Avenue and San Pablo Avenue. Specific locations where bicycle parking facilities could be located are outlined in text and graphic form in Appendix B.

e. Existing and Proposed Bicycle Transport and Parking Facilities for Transportation Connections (map and description)

No BART station or other form of mass transportation (beyond buses) are within the city limits of Albany. With regards to buses, bicycle parking is proposed at bus stops along San Pablo Avenue and Solano Avenue, as detailed in Appendix B.

f. Existing and Proposed Shower Facilities (map and description)

There are currently no major shower facilities for bicycle commuters within the City of Albany. As suggested in Chapter 2, the City could require that any development or redevelopment over 50,000 square feet of gross leasable area or 150 employees provide one shower and locker facility per 100 employees. The location of these facilities is not known at this time. This Plan does not map proposed shower facilities because they would be developed in conjunction with the development of future major employers within the City.

g. Bicycle Safety and Education Programs (description)

Bicycle safety and education programs are encouraged by this Plan as described in chapters 2 and 3. A detailed description of possible education programs that could be incorporated into the City's coordinated strategy to encourage bicycling in Albany is provided beginning on page 24 on this Plan.

h. Citizen and Community Participation

This Plan was developed by the City of Albany Bicycle Advisory Committee, which is a citizen's advisory committee appointed by the

Albany City Council. The Committee held over ten meetings to develop this Plan. Additionally, a community survey and two public workshops were conducted, and the Plan was publicized for public input. Notices of these events were provide through City notification processes, in addition to postings along the Solano Avenue stroll.

i. Consistency with Long-Range Transportation, Air Quality and Energy Plans

This Bicycle Plan is consistent with the Albany General Plan. The Circulation Element of the City's General Plan states that a bikeway system should be established based upon the following considerations: the points of likely destination such as schools, parks, etc; through streets providing the greatest safety; routes north, south, east, and west; connections to the Berkeley system; and flat terrain to enable as many cyclists as possible to use the system. More specifically, General Plan Policy 4.3 mandates continuing to work with the City's Trip Reduction Ordinance and continue to develop programs and incentives for the use of trip reduction strategies including bicycling. Additionally, Goal CIRC-6 of the General Plan is to "improve and enhance the City's bicycle route and path system." The policies to implement this goal include the development of a bicycle plan, and to work to obtain funding sources for the Bay Trail in Albany. This Bicycle Plan is consistent with these policy directions.

j. Project Descriptions and Priority Listings

Descriptions of projects anticipated in this Plan are provided in Chapter 4. Priorities of these projects are provided in Chapter 5.

k. Past Expenditures and Future Financial Needs Description

The City of Albany has not spent any significant funds on bicycle facility improvements. The City is currently sharing a $25,000 grant with the cities of Berkeley and Emeryville for bicycle signage. Additionally, this Bicycle Plan was funded through two years of TDA Article 3 funds

totaling $20,000 ($10,000 in fiscal year 1995-96, and $10,000 in fiscal year 1996-97). The future financial requirements for bicycle facilities are detailed in Chapter 5 of this Plan, which provides the expected costs of individual project, their priorities, and anticipated funding, including a discussing of funding sources.

APPENDIX B: POTENTIAL BICYCLE PARKING LOCATIONS

Installation of new bicycle parking along Solano Avenue and San Pablo Avenue would be important steps toward making Albany more bicycle-friendly. The Bicycle Advisory Committee has considered potential locations for bicycle parking on these streets, which are indicated in Figure B-1.

Members of the Bicycle Advisory Committee hope to work with City staff and other oversight committees to ensure that future improvements on Solano Avenue and San Pablo Avenue include adequate bicycle parking. This appendix includes a list and map of potential locations for bicycle parking on Solano Avenue and San Pablo Avenue, which may be considered when parking locations are chosen.

1. Class I Bicycle Parking

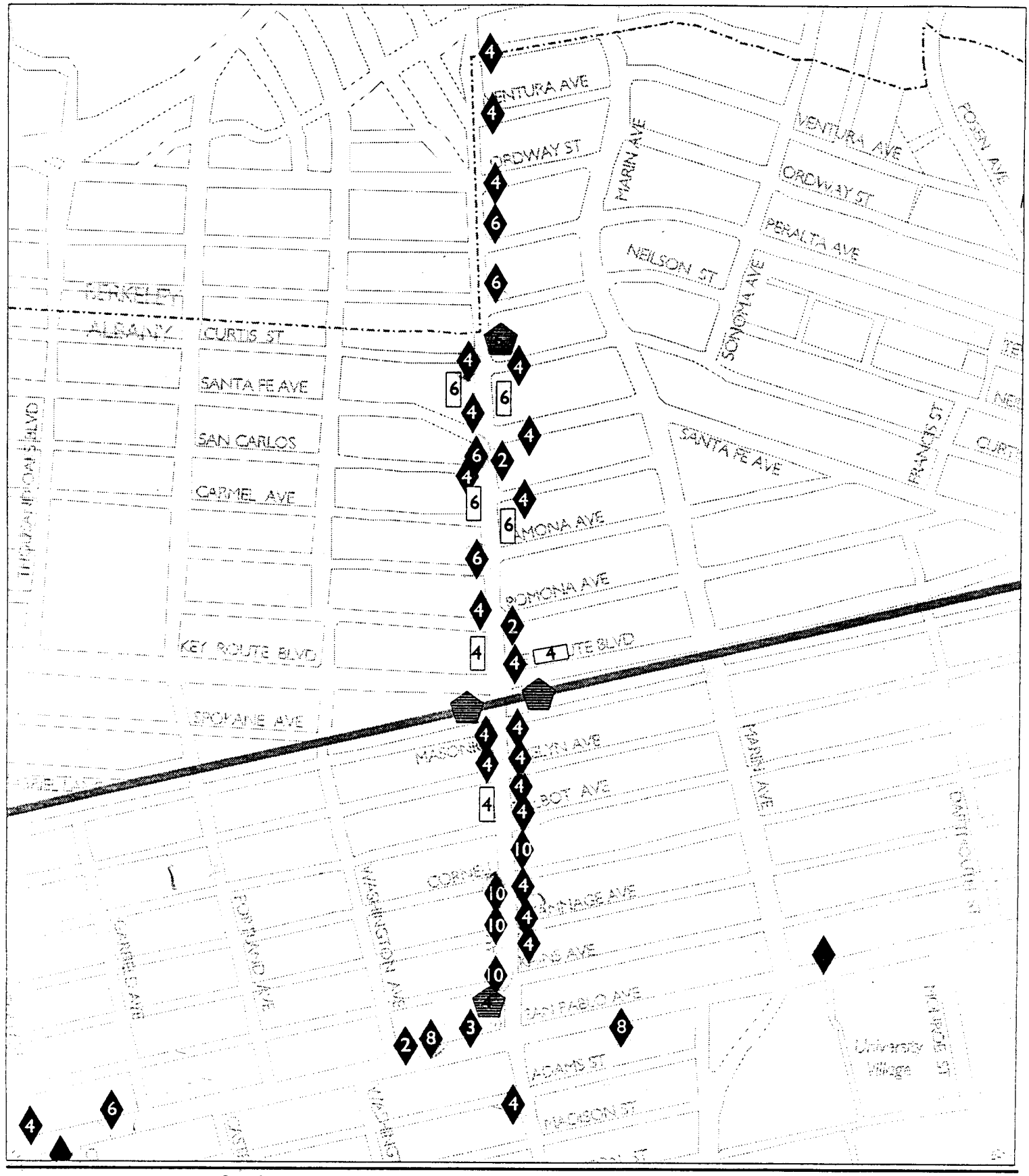
Class I bicycle parking facilities are secure bike lockers. They could be placed in the following locations:

- one high use facility (six-bicycle capacity) at the corner of Solano Avenue and Curtis Street;
- one medium use facility (four-bicycle capacity) at the corner of the Solano Avenue and Kains Avenue; and
- two medium use facilities on either side of Solano Avenue under the BART tracks.

2. Class II Bicycle Parking

Class II facilities are characterized as either clustered or linear. "Clustered" facilities would group parked bicycles together in a designated bulb along roadways. The following "clustered" facilities could be considered for Solano Avenue:

- one high use facility (six-bicycle capacity) at the corner of Peralta Avenue;
- one high use facility (four-bicycle capacity) at the corner of San Carlos Avenue;



Class I Bicycle Parking (secure - *number indicates desired number of spaces*)

Class II Bicycle Parking (clustered, not secure - *number indicates desired number of spaces*)

Class II Bicycle Parking (linear, not secure - *number indicates desired number of spaces*)

FIGURE B-1

PROPOSED NEW BICYCLE PARKING

CITY OF ALBANY
BICYCLE PLAN

- one high use facility (two-bicycle capacity) at the corner of Pomona Avenue;
- two high use facilities (each with ten-bicycle capacity) between Cornell and Stannage Avenues;
- one high use facility (ten-bicycle capacity) at the corner of Kains Avenue;
- one medium use facility (four-bicycle capacity) at the corner of Ordway Street;
- one medium use facility (six-bicycle capacity) at the corner of Neilson Street;
- two medium use facilities (each with four-bicycle capacity) at opposite corners of Curtis Street;
- four medium use facilities (two with four-bicycle capacity, one with six-bicycle capacity, and the other with two-bicycle capacity) around the intersection of Santa Fe Avenue;
- one medium use facility (four-bicycle capacity) at the corner of Carmel Avenue;
- one medium use facility (six-bicycle capacity) at the corner of Pomona Avenue;
- two medium use facilities (each with four-bicycle capacity) between Masonic and Evelyn Avenues;
- one medium use facility (ten-bicycle capacity) at the corner of Cornell Avenue;
- two medium use facilities (each with four-bicycle capacity) between Cornell and Stannage Avenues;
- one medium use facility (four-bicycle capacity) at the corner of Adams Avenue;
- one low use facility (four-bicycle capacity) at the entrance to the Solano Avenue tunnel;

- one low use facility (four-bicycle capacity) at the corner of Ventura Avenue;
- one low use facility (four-bicycle capacity) at the corner of Pomona Avenue;
- one low use facility (four-bicycle capacity) at the corner of Key Route Boulevard;
- two low use facilities (each with four-bicycle capacity) between Masonic and Evelyn Avenues;
- two low use facilities (each with four-bicycle capacity) between Evelyn and Talbot Avenues; and
- one low use facility (four-bicycle capacity) at the corner of Stannage Avenue.

"Linear" Class II facilities align parked bicycles end to end on the sidewalk at the foot of automobile parking spaces. "Linear" facilities that could be considered along Solano Avenue are as follows:

- two medium use facilities (each with six-bicycle capacity) on opposite sides of Solano Avenue between Curtis Street and Santa Fe Avenue;
- one medium use facility (six-bicycle capacity) at the corner of Carmel Avenue;
- one medium use facility (six-bicycle capacity) at the corner of Ramona Avenue;
- two facilities, one low use and the other medium use (each with four-bicycle capacity), on opposite sides of Solano Avenue between Pomona Avenue and Key Route Boulevard; and
- one medium use facility (four-bicycle capacity) between Evelyn and Talbot Avenues.

"Clustered" bicycle parking should also be added along San Pablo Avenue. The following locations could be considered:

- one low use facility (four-bicycle capacity) at the corner of Brighton Avenue (500 San Pablo Avenue);
- one medium use facility at the corner of Clay Street (505 San Pablo Avenue);
- one heavy use facility (six-bicycle capacity) at the corner of Garfield Avenue (540 San Pablo Avenue);
- one low use facility (two-bicycle capacity) at the corner of Washington Avenue (801 San Pablo Avenue);
- one heavy use facility (eight-bicycle capacity) between Washington and Solano Avenues (811-827 San Pablo Avenue);
- one medium use facility (three-bicycle capacity) between Washington and Solano Avenues (865 San Pablo Avenue);
- one heavy use facility (eight-bicycle capacity) between Solano and Marin Avenues (962 San Pablo Avenue); and
- one medium use facility at the corner of Marin Avenue (1019-1035 San Pablo Avenue).

APPENDIX D

Marin Avenue Bike Lane Project Traffic Study
(CCS Planning and Engineering, December 29, 1997)

METROPOLITAN TRANSPORTATION COMMISSION
TRAFFIC ENGINEERING TECHNICAL ASSISTANCE PROGRAM

MARIN AVENUE BIKE LANE PROJECT TRAFFIC STUDY

Final Report

prepared for

City of Albany

submitted by

CCS
PLANNING AND ENGINEERING
INCORPORATED

December 29, 1997

Metropolitan Transportation Commission
Traffic Engineering Technical Assistance Program (TE-TAP)

MARIN AVENUE BIKE LANE PROJECT TRAFFIC STUDY

Final Report

prepared for

City of Albany

submitted by

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Oakland, CA 94612
(510) 267-1800

December 29, 1997

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SECTION 1

INTRODUCTION AND SUMMARY

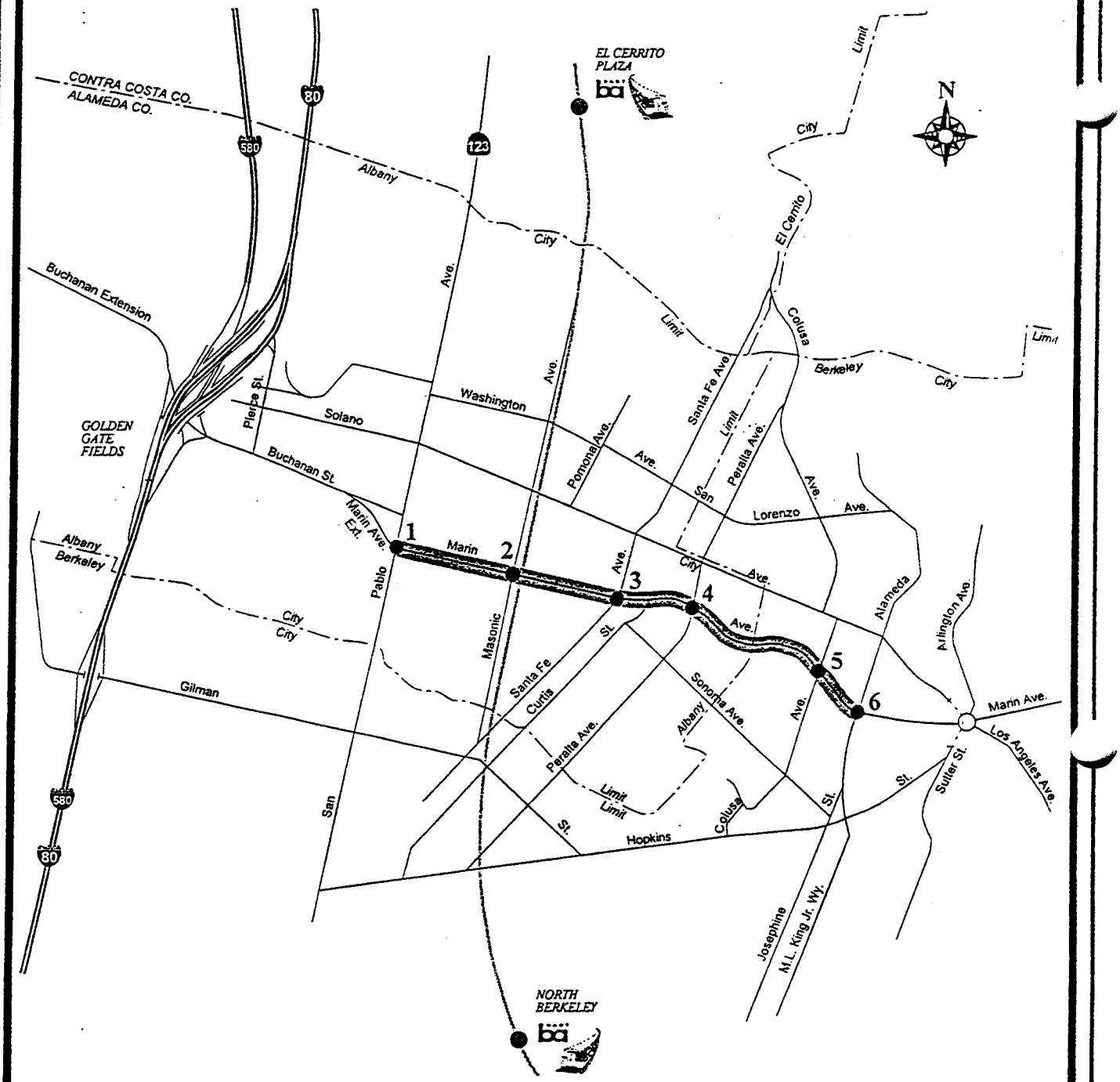
The City of Albany is preparing a Bicycle Master Plan which will ultimately be added to the Circulation Element of the General Plan. The City's Bicycle Advisory Committee has completed a draft of the Bicycle Master Plan. One of the recommendations contained in the draft plan is to designate Marin Avenue from San Pablo Avenue to the eastern city limits as a Class II bike route having striped bike lanes along both sides of the street. To provide room for the bike lanes within the existing roadway, Marin Avenue would be narrowed from four lanes to two lanes plus a two-way left turn lane.

There is concern that reducing the number of travel lanes on Marin Avenue could cause undesirable traffic impacts, and approval of the Marin Avenue bike lane project has been delayed pending resolution of these issues. Possible adverse impacts include reduced levels of service (particularly during commute periods) at intersections in the corridor; diversion of Marin Avenue traffic to other local streets; and increases in accidents. Concerns have also been raised about how to transition into the bike lanes at each end of the corridor.

This report addresses the traffic issues raised about the narrowing of Marin Avenue to accommodate the proposed bike lanes on Marin Avenue. The study was conducted by *CCS Planning & Engineering, Inc.* (CCS) under a Traffic Engineering Technical Assistance Program (TE-TAP) grant awarded to the City of Albany by the Metropolitan Transportation Commission.

1.1 STUDY SCOPE

Figure 1 shows the study area. The proposed Marin Avenue bike lane project would begin at or near San Pablo Avenue. Although the eastern limit of the City of Albany is at Tulare Avenue, the analysis assumes the proposed bike lane project would continue east within the City of Berkeley, extending to The Alameda.



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● 1 Study Intersection

Marin Avenue Traffic Study	Figure 1
Vicinity Map	

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Overall traffic capacity of an arterial roadway is typically limited by its major intersections, where capacity must be shared with cross-streets, rather than by the roadway segments between intersections. Therefore, the traffic analysis focuses on the six signalized intersections within the study corridor, as follows:

- San Pablo Avenue & Marin Avenue
- Masonic Avenue & Marin Avenue
- Santa Fe Avenue & Marin Avenue
- Peralta Avenue & Marin Avenue
- Colusa Avenue & Marin Avenue
- The Alameda & Marin Avenue

The scope of this study is limited to assessing potential traffic impacts of the bike lane project and identifying mitigation measures for significant impacts. For this analysis, data was obtained from the City of Albany and new data was collected on existing conditions. Intersection levels of service were determined for existing conditions and for project conditions, and several alternatives for mitigating the resulting impacts were tested. Traffic diversion potential and accident potential were also assessed qualitatively using travel time surveys and accident records, respectively. Illustrative concepts for the transitions at each end of the bike lane project were also prepared to help guide future project design.

Baseline Conditions

A separate study of Marin Avenue is being conducted by Kimley-Horn and Associates. The Kimley-Horn study is assessing signal timing modifications to improve pedestrian safety and control traffic speeds along Marin Avenue.[1] The Kimley-Horn study recommended providing additional "green time" for pedestrians to cross Marin Avenue, and recommended coordinating traffic signals at all of the Albany intersections except at San Pablo Avenue (which is coordinated instead with other San Pablo Avenue intersections). For intersections in the City of Albany, Kimley-Horn's draft recommendations were assumed as a "baseline" condition against which to compare study alternatives involving modifications to cycle lengths and/or green times at each intersection. Existing conditions were assumed for baseline conditions at the Berkeley intersections.

Study Alternatives

The proposed plan concept would restripe Marin Avenue from four travel lanes to two lanes plus a two-way left turn lane. At signalized intersections, the two-way left turn lane would become an exclusive left turn lane in each direction. For the proposed plan, the following signal timing and intersection lane variations were developed and tested as study alternatives:

- ***Alternative 1:*** Assumes baseline signal cycle lengths at all study intersections (Kimley-Horn recommendations within Albany and existing conditions within Berkeley).

- ***Alternative 1b:*** Same as Alternative 1, but the signal timings at the Colusa Avenue and The Alameda intersections (i.e., within Berkeley) are assumed to be modified to use the

[1] *Marin Avenue Signal Timing Study, Draft Report*, Kimley-Horn Associates, October, 1997.

same cycle lengths as recommended by Kimley-Horn for the Albany intersections.

- ***Alternative 2:*** Assumes that cycle lengths are increased in the AM and PM peak periods.

- ***Alternative 3:*** Assumes that minimum green times for the cross-street approaches at Marin Avenue's intersections with Santa Fe and Peralta Avenue are reduced in order to provide more green time along Marin Avenue.

In addition, due to potential level of service deficiencies at San Pablo Avenue with the lane reductions, the above study alternatives were analyzed with the existing westbound approach lane configurations being retained there.

Level of Service Analysis Procedures

The traffic analysis considers potential impacts of the project on intersection levels of service (LOS), which is a qualitative measure of the overall quality of traffic flow at the intersection. LOS is defined by letter grades from A (best) to F (worst) based on the estimated average delays to vehicles in the intersection. As average delays increase, the LOS declines. For this analysis, LOS A-D is considered acceptable for peak hour conditions, with delays averaging less than 40 seconds per vehicle. LOS E-F are considered deficient, with delays of more than 40 seconds per vehicle.

Average delays and resulting LOS measures were estimated using SYNCHRO, a software program for assessing performance of groups of intersections. SYNCHRO was also used for assessing corridor-wide performance under the various study alternatives. SYNCHRO files developed by Kimley-Horn for the Marin Avenue signal timing study were used as a starting point in order to assure consistency with the signal timing study. More information on the methodology is presented in Section 2.3.

1.2 SUMMARY OF FINDINGS

Based on the study analysis, the following findings are made:

- Under baseline conditions with existing travel lanes, all of the study intersections operate acceptably at LOS D or better.

- The proposed lane reduction along Marin Avenue would degrade peak hour traffic operations at all of the study intersections, assuming no changes to the baseline traffic signal timings, with five of the six study intersections projected to fall to below the acceptable LOS D threshold. However, with signal cycle lengths at the two Berkeley intersections lengthened consistent with the Albany intersections, the two Berkeley intersections would operate acceptably.

- Modifying all of the study intersections to operate on a longer signal cycle length would achieve acceptable traffic operations at two of the remaining deficient Albany intersections (Santa Fe and Peralta). Alternatively, reducing the minimum green times for the cross street approaches at those two intersections would accomplish similar results.

- For the San Pablo intersection, it appears necessary to retain the existing lanes on all approaches in order to achieve an acceptable level of service.

- In comparison to baseline conditions, the proposed modifications would increase total travel times, total vehicle delays and total fuel consumption within the study corridor, with some increases being significant in percentage terms.

- Travel times, delays and fuel consumption appear to be slightly higher for the case with reduced green times) than for the case with increased cycle lengths. However, the differences between the two alternatives are relatively small.

- No significant proportion of existing Marin Avenue traffic is expected to divert to other routes under the proposed plan, assuming that existing lanes are maintained at the Marin/San Pablo Avenue intersection.

- From review of historical accident data for Marin Avenue, it does not appear that the proposed geometric changes would have a significant effect -- negative or positive --on accidents along this corridor.

1.3 CONCLUSIONS AND RECOMMENDATIONS

Based on this study, it appears that Marin Avenue could be restriped to accommodate bike lanes from San Pablo Avenue east to the city limits, with only limited impacts on traffic levels of service. With left turn lanes and modified signal timing at signalized intersections, acceptable levels of service could be maintained in the corridor under current traffic volumes. The project would modestly increase overall travel times, delays and fuel consumption in the corridor and, depending on the signal timing modifications, may reduce the time available for pedestrians and vehicles to cross Marin Avenue. These potential impacts need to be weighed against the potential benefits of the project.

If the bike lane project is implemented, the existing approach lanes should be retained at the San Pablo Avenue intersection. Left turn pockets should be striped at the other signalized intersections. Also, signal timings should be modified at the signalized intersections to provide either longer signal cycle lengths or reduced green times for cross streets. With these provisions, acceptable levels of service would be maintained with the reduced travel lanes.

The project could also be extended easterly to The Alameda, which is within the City of Berkeley. With left turn lanes and traffic signal timing modifications as proposed for the Albany intersections, the two signalized intersections in Berkeley (Colusa and The Alameda) would continue to operate acceptably at LOS D or better with the reduced travel lanes.

At both ends of the corridor (San Pablo Avenue and The Alameda), transitions back to the existing lanes appear possible within available roadway widths, while maintaining acceptable traffic operations. However, the transition on the San Pablo Avenue end is somewhat problematic due to the short blocks and narrow widths. Therefore, more detailed study, including consideration of additional options for the transition, should be made during project design.

SECTION 2

EXISTING CONDITIONS

This chapter describes the existing physical conditions in the study area, including the lane configurations and locations of pedestrian, bicycle and transit facilities along Marin Avenue. In addition, study intersection lane configurations and traffic volumes are presented. The analysis of baseline operating conditions along Marin Avenue and travel time surveys are also described.

2.1 ROADWAY CHARACTERISTICS

Marin Avenue

Within Albany, Marin Avenue is a four lane roadway extending approximately one mile between its connection with Buchanan Street just west of San Pablo Avenue and Tulare Avenue which is at the east city limits. Marin Avenue is classified as a major arterial in the Circulation Element of the City of Albany General Plan. As described in the introduction, the study area for this analysis extends along Marin Avenue from San Pablo Avenue easterly beyond the Albany city limits, terminating in Berkeley at The Alameda, a total distance of about 1.25 miles.

A raised median exists from San Pablo Avenue to Kains Avenue one block east. A striped median exists from Kains Avenue to Tulare Avenue. A double-yellow line exists within the Berkeley segment between Tulare Avenue and The Alameda. Within the study area, exclusive turn lanes only exist at the intersection with San Pablo Avenue.

On-Street Parking

Curb parking exists along both sides of Marin Avenue throughout the study area except for the one-block segment between Kains Avenue and San Pablo Avenue.

Pedestrian Facilities

Sidewalks exist along both sides of Marin Avenue throughout the study area. Pedestrian cross-walks are striped across Marin Avenue at all of the signalized intersections (San Pablo Avenue, Masonic Avenue, Santa Fe Avenue, Peralta Avenue, Colusa Avenue and The Alameda). Crosswalks are also striped at the unsignalized intersections at Kains Avenue, Stannage Avenue, Cornell Avenue, Talbot Avenue, Evelyn Avenue, Key Route Boulevard, Pomona Avenue, Ramona Avenue, Curtis Street, Neilson Street, Ordway Street, Ventura Avenue, Tulare Avenue and Fresno Avenue.

Bicycle Facilities

Currently, Marin Avenue is classified and posted as a Class III Bikeway in the segment between Tulare Avenue and The Alameda within the City of Berkeley. A Class III Bikeway (Bike Route) is a signed bike route where bicycles share the rightmost travel lane with autos. Within the City of Albany, Marin Avenue is not currently designated as a bikeway.

One major Class I (off-street) bike route, the Ohlone Trail, crosses Marin Avenue just east of Masonic Avenue. This bike path runs under the BART tracks through portions of El Cerrito, Albany and Berkeley.

Transit Facilities

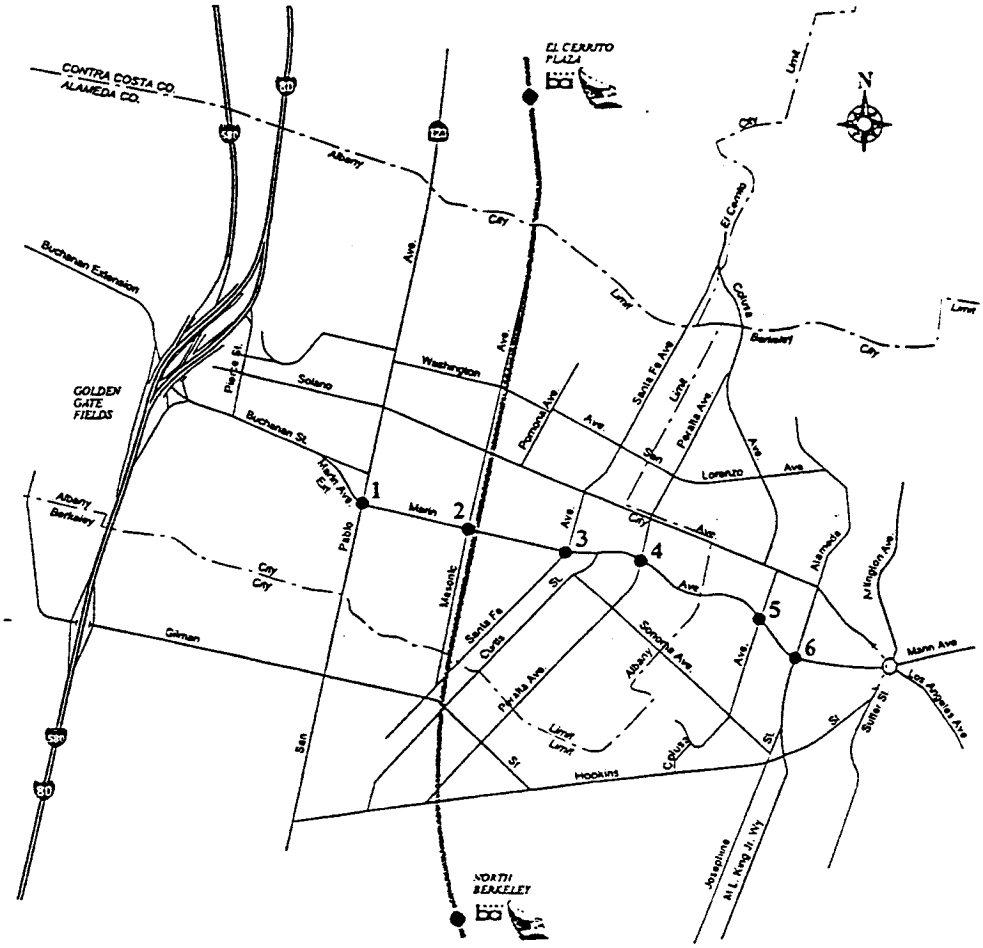
AC Transit Route 15 operates along Marin Avenue from The Alameda to Colusa Avenue, in the City of Berkeley. Route 15 operates seven days a week, with about 15 minute service during commute hours and midday on weekdays, and 20-30 minute service at other times. However, there are no designated bus stops on Marin Avenue.

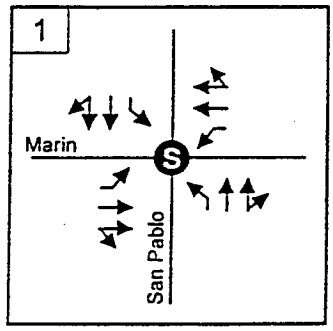
2.2 STUDY INTERSECTIONS AND TRAFFIC COUNTS

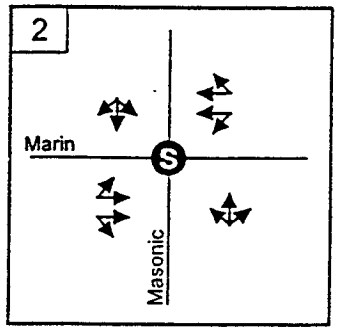
The analysis focused on operating conditions at the following six signalized intersections along Marin Avenue since these are the locations that control levels of service along the corridor:

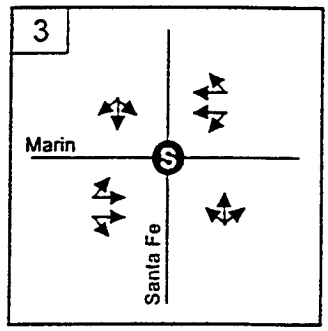
1. San Pablo Avenue
2. Masonic Avenue
3. Santa Fe Avenue
4. Peralta Avenue
5. Colusa Avenue (Berkeley)
6. The Alameda (Berkeley)

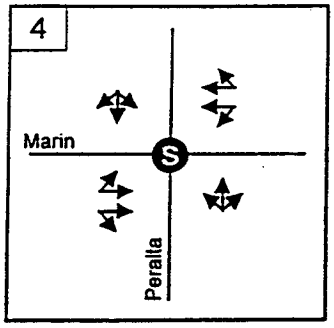
Figure 2 presents the existing lane configurations at the study intersections. The existing AM and PM peak hour traffic volumes at these intersections are shown in Figure 3. In addition, existing traffic volumes were collected at the unsignalized intersection of Kains Avenue and Marin Avenue. The traffic counts conducted for this study are included in Appendix A.

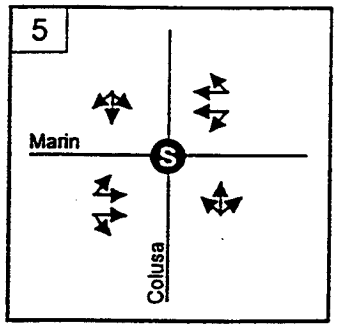


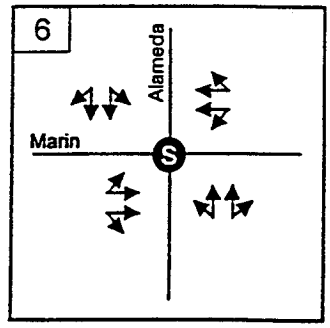












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1 Study Intersection

S Signalized Intersection

Marin Avenue Traffic Study

Figure 2

Existing Intersection Lanes

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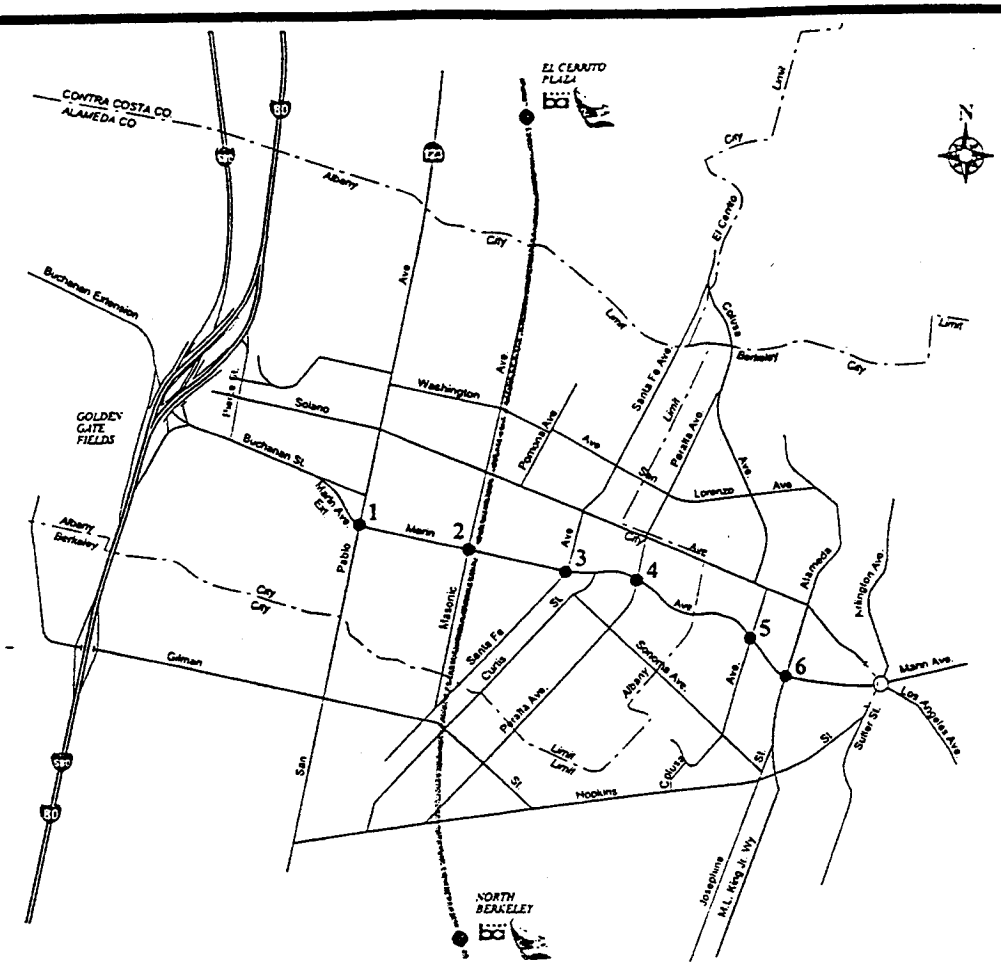

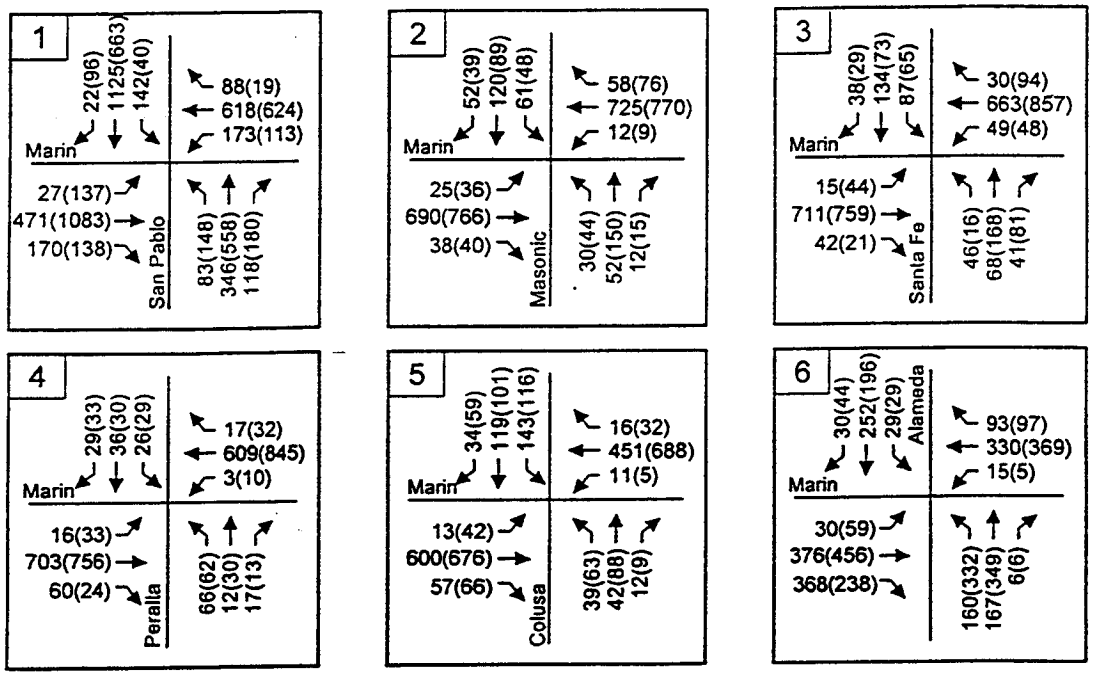

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● 1 Study Intersection

609(845) AM(PM) Peak Hour Volumes

Marin Avenue Traffic Study

Figure 3

Existing AM & PM Peak Hour Volumes

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2.3 EVALUATION PROCEDURES

The procedures used to quantitatively evaluate the corridor's traffic operations include the intersection level of service (LOS) methodology described in the *1994 Highway Capacity Manual* (HCM), as well as the determination of corridor-wide Measures of Effectiveness (MOEs). The analyses were carried out with the SYNCHRO software program using the traffic counts conducted by CCS for this study.

Intersection Levels of Service

Level of Service (LOS) is a qualitative measure of the intersection's quality of traffic flow, using letter grades from A (best) to F (worst). For this analysis, LOS A-D is considered acceptable for peak hour conditions, while LOS E-F are considered deficient.

LOS is calculated by the SYNCHRO software using procedures from the 1994 Highway Capacity Manual. These procedures determine the LOS based on the estimated average delays to vehicles in the intersection as a whole, as follows:

Level of Service	Stopped Delay per Vehicle
A	Up to 5 seconds
B	5 - 15 seconds
C	15 - 25 seconds
D	25 - 40 seconds
E	40 - 60 seconds
F	More than 60 seconds

In addition, the SYNCHRO software reports a volume/capacity (v/c) ratio, which indicates the proportion of the intersection's capacity that is used by the approach volumes. The v/c ratio helps to indicate the amount of additional traffic that can be accommodated by the intersection.

Corridor Measures of Effectiveness

Several corridor-wide Measures of Effectiveness (MOEs) were also available from the SYNCHRO software to assist in comparing the study alternatives. The selected MOEs used in this analysis are as follows:

- ***Total travel time:*** The number of vehicle-hours of travel spent in the corridor during the period.
- ***Total fuel consumption:*** The estimated amount of fuel used by all vehicles within the corridor, including during delays at the intersections.
- ***Total vehicle delay:*** The number of vehicle hours spent during stopped delays in the corridor.

2.4 BASELINE CONDITIONS LEVELS OF SERVICE

For study purposes, baseline conditions represent existing lanes along Marin Avenue and at the study intersections, but with signal timings adjusted at City of Albany intersections in accordance with Kimley-Horn recommendations. This scenario provides a frame of reference against which to compare the study alternatives with reduced travel lanes.

Results from the analysis of baseline intersection operations are presented in Table 1. All of the study intersections operate at LOS D or better under baseline conditions.

Table 1
Baseline Conditions Intersection Operations

Intersection	AM PEAK HOUR			PM PEAK HOUR		
	v/c	Average Delay (sec)	LOS	v/c	Average Delay (sec)	LOS
1. San Pablo Avenue & Marin Avenue	0.84	27.7	D	0.87	28.4	D
2. Masonic Avenue & Marin Avenue	0.60	7.0	B	0.58	5.0	A
3. Santa Fe Avenue & Marin Avenue	0.63	7.4	B	0.78	10.1	B
4. Peralta Avenue & Marin Avenue	0.45	5.3	B	0.51	5.6	B
5. Colusa Avenue & Marin Avenue	0.60	9.3	B	0.70	10.6	B
6. The Alameda & Marin Avenue	0.57	9.8	B	0.72	13.3	B

The corridor-wide MOE analysis results are presented in Table 2. The detailed SYNCHRO output worksheets for baseline conditions are included in Appendix B.

Table 2
Baseline Conditions Corridor-Wide Measures of Effectiveness

Scenario		Total Travel Time (veh-hr)	Total Vehicle Delay (veh-hr/hr)	Total Fuel Consumption (gal)
Existing Conditions	AM Peak Hr	164	59.0	216
	PM Peak Hr	191	73.6	251

2.5 TRAVEL TIME STUDY

Peak and off-peak travel time surveys were conducted using the floating car technique. The surveys included both Marin Avenue and Solano Avenue (a parallel route just north of Marin Avenue) from San Pablo Avenue to The Alameda. The survey results, presented in Table 3, indicate the total travel times from one end of the route to the other. As shown on the table, existing travel times are higher along Solano Avenue than along Marin Avenue in both peak and off-peak periods.

The detailed results of this travel time survey are included in Appendix C, Table C-1.

Table 3
Travel Time Comparisons - Marin Avenue and Solano Avenue

Time Period	Travel Time (minutes: seconds)				Difference (min: sec)	
	Marin Avenue		Solano Avenue		Solano Ave - Marin Ave	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Off-peak 1	3:10	2:35	5:35	4:35	2:25	2:00
Off-peak 2	3:25	3:05	4:25	5:05	1:00	2:00
Peak 1	3:55	3:00	5:05	5:20	1:10	2:20
Peak 2	3:15	4:35	3:55	4:55	0:40	0:20

SECTION 3

TRAFFIC ANALYSIS OF BIKE LANE PROJECT

This chapter presents the impact analysis of the proposed physical modifications, including the proposed lane configurations at the study intersections. In addition, the potential effect of the proposed lane geometry on travel and accident patterns along Marin Avenue is discussed.

3.1 PROPOSED CONCEPT PLAN

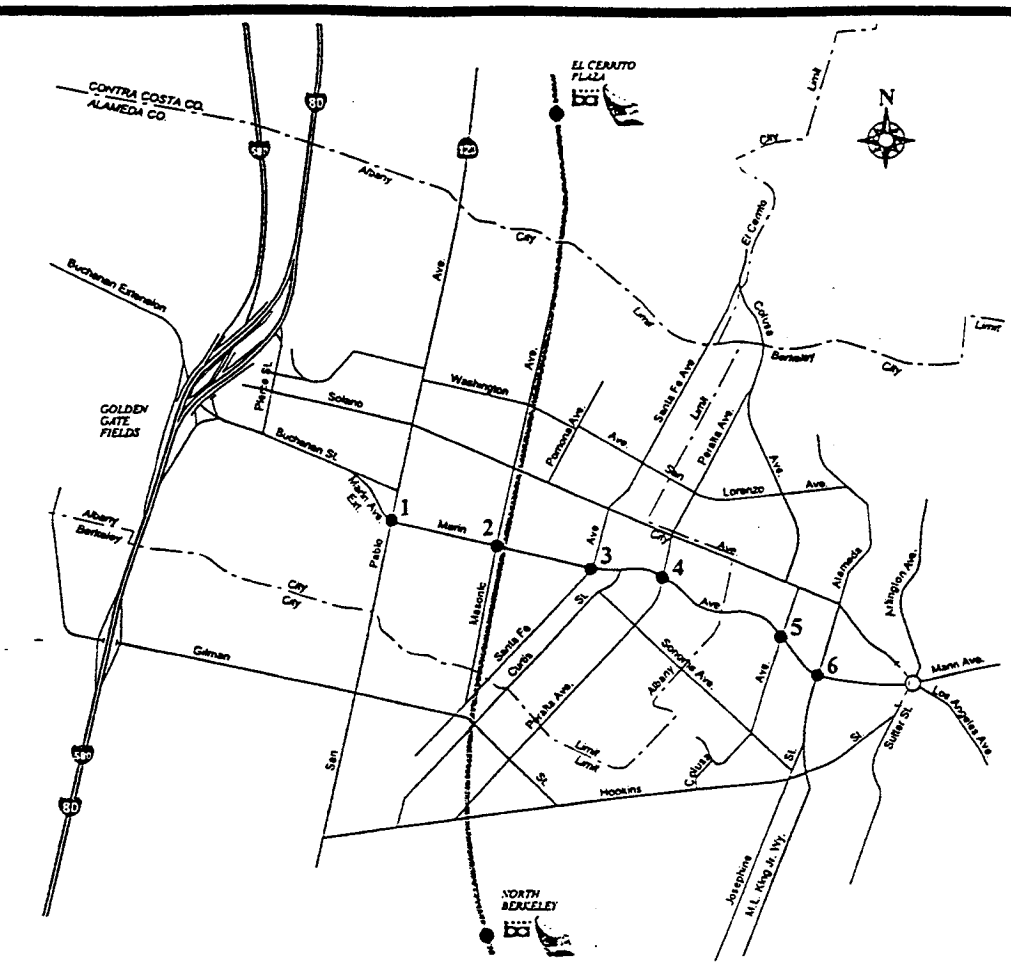
The city's Draft Bicycle Master Plan recommends narrowing Marin Avenue from four lanes to two lanes plus a two-way left turn lane in order to accommodate Class II bike lanes along both sides of the street within the existing roadway. On the Marin Avenue approaches to signalized intersections, the two-way left turn lane would become an exclusive left turn lane. Cross-street lane designations would be unchanged. The proposed intersection lane configurations with these modifications at the study intersections are shown in Figure 4.

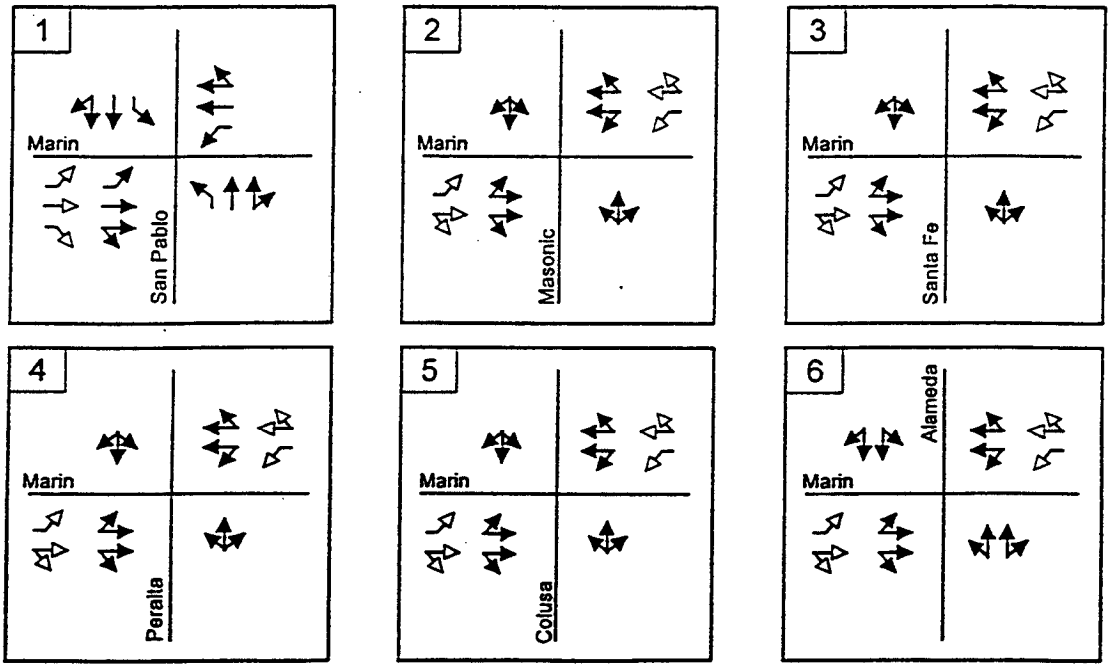
3.2 OPERATIONAL ANALYSIS OF BIKE LANE PROJECT

To help evaluate impacts of reducing travel lanes along Marin Avenue, levels of service were assessed for the six study intersections using the same procedures as described in Section 2. A number of signal timing and intersection lane variations were tested to reduce the impacts:

- ***Alternative 1:*** Assumes baseline cycle lengths are retained at all Marin Avenue study intersections (100 seconds at San Pablo, 75 seconds at Masonic, Santa Fe and Peralta in both the AM and PM peak periods; 65 and 70 seconds in the AM and PM peak periods, respectively, at Colusa and The Alameda).

- ***Alternative 1b:*** Same as Alternative 1, but the signal timings at the Colusa Avenue and The Alameda intersections with Marin Avenue (within Berkeley) are assumed to be modified to use the same 75 second cycle lengths as the Albany intersections.





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- 1 Study Intersection
- Existing Geometrics
- Future Geometrics

Marin Avenue Traffic Study

Figure 4

Assumed Lane Modifications

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- *Alternative 2:* Assumes that the common cycle lengths at Marin Avenue intersections are increased to 90 seconds in the AM peak hour and to 100 seconds in the PM peak hour.

- *Alternative 3:* Assumes that the minimum green times for the cross-street approaches at Marin Avenue's intersections with Santa Fe and Peralta Avenue are reduced in order to provide more green time along Marin Avenue.

In addition, due to potential level of service deficiencies at San Pablo Avenue with the lane reductions, the above alternatives were also analyzed assuming the existing eastbound approach lane configurations are retained at that intersection.

Level of Service Comparisons

The results of the intersection operations analysis for baseline conditions and all the study alternatives are presented in Table 4.

The proposed lane reduction along Marin Avenue, along with retention of baseline traffic signal timings (Alternative 1), would degrade peak hour traffic operations at all of the study intersections. In this case, five of the six study intersections would fall to below an acceptable LOS D threshold. However, with signal cycle lengths at the two Berkeley intersections lengthened consistent with the Albany intersections (Alternative 1a), the two Berkeley intersections are projected to operate acceptably (LOS D or better). This alternative would still leave three of the four Albany intersections (San Pablo, Santa Fe and Peralta) deficient.

Alternatives 2 and 3 would both achieve acceptable traffic operations (LOS D or better) at two of the remaining deficient Albany intersections (Santa Fe and Peralta). In Alternative 2, all of the study intersections would be re-timed to operate with a common cycle length of 90 and 100 seconds in the AM and PM peak hour, respectively. In Alternative 3, the minimum green times for the cross street approaches at Marin Avenue's intersections with Santa Fe Avenue and Peralta Avenue would be reduced.

For the San Pablo intersection, it appears necessary to retain the existing lanes on all approaches in order to achieve an acceptable LOS D. All other study alternatives result in LOS F during the PM peak hour.

Minimum Green Time Options

As described above, Alternative 3 assumes that the minimum green times for the cross street approaches at Marin Avenue's intersections with Santa Fe and Peralta Avenue are reduced. Table 5 compares alternative minimum green times and their effects on LOS there.

As shown in the table, the minimum green times calculated by Kimley Horn are 30 seconds at Santa Fe Avenue and 37 seconds at Peralta Avenue. These numbers are based on a 10 second walk phase and a flashing "don't walk" time requirement calculated as the total width of the cross-walk divided by 3.5 feet per second pedestrian walking speed. As described in the Kimley Horn report, these assumptions were determined from a meeting with City staff. With these minimum green times, the two intersections would operate at LOS B in both the AM and PM peak hours under baseline conditions. However, with the reduced travel lanes under the

Table 4
Level of Service by Alternative

Alternative	Peak Hour	Intersection Levels of Service																	
		San Pablo Av & Marin Av [1]			Masonic Av & Marin Av			Santa Fe Av & Marin Av			Peralta Av & Marin Av			Colusa Av & Marin Av			The Alameda & Marin Av		
		v/c	Delay (sec)	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)	LOS
0. Baseline Conditions	AM	0.84	27.7	D	0.60	7.0	B	0.63	7.4	B	0.45	5.3	B	0.60	9.3	B	0.57	9.8	B
	PM	0.87	28.4	D	0.58	5.0	A	0.78	10.1	B	0.51	5.6	B	0.70	10.6	B	0.72	13.3	B
1. Lane Reduction with baseline cycle lengths [2]	AM	0.92	30.3	D	0.80	26.0	D	0.76	14.1	B	0.70	*	*F*	0.85	64.5	*F*	0.84	57.1	*E*
	PM	1.14	*	*F*	0.84	20.9	C	0.97	*	*F*	0.77	*	*F*	0.86	44.7	*E*	0.90	17.7	C
1b. Lane Reduction with baseline cycle lengths and Berkeley intersections on common CL [3]	AM	0.92	30.3	D	0.80	12.3	B	0.75	11.0	B	0.70	*	*F*	0.84	15.0	C	0.83	14.3	B
	PM	1.14	*	*F*	0.84	13.7	B	0.97	*	*F*	0.77	*	*F*	0.86	18.2	C	0.90	16.0	C
2. Lane Reduction with cycle lengths increased to 90 sec in AM, 100 sec in PM	AM	0.92	30.3	D	0.79	13.6	B	0.75	10.7	B	0.69	22.3	C	0.83	15.2	C	0.86	15.5	C
	PM	1.14	*	*F*	0.83	13.6	B	0.95	29.7	D	0.76	22.3	C	0.85	20.2	C	0.88	20.7	C
3. Lane Reduction with reduction in min green times (refer to Table 5)	AM	0.92	30.3	D	0.80	10.9	B	0.75	13.1	B	0.70	20.6	C	0.84	14.6	B	0.87	19.2	C
	PM	1.14	*	*F*	0.84	13.4	B	0.97	38.9	D	0.77	36.6	D	0.86	18.1	C	0.90	17.5	C
With existing lane configurations at San Pablo Av & Marin Av (all alternatives)	AM	0.84	27.7	D															
	PM	0.87	28.4	D															

Notes:

* Delay meaningless due to one or more approach v/c > 1.20

[1] Assumes that this intersection is not coordinated with other Marin Av intersections (intersection is coordinated with other San Pablo Av intersections).

[2] Assumes Berkeley intersections operate at their existing cycle lengths and are not coordinated with other Marin Av intersections.

[3] Assumes Berkeley intersections are coordinated and at common cycle length with other Marin Av intersections.

Table 5
Minimum Green Time Calculations

Lanes	Signal Timing	Santa Fe Avenue (at Marin Avenue)					Peralta Avenue (at Marin Avenue)				
		Walk (sec)	Flashing Don't Walk (sec)	Min. Green (sec)	Level of Service		Walk (sec)	Flashing Don't Walk (sec)	Min. Green (sec)	Level of Service	
					AM	PM				AM	PM
Existing	Kimley Horn	10	20	30	B	B	10	27	37	B	B
Reduced	Kimley Horn	10	20	30	B	F	10	27	37	F	F
Reduced	HCM minimum	7	13	20	B	B	7	17	24	B	B
Reduced	LOS D minimum			27	B	D			29	C	D

proposed bike plan (Alternative 1 or 1a), the Santa Fe intersection would degrade to LOS F for the PM peak hour and the Peralta Avenue would degrade to LOS F during both peak hours.

One possible method to improve the level of service at these intersections with the reduced travel lanes is to reduce the minimum green times required for the cross street approaches. Calculating the minimum green time according to the formula presented in the 1994 HCM leads to the result of 20 and 24 seconds minimum of green time for the cross street approaches at Marin Avenue's intersections with Santa Fe Avenue and Peralta Avenue, respectively. These minimum green times would lead to LOS B for both intersections during both peak hours. However, these values could be increased to 27 and 29 seconds, respectively, for Santa Fe Avenue and Peralta Avenue approaches without exceeding LOS D at both intersections. Therefore, the analysis presented in Alternative 3 above (see Table 4) assumes minimum green times of 27 and 29 seconds, respectively, for Santa Fe Avenue and Peralta Avenue.

Corridor-wide Measures of Effectiveness

The corridor-wide Measures of Effectiveness (MOEs) are presented in Table 6. The corridor-wide travel times, vehicle delays and fuel consumption cannot accurately be calculated, and are therefore not reported, when one or more intersection lane groups have a volume/capacity (v/c) ratio greater than 1.2. Therefore, corridor-wide MOEs are reported only for baseline conditions (existing lanes) and for Alternatives 2 and 3. With reduced lanes at San Pablo Avenue, MOEs are reported for the AM peak hour only, but with existing lanes there, the MOEs are reported for both peak hours.

As can be seen, both Alternatives 2 and 3 increase total travel times, total vehicle delays and total fuel consumption within the corridor over baseline conditions, with some increases being significant in percentage terms. The increases are due solely to reduced LOS and increased delay as a result of the lane modifications at the intersections. Potential effects on mid-block traffic speeds are not reflected in the SYNCHRO calculations. Since no traffic has been assumed to divert to other routes in this analysis and considering that Marin Avenue represents only a small percentage of total travel in the area, the differences may be somewhat overstated.

Travel times, delays and fuel consumption appear to be slightly higher for Alternative 3 (reduced green times) than for Alternative 2 (increased cycle lengths). However, the differences between the two alternatives are relatively small in percentage terms.

In addition to the corridor MOEs, time bands indicating the extent to which traffic progression can be achieved along Marin Avenue are reported by SYNCHRO for each alternative. (The San Pablo intersection was generally not included in the Marin Avenue progression since it is coordinated with San Pablo intersections instead.) The resulting progression band widths, provided in Appendix B, indicate that all of the alternatives can achieve reasonable traffic progression along Marin Avenue, although not quite as good as under baseline conditions.

Table 6
Corridor-Wide MOE's by Alternative

Alternative	Peak Hour	Corridor-Wide MOE's With Lane Modifications at All Intersections			Corridor-Wide MOE's With Existing Configurations at San Pablo Avenue		
		Total Travel Time (veh-hrs)	Total Vehicle Delay (veh-hrs/hr)	Total Fuel Consumption (gal)	Total Travel Time (veh-hrs)	Total Vehicle Delay (veh-hrs/hr)	Total Fuel Consumption (gal)
0. Baseline Conditions	AM	164	59.0	216	164	59.0	216
	PM	191	73.6	251	191	73.6	251
1. Lane Reduction with baseline cycle lengths [2]	AM	*	*	*	*	*	*
	PM	*	*	*	*	*	*
1b. Lane Reduction with baseline cycle lengths and Berkeley intersections on common CL [3]	AM	*	*	*	*	*	*
	PM	*	*	*	*	*	*
2. Lane Reduction with cycle lengths increased to 90 sec in AM, 100 sec in PM	AM	187	86.0	239	183	82.0	236
	PM	*	*	*	239	120.7	291
3. Lane Reduction with reduction in min green times (refer to Table 4)	AM	189	86.7	237	188	84.4	235
	PM	*	*	*	252	133.8	301

Notes:

* Corridor-wide MOE values cannot be calculated due to LOS F conditions at one or more intersections.

3.3 POTENTIAL TRAFFIC DIVERSION

The potential for existing traffic to divert to alternate routes in order to avoid possible delays can be judged by examining the levels of congestion along Marin Avenue and the various characteristics of the potential alternative routes.

Potential Alternative Routes

Possible alternative routes to Marin Avenue include:

- Solano Avenue
- Sonoma Avenue
- Washington Avenue
- Dartmouth Street
- Gilman Street

Solano Avenue appears to have highest potential for traffic diversion since it is parallel to and near Marin Avenue and is a continuous route through the study area. However, there are several factors that limit Solano Avenue's attractiveness as an alternate to Marin Avenue, such as its angled on-street parking with high turnover; the heavy pedestrian activity; and the potential for delivery trucks to partially block the roadway at times. Moreover, Solano Avenue is significantly slower to travel than Marin Avenue according to the travel time surveys presented in Section 2.

Sonoma Avenue could be used an alternative route to Marin Avenue from Curtis Street east to The Alameda. However, many characteristics of this roadway would discourage its use as an alternative route to Marin Avenue, including: the presence of six stop-controlled intersections along this route; the potential increased difficulty for turning movements at its unsignalized intersections with The Alameda and Marin Avenue (via Curtis Street); and that this is a low capacity residential roadway.

Washington Avenue and Dartmouth Street also have the disadvantages of residential two-lane roadways with stop controlled intersections along their routes. Also, due to its existing levels of congestion, as well as its awkward geometric configurations, Gilman Street would not be an advantageous alternative to Marin Avenue in this corridor.

Effects of Plan on Marin Avenue Travel Times

The end-to-end travel times along Marin Avenue through the study area can be approximated for each alternative by SYNCHRO, using the average delay for the through movements at each intersection and assuming a constant travel speed between intersections. Table 7 compares the estimated travel times for baseline conditions to those of Alternative 2 (reduced lanes with increased cycle lengths) and Alternative 3 (reduced lanes and reduced cross street green times at Santa Fe Avenue and Peralta Avenue). These estimates assume retention of existing lanes at the San Pablo Avenue intersection. The detailed results of this analysis are presented in Appendix C, Table C-2.

As shown in the table, the estimated travel times under baseline conditions are reasonably consistent with the times from the travel time surveys conducted for this study (Table 3).

Table 7
Comparison of Marin Avenue Travel Times by Alternative

Peak Hour	Direction	Travel Time (minutes: seconds)				
		Baseline Conditions	Alternative 2*	Increase	Alternative 3*	Increase
AM	Eastbound	4:03	4:47	0:44	5:08	1:05
	Westbound	3:55	4:04	0:09	4:05	0:10
PM	Eastbound	4:02	4:44	0:42	4:32	0:30
	Westbound	3:54	5:12	1:18	6:26	2:32

* Assuming the existing lanes at the San Pablo Avenue intersection are retained.

The estimated increases in travel times are sufficiently small to suggest a minimal likelihood of route diversion for all cases except for the westbound PM peak hour under Alternative 3. In this case, the delay to the westbound through movements are projected to be quite high at Marin Avenue's intersections with Santa Fe Avenue and Peralta Avenue. The estimated travel time increases for eastbound and westbound traffic are in the ranges of from 30 seconds to about a minute, and from 9 seconds to about 2 1/2 minutes, respectively. These increases are comparable to the peak hour travel time differences between Solano Avenue and Marin Avenue (Table 3).

Based on the above considerations, no significant proportion of existing Marin Avenue traffic is expected to divert to other routes under Alternative 2, assuming that existing lanes are maintained at the Marin/San Pablo Avenue intersection.

Under Alternative 3, significant delays are estimated for the westbound PM peak hour through movements at Marin Avenue's intersections with Santa Fe Avenue and Peralta Avenue. Therefore, there is greater potential for diversion of some existing Marin Avenue traffic to alternate routes under this alternative than for Alternative 2. However, the estimated increase in travel time of 2 1/2 minutes due to delays at the two intersections is similar to the observed travel time differential on Solano Avenue. Since even in this alternative Solano Avenue does not appear to provide a better travel time through the study area over Marin Avenue, the potential for traffic diversion appears limited.

3.4 ACCIDENT REVIEW Improves Accid

Accident data was obtained from the City of Albany. The data includes vehicle, bicycle and pedestrian accident histories for the years 1994, 1995 and 1996 in the form of SWITRS reports. The accident data was analyzed to determine the types and frequencies of accidents that have occurred in the vicinity of Marin Avenue.

This accident information was used to assess the degree to which the proposed changes in roadway geometry could affect accident occurrence. For example, an accident along Marin Avenue caused by a vehicle swerving around another vehicle that was making a left-turn from the shared through/left-turn lane and sideswiping another vehicle traveling in the same

direction might not have occurred if a separate left-turn lane, as proposed, existed at the time. Similarly, an accident caused by a vehicle turning left into an opposing vehicle that has just started through the intersection after being delayed by a vehicle turning left in front of it, or after swerving around a left-turning vehicle waiting in the shared left-through lane may have been avoided by an exclusive left turn lane. In addition, rear-end collisions between vehicles waiting to turn left and vehicles behind them traveling through the intersection would be reduced by an exclusive left-turn lane. Also, sideswipe accidents involving vehicles changing lanes would be also avoided with the reduction of through lanes to only one in each direction. Or, an accident with a bicycle traveling along Marin Avenue might have been avoided by bike lanes, as these may draw attention to drivers that bicycles also share this roadway.

Table 8 summarizes vehicle, bicycle and pedestrian accidents reported along Marin Avenue over the past 3 years. Shown in the table are total accidents by location as well as the number that could possibly have been avoided by the proposed plan lane configurations. As shown on the table, only a very small number of the accidents that occurred in the past three years are judged to be of the type affected by the improvements. It is important to note also that the information in the accident reports for those accidents thought to have the potential to be avoided was not explicit enough to determine with confidence that even those accidents could have been avoided.

There is potential for an increase in certain types of accidents with the proposed lane configurations. For instance, with a continuous left turn lane between intersections, there is the possibility for head-on and sideswipe collisions between opposing left-turning vehicles at mid-block locations. However, there are no indications that two-way left turn lanes create more accidents unless left turning volumes are high relative to through volumes (such as perhaps in a commercial strip). The lane merges on the east end of the corridor is another possible accident location but, with adequate merge room and signs, this is a standard condition for an urban area and there is no known increase in accidents associated with such treatments.

Based on the review of the recent accident data for this roadway, it does not appear as though the proposed geometric changes would have a significant effect on accidents in the corridor.

3.5 TRANSITIONS AT ENDS OF CORRIDOR

Transitions back to the existing configurations would be needed at both ends of the corridor. Figure 5 shows some possible treatments for both ends using the available roadway widths. It should be noted that only a brief review using available mapping was conducted here, and further options may be possible. A more detailed analysis should be conducted at the time of project design.

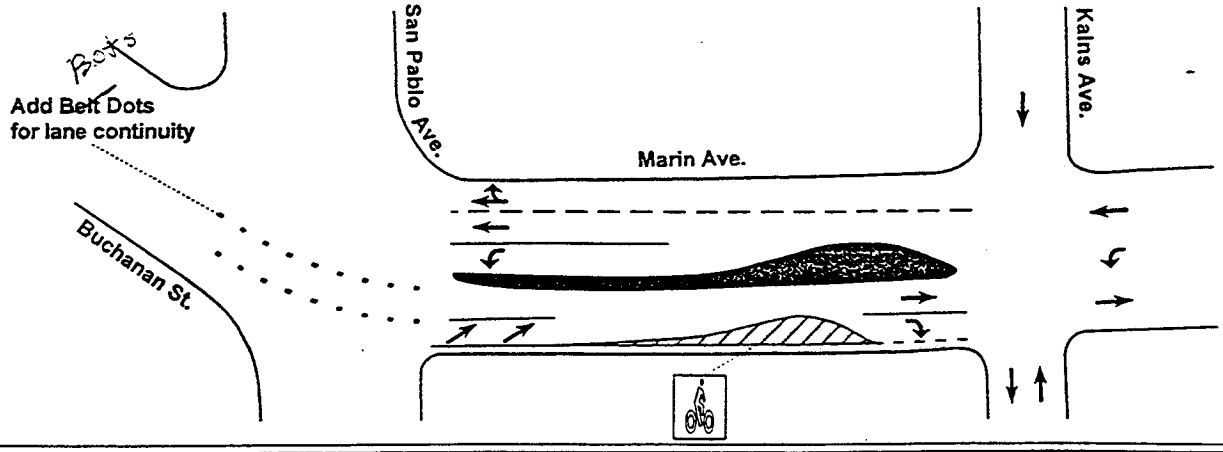
West End Transition

The transition on the west end near San Pablo Avenue is somewhat problematic, due to the need to retain existing travel lanes on the intersection approach and the restricted roadway widths. Options A and B show two possible transitions for the eastbound transition in this area, both retaining the existing raised median on Marin Avenue.

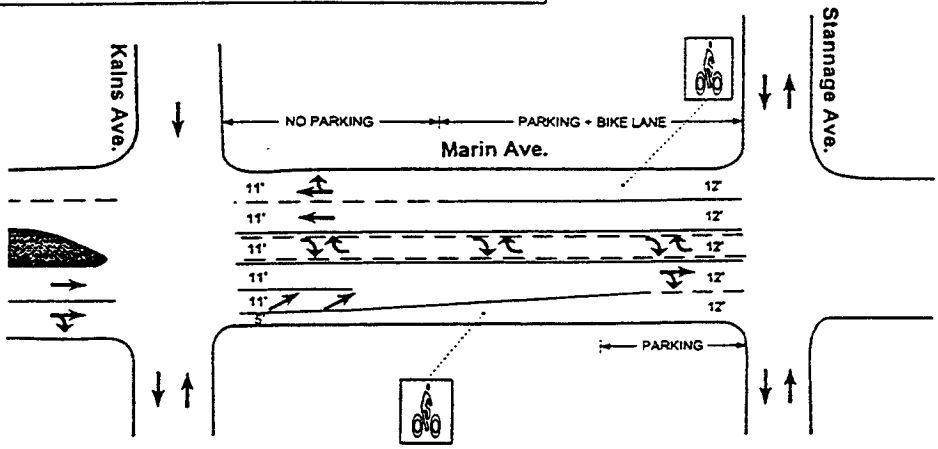
Table 8
Accident Analysis Summary

Location	Vehicle (only) Accidents			Bicycle Accidents			Pedestrian Accidents		
	1996	1995	1994	1996	1995	1994	1996	1995	1994
Cornell Av / Marin Av	0	1	0	0	0	0	0	1	0
Curtis St / Marin Av	2	0	1	0	0	2	0	0	0
Evelyn Av / Marin Av	0	0	1	0	0	0	0	0	0
Kains Av / Marin Av	0	1	1	0	0	0	0	0	0
Key Route Bl / Marin Av	0	1	3	0	0	0	0	0	0
Masonic Av / Marin Av	0	0	4	0	1	0	0	0	0
Neilson St / Marin Av	1	0	2	1	0	0	0	0	0
Ordway St / Marin Av	0	2	0	0	0	0	0	0	0
Peralta Av / Marin Av	0	0	1	0	0	1	1	0	0
San Pablo Av / Marin Av	10	10	9	0	1	0	0	0	0
Santa Fe Av / Marin Av	0	0	1	2	0	0	0	0	0
Stannage Av / Marin Av	0	0	0	1	0	0	0	0	0
Tulare Av / Marin Av	0	0	1	0	0	0	0	0	0
Total	13	15	24	4	2	3	1	1	0
# possibly reduced with proposed geometrics	1	1	3	1	0	1	0	0	0

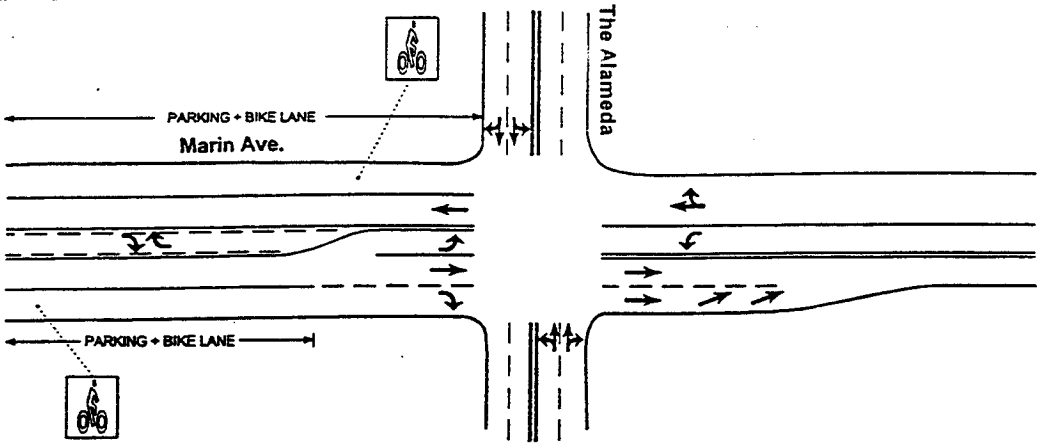
A. West End Transition in Block East of San Pablo Avenue



B. West End Transition in Block East of Kains Avenue



C. East End Transition at The Alameda



Marin Avenue Traffic Study

Figure 5

Bike Lane Transition

CCS Planning and Engineering Incorporated

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In Option A, the transition from two travel lanes to one travel lane would take place in the block immediately east of San Pablo Avenue. This would potentially leave a minimal width for the eastbound bike lane to be striped beginning near San Pablo Avenue. Striping of the bike lane would be discontinued on the Kains intersection approach to allow right turning vehicles to cross it. The single eastbound travel lane would continue to the east, and on-street parking would be unaffected. The merge area is shorter than desirable and, due to the skew in the roadway alignment across San Pablo Avenue, it may be necessary to install "bott" dots to better direct traffic into the merge area. To lessen these design problems, it might be preferable to wait until the next block east of Kains to stripe the eastbound bike lane.

In Option B, the eastbound transition would instead be done in the block immediately east of Kains Avenue. This would move the transition farther from San Pablo Avenue and hence provide better traffic operations at that intersection where capacity is most needed. As with Option A, only a relatively short merge distance can be provided due to short block, but some vehicles would tend to merge over before Kains. Overall, this option would appear to be better for eastbound merging than Option A. Its key disadvantage is the removal of 3 existing on-street parking spaces in front of an apartment building on the west end of the block and perhaps several more to the east.

In the westbound direction, both Options A and B would be the same, with the transition from one to two travel lanes and the end of the bike lane striping occurring in the block between Stannage and Kains. The second westbound travel lane would begin just east of Kains and would continue to San Pablo, with no change in lane striping and no bike lanes west of Kains.

East End Transition at The Alameda

A possible treatment for the transition at The Alameda is shown in the lower part of Figure 5 (Option C). The westbound approach of the intersection should be restriped to provide an exclusive left turn lane and a shared through/right turn lane. The eastbound lanes would also have this same configuration, and would transition back to existing conditions east of the intersection. As an option, the eastbound approach could be striped for a left turn, a through and a shared through/right lane since two existing lanes continue on Marin Avenue for a short distance downstream of the intersection.

SECTION 4

FINDINGS AND RECOMMENDATIONS

4.1 STUDY FINDINGS

Based on the analysis presented in Section 3, the following findings are made with respect to potential traffic impacts of the proposed project.

Intersection Levels of Service

LOS D or better is assumed to represent acceptable operating conditions during peak periods, and LOS E and F are unacceptable. Under baseline conditions with existing travel lanes, all of the study intersections operate acceptably at LOS D or better.

The proposed lane reduction along Marin Avenue would degrade peak hour traffic operations at all of the study intersections assuming no changes to the baseline traffic signal timings (Alternative 1). In this case, five of the six study intersections would fall to below the acceptable LOS D threshold. However, with signal cycle lengths at the two Berkeley intersections lengthened consistent with the Albany intersections, the two Berkeley intersections would operate acceptably.

Modifying all of the study intersections to operate on a longer signal cycle length (Alternative 2) would achieve acceptable traffic operations at two of the remaining deficient Albany intersections (Santa Fe and Peralta). Alternatively, reducing the minimum green times for the cross street approaches at those two intersections would accomplish similar results.

For the San Pablo intersection, it appears necessary to retain the existing lanes on all approaches in order to achieve an acceptable level of service.

Corridor Measures of Effectiveness

Corridor measures of effectiveness considered in the analysis include total travel time to traverse the corridor, total vehicle delays, and total fuel consumption in the corridor. In

comparison to baseline conditions, the proposed modifications would increase travel times, vehicle delays and fuel consumption within the study corridor, with some increases being significant in percentage terms.

Travel times, delays and fuel consumption appear to be slightly higher for Alternative 3 (reduced green times) than for Alternative 2 (increased cycle lengths). However, the differences between the two alternatives are relatively small.

Potential Diversion to Other Routes

Should Marin Avenue become less attractive as a travel route under the bike lane project, Solano Avenue appears to have greatest potential for traffic diversion since it is parallel to and near Marin Avenue and is a continuous route through the study area. Other routes with less potential for traffic diversion include Sonoma Avenue from Curtis Street east to The Alameda, Washington Avenue, Dartmouth Street and Gilman Street. However, there are several factors that limit these routes' attractiveness as alternates to Marin Avenue. In Alternative 2, the projected increases in travel times along Marin Avenue due to the project do not outweigh the travel time and other advantages of Marin Avenue over the other routes. In Alternative 3, significant delays are estimated at two study intersections, but the potential for traffic diversion still appears relatively limited.

Therefore, no significant proportion of existing Marin Avenue traffic is expected to divert to other routes under the proposed plan, assuming that existing lanes are maintained at the Marin/San Pablo Avenue intersection.

Accident Analysis

From review of historical accident data for Marin Avenue, it does not appear that the proposed geometric changes would have a significant effect -- negative or positive --on accidents along this corridor.

4.2 CONCLUSIONS AND RECOMMENDATIONS

From this analysis, it appears that Marin Avenue could be restriped to accommodate bike lanes from San Pablo Avenue east to the city limits, with only limited impacts on traffic levels of service. With left turn lanes and modified signal timing at signalized intersections, acceptable levels of service could be maintained in the corridor under current traffic volumes. The project would modestly increase overall travel times, delays and fuel consumption in the corridor and, depending on the signal timing modifications, may reduce the time available for pedestrians and vehicles to cross Marin Avenue. These potential impacts need to be weighed against the potential benefits of the project.

If the bike lane project is implemented, the existing approach lanes should be retained at the San Pablo Avenue intersection. Left turn pockets should be striped at the other signalized intersections. Also, signal timings should be modified at the signalized intersections to provide either longer signal cycle lengths or reduced green times for cross streets. With these provisions, acceptable levels of service would be maintained with the reduced travel lanes.

The project could also be extended easterly to The Alameda, which is within the City of Berkeley. With left turn lanes and traffic signal timing modifications as proposed for the Albany intersections, the two signalized intersections in Berkeley (Colusa and The Alameda) would continue to operate acceptably at LOS D or better with the reduced travel lanes.

At both ends of the corridor (San Pablo Avenue and The Alameda), transitions back to the existing lanes appear possible within available roadway widths, while maintaining acceptable traffic operations. However, the transition on the west end (San Pablo Avenue) is somewhat problematic due to the short blocks and narrow widths. Therefore, more detailed study, including consideration of additional options for the transition, should be made during project design.

APPENDIX E

Bicycle Advisory Committee Recommendation (City of Albany) and Evaluation of Bicycle Master Plan (Korve Engineering, April 2, 1999)

Bicycle Master Plan

Bicycle Advisory Committee Recommendations

I. Bicycle Trail Classifications

On September 2, 1999, the City of Albany Bicycle Advisory Committee reviewed the attached April 2, 1999 memorandum prepared by Korve Engineering that evaluated the City's draft Bicycle Master Plan. Specifically, Korve Engineering determined whether it was possible to implement the proposed bicycle plan including Class I, II, and III trails given varying street widths, existing parking, etc.

Based on the Korve Engineering information, the Bicycle Advisory Committee recommended bicycle trail classifications the respective street segments. These recommendations have also been reviewed by the City's Traffic and Safety Commission and are outlined in Table 1.

II. Marin School Drop-Off between Santa Fe Avenue and Curtis Street

Korve Engineering recommends increasing the passenger loading area on Santa Fe Avenue by using diagonal parking. The Bicycle Advisory Committee recommends an additional alternative plan as follows:

- Marin Avenue (south side) between Santa Fe Avenue and Curtis Street - reconfigure street to accommodate a one-way frontage road on the south side. One-way frontage road would be used for parking, and as a school drop-off/pick-up area depending upon the time of day.

  Example:
  7'(parking) + 5'(bike) + 11'(travel) + 11'(left turn) + 11'(travel) + 5'(bike) + 1'(solid median) + 11'(travel) + 8'(parking/passenger loading)

- Retain load zone (parallel) on Santa Fe Avenue.

- Add loading zone (parallel) on west side at Curtis Street only during school hours).

- The Bicycle Advisory Committee also recommends that the City proceed with Phase I as soon as possible, conducting before and after studies. A decision on whether to proceed with Phase II should be made subsequent to review of the benefits and community acceptance of the Phase I project.

III. Marin Avenue Reconfiguration

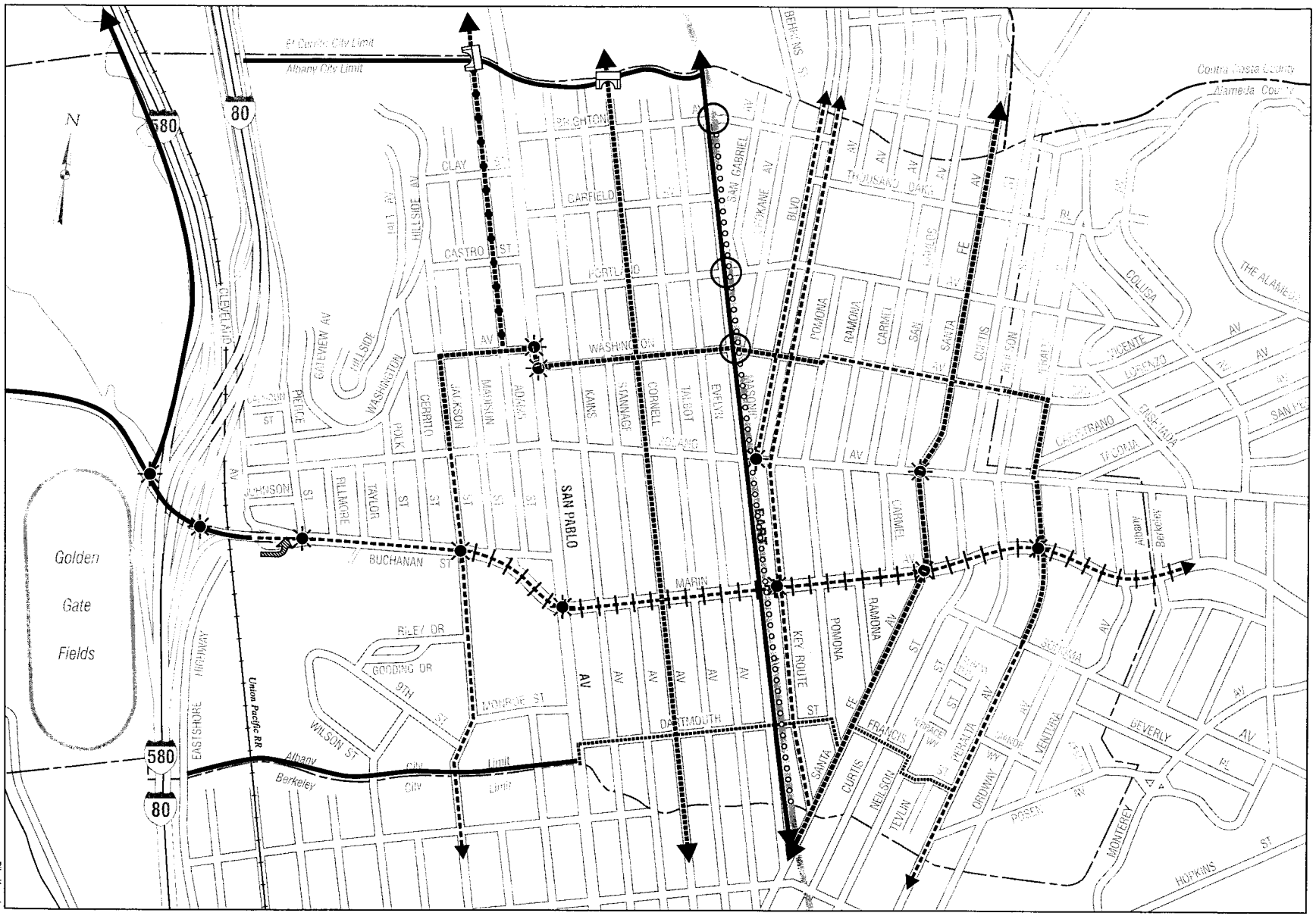
- The Bicycle Advisory Committee recommends that the City proceed with the conversion of Marin Avenue from a four-lane undivided arterial, to a two-lane divided arterial with left-turn lanes and bicycle lanes. In order to make the project more manageable in size, the BAC recommends that the project be broken into two pieces: from Berkeley to Santa Fe Avenue (Phase I) and from Santa Fe Avenue to San Pablo Avenue (Phase II). The Bicycle Advisory Committee also recommends that the City proceed with Phase I as soon as possible, conducting before and after studies of accidents, speeds and volumes in the process. A decision on whether to proceed with Phase II should be made subsequent to review of the benefits and community acceptance of the Phase I project.

TABLE 1

Bicycle Advisory Committee Recommendations Regarding Bicycle Trail Classifications

Street Location	Recommended Bicycle Trail Classification
Adams Street – Washington Avenue north to City limits (Figure 3)	▪ Stripe for Class III - C
Buchanan Street (Figure 4a, 4b)	
Pierce Street to Taylor Street	▪ Retain current no parking status. ▪ Retain Class II bike trail.
Taylor Street to Jackson Street	▪ Reduce median on south side by four feet. ▪ Retain parking on both sides of street. ▪ Stripe for Class II
Jackson Street to San Pablo Avenue	▪ Stripe for Class II
Eastshore Highway (Figure 5)	▪ No bike treatment recommended.
Jackson Street (Figure 6)	
Solano Avenue to Buchanan Street	▪ Stripe for Class II
Washington Avenue to Solano Avenue	▪ Stripe for Class III
Peralta Avenue (Figure 7)	
Washington Avenue/San Lorenzo to Sonoma Avenue	▪ Stripe for Class III
Sonoma Avenue south to Berkeley city limits	▪ Stripe for Class II
Pierce Street (Figure 8a, 8b)	▪ Eliminate bike treatments.
Santa Fe Avenue - Key Route Blvd. (which is south city limits) to north city limits (Figure 9)	▪ Stripe for Class III - B
Washington Avenue (Figure 10a, 10b)	
Jackson Street to San Pablo Avenue	▪ Stripe for Class III
San Pablo Avenue to Pomona Avenue	▪ Stripe for Class III
Pomona Avenue to eastern city limit	▪ Stripe for Class II
Key Route Blvd. (no figure)	▪ Stripe for Class II 7' (parking) + 5' (bike) + 12' (travel) + 8' (parking) = 32'

Note: See attached proposed Bicycle System Map and sketches showing the Class III-B and Class III-C concepts.



CITY TRAFFIC MANAGEMENT PLAN

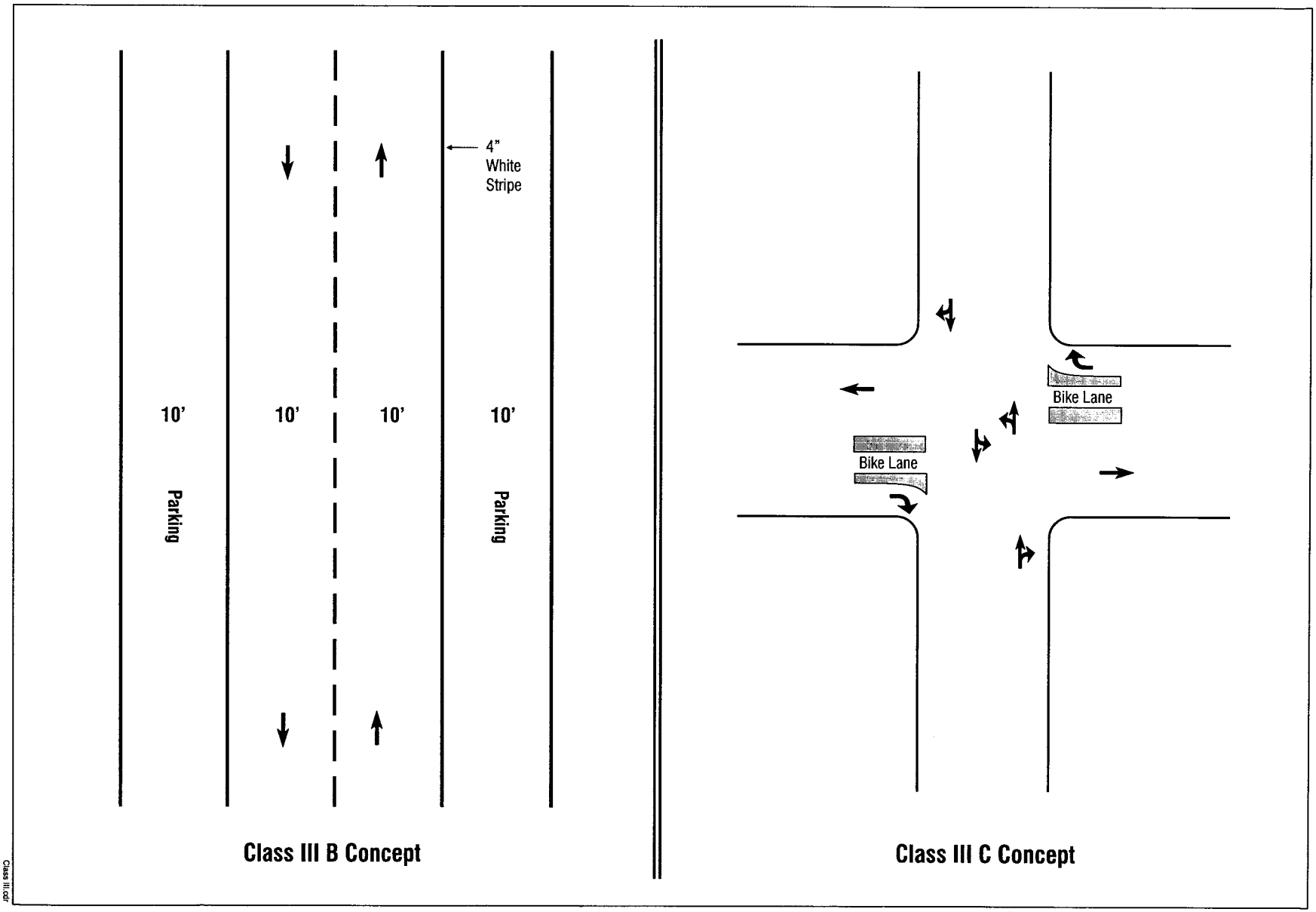
Class I
Class II
Bike Boulevard
Class III

Bike Actuated Signal
Modified BART Trail Street Crossing
Modified Marin Avenue cross-section
Bike Bridge

Improved BART Trail Lighting
Bicycle Left Turn Lane (Buchanan to Pierce)

Proposed Bicycle Plan

Bike Key.cdr



Class III.cdr

Korve Engineering

ALBANY TRAFFIC MANAGEMENT PLAN

Class III B Striping and Class III C Bicycle Lane

Korve Engineering

MEMORANDUM

TO: Anne Chaney

FROM: Hans Korve

DATE: April 2, 1999

SUBJECT: Evaluation of Bicycle Master Plan for City of Albany

PROJECT NO.: 398019X0, Albany Transportation Management Plan

KORVE was asked by Daren Fields to review the feasibility of the City of Albany's Bicycle Master Plan of January, 1997. Specifically, we were to determine whether it is possible to execute the proposed bicycle plan including Class I, II, and III trails. Subsequently, routes designated in the report as Class II, or III routes were measured on September 18, 1998, by KORVE staff to determine if bicycle lanes are possible given the space constraint. *(See FIG.1 for location of measurements)*

Requirements *(FIG.2)*
A minimum of 4 feet is required for a bicycle lane where parking is present. If there is no parking, 5 feet is required to give the rider extra space away from the curb. Parallel parking strips should be 7 feet wide and travel lanes a minimum of 10 feet. Therefore, in order to safely install bicycle lanes, a one-way road width of 21 feet is required if parallel parking exists and of 15 feet if no parking exists. In addition, two way bicycle traffic should not be installed on a one-way auto traffic street. This will inevitably cause conflicts.

Street Measurements

On-site street measurements were taken at 27 different locations on 8 roads within the city limits. The street sections measured include:

Adams Street from Washington Avenue to the city limit	*(FIG.3)*
Buchanan Street from Cleveland Avenue to Jackson Street	*(FIG. 4a, 4b)*
Eastshore Highway from the city limit to Buchanan Street	*(FIG. 5)*
Jackson Street from Riley Drive to Washington Avenue	*(FIG. 6)*
Peralta Avenue from Solano Avenue to the city limit	*(FIG. 7)*
Pierce Street from Buchanan Street to the city limit	*(FIG. 8, 8b)*
Santa Fe Avenue from city limit to city limit	*(FIG. 9)*
Washington Avenue form Jackson Street to the city limit	*(FIG. 10a, 10)*

Conclusions

The Bicycle Boulevard on Adams Point with Class III bicycle route designation, as proposed by the Albany Bicycle Master Plan, would not be possible without converting the street to two way operations. Adams Street is one-way from Clay Street south, therefore it would not be recommended to designate this street as a Class III route, unless traffic flow is changed to two-way.

Westbound Buchanan Street can accommodate bicycle lanes from Jackson Street to Pierce Street without removing the parking. However, the eastbound lanes cannot fit bicycle lanes without removing the parking. Additional space could be added to the roadway by narrowing the central median. Bicycle lanes could be placed on Buchanan Street east of Pierce by removing the parallel parking on the westbound side.

The Eastshore Highway is wide enough for bicycle lanes on both sides along most of its length within Albany. There is parallel parking on the northbound side near the city limits that would have to be removed.

Jackson Street can accommodate bicycle lanes between Washington Avenue and Solano Avenue if the on-street parking is removed. The parking may remain south of Solano Avenue and still accommodate the bicycle lanes. South of Buchanan Street, however, Jackson Street acts more like a parking lot for the nearby school. Sixty degree angled parking exists on the northbound side, which makes painted bicycle lanes inadvisable for safety reasons. Bicycles may still use this route as a Class III trail.

For bicycle lanes to fit on Peralta Avenue, the on-street parking must be removed from Solano Avenue to Sonoma Avenue. Peralta Avenue south of Sonoma Avenue is wide enough for bicycle lanes and parallel parking.

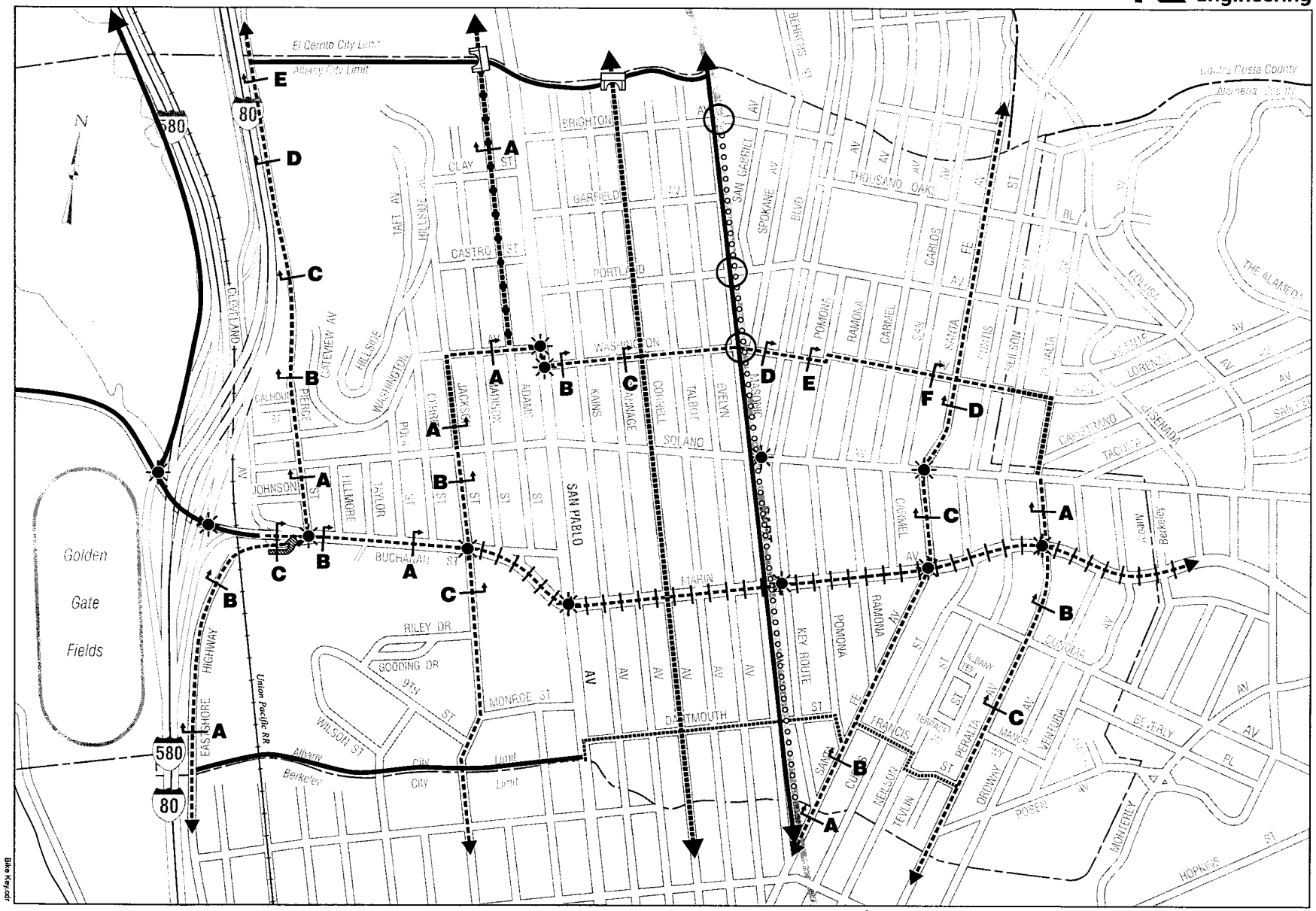
Pierce Street can accommodate bicycle lanes from Buchanan Street to the city limit if the parallel parking is removed from the extreme northern end of the road and the southern half. There is a section just south of the city limit that has angled parking on the southbound side and unmarked parallel parking on the northbound side. This section is wide enough to have a painted bicycle lane on the northbound side, but the angled parking make painted lanes inadvisable. However, the southbound side is wide enough to accommodate bicycle traffic.

Bicycle lanes are possible on Santa Fe Avenue if parallel parking is removed.

Washington Avenue can accommodate bicycle lanes without removing parking only between the city limits and San Carlos Avenue. On the remaining portion of Washington Street within the study area parallel parking would have to be removed to accommodate bicycle lanes.

An alternative bicycle route not proposed in the Albany Bicycle Master Plan is Key Route Boulevard. The street's wide grassy median could easily accommodate a Class I trail from the city limit south to Solano Avenue where it could be joined with the bicycle trail that follows beneath the BART tracks. This could provide a continuous from the southern portions of the city to the school at the corner of Key Route Boulevard and Portland Avenue. Further study of this option is recommended.

Korve Engineering



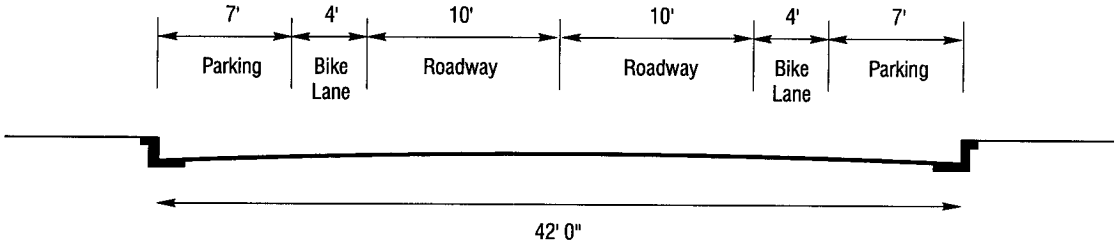
CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

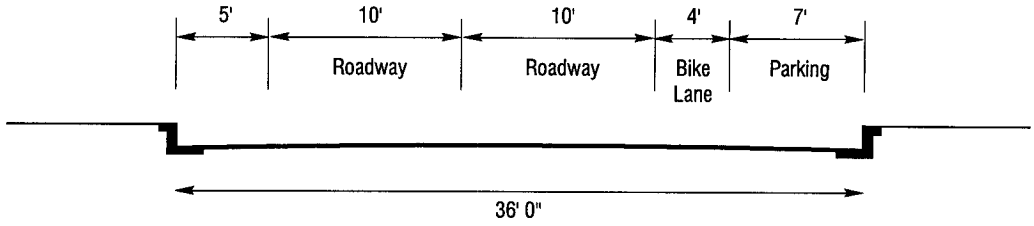
Class I
Class II
Bike Boulevard
Class III

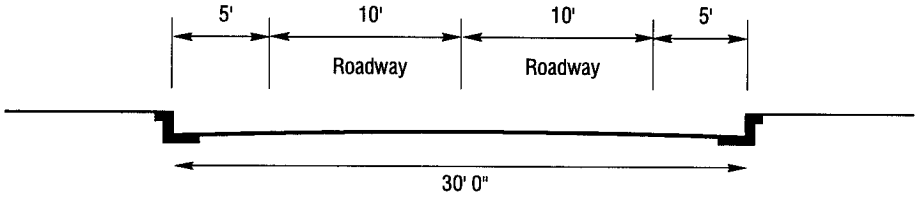
Bike Actuated Signal
Modified BART Trail Street Crossing
Modified Marin Avenue cross-section
Bike Bridge

Improved BART Trail Lighting
Bicycle Left Turn Lane (Buchanan to Pierce)
A Location of Measurement

Figure 1
KEY MAP



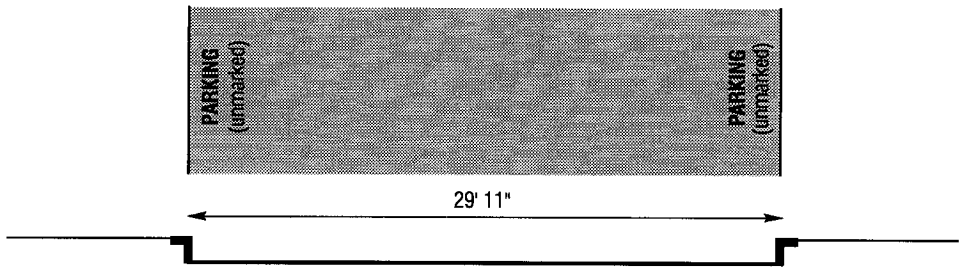




CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 2

POSSIBLE CROSS SECTIONS WITH BIKE LANES



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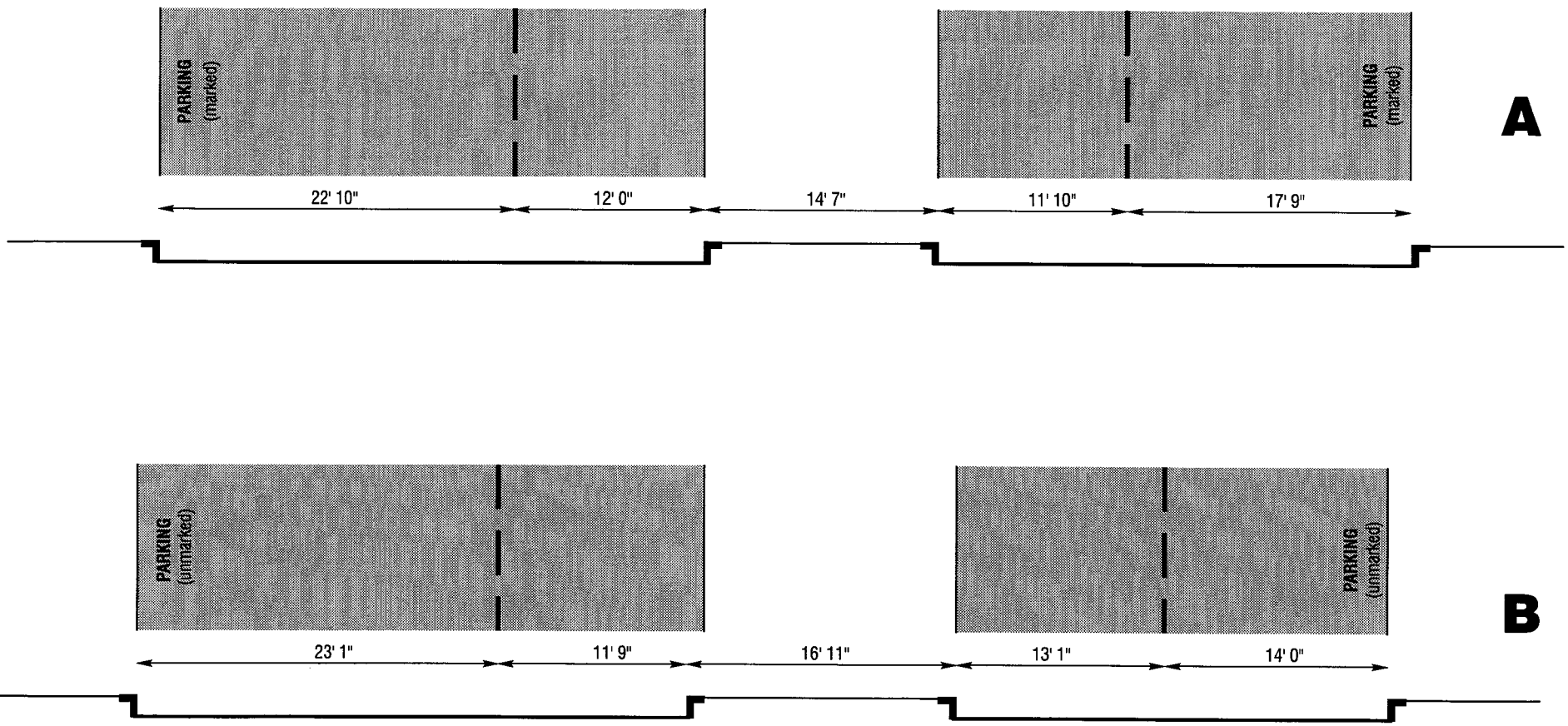
CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 3

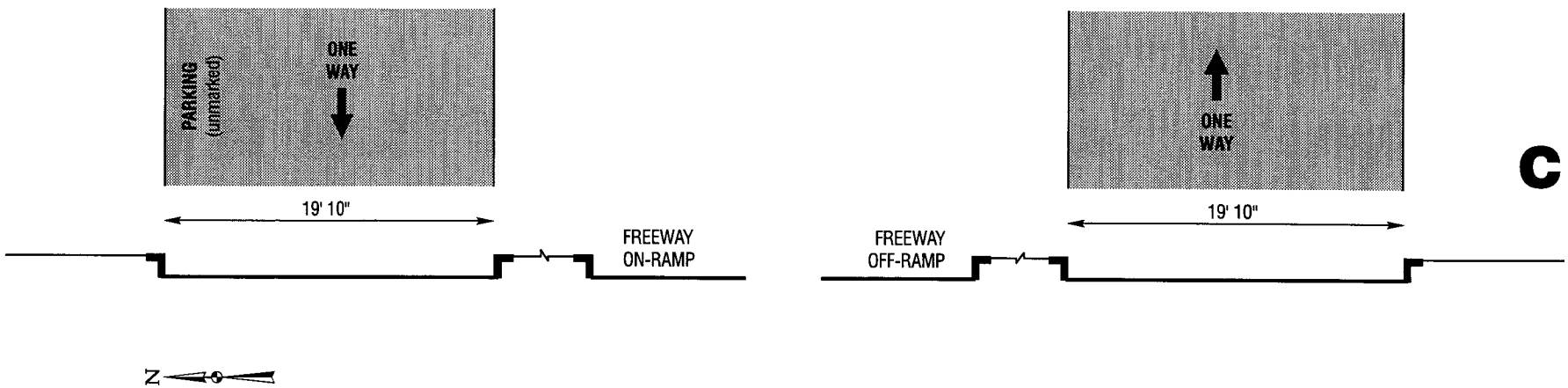
ADAMS STREET

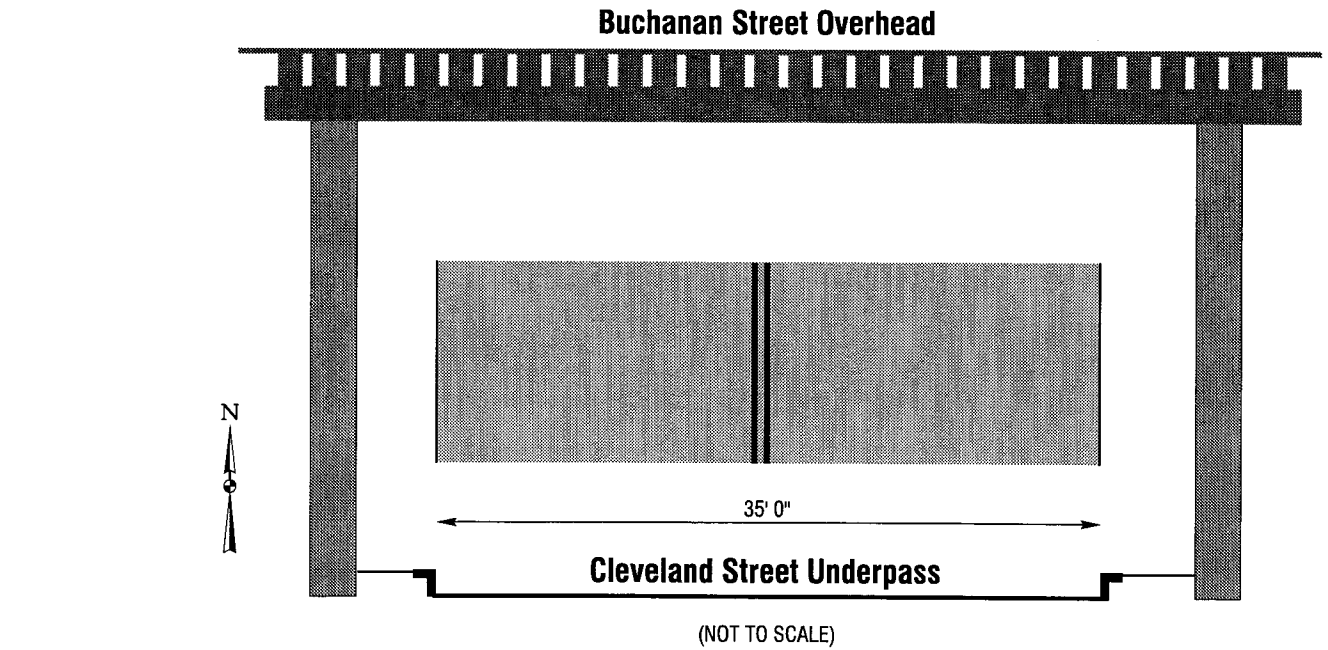


CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 4a

BUCHANAN STREET



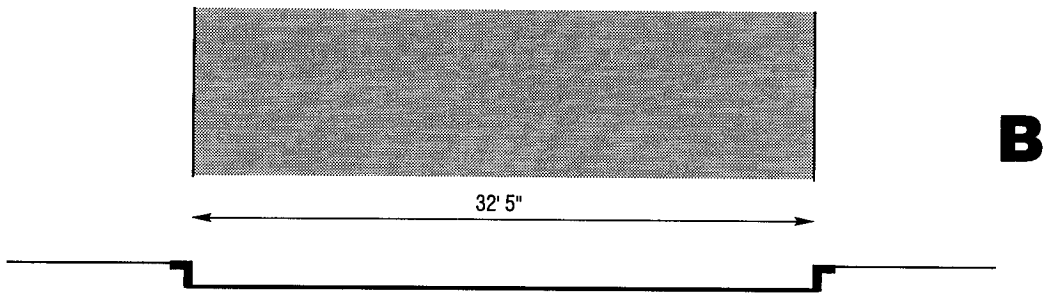


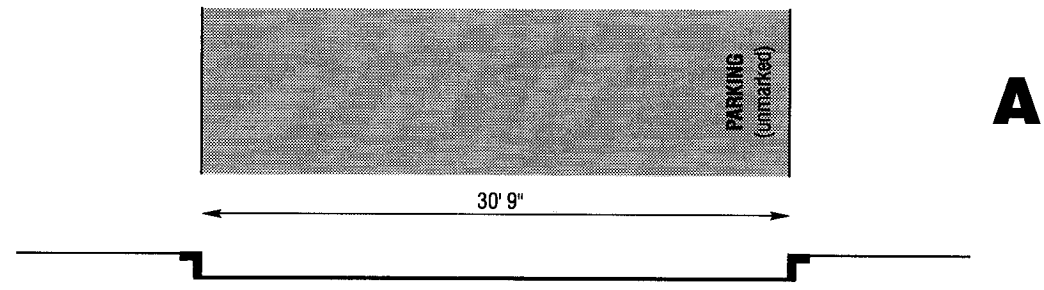
(NOT TO SCALE)

CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 4b

BUCHANAN STREET

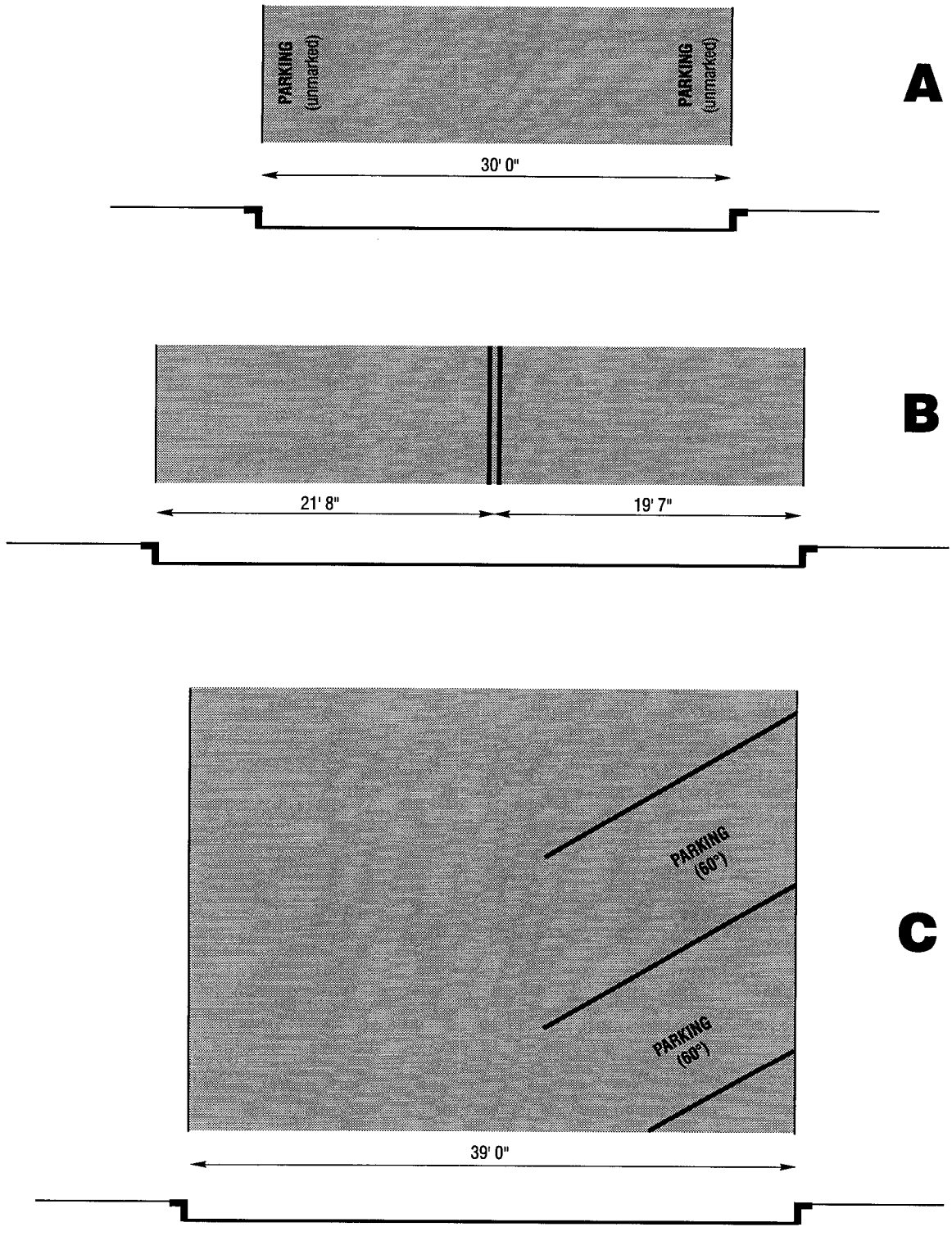




CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 5

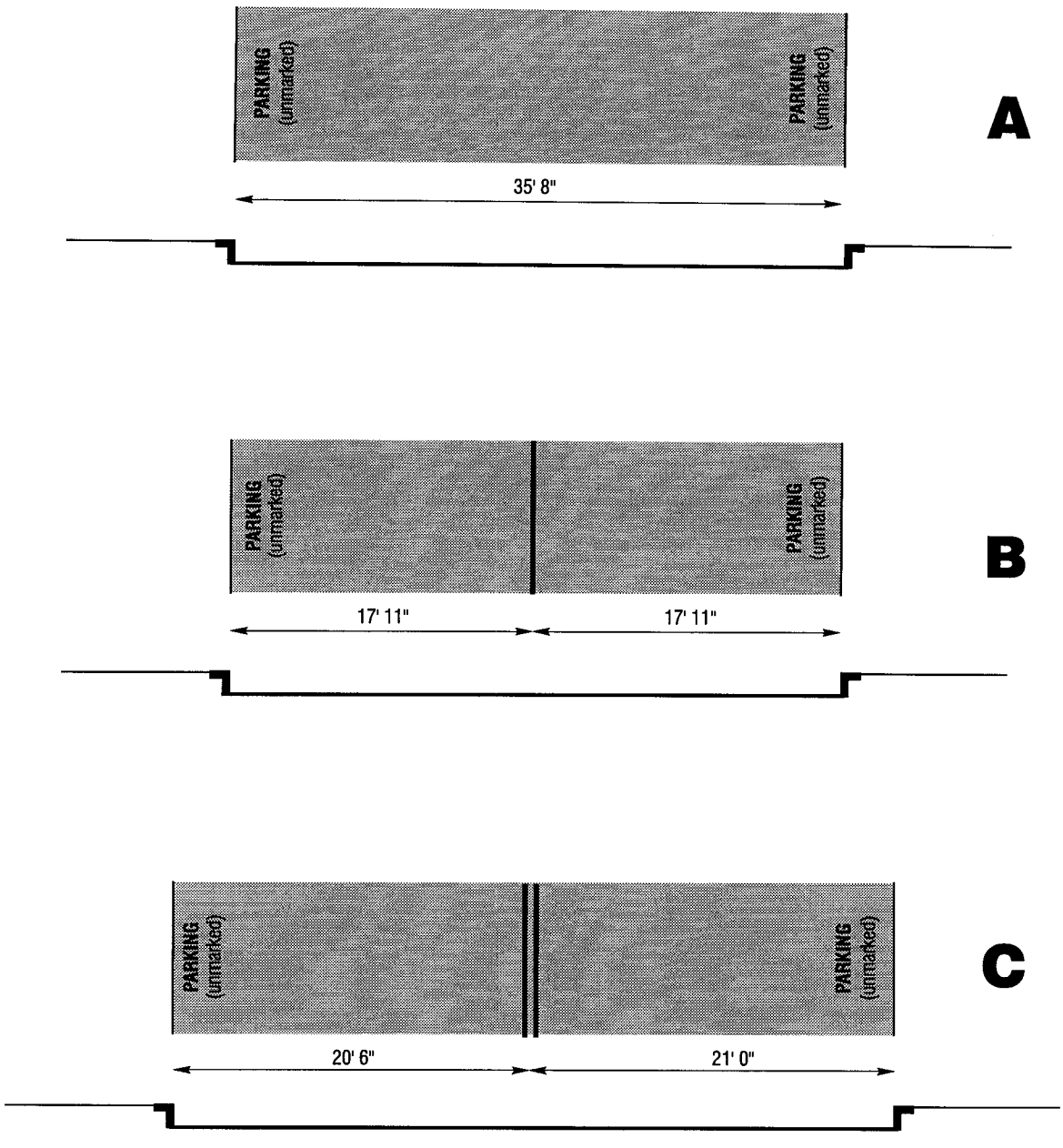
EASTSHORE HIGHWAY



CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 6

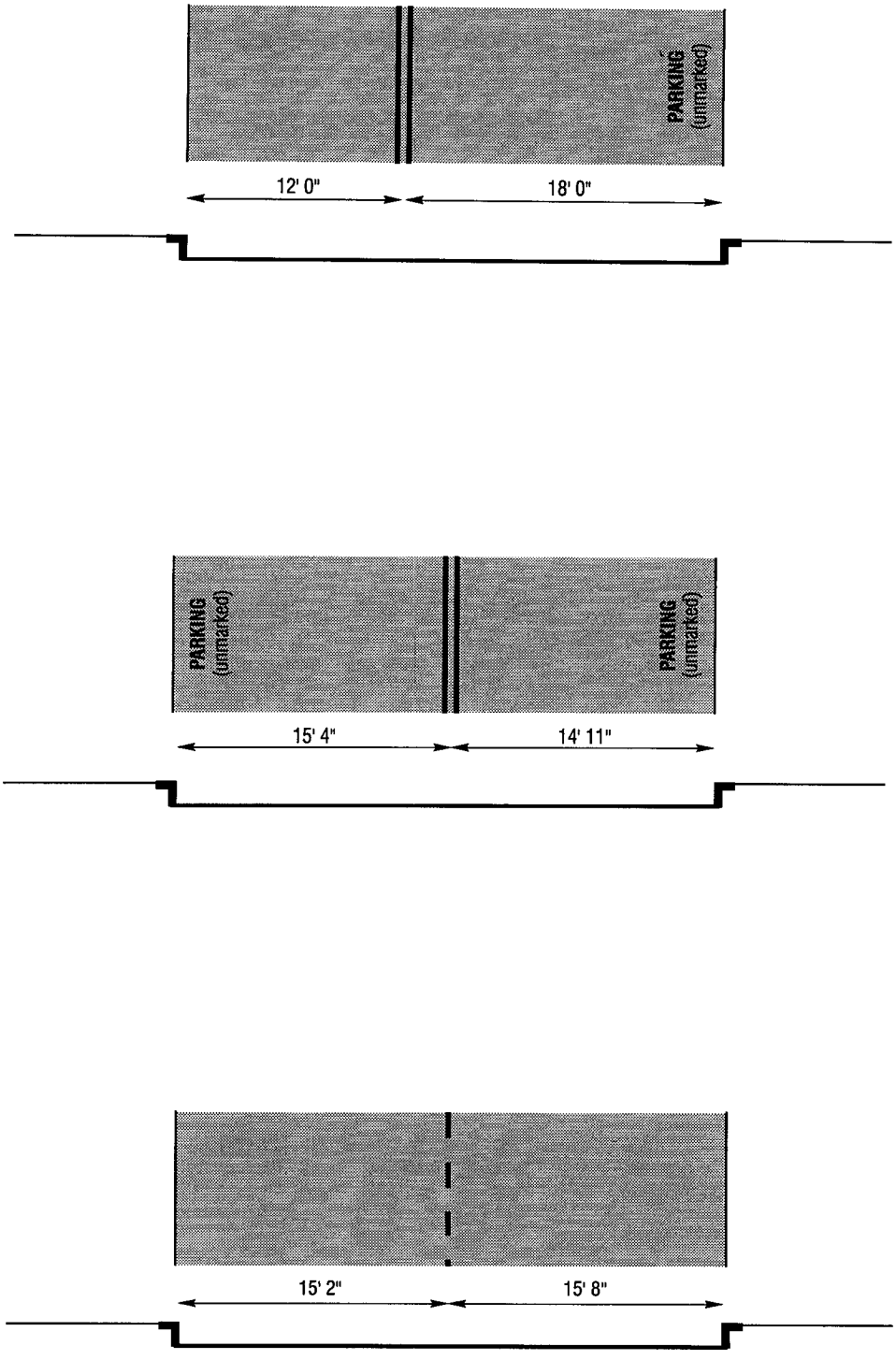
JACKSON STREET



CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 7

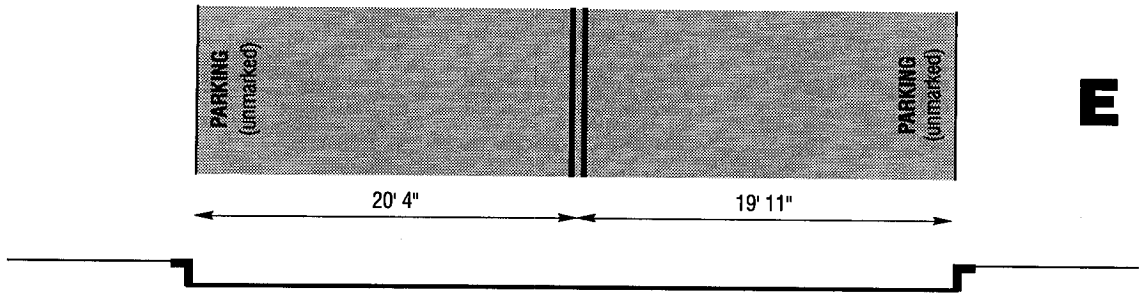
PERALTA AVENUE



CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 8a

PIERCE STREET



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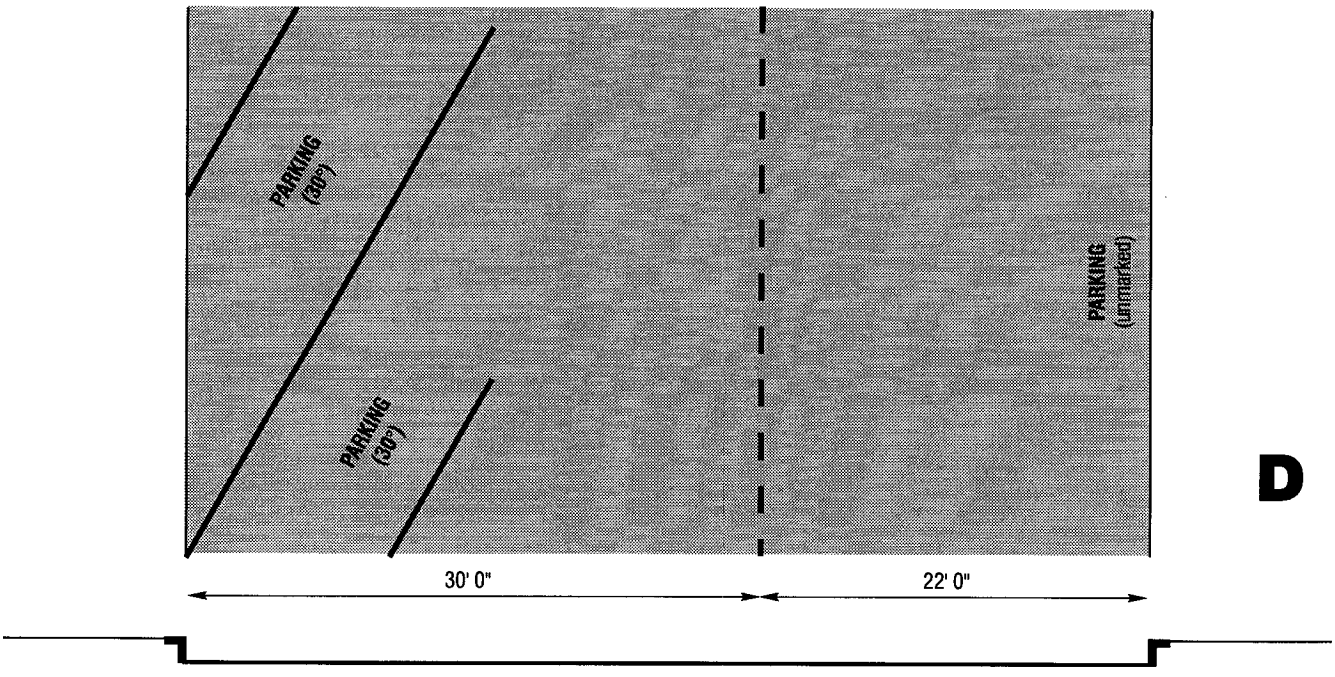

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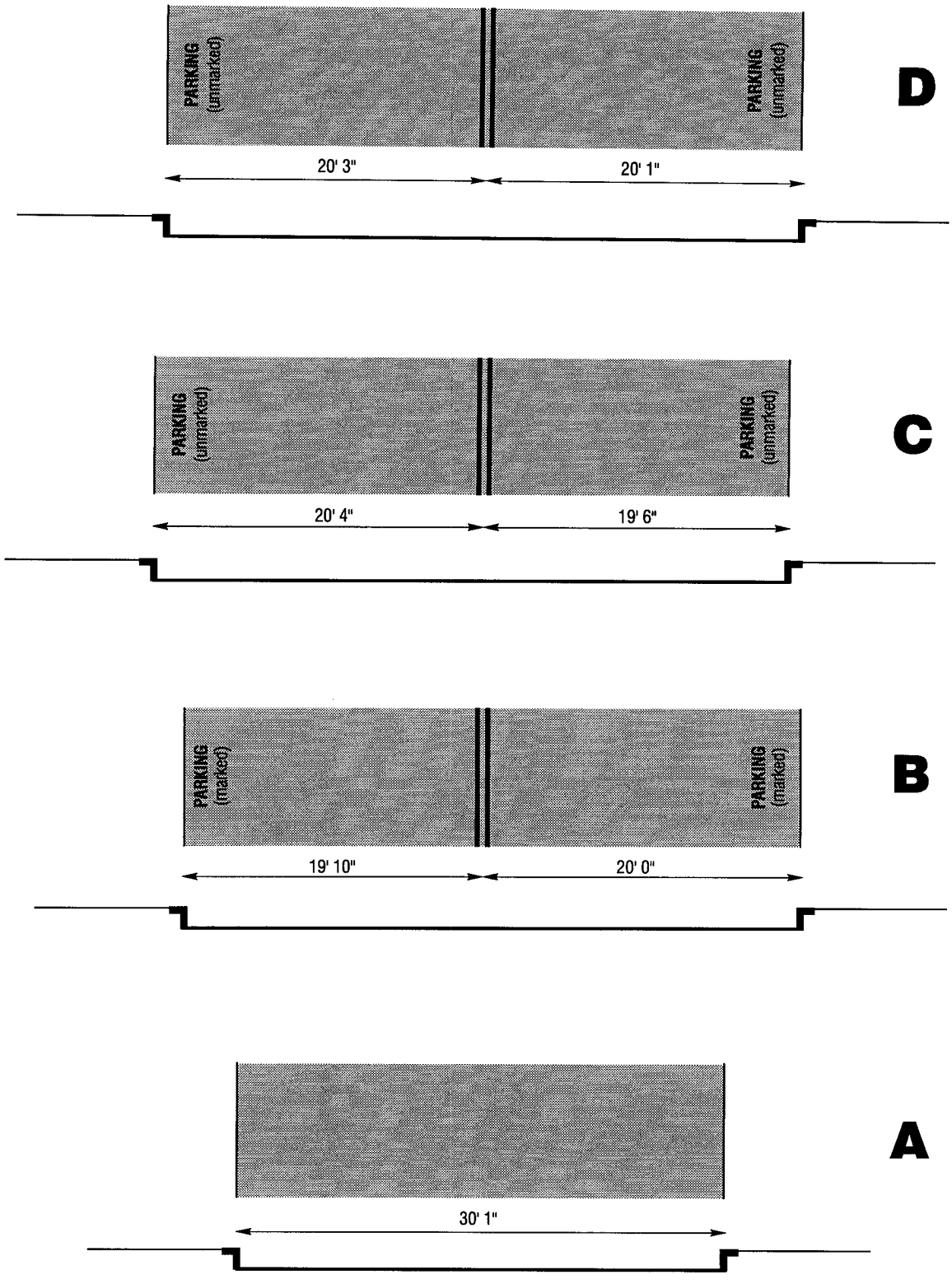
CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 8b

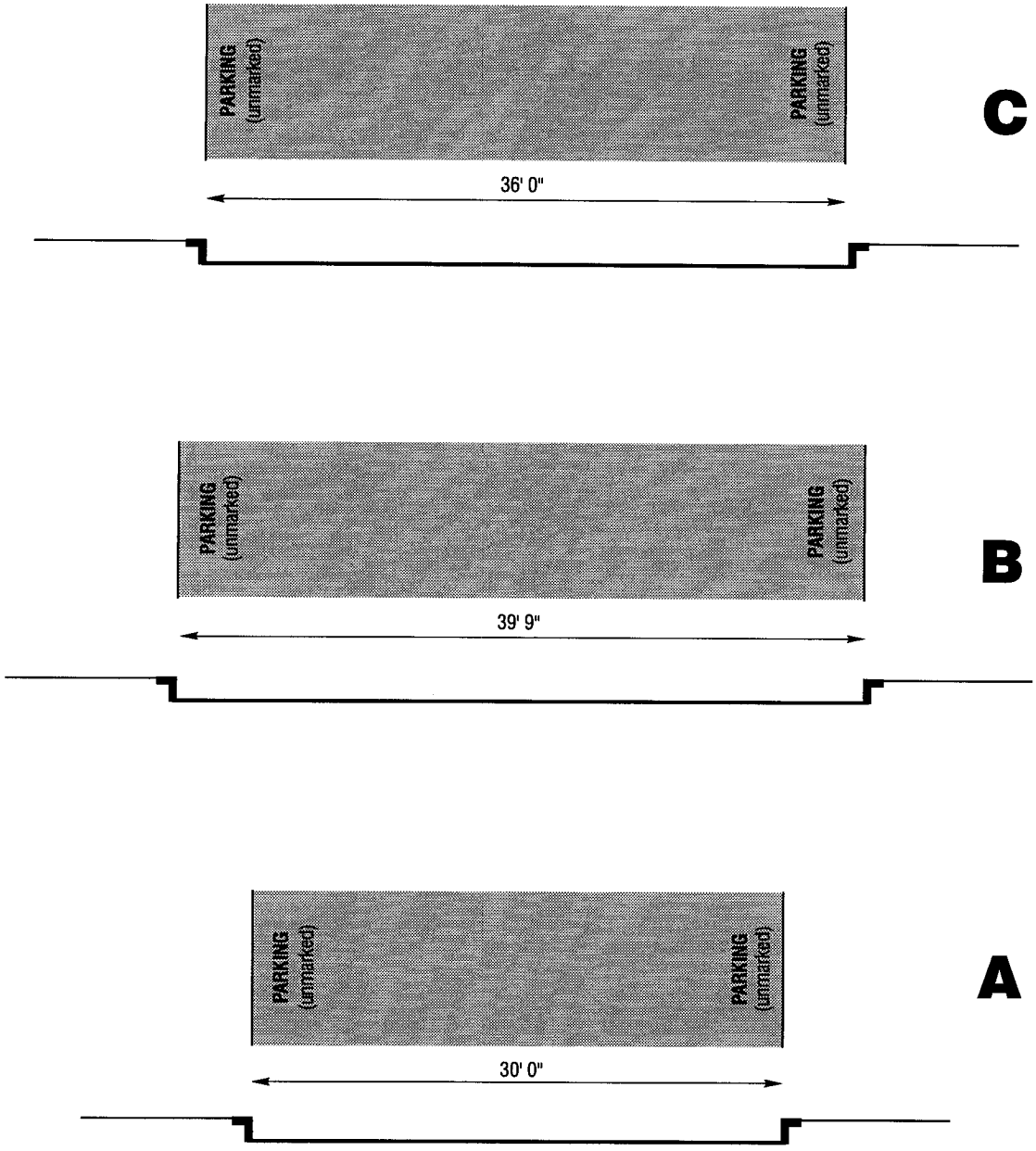
PIERCE STREET



CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 9

SANTA FE AVENUE



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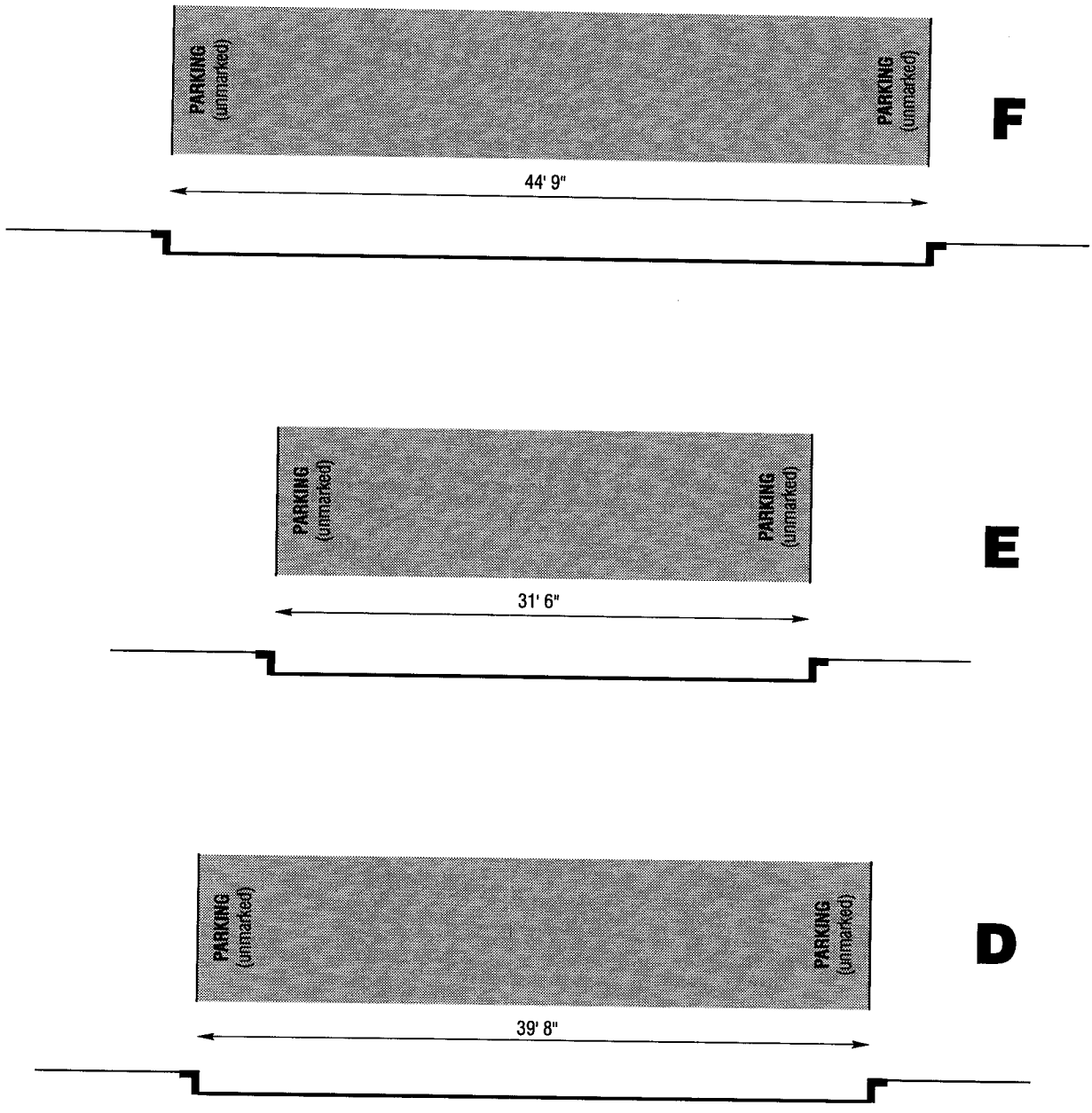
CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 10a

WASHINGTON STREET



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CITY OF ALBANY TRANSPORTATION MANAGEMENT PLAN

Figure 10b

WASHINGTON STREET

APPENDIX F

Engineering and Traffic Survey for Speed Limits (Kimley-Horn and Associates, Inc., May, 1997)

CITY OF ALBANY

ENGINEERING AND TRAFFIC SURVEY

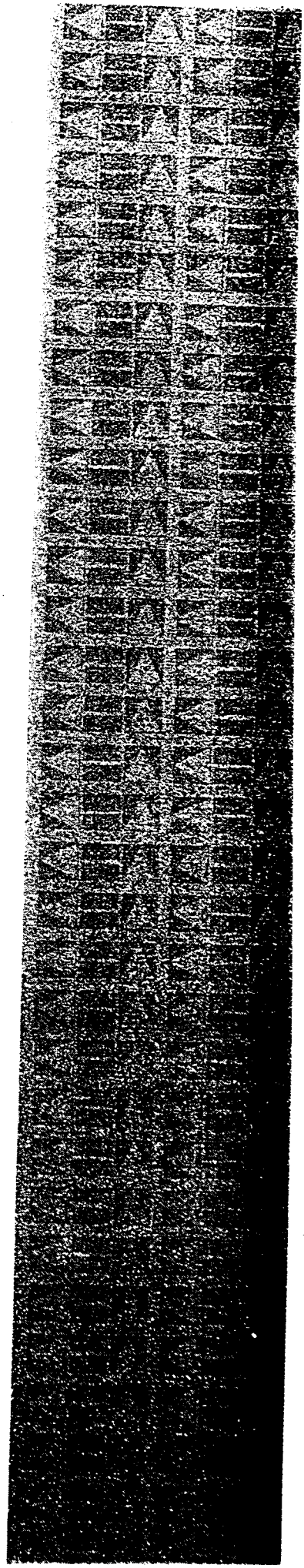
FOR SPEED LIMITS

MAY 1997

PREPARED BY:

Kimley-Horn and Associates, Inc.

Kimley-Horn
and Associates, Inc.
Engineering, Planning, and Environmental Consultants



CITY OF ALBANY

ENGINEERING AND TRAFFIC SURVEY

FOR SPEED LIMITS

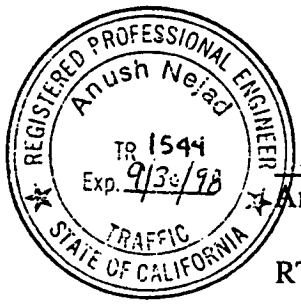
MAY 1997

PREPARED BY:

Kimley-Horn and Associates, Inc.

CERTIFICATION

I, Anush Nejad, do hereby certify that this Engineering and Traffic Survey for the City of Albany was performed under my supervision. I certify that I am experienced in performing surveys of this type and duly registered in the State of California as a professional Traffic Engineer.



Anush Nejad 5/14/97

Anush Nejad Date

RTE # 1544

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EXECUTIVE SUMMARY

INTRODUCTION

Governmental agencies have the authority to set and enforce speed limits which apply on roadways under their jurisdictions. In accordance with the *California Vehicle Code* (CVC), where speed limits are not posted, the speed limit is 25 mph in residential and business districts and 65 mph elsewhere. Local jurisdictions, such as the City of Albany, have the authority to set speed limits between 15 mph and 65 mph as appropriate.

Section 40802 of the CVC states that the radar enforcement of the speed limits not justified by an Engineering and Traffic Survey (conducted in the past five years) constitutes a "speed trap". A local street is exempt from the speed trap requirements. A local road is defined as 1) roadway width of not more than 40 feet; 2) not more than one-half mile of uninterrupted length (no traffic control devices; and 3) not more than one traffic lane in each direction. This provision shall remain in effect until January 1, 1999, and as of that date is repealed, unless a later enacted statute, that is enacted on or before January 1, 1999, deletes or extends that date.

The Engineering and Traffic Survey is defined in Section 627 of the CVC and the procedures are outlined in the Department of Transportation's *Traffic Manual.* Based on these requirement, the Engineering and Traffic Survey must consider prevailing speeds, accident records, traffic, and roadside conditions not readily apparent to the driver.

This study represents an Engineering and Traffic Survey as defined in the *California Vehicle Code* and the requirements of the *Traffic Manual*, and are enforceable for a period of up to five years, subject to the provisions of Section 40802.

REALISTIC SPEED LIMITS

The majority of motor vehicle drivers can be relied upon to travel at a reasonable and prudent speed while traveling on City streets. For this reason, existing speeds are one of the primary factors used in the setting of speed limits. By setting a reasonable speed limit, local agencies can more easily identify the unreasonable vehicle operators which exceed the safe speed for a given roadway environment. Speed limits, like other laws, are often ignored when they contradict the reasonable behavior of the public majority. The setting of an unreasonably low speed limit is likely to lead to speed violations by the majority of the motorists. On the other hand, if speed limits are set too high, it will be difficult to identify and control the unreasonable drivers which travel at speeds significantly greater than the majority.

Under normal conditions, the speed limit on a particular roadway should be set at the maximum range of speeds at which reasonable drivers travel. In most cases, the 85th percentile speed of existing traffic is used. For a given roadway, the 85th percentile speed is determined such that 85% of the drivers travel at or below this speed. Normally the speed limit should be set close to the 85th percentile, but in some cases other factors lead to the setting of a speed limit different from this standard. These factors include accident history and local traffic and roadside conditions.

In summary, the setting of a realistic speed is intended as a way of guiding reasonable motorists as to the safe speed for a given roadway. A reasonable speed limit will provide conformance with state law and a means of separating the majority of motorists from a few unreasonable violators.

STUDY PROCEDURES

The analysis of each street segment in the study included an existing speed survey, a check of the accident records, and a review of the roadside conditions, in accordance with the requirements of Section 627 of the CVC.

The analysis followed the following three steps:

1. Speed surveys were performed using a calibrated hand-held radar gun (Calibration Certificate is included in the Appendix). Data was taken from a vehicle parked in an inconspicuous location on the roadside. Only free flowing vehicles in the traffic stream were included in the survey to account for the maximum normal speed conditions. Construction areas, inclement weather, unnormal topography, locations near traffic control devices, and other unusual situations were avoided. Along streets with medium to heavy traffic, one hundred sample speeds were obtained at each location. For smaller streets, a minimum of fifty samples was collected.

   The data collected in the speed survey was used to develop a number of useful statistics. These include:

   - 85th Percentile Speed: This is the speed below which 85% of the vehicles are traveling. It is used as the speed limit in many cases where no unusual circumstances exist.

   - 50th Percentile Speed: This is the median speed. Half of the vehicles travel above this speed and half travel below.

   - 10 MPH Pace Speed: The pace speed is that 10 mph range which contains the speeds of the greatest number of vehicles. Normally, the speed limit will be within or slightly above the pace.

2. Each roadway segment in the study was examined by an engineer. This part of the study was conducted to evaluate a variety of factors which cannot be taken into account through the use of the available speed statistics. Engineering judgement was applied to take into account such factors as adjacent land use, topography, visibility, hazards, and other factors not readily apparent to the motorists, and potential for conflicts with pedestrians and other vehicles, such as residential or business districts

3. Accident records were reviewed for all street segments to identify any locations with an unusual accident history. The SWITRS accident records were the primary source of this information. Speed reduction below the 85th percentile speeds were recommended for the street segments which had higher than average accident history as compared to state averages, for both speed related and total number of accidents.

RESULTS AND RECOMMENDATIONS

The following table summarizes the survey results and recommended speed limit for each segment:

Street Location	Current Speed Limit	Recom. Speed Limit	85% Speed	Median Speed	10 MPH Pace Range	% of Vehicles in Pace	Justification
Brighton Avenue San Pablo to Key Route	25	25	32	28	23-32	83%	Residence District
Buchanan Street City Limits to San Pablo	25	25	41	34	29-38	67%	Residence District
Cleveland Avenue Buchanan to Washington	25	25	38	33	28-37	68%	Residence District
Cleveland Avenue Washington to City Limits	25	35	38	33	28-37	68%	85% Speed
Key Route Boulevard City Limits to City Limits	25	25	32	29	24-33	92%	Residence District
Marin Avenue Buchanan to City Limits	25	25	36	32	27-36	77%	Residence District
Masonic Avenue Brighton to City Limits	25	25	31	28	24-33	89%	Residence District
Pierce Street Buchanan to City Limits	25	25	27	25	20-29	94%	Residence District

Street Location	Current Speed Limit	Recom. Speed Limit	85% Speed	Median Speed	10 MPH Pace Range	% of Vehicles in Pace	Justification
Portland Avenue San Pablo to City Limits	25	25	33	28	23-32	75%	Residence District
San Pablo Avenue City Limits to City Limits	35	35	35	30	25-34	80%	85% Speed
Santa Fe Avenue City Limits to Marin	25	25	36	32	29-38	84%	Residence District
Santa Fe Avenue Marin to City Limits	25	25	31	27	23-32	89%	Residence District
Solano Avenue San Pablo to City Limits	25	25	25	22	18-27	93%	85% Speed
Washington Avenue San Pablo to City Limits	25	25	32	27	23-32	82%	Residence District

This summary indicates that thirteen of the street segments should remain posted at their current speed limits, while one segment, Cleveland Avenue from Washington Avenue to the City Limits, should increase. The following segments should remain at 25 mph due to the segments being classified as a "Residence District" (CVC Section 515): Brighton Avenue, Buchanan Street, Cleveland Avenue (from Buchanan St. to Washington Ave.), Key Route Boulevard, Marin Avenue, Masonic Avenue, Pierce Street, Portland Avenue, Santa Fe Avenue (both sections), and Washington Avenue. The segments of San Pablo Avenue and Solano Avenue should remain at their current speeds based on the 85% speed. The Cleveland Avenue speed limit should be raised from 25 mph to 35 mph from north of Washington Avenue to the City Limits based on the 85% speed.

In addition, due to higher speeds on Buchanan Street, we recommend the existing speed limit sign in the eastbound direction as you enter town to be changed to a 36" by 45" sign. We also recommend "Radar Enforced" signs to be placed strategically at city limit boundaries.

CITY OF ALBANY

ENGINEERING & TRAFFIC SURVEY FOR SPEED LIMITS

INTRODUCTION

This Engineering and Traffic Survey is intended to serve as the basis for the establishment and enforcement of speed limits for selected streets within the City of Albany. This survey was authorized by the City and independently conducted by the private consulting firm of Kimley-Horn and Associates, Inc. to determine if changes in prevailing conditions have occurred and are in compliance with State law for enforcement purposes.

Engineering and traffic surveys for speed limits are regularly conducted once every five (5) years by governing municipalities for the purpose of complying with Section 40802b of the *California Vehicle Code (CVC)* and the national *Uniform Vehicle Code*. This law requires that speed surveys must be performed with the use of radar or other electronic devices at locations where speed limits are to be enforced with the use of radar. The current survey must be completed within five years of the date of the preceding survey. A survey allowed to expire after five years of the previous survey would constitute a speed trap as stated below:

40802 A "speed trap" is either of the following:

(a) A particular section of a highway measured as to distance and with boundaries marked, designated, or otherwise determined in order that the speed of a vehicle may be calculated by securing the time it takes the vehicle to travel the known distance.

(b) A particular section of a highway with a prima facie speed limit provided by this code or by local ordinance pursuant to paragraph (1) of subdivision (b) of Section 22352, or established pursuant to Section 22354, 22357, 22358, or 22358.3, which speed limit is not justified by an engineering and traffic survey conducted within five years prior to the date of the alleged violation, and where enforcement involves the use of radar or other electronic devices which measure the speed of moving objects.

In addition, testimony and evidence based upon a speed trap is inadmissible in a court of Law.

PURPOSE AND METHODOLOGY OF SPEED ZONE ESTABLISHMENT

Speed zones are primarily established to protect the general public from the unreasonable behavior of reckless, unreliable, or otherwise dangerous drivers. Speed limits are generally established at or near the 85 percentile speed, which is defined as that speed at or below which 85 percent of traffic is moving. Speed limits established on this basis conform to the consensus of those who drive highways to what speed is reasonable and safe, and are not dependent on the judgement of one or a few individuals.

The Engineering and Traffic Survey, as defined in Section 627 of the CVC must consider the prevailing speeds, accident records, and roadway traffic and roadside conditions not readily apparent to the driver. Speed zones are also established to advise of road conditions or hazards which may not be readily apparent to a reasonable driver. For this reason, a field review of related road/traffic variables is conducted which is considered in combination with the statistical data and accident history of a particular roadway segment to determine a safe and reasonable speed limit. The specific procedures used in the conduct of the Engineering and Traffic Study are outlined in the *Traffic Manual* published by California Department of Transportation. The statistical factors used to analyze the collected speed survey data are defined in the following section.

It should be noted that the CVC allows local authorities to increase or decrease the prima facie limits by ordinance or resolution to appropriate limits as determined by an engineering and traffic survey. Posted speed limits not defined in the CVC or established by ordinance are not valid.

According to Section 22352.b of the CVC, the prima facie speed limit for streets in any business or residence district is twenty-five miles per hour. The definitions of business and residence district are as follows:

235. A "business district" is that portion of a highway and the property contiguous thereto

(a) upon one side of which highway, for a distance of 600 feet, 50 percent or more of the contiguous property fronting thereon is occupied by buildings in use for business, or

(b) upon both sides of which highway, collectively, for a distance of 300 feet, 50 percent to or more of the contiguous property fronting thereon is so occupied.

515. A "residence district" is that portion of a highway and the property contiguous thereto, other than a business district,

(a) upon one side of which highway, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 13 or more separate dwelling houses or business structures, or

(b) upon both sides of which highway, collectively, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 16 or more separate dwelling houses or business structures.

RADAR SPEED SURVEY OPERATIONAL PROCEDURES

Radar speed measurements for this survey were conducted in April of 1997 on 13 Segments in the City of Albany. The surveyed segments are listed below:

STREET	SEGMENT	CLASSIFICATION
Brighton Avenue	San Pablo Avenue to Key Route Boulevard	Residential
Buchanan Street	City Limits to San Pablo Avenue	Residential
Cleveland Avenue	Buchanan Street and City Limits	Collector
Key Route Boulevard	City Limits to City Limits	Residential
Marin Avenue	Buchanan Street to City Limits	Residential
Masonic Avenue	Brighton Avenue and City Limits	Residential
Pierce Street	Buchanan Street to City Limits	Residential
Portland Avenue	San Pablo Avenue to City Limits	Residential
San Pablo Avenue	City Limits to City Limits	Business
Santa Fe Avenue	City Limits to Marin Avenue	Residential
Santa Fe Avenue	Marin Avenue to City Limits	Residential
Solano Avenue	San Pablo Avenue to City Limits	Business
Washington Avenue	San Pablo Avenue to City Limits	Residential

The specific survey location for each segment was selected after determining the following criteria:

a. Minimum stop sign or traffic signal influence;

b. Minimum visibility restrictions;

c. Uncongested traffic flow away from intersections, major driveways, crosswalks, and unusual turning movements;

d. Minimum influence from parked vehicles, bumps, dips, curves, or poor roadway conditions.

The hours of radar operation were from 8:00 am to 5:30 pm with arterial roadways being restricted to off-peak periods from 9:00 am to 4:00 pm. Speed surveys were conducted on days with no rain and clear visibility. The radar unit was in an unmarked vehicle and the calibration checked periodically using a tuning fork.

The operator recorded the radar speed meter readings for each location on Radar Speed Survey Field Sheets included in the Appendix Section of this report. A representative sampling of at least 50 vehicles were surveyed in each direction (or a cumulative sample of 100 vehicles for both directions). For certain segments, which had so few vehicles, the operator conducted the survey to obtain a minimum sample of 50 vehicles.

STATISTICAL ANALYSIS FACTORS

Significant factors used to analyze the collected survey data are summarized below:

1. The critical speed, or 85th Percentile Speed, is defined as that speed at or below which 85 percent of the traffic is moving. This factor is the primary guide in determining what speeds the majority of safe and reasonable drivers are traveling. Therefore, the accepted practice is to set the speed limit at or within 5 mph below the Critical Speed unless other factors require a lower limit. Speed limits set on this basis provide law enforcement officials with a means of controlling reckless or unreliable drivers who will not conform to what the majority finds reasonable.

2. The 10 MPH Pace is the 10 MPH increment range which contains the largest number of recorded vehicles. The pace is a measure of the dispersion of speeds within the sample surveyed. Speed limits are normally set to fall within the 10 MPH pace. However, conditions not readily apparent to the driver or adhering to State mandated limits such as in Residence Districts may require setting speed limits below the 10 MPH pace.

3. The Median Speed, or 50th Percentile Speed, represents the mid-point value within the range of recorded speeds for a particular roadway location. Such that, 50% of the vehicles travel faster than, and 50% travel slower than the median speed. This value is another measure of the central tendency of the vehicle speed distribution.

4. The 15th Percentile is that speed at or below which 15% of the vehicles are traveling. This value is important in determining the minimum allowable speed limit, given that the vehicles traveling below this speed tend to obstruct the flow of traffic, thereby increasing the accident potential.

FIELD REVIEW

Examples of the field data collected for the purposes of analyzing related roadway characteristics as they pertain to the determination of appropriate speed limits are listed below:

1. Segment length, width and alignment;
2. Level of pedestrian activity;
3. Traffic flow characteristics;
4. Number of lanes and other channelization/striping factors;
5. Frequency of intersections, driveways and on-street parking;
6. Location of stop signs, traffic signals, and other regulatory traffic control devices;
7. Roadway condition, bumps and dips;
8. Obstructions to driver/pedestrian visibility;
9. Land use and proximity of schools;
10. Uniformity with existing speed zones in adjacent jurisdictions;
11. Any other unusual conditions or hazards not readily apparent to the driver.

The results of the field review of related road/traffic variables are summarized on the Engineering and Traffic Survey forms found in the Appendix of this report.

ACCIDENT HISTORY

The Engineering and Traffic Survey forms summarize the available accident information for each of the 13 street segments. The accident information for Albany was obtained from the City's traffic accident records or California Statewide Integrated Traffic Records System (SWITRS) Report for the City of Albany. Based on the number of total accidents studied over a thirty-three month period, from January 1, 1994 to September 30,1996, the total accident rate per million vehicle miles was calculated and compared to the statewide average rate listed in the 1995 Accident Data on California State Highways (road miles, travel, accidents, accident rates).

For the City of Albany, the total accident rate was compared with the 3-year (91, 92, 93) statewide average rate in an urban environment. According to the 1995 Accident Data on California State Highways, the statewide total accident rate average are as follows:

Lane Type	Total Accident Rate Per Million Vehicle Miles (3-Year Rates for 91, 92 and 93)
2 lanes	3.30
4 lanes (undivided highway)	5.20
4 lanes (divided highway)	3.60

Analysis of the accident history revealed high total accident rates compared to the statewide average were found on only 3 of the 13 segments surveyed during the period from January 1994 to September, 1996. The number of reported speed-related accidents was relatively low for all segments surveyed. However, it is reasonable to conclude that the high total accident rates at the three locations could be attributed to motorists traveling at unsafe speeds for the conditions.

RESULTS AND RECOMMENDATIONS

Roadway conditions such as width, number of lanes, traffic control devices, and properly identified schools are readily apparent to the driver and should not influence the results of the Engineering and Traffic Survey.

The recommendations contained in this report are intended to establish prima facie speed limits. Prima facie limits attempt to advise the motorist and enforcement of the reasonable speed for a particular section of roadway for the prevailing conditions. In many cases, the recommendations made produce a uniform speed limit along the road. As a result, the speed limits in adjacent jurisdictions were considered as well as along the various street segments surveyed within the City of Albany.

The Engineering and Traffic Survey Sheets, presented in the Appendix, illustrate the results of a thorough evaluation of the available data and indicate a recommended speed limit for each of the 13 street segments surveyed. The radar speed survey statistical data and subsequent speed limit recommendations for each of the segments are given in tabular form in the Summary of Recommendations.

This summary indicates that twelve of the street segments should remain posted at their current speed limits, while one segment speed limit should increase. A speed limit change is recommended for Cleveland Avenue from Washington Avenue to the City Limits segment, with the speed limit to remain unchanged from Buchanan Street to Washington Avenue.

The following section includes discussions of each segment, the recommended speed limit, and justification for the recommended speed limit.

SUMMARY OF RECOMMENDATIONS

Brighton Avenue from San Pablo Avenue to Key Route Boulevard

This segment does qualify as a Residence District, CVC Section 515. The adjacent land use consists of residential frontage, apartments, and a commercial parking lot. This segment is 0.5 miles long with 2 undivided lanes. The 85% speed for this segment is 32 MPH. According to SWITRS obtained from the City, the total accident rate was 5.23 accidents per million vehicle miles, which is significantly higher than the statewide average. Based on this segment being classified as a Residence District and the accident rate being significantly higher than the statewide average, a speed limit of 25 MPH is recommended.

Buchanan Street from City Limits to San Pablo Avenue

This segment consists of residential frontage along the northbound side and a Civic Center, a school zone, City Hall, and a park along the southbound side. This segment does qualify as a Residence District, CVC Section 515. This segment is 0.57 miles long with 4 divided lanes from City Limits to Madison Street and 2 undivided lanes from Madison Street to San Pablo Avenue. The 85% speed for this segment is 41 MPH. According to SWITRS reports, the accident rate is slightly higher than the statewide average. Due to this segment being a Residence District, it is recommended that the speed limit remain at 25 MPH. Due to higher speeds on Buchanan Street, we recommend the existing speed limit sign in the eastbound direction as you enter town to be changed to a 36" by 45" sign.

Cleveland Avenue from City Limits to Buchanan Street

This segment consists of residential frontage on the east side from Buchanan Street to Washington Street, a Caltrans building on the east side north of Washington Street, open space on the west side from Buchanan Street to just south of the I-80 exit ramp, open space/I-80 on the east side from the Caltrans building to City Limits, and commercial buildings on the west side from just south of I-80 to City Limits. This segment qualifies as a Residence District, CVC Section 515, from Buchanan Street to Washington Street. According to the SWITRS reports, the accident rate is lower than the statewide average. Based on a high 85% speed surveyed on Buchanan Avenue and small 24" by 30" speed limit signs being posted on the route, it is recommended that the speed limit signs be increased to 36" by 45" signs with "Radar Enforced" signs beneath each sign.

Key Route Boulevard from City Limits to City Limits

This segment qualifies as a Residence District, CVC Section 515. The adjacent land use is primarily residential frontage and a school at the northeast corner of Key Route Boulevard and Portland Avenue. This segment is 1.06 miles long with 2 divided lanes from Solano Avenue to City Limits with parking on each side of the divided lanes and 2 undivided lanes from City Limits to Solano Avenue with parking on both sides. The 85% speed for this segment is 32 MPH.

According to SWITRS reports the accident rate is below the statewide average. Based on the segment being a Residence District, it is recommended that the speed limit remain 25 MPH.

Marin Avenue from Buchanan Street to City Limits

This segment qualifies as a Residence District, CVC Section 515. The adjacent land use is residential frontage with a school at the corner of Santa Fe Avenue and Marin, a library at the corner of Masonic Avenue and Marin, and several businesses near San Pablo Avenue. This segment is 1.09 miles long with 4 undivided lanes, 2 in each direction, and unrestricted parking on each side. The 85% speed for this segment is 36 MPH. According to SWITRS, the accident rate is below statewide average for this type of roadway. It is recommended that the speed limit remain 25 MPH due to the segment being a Residence District.

Masonic Avenue from Brighton Avenue to City Limits

This segment qualifies as a Residence District, CVC Section 515. The adjacent land use is residential frontage on the southbound side and a park/pedestrian trail and BART track on the northbound side. This segment is 1.04 miles with 2 undivided lanes and parking on both sides. The 85% speed for this segment is 32 MPH. According to SWITRS, the accident rate for this segment is lower than the statewide average. Based on the segment being a Residence District, it is recommended that the speed limit remain 25 MPH.

Pierce Street from Buchanan Street to City Limits

This segment qualifies as a Residence District, CVC Section 515. The adjacent land use is residential frontage from Buchanan Street to just north of the I-80 ramps, open space just north of the I-80 ramps, and apartments complexes for the last one-third mile to the City Limits. This segment is 0.72 miles long with parking on both sides from Buchanan to the I-80 ramps, no parking just north of the ramps, and angled parking on the southbound side across from the apartment complexes. The speed survey was taken between Washington Avenue and the I-80 ramps and speeds were observed in the other sections. The 85% speed for this segment is 27 MPH. According to SWITRS, the accident rate is lower than the statewide average for this type of roadway. Based on the segment being a Residence District on the two ends of the segment and the open space being only 1000 feet long, it is recommended that the speed limit remain at 25 MPH for the entire segment.

Portland Avenue from San Pablo Avenue to City Limits

This segment does qualify as a Residence District, CVC Section 515. The adjacent land use is primarily residential frontage with a school at the corner of Portland Avenue and Key Route Boulevard, a park just east of the school, and a Veterans Hall building. This segment is 0.73 miles long and has unrestricted parking on both sides of the segment. The 85% speed for this segment is 33 MPH. According to SWITRS, the total accident rate was 6.31 accidents per million

vehicle miles, which is significantly higher than the statewide average. It is recommended that the speed limit remain at 25 MPH due to the segment being a Residence District and the accident rate being significantly higher than the statewide average.

San Pablo Avenue from City Limits to City Limit

The adjacent land use is commercial business and the segment qualifies as a Business District, CVC Section 235. The segment is 1.06 miles long and consists of 4 divided lanes, 2 in each direction. The lanes are divided by a concrete median from the City Limits to Marin Avenue and a dual left turn lane from Marin Avenue to the City Limits. There is unrestricted parking in both directions. The 85% speed is 35 MPH. According to SWITRS, the accident rate is just slightly higher than the statewide average for this type of roadway. Based on the 85% speed of 35 MPH, and no justification to downgrade the speed limit, it is recommended that the speed limit remain at 35 MPH.

Santa Fe Avenue from City Limits to Marin Avenue

This segment does qualify as a Residence District, CVC Section 515. The adjacent land use is residential frontage with a school at the corner of Santa Fe and Marin. This segment is 0.40 miles long and consists of 2 undivided lanes with parking on both sides. The 85% speed for this segment is 36 MPH. According to SWITRS report, the accident rate for this segment is below the statewide average. It is recommended that the speed limit remain 25 MPH due to the segment being a Residence District.

Santa Fe Avenue from Marin Avenue to City Limits

The adjacent land use is residential frontage and the segment qualifies as a Residence District, CVC Section 515. This segment is 0.64 miles long and consists of 2 undivided lanes with parking on both sides. The 85% speed for this segment is 31 MPH. According to SWITRS report, the accident rate is lower than the statewide average for this type of roadway. Based on the segment being a Residence District, it is recommended that the speed limit remain at 25 MPH.

Solano Avenue from San Pablo Avenue to City Limits

The adjacent land use for this segment is commercial with a school located between Cornell Avenue and Talbot Avenue. This segment qualifies as a Business District, CVC Section 235. This segment is 0.90 miles and consists of 2 undivided lanes with angled parking on both sides. The 85% speed for this segment is 25 MPH. According to SWITRS, the accident rate is below the statewide average for this type of roadway. Based on the 85% speed of 25 MPH, and no justification to downgrade the speed limit, it is recommended that the speed limit remain at 25 MPH.

Washington Avenue from San Pablo Avenue to City Limits

This segment qualifies as a Residence District, CVC Section 515. The adjacent land use is residential frontage. This segment is 0.68 miles long and consists of 2 undivided lanes, with unrestricted parking on each side of the roadway. The 85% speed for this segment is 32 MPH. According to SWITRS, the total accident rate was 4.27 accidents per million vehicle miles, which is higher than the statewide average. Based on the segment being a Residence District and a high accident rate, it is recommended that the speed limit remain at 25 MPH.

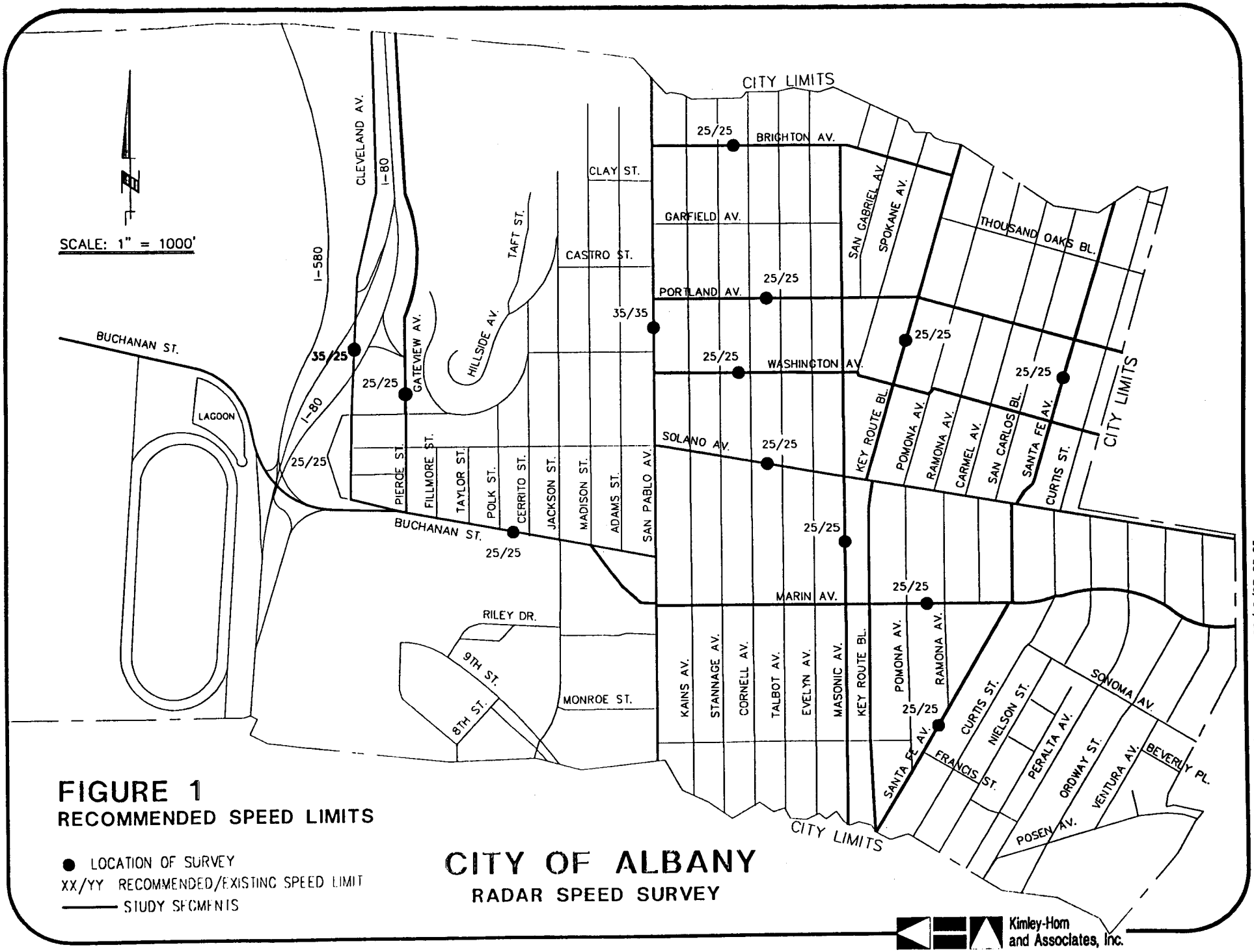


FIGURE 1
RECOMMENDED SPEED LIMITS

● LOCATION OF SURVEY
XX/YY RECOMMENDED/EXISTING SPEED LIMIT
—— STUDY SEGMENTS

CITY OF ALBANY
RADAR SPEED SURVEY

Kimley-Horn and Associates, Inc.

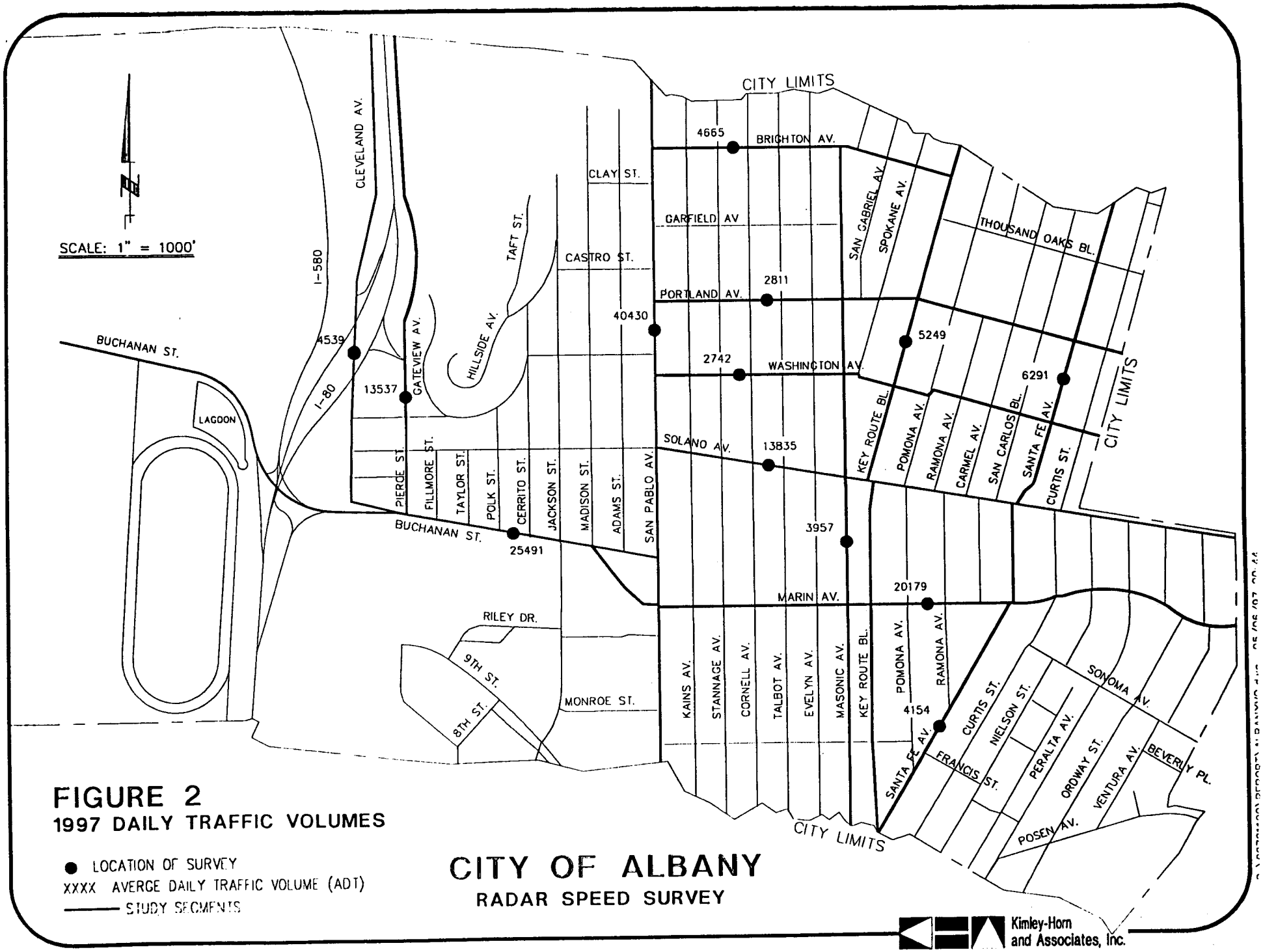


FIGURE 2
1997 DAILY TRAFFIC VOLUMES

● LOCATION OF SURVEY
XXXX AVERGE DAILY TRAFFIC VOLUME (ADT)
—— STUDY SEGMENTS

CITY OF ALBANY
RADAR SPEED SURVEY

Kimley-Horn and Associates, Inc.

APPENDIX

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Brighton Avenue** between **San Pablo Avenue** and **Key Route Boulevard**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Cornell Avenue and Stannage Avenue	
Date of Survey		4/23/97	
50%ile	85%ile	28 mph	32 mph
10 mph pace (% of Veh)		23-32 mph (83%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/1994 - 9/30/96
Number of Accidents	Total	12
	Speed-Related	0
Accident Rates per Million Vehicle Miles	Total	5.23
	Speed-Related	-
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Residential
	Segment Length		0.49 miles
	Lane Configuration		2 lanes undivided
	Geometrics, Access (curves, driveways,etc.)		Gradual bend @ Masonic Avenue, slight grade, many driveways both sides along segment
	Traffic Controls	Signals	@ San Pablo Avenue
		Stop Signs	@ Key Route Blvd.
TRAFFIC:	Pedestrians, parking, school xings		Low to Moderate pedestrian traffic parking on both sides of segment, school crossings @ San Gabriel and Key Route
	Average Daily Traffic		4665 2332
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		

PART IV: ADDITIONAL REMARKS

Based on Residence District High Accident Rate	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Buchanan Street** between **City Limits** and **San Pablo Avenue**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Polk Street and Cerrito Street	
Date of Survey		4/23/97	
50%ile	85%ile	34 mph	41 mph
10 mph pace (% of Veh)		29-38 mph (67%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	30
	Speed-Related	0
Accident Rates per Million Vehicle Miles	Total	2.06
	Speed-Related	-
Expected Accident Rate - Total Accidents		2.00

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Residential
	Segment Length		0.57 miles
	Lane Configuration		4 lane divided / 2 lanes undivided
	Geometrics, Access (curves, driveways,etc.)		"Y" channelization at Madison, many driveways along westbound side, 2 driveways along eastbound direction, medium grade west of Taylor Street
	Traffic Controls	Signals	@ Jackson Street
		Stop Signs	@ Madison Street
TRAFFIC:	Pedestrians, parking, school xings		Moderate pedestrian traffic, parking on westbound side, school crossing @Jackson Street
	Average Daily Traffic		25491 12745
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		School/park on eastbound side west of Jackson Street

PART IV: ADDITIONAL REMARKS

Based on Residence District	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Cleveland Avenue** between **Buchanan Street** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Just north of Washington Avenue	
Date of Survey		4/23/97	
50%ile	85%ile	33 mph	38 mph
10 mph pace (% of Veh)		28-37 mph (68%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	7
	Speed-Related	0
Accident Rates per Million Vehicle Miles	Total	2.13
	Speed-Related	-
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Collector
	Segment Length		0.72 miles
	Lane Configuration		2 lanes
	Geometrics, Access (curves, driveways,etc.)		Few driveways on Northbound side between Buchanan St. and Washington Ave., few driveways on Southbound side north of I-80 ramp, slight horizontal curve north of I-80 ramp
	Traffic Controls	Signals	No signals
		Stop Signs	No stop signs
TRAFFIC:	Pedestrians, parking, school xings		Low pedestrian traffic, parking on NB side from Buchanan St. to I-80 ramp and SB side from I-80 ramp to City Limits
	Average Daily Traffic		4539 (1990)
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		

PART IV: ADDITIONAL REMARKS

Based on 85%ile speed	
RECOMMENDATION	35 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Key Route Blvd.** between **City Limits** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Portland Avenue and Washington Avenue	
Date of Survey		4/23/97	
50%ile	85%ile	29 mph	32 mph
10 mph pace (% of Veh)		24-33 mph (92%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	9
	Speed-Related	1
Accident Rates per Million Vehicle Miles	Total	1.61
	Speed-Related	0.18
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Residential
	Segment Length		1.06 miles
	Lane Configuration		2 lane divided / 2 lane undivided
	Geometrics, Access (curves, driveways,etc.)		Many driveways both sides along segment, Bend at Solano Avenue
	Traffic Controls	Signals	No signals
		Stop Signs	@ Thousand Oaks, Portland, Washington, Solano, Marin Dartmouth
TRAFFIC:	Pedestrians, parking, school xings		Moderate pedestrian traffic, parking both sides of divided lane north of Solano, parking both sides south of Solano, school crossing @ Portland Ave, Thousand Oaks Ave
	Average Daily Traffic		5249 2625
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		School on northbound Key Route between Portland and Thousand Oaks

PART IV: ADDITIONAL REMARKS

Based on Residence District	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Marin Avenue** between **Buchanan Street** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Pomona Avenue and Ramona Avenue	
Date of Survey		4/22/97 Tuesday	
50%ile	85%ile	32 mph	36 mph
10 mph pace (% of Veh)		27 -36 mph (77%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	37
	Speed-Related	2
Accident Rates per Million Vehicle Miles	Total	1.68
	Speed-Related	0.91
Expected Accident Rate - Total Accidents		3.60

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/22/97
HIGHWAY:	Street Classification		Residential
	Segment Length		1.09 miles
	Lane Configuration		4 lanes
	Geometrics, Access (curves, driveways,etc.)		Slight curve from Buchanan St. and San Pablo Ave, slight "C" curve east of Santa Fe Ave, many driveways along both sides of segment
	Traffic Controls	Signals	@ San Pablo Ave, Masonic Ave, Santa Fe Ave, and Peralta Ave
		Stop Signs	No stop signs
TRAFFIC:	Pedestrians, parking, school xings		Moderate pedestrian traffic, parking both sides, school crossing @ Santa Fe Ave, Cornell, Talbot
	Average Daily Traffic		20179 10090
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		School @ the corner of Marin Ave and Santa Fe Avenue

PART IV: ADDITIONAL REMARKS

Based on Residence District	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Masonic Avenue** between **Brighton Avenue** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Solano Avenue and Marin Avenue	
Date of Survey		4/23/97	
50%ile	85%ile	28 mph	31 mph
10 mph pace (% of Veh)		24-33 mph (89%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	8
	Speed-Related	0
Accident Rates per Million Vehicle Miles	Total	1.94
	Speed-Related	-
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Residential
	Segment Length		1.04 miles
	Lane Configuration		2 lanes
	Geometrics, Access (curves, driveways,etc.)		Many driveways along southbound side
	Traffic Controls	Signals	@ Marin Ave and Solano Ave
		Stop Signs	@ Portland Ave, Washington Ave, and Dartmouth Sreet
TRAFFIC:	Pedestrians, parking, school xings		Moderate pedestrian traffic, pedestrian trail on northbound side, school crossing just north of Solano Avenue
	Average Daily Traffic		3957 1978
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		Daycare center w/school crossing just north of Solano Ave

PART IV: ADDITIONAL REMARKS

Based on Residence District	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Pierce Street** between **Buchanan Street** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Washington Avenue and I-80 ramps	
Date of Survey		4/23/97	
50%ile	85%ile	25 mph	27 mph
10 mph pace (% of Veh)		20-29 (94%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	7
	Speed-Related	0
Accident Rates per Million Vehicle Miles	Total	0.72
	Speed-Related	-
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Residential
	Segment Length		0.72 miles
	Lane Configuration		2 lanes undivided
	Geometrics, Access (curves, driveways,etc.)		Many driveways both sides between Buchanan and I-80 ramps, few driveways north section of route, up hill and down hill grades
	Traffic Controls	Signals	No signals
		Stop Signs	@Buchanan St, Solano Ave, I-80 ramps
TRAFFIC:	Pedestrians, parking, school xings		Low to Moderate pedestrian traffic, parking both sides south of I-80 ramps, angled parking southbound side north 1/3 mile of route
	Average Daily Traffic		13537 6768
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		

PART IV: ADDITIONAL REMARKS

Based on Residence District 85%ile speed	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Portland Avenue** between **San Pablo Avenue** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Talbot Avenue and Cornell Avenue	
Date of Survey		4/23/97	
50%ile	85%ile	28 mph	33 mph
10 mph pace (% of Veh)		23 -32 mph (75%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	13
	Speed-Related	0
Accident Rates per Million Vehicle Miles	Total	6.31
	Speed-Related	-
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Residential
	Segment Length		0.73 miles
	Lane Configuration		2 lanes
	Geometrics, Access (curves, driveways,etc.)		Many driveways along both sides of segment
	Traffic Controls	Signals	No signals
		Stop Signs	@ Masonic Ave, Key Route Blvd, and Santa Fe Ave
TRAFFIC:	Pedestrians, parking, school xings		Moderate pedestrians, parking on both sides, school crossing @ Key Route Blvd, Pomona Avenue
	Average Daily Traffic		2811 1465
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		School @ corner of Portland Ave and Key Route Blvd, Rec center, Veterans Hall, park just north of Key Route Blvd

PART IV: ADDITIONAL REMARKS

Based on Residence District High Accident Rate	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **San Pablo Avenue** between **City Limits** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Washington Ave and Portland Ave	
Date of Survey		4/23/97	
50%ile	85%ile	30 mph	35 mph
10 mph pace (% of Veh)		25-34 mph (80%)	
Posted Speed Limit		35 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	160
	Speed-Related	2
Accident Rates per Million Vehicle Miles	Total	3.72
	Speed-Related	0.46
Expected Accident Rate - Total Accidents		3.60

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Business
	Segment Length		1.06 miles
	Lane Configuration		4 lanes divided
	Geometrics, Access (curves, driveways,etc.)		Many driveways both sides of segment
	Traffic Controls	Signals	@ Brighton Ave, Clay St., Washington Ave, Solano Ave, Buchanan St., Marin Ave
		Stop Signs	No stop signs
TRAFFIC:	Pedestrians, parking, school xings		Moderate to High pedestrian traffic, parking both sides
	Average Daily Traffic		40430 2015
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		

PART IV: ADDITIONAL REMARKS

Based on 85%ile speed	
RECOMMENDATION	35 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Santa Fe Avenue** between **City Limits** and **Marin Avenue**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Ramona Avenue and Francis Street	
Date of Survey		4/22/97 Tuesday	
50%ile	85%ile	32 mph	36 mph
10 mph pace (% of Veh)		29-38 mph (84%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	5
	Speed-Related	1
Accident Rates per Million Vehicle Miles	Total	3.00
	Speed-Related	0.60
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/22/97
HIGHWAY:	Street Classification		Residential
	Segment Length		0.40 miles
	Lane Configuration		2 lanes
	Geometrics, Access (curves, driveways,etc.)		Many driveways along both sides of segment
	Traffic Controls	Signals	@ Marin Avenue
		Stop Signs	No stop signs
TRAFFIC:	Pedestrians, parking, school xings		Low to moderate pedestrian traffic, parking both sides
	Average Daily Traffic		4154 2077
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		School at Marin Avenue

PART IV: ADDITIONAL REMARKS

Based on Residence District	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Santa Fe Avenue** between **Marin Avenue** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Portland Avenue and Washington Avenue	
Date of Survey		4/22/97 Tuesday	
50%ile	85%ile	27 mph	31 mph
10 mph pace (% of Veh)		23-32 mph (89%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	2
	Speed-Related	0
Accident Rates per Million Vehicle Miles	Total	0.20
	Speed-Related	-
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/22/97
HIGHWAY:	Street Classification		Residential
	Segment Length		0.64 miles
	Lane Configuration		2 lanes
	Geometrics, Access (curves, driveways,etc.)		Bend at Solano Avenue, many driveways both sides of segment, up hill and down hill grades
	Traffic Controls	Signals	@ Marin Ave. and Solano Ave
		Stop Signs	@ Portland Ave, Washington Ave, and Thousand Oaks Ave
TRAFFIC:	Pedestrians, parking, school xings		Low to moderate pedestrian traffic, parking both sides, school crossing @ Marin Avenue
	Average Daily Traffic		6291 3145
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		

PART IV: ADDITIONAL REMARKS

Based on Residence District	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Solano Avenue** between **San Pablo Avenue** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Comell Avenue and Evelyn Avenue	
Date of Survey		4/22/97 Tue	
50%ile	85%ile	22 mph	25 mph
10 mph pace (% of Veh)		18-27 mph (93%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	34
	Speed-Related	1
Accident Rates per Million Vehicle Miles	Total	2.72
	Speed-Related	0.08
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/22/97
HIGHWAY:	Street Classification		Business
	Segment Length		0.90 miles
	Lane Configuration		2 lanes
	Geometrics, Access (curves, driveways,etc.)		Many driveways both sides
	Traffic Controls	Signals	@ San Pablo Ave, Masonic Ave, and Santa Fe Ave
		Stop Signs	No stop signs
TRAFFIC:	Pedestrians, parking, school xings		High pedestrian traffic, angled parking on both sides, school crossing @ Talbot and Comell
	Average Daily Traffic		13835 6917
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		

PART IV: ADDITIONAL REMARKS

Based on 85%ile speed	
RECOMMENDATION	25 mph

ENGINEERING AND TRAFFIC SURVEY (CVC SEC. 627)

Street: **Washington Avenue** between **San Pablo Avenue** and **City Limits**

PART I: PREVAILING SPEED MEASURMENT

Location of Survey		Between Cornell Avenue and Stannage Avenue	
Date of Survey		4/23/97	
50%ile	85%ile	27 mph	32 mph
10 mph pace (% of Veh)		23-32 mph (82%)	
Posted Speed Limit		25 mph	

PART II: ACCIDENT RECORDS

Time Period Covered		1/1/94 - 9/30/96
Number of Accidents	Total	8
	Speed-Related	0
Accident Rates per Million Vehicle Miles	Total	4.27
	Speed-Related	-
Expected Accident Rate - Total Accidents		3.30

PART III: HIGHWAY, TRAFFIC, AND ROADSIDE CHARACTERSTICS NOT READILY APPARENT

Date Observations Made			4/23/97
HIGHWAY:	Street Classification		Residential
	Segment Length		0.68 miles
	Lane Configuration		2 lanes
	Geometrics, Access (curves, driveways,etc.)		"S" curve at Pomona Ave, gradual bend @ Masonic, many driveways both sides along segment
	Traffic Controls	Signals	@ San Pablo Avenue
		Stop Signs	@ Masonic Ave, Key Route Blvd, and Santa Fe Ave
TRAFFIC:	Pedestrians, parking, school xings		Low pedestrian traffic, parking both sides of roadway
	Average Daily Traffic		2742 1371
ROADSIDE:	Land uses not apparent (park, school, etc.) other conditions		

PART IV: ADDITIONAL REMARKS

Based on Residence District High Accident Rate	
RECOMMENDATION	25 mph

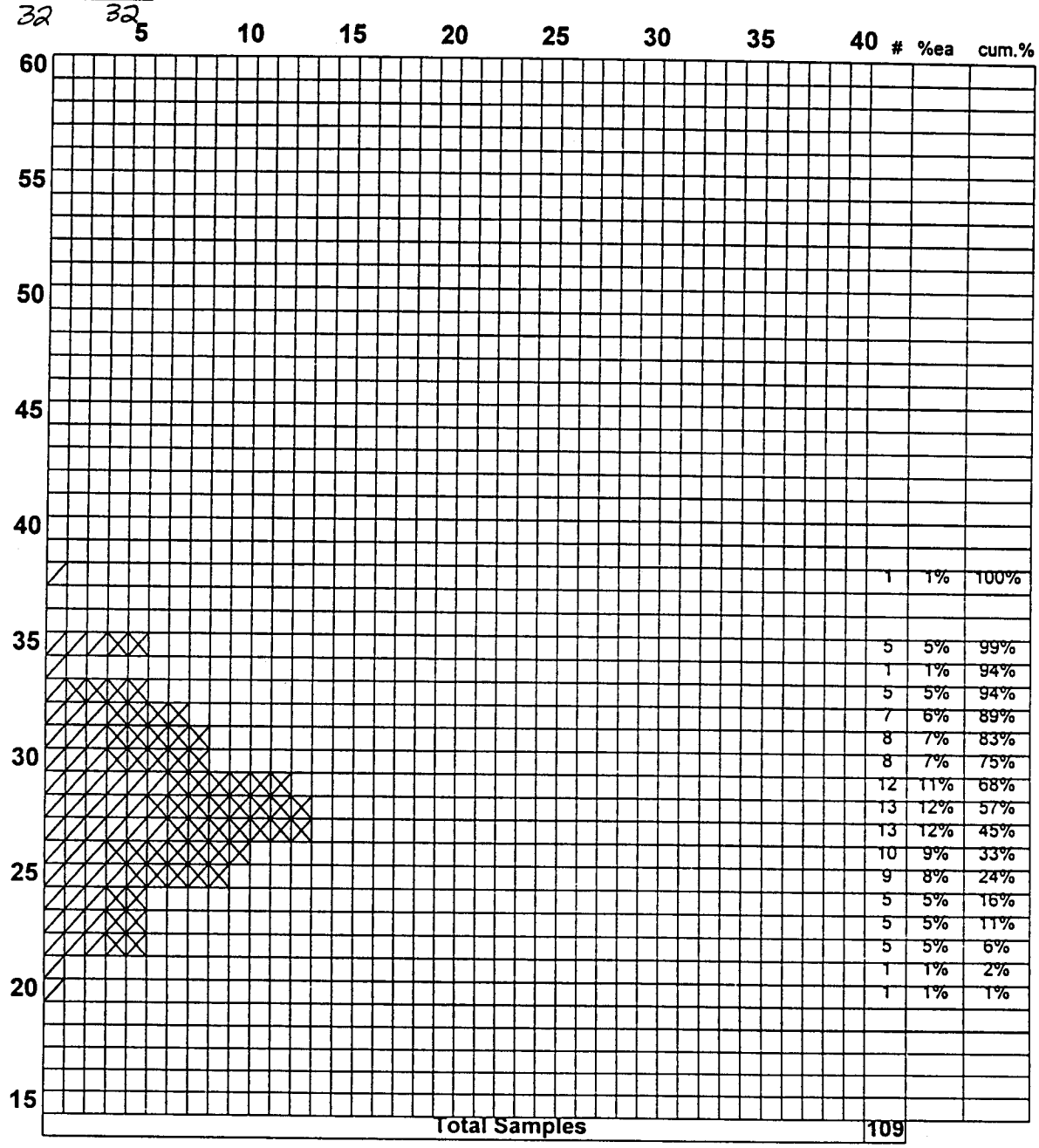
City of Albany
Traffic Engineering Department

Street Name: BRIGHTON AVENUE
Limits: SAN PABLO AVENUE to KEY ROUTE BOULEVARD

Radar Survey Sheet

X=West /=East

32 32



#	%ea	cum.%
1	1%	100%
5	5%	99%
1	1%	94%
5	5%	94%
7	6%	89%
8	7%	83%
8	7%	75%
12	11%	68%
13	12%	57%
13	12%	45%
10	9%	33%
9	8%	24%
5	5%	16%
5	5%	11%
5	5%	6%
1	1%	2%
1	1%	1%
109		

85th Percentile Speed:	32
50th Percentile Speed:	28
15th Percentile Speed:	24
10 MPH Pace:	23- 32
Number in Pace:	90
Percent in Pace:	83%

Date of Survey:	4/23/97	Start Time:	16:35
Weather:	SUNNY	End Time:	17:00
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS
Comments:			

City of Albany

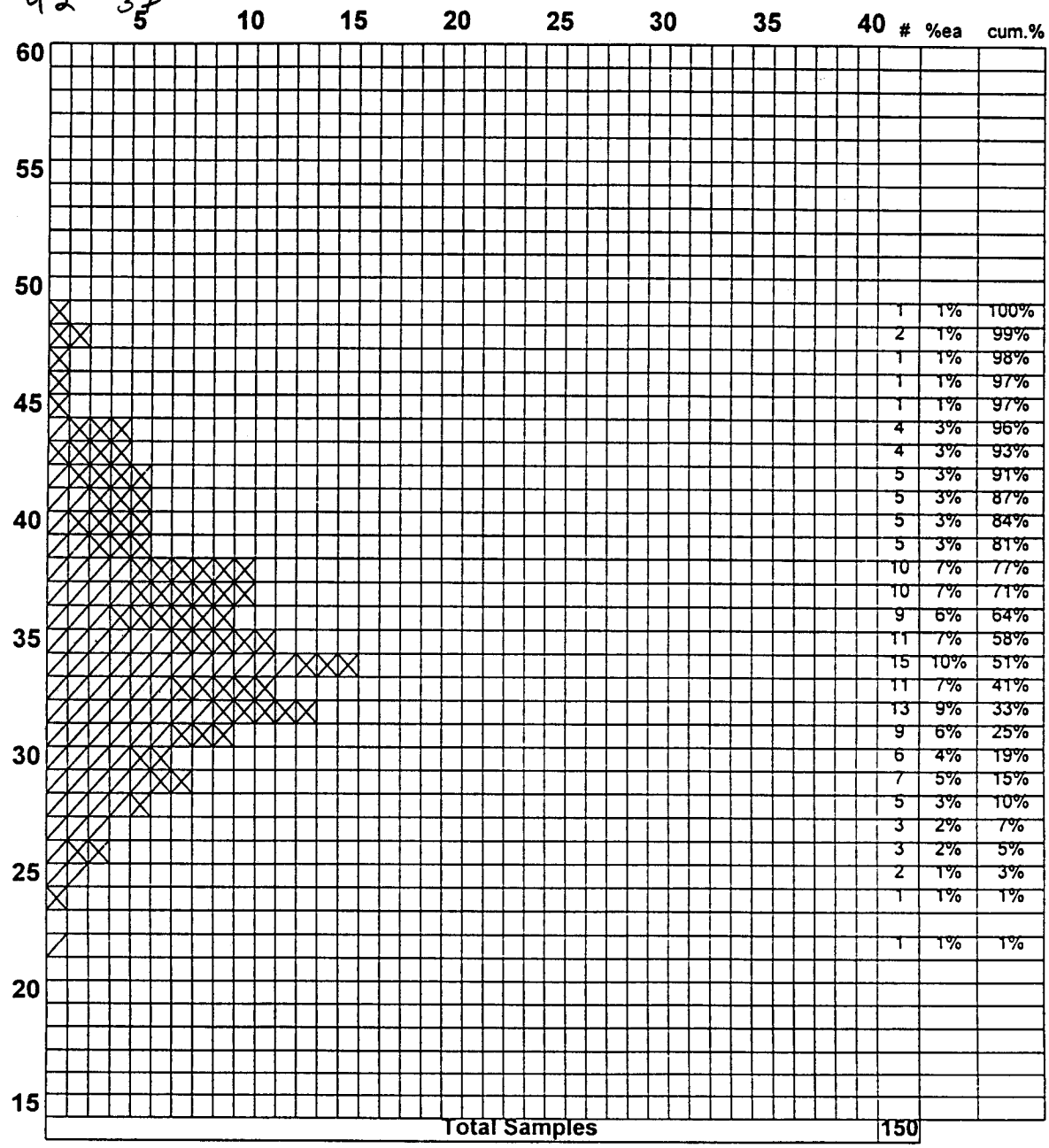
Traffic Engineering Department

Street Name: BUCHANAN STREET
Limits: CITY LIMITS to SAN PABLO AVENUE

Radar Survey Sheet

X=West /=East

42 37



#	%ea	cum.%
1	1%	100%
2	1%	99%
1	1%	98%
1	1%	97%
1	1%	97%
4	3%	96%
4	3%	93%
5	3%	91%
5	3%	87%
5	3%	84%
5	3%	81%
10	7%	77%
10	7%	71%
9	6%	64%
11	7%	58%
15	10%	51%
11	7%	41%
13	9%	33%
9	6%	25%
6	4%	19%
7	5%	15%
5	3%	10%
3	2%	7%
3	2%	5%
2	1%	3%
1	1%	1%
1	1%	1%
Total Samples	150	

85th Percentile Speed:	41
50th Percentile Speed:	34
15th Percentile Speed:	30
10 MPH Pace:	29- 38
Number in Pace:	101
Percent in Pace:	67%

Date of Survey:	4/23/97	Start Time:	11:05
Weather:	SUNNY	End Time:	11:35
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS

Comments: Residential, school, school park, civic center, city hall

City of Albany

Traffic Engineering Department

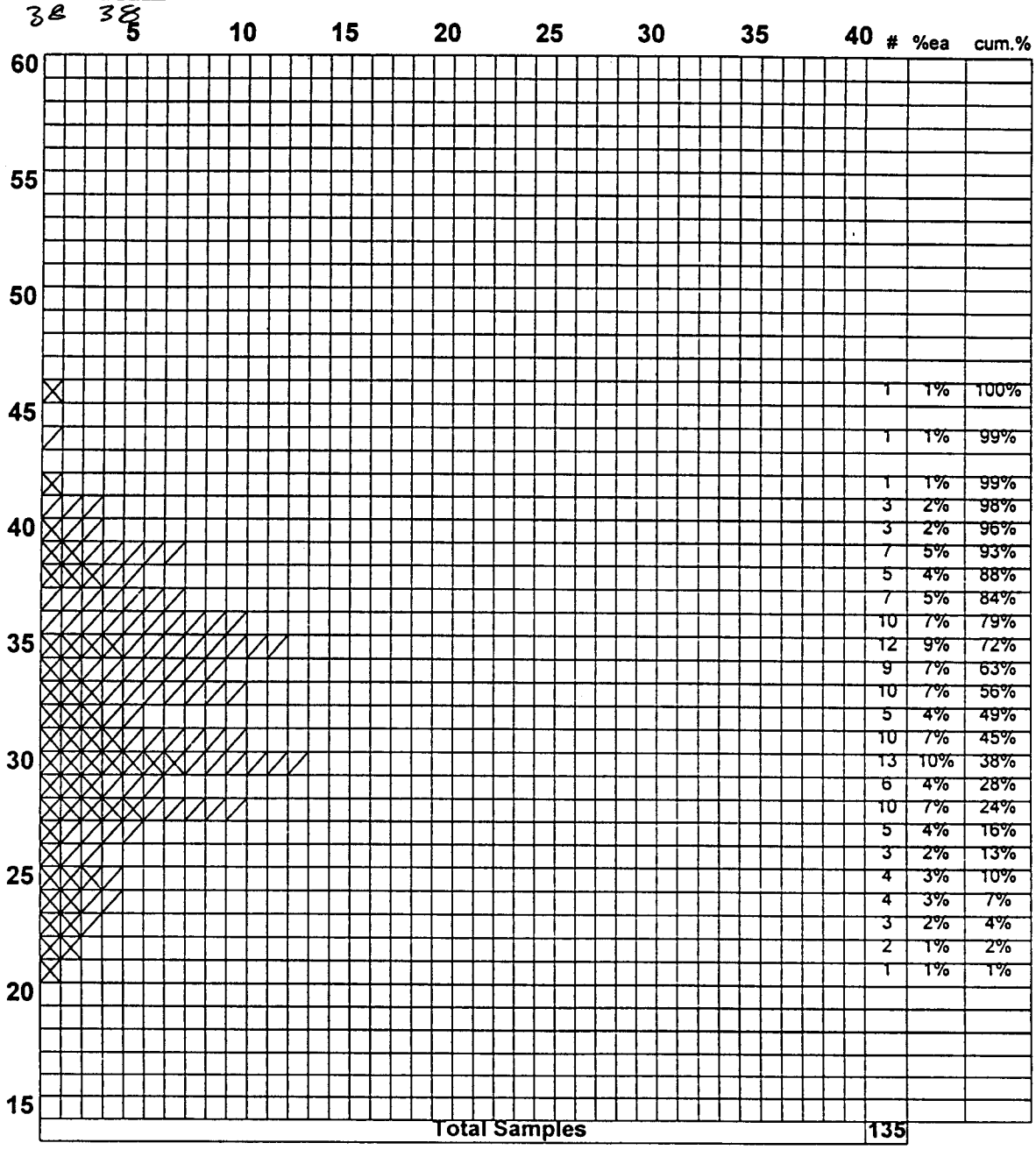
Street Name: CLEVELAND AVENUE

Limits: BUCHANAN STREET to CITY LIMITS

Radar Survey Sheet

X=North /=South

38 38



#	%ea	cum.%
1	1%	100%
1	1%	99%
1	1%	99%
3	2%	98%
3	2%	96%
7	5%	93%
5	4%	88%
7	5%	84%
10	7%	79%
12	9%	72%
9	7%	63%
10	7%	56%
5	4%	49%
10	7%	45%
13	10%	38%
6	4%	28%
10	7%	24%
5	4%	16%
3	2%	13%
4	3%	10%
4	3%	7%
3	2%	4%
2	1%	2%
1	1%	1%
Total Samples		135

85th Percentile Speed:	38
50th Percentile Speed:	33
15th Percentile Speed:	27
10 MPH Pace:	28- 37
Number in Pace:	92
Percent in Pace:	68%

Date of Survey:	4/23/97	Start Time:	9:40
Weather:	SUNNY	End Time:	10:20
Road Condition:	DRY	Posted Speed:	25
Street Class.:	COLLECTOR	Observer:	B SOWERS

Comments: Residential from Buchanan to Washington. Open space and commercial from Washington to City limits.

City of Albany

Traffic Engineering Department

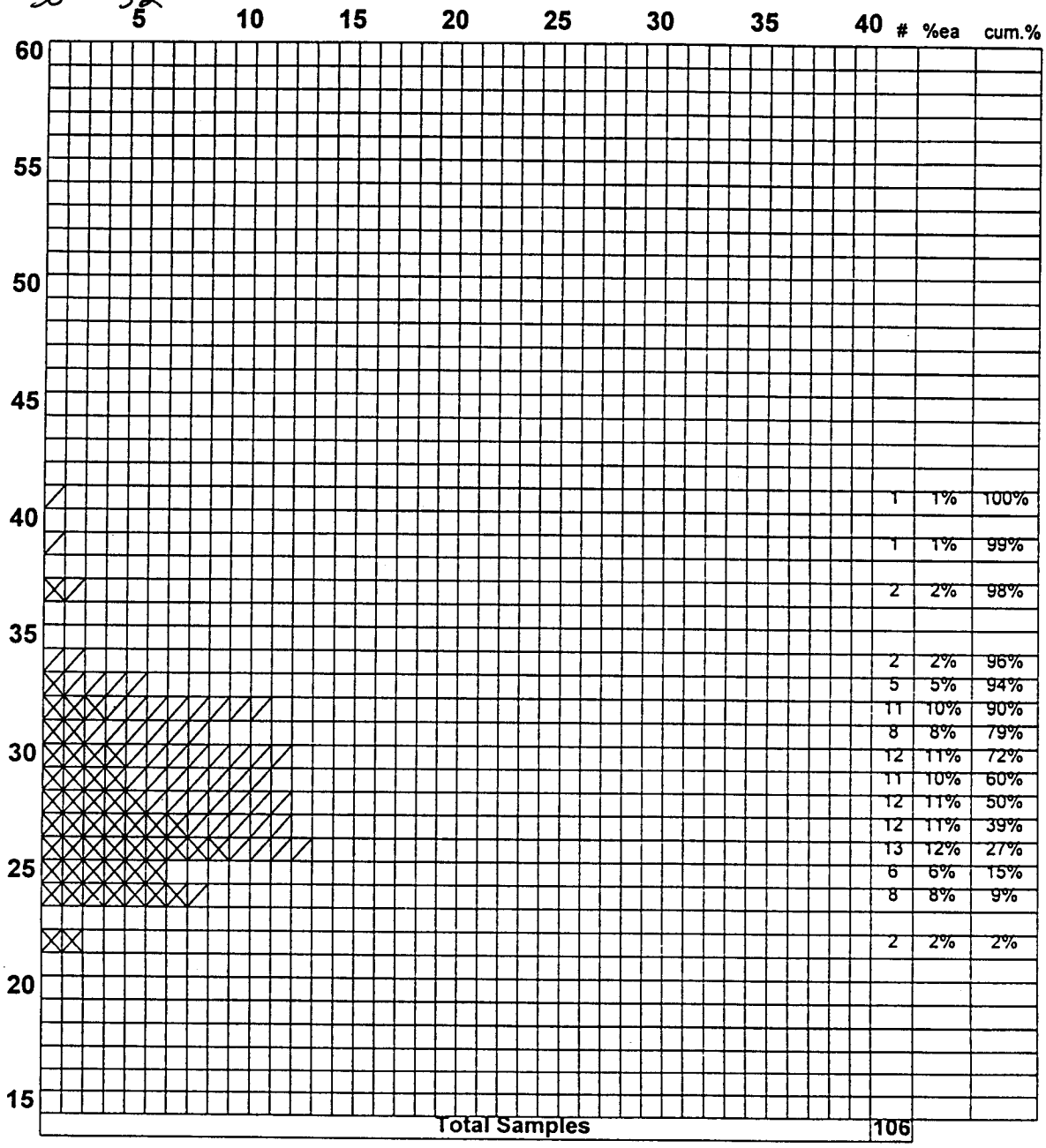
Street Name: KEY ROUTE BOULEVARD

Limits: CITY LIMITS to CITY LIMITS

Radar Survey Sheet

X=North /=South

30 32



#	%ea	cum.%
1	1%	100%
1	1%	99%
2	2%	98%
2	2%	96%
5	5%	94%
11	10%	90%
8	8%	79%
12	11%	72%
11	10%	60%
12	11%	50%
12	11%	39%
13	12%	27%
6	6%	15%
8	8%	9%
2	2%	2%
Total Samples	106	

85th Percentile Speed:	32
50th Percentile Speed:	29
15th Percentile Speed:	25
10 MPH Pace:	24- 33
Number in Pace:	98
Percent in Pace:	92%

Date of Survey:	4/23/97	Start Time:	14:35
Weather:	SUNNY	End Time:	15:20
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS

Comments:

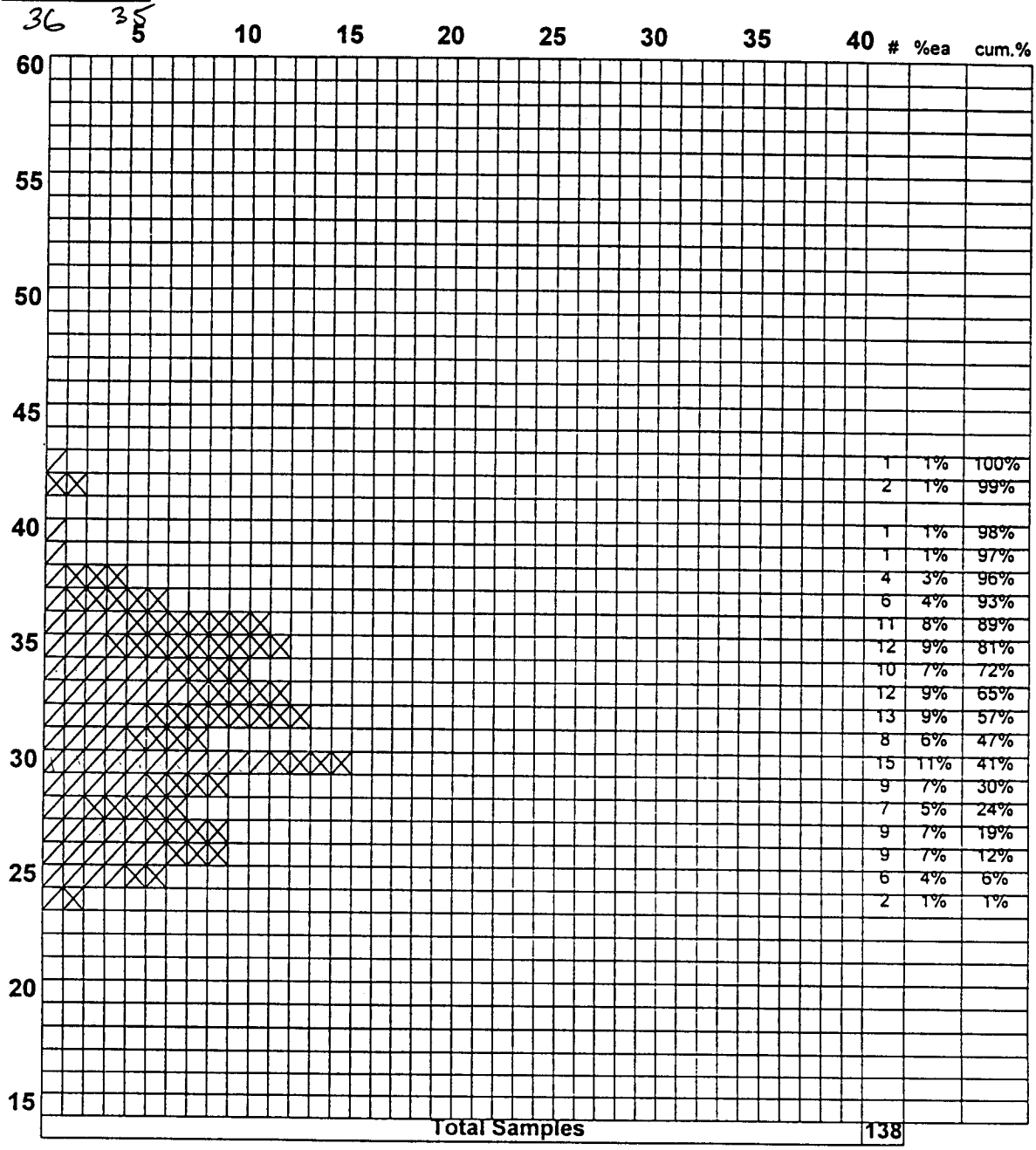
City of Albany
Traffic Engineering Department

Street Name: MARIN AVENUE
Limits: BUCHANAN STREET to CITY LIMITS

Radar Survey Sheet

X=West /=East

36 35



#	%ea	cum.%
1	1%	100%
2	1%	99%
1	1%	98%
1	1%	97%
4	3%	96%
6	4%	93%
11	8%	89%
12	9%	81%
10	7%	72%
12	9%	65%
13	9%	57%
8	6%	47%
15	11%	41%
9	7%	30%
7	5%	24%
9	7%	19%
9	7%	12%
6	4%	6%
2	1%	1%
Total Samples	138	

85th Percentile Speed:	36
50th Percentile Speed:	32
15th Percentile Speed:	27
10 MPH Pace:	27- 36
Number in Pace:	106
Percent in Pace:	77%

Date of Survey:	4/22/97	Start Time:	15:25
Weather:	CLOUDY	End Time:	16:15
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS
Comments:			

City of Albany

Traffic Engineering Department

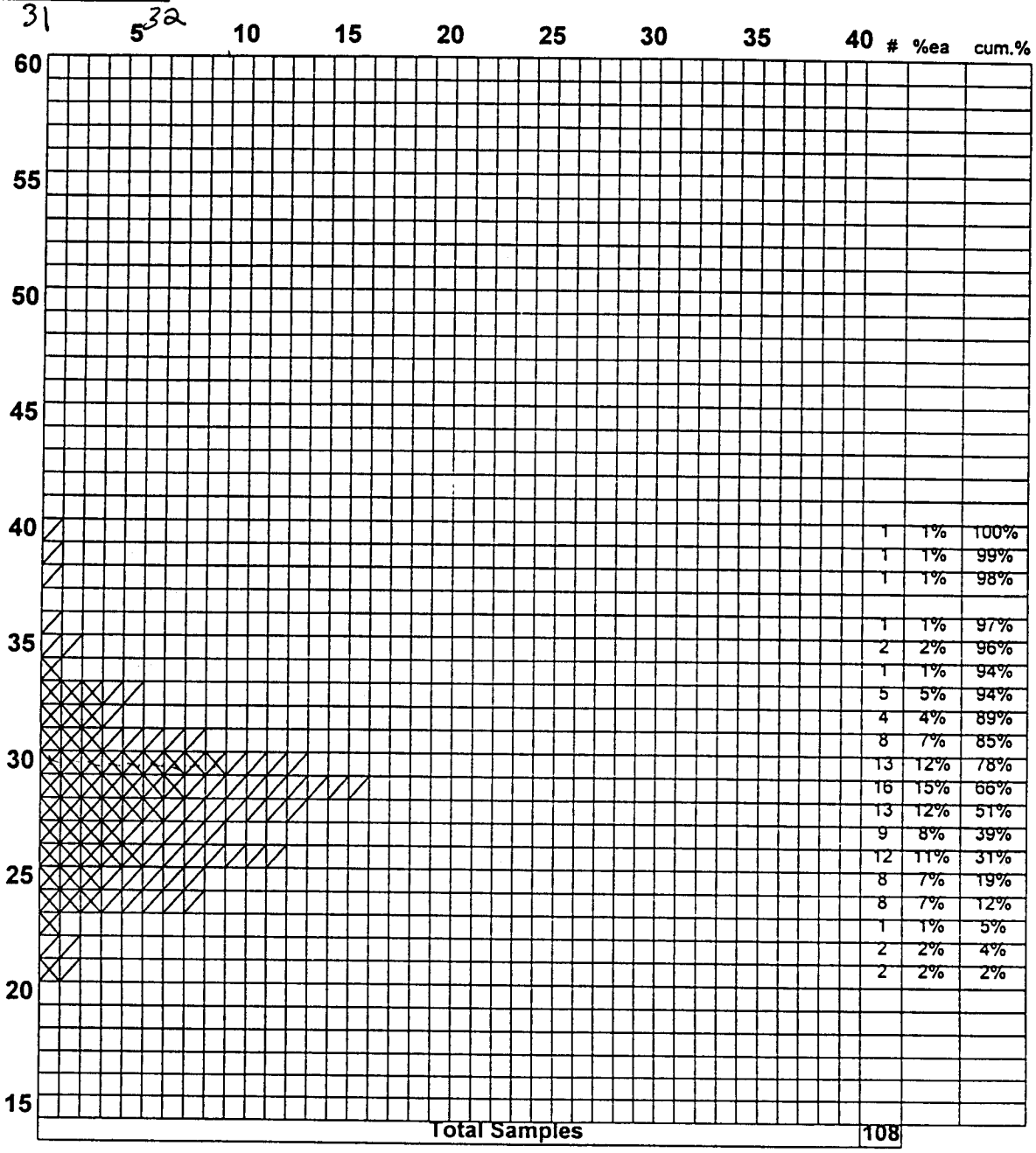
Street Name: MASONIC AVENUE

Limits: BRIGHTON AVENUE to CITY LIMITS

Radar Survey Sheet

X=North /=South

31 532



#	%ea	cum.%
1	1%	100%
1	1%	99%
1	1%	98%
1	1%	97%
2	2%	96%
1	1%	94%
5	5%	94%
4	4%	89%
8	7%	85%
13	12%	78%
16	15%	66%
13	12%	51%
9	8%	39%
12	11%	31%
8	7%	19%
8	7%	12%
1	1%	5%
2	2%	4%
2	2%	2%
108		

85th Percentile Speed:	31
50th Percentile Speed:	28
15th Percentile Speed:	25
10 MPH Pace:	24- 33
Number in Pace:	96
Percent in Pace:	89%

Date of Survey:	4/23/97	Start Time:	12:00
Weather:	SUNNY	End Time:	12:40
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS
Comments:			

City of Albany

Traffic Engineering Department

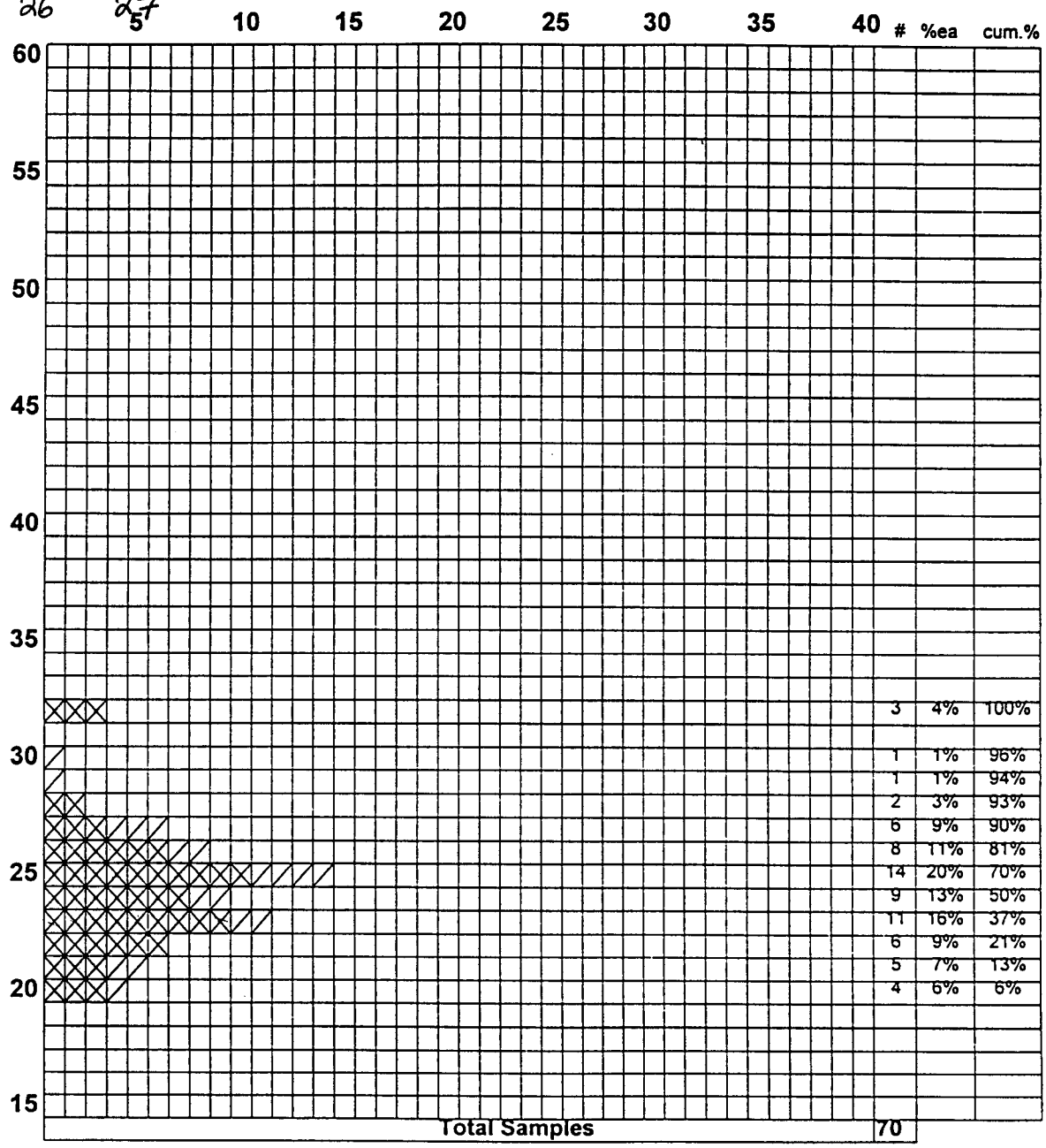
Street Name: PIERCE STREET

Limits: BUCHANAN STREET to CITY LIMITS

Radar Survey Sheet

X=North /=South

26 27



#	%ea	cum.%
3	4%	100%
1	1%	96%
1	1%	94%
2	3%	93%
6	9%	90%
8	11%	81%
14	20%	70%
9	13%	50%
11	16%	37%
6	9%	21%
5	7%	13%
4	6%	6%
Total Samples	70	

85th Percentile Speed:	27
50th Percentile Speed:	25
15th Percentile Speed:	22
10 MPH Pace:	20- 29
Number in Pace:	66
Percent in Pace:	94%

Date of Survey:	4/23/97	Start Time:	17:10
Weather:	SUNNY	End Time:	17:30
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS

Comments:

City of Albany

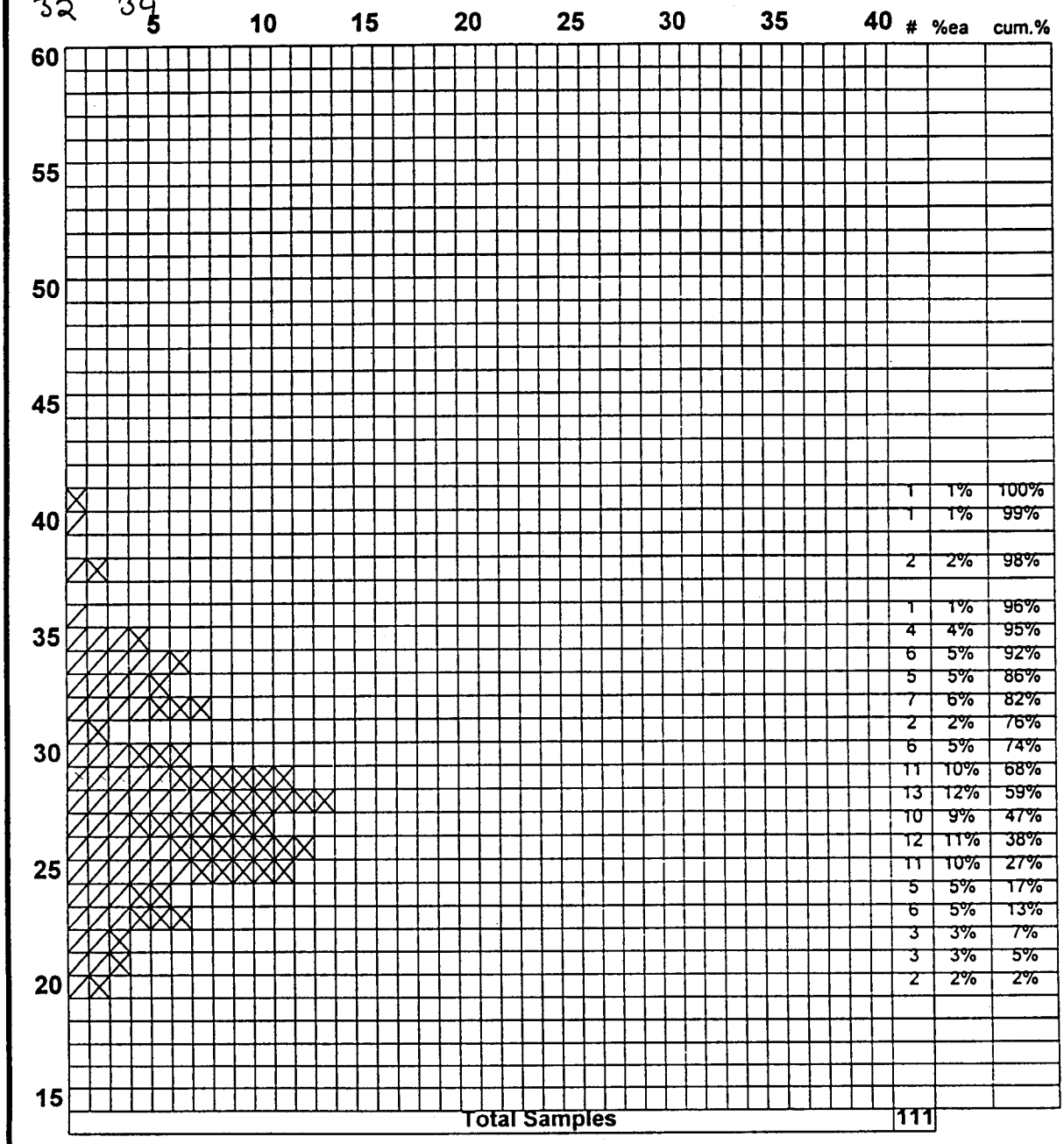
Traffic Engineering Department

Street Name: PORTLAND AVENUE
Limits: SAN PABLO AVENUE to CITY LIMITS

Radar Survey Sheet

X=West /=East

32 34



#	%ea	cum.%
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1	1%	99%
2	2%	98%
1	1%	96%
4	4%	95%
6	5%	92%
5	5%	86%
7	6%	82%
2	2%	76%
6	5%	74%
11	10%	68%
13	12%	59%
10	9%	47%
12	11%	38%
11	10%	27%
5	5%	17%
6	5%	13%
3	3%	7%
3	3%	5%
2	2%	2%
Total Samples		111

85th Percentile Speed:	33
50th Percentile Speed:	28
15th Percentile Speed:	24
10 MPH Pace:	23- 32
Number in Pace:	83
Percent in Pace:	75%

Date of Survey:	4/23/97	Start Time:	13:20
Weather:	SUNNY	End Time:	14:10
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS

Comments:

City of Albany

Traffic Engineering Department

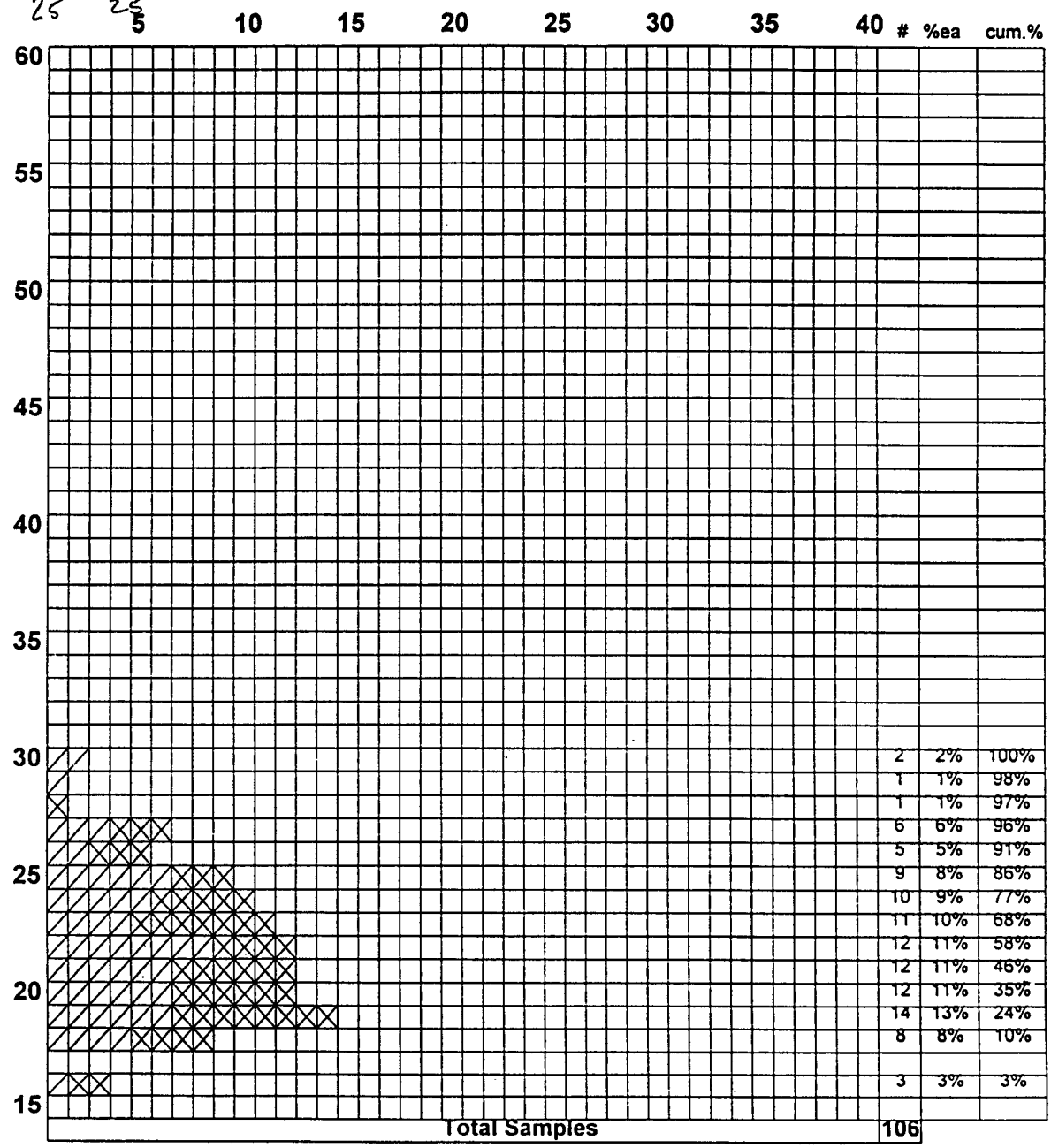
Street Name: SOLANO AVENUE

Limits: SAN PABLO AVENUE to CITY LIMITS

Radar Survey Sheet

X=West /=East

25 25



#	%ea	cum.%
2	2%	100%
1	1%	98%
1	1%	97%
6	6%	96%
5	5%	91%
9	8%	86%
10	9%	77%
11	10%	68%
12	11%	58%
12	11%	46%
12	11%	35%
14	13%	24%
8	8%	10%
3	3%	3%
Total Samples	106	

85th Percentile Speed:	25
50th Percentile Speed:	22
15th Percentile Speed:	19
10 MPH Pace:	18- 27
Number in Pace:	99
Percent in Pace:	93%

Date of Survey:	4/22/97	Start Time:	13:05
Weather:	CLOUDY	End Time:	14:05
Road Condition:	DRY	Posted Speed:	25
Street Class.:	BUSINESS	Observer:	B SOWERS

Comments:

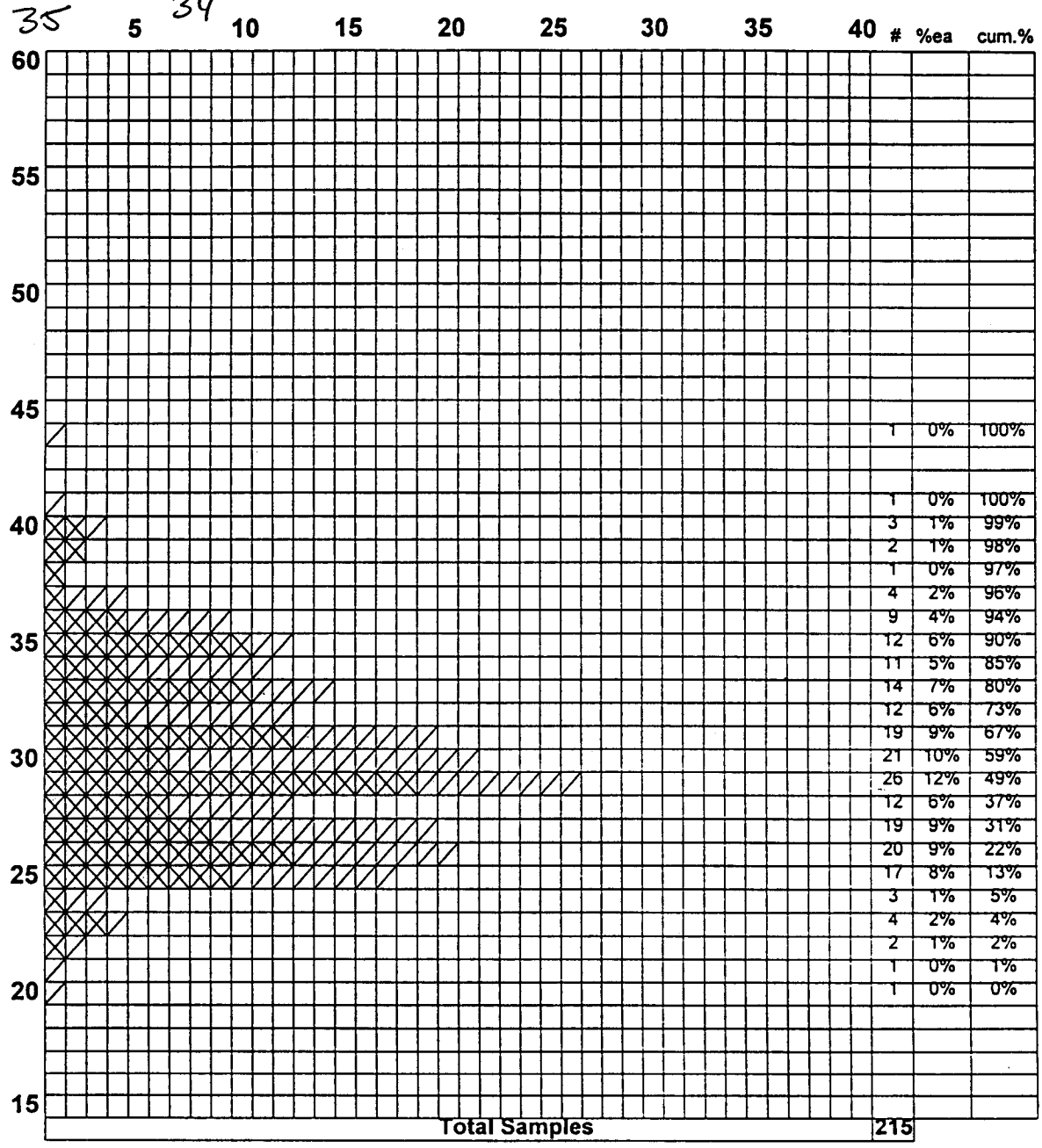
City of Albany

Traffic Engineering Department

Street Name: SAN PABLO AVENUE
Limits: CITY LIMITS to CITY LIMITS

Radar Survey Sheet

X=North /=South



#	%ea	cum.%
1	0%	100%
1	0%	100%
3	1%	99%
2	1%	98%
1	0%	97%
4	2%	96%
9	4%	94%
12	6%	90%
11	5%	85%
14	7%	80%
12	6%	73%
19	9%	67%
21	10%	59%
26	12%	49%
12	6%	37%
19	9%	31%
20	9%	22%
17	8%	13%
3	1%	5%
4	2%	4%
2	1%	2%
1	0%	1%
1	0%	0%
Total Samples		215

85th Percentile Speed:	35
50th Percentile Speed:	30
15th Percentile Speed:	26
10 MPH Pace:	25- 34
Number in Pace:	171
Percent in Pace:	80%

Date of Survey:	4/22/97	Start Time:	14:10
Weather:	CLOUDY	End Time:	14:45
Road Condition:	DRY	Posted Speed:	35
Street Class.:	ARTERIAL	Observer:	B SOWERS
Comments:	Commercial and Business		

City of Albany

Traffic Engineering Department

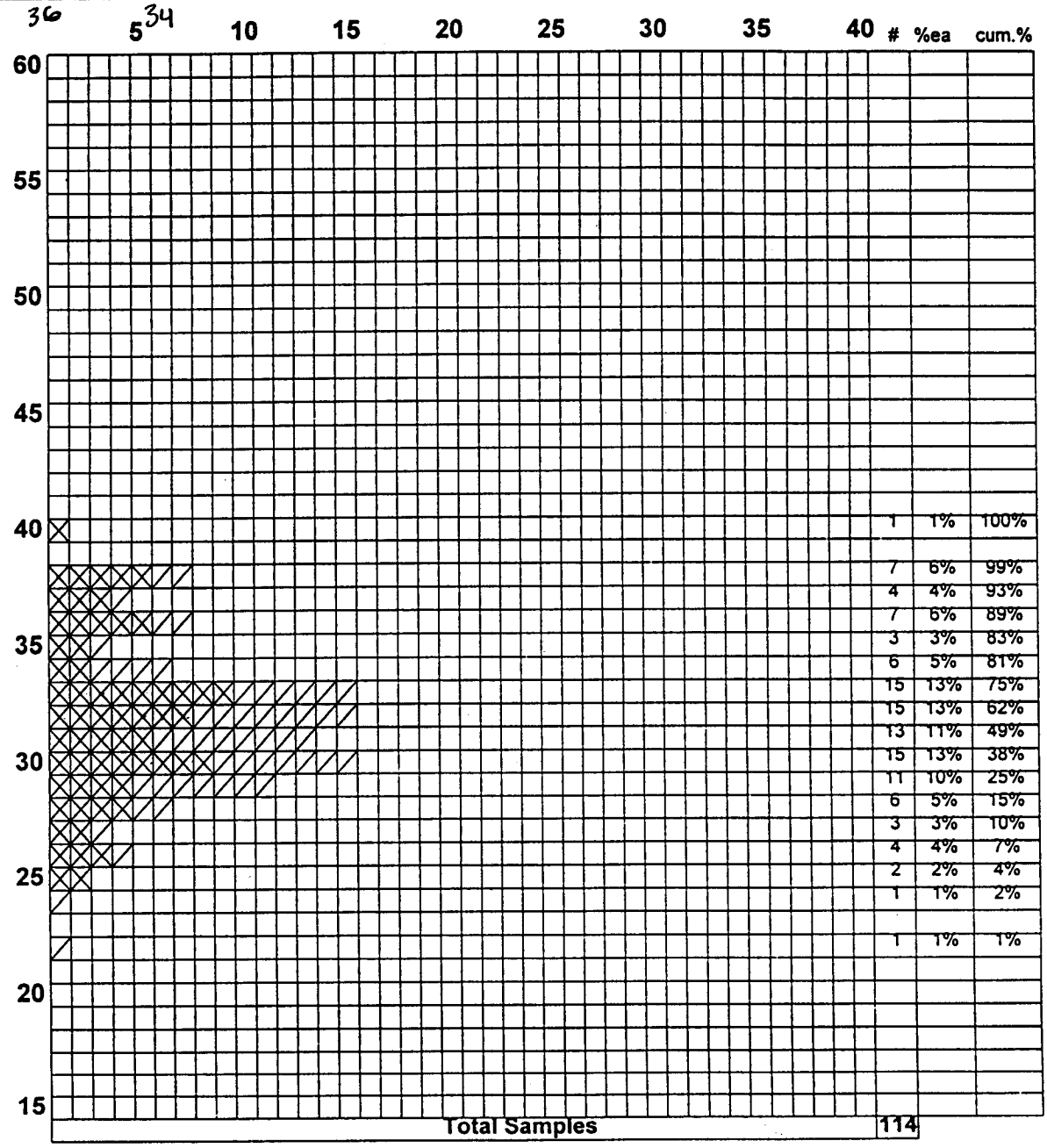
Street Name: SANTA FE AVENUE

Limits: CITY LIMITS to MARIN AVENUE

Radar Survey Sheet

X=North /=South

36 5 34



#	%ea	cum.%
1	1%	100%
7	6%	99%
4	4%	93%
7	6%	89%
3	3%	83%
6	5%	81%
15	13%	75%
15	13%	62%
13	11%	49%
15	13%	38%
11	10%	25%
6	5%	15%
3	3%	10%
4	4%	7%
2	2%	4%
1	1%	2%
1	1%	1%
114		

85th Percentile Speed:	36
50th Percentile Speed:	32
15th Percentile Speed:	29
10 MPH Pace:	29- 38
Number in Pace:	96
Percent in Pace:	84%

Date of Survey:	4/22/97	Start Time:	16:20
Weather:	CLOUDY	End Time:	16:55
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS

Comments:

City of Albany

Traffic Engineering Department

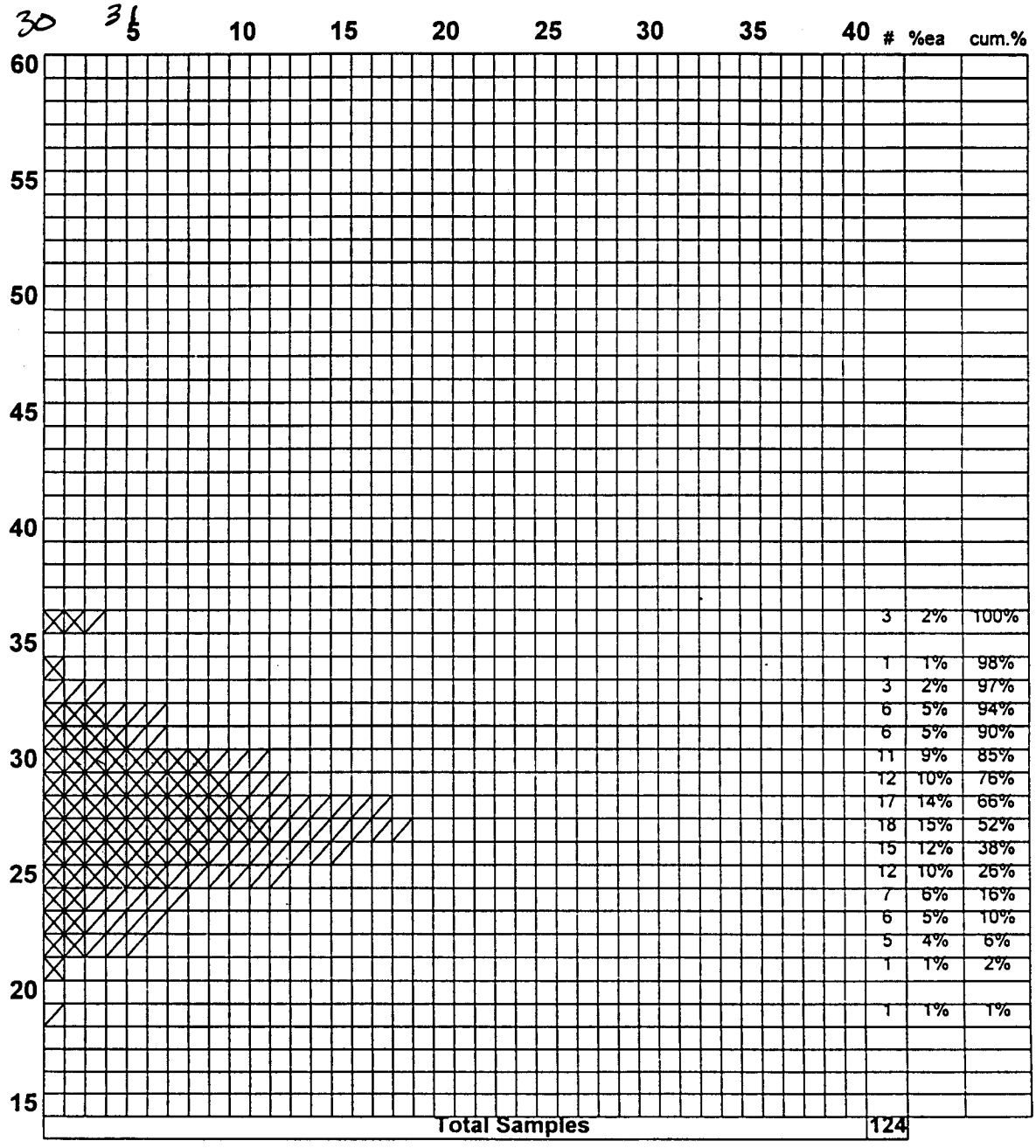
Street Name: SANTA FE AVENUE

Limits: MARIN AVENUE to CITY LIMITS

Radar Survey Sheet

X=North /=South

30 31



#	%ea	cum.%
3	2%	100%
1	1%	98%
3	2%	97%
6	5%	94%
6	5%	90%
11	9%	85%
12	10%	76%
17	14%	66%
18	15%	52%
15	12%	38%
12	10%	26%
7	6%	16%
6	5%	10%
5	4%	6%
1	1%	2%
1	1%	1%
Total Samples	124	

85th Percentile Speed:	31
50th Percentile Speed:	27
15th Percentile Speed:	24
10 MPH Pace:	23- 32
Number in Pace:	110
Percent in Pace:	89%

Date of Survey:	4/23/97	Start Time:	17:10
Weather:	CLOUDY	End Time:	17:40
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS
Comments:			

City of Albany

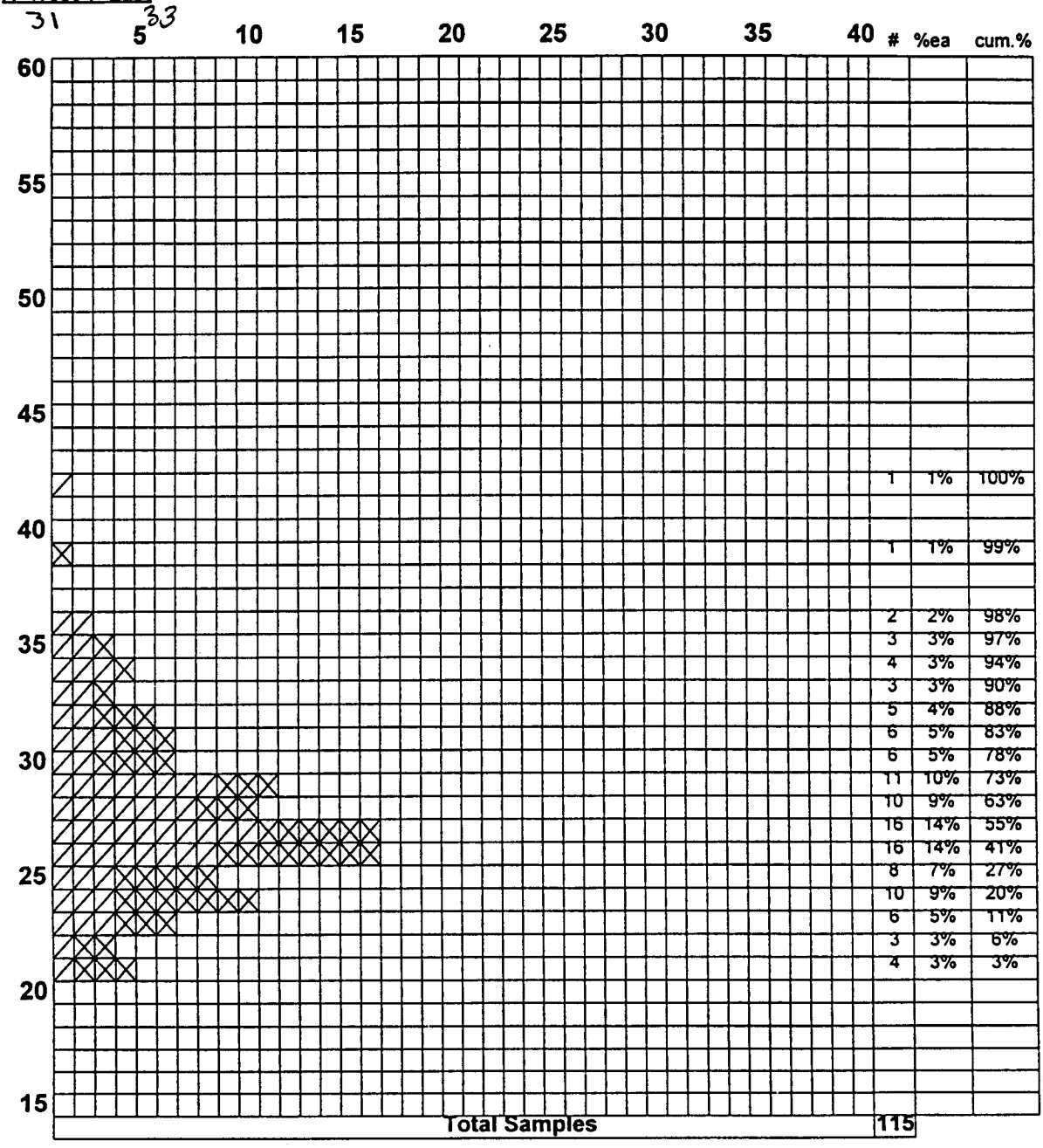
Traffic Engineering Department

Street Name: WASHINGTON AVENUE

Limits: SAN PABLO AVENUE to CITY LIMITS

Radar Survey Sheet

X=West /=East



#	%ea	cum.%
1	1%	100%
1	1%	99%
2	2%	98%
3	3%	97%
4	3%	94%
3	3%	90%
5	4%	88%
6	5%	83%
6	5%	78%
11	10%	73%
10	9%	63%
16	14%	55%
16	14%	41%
8	7%	27%
10	9%	20%
6	5%	11%
3	3%	6%
4	3%	3%
Total Samples		115

85th Percentile Speed:	32
50th Percentile Speed:	27
15th Percentile Speed:	24
10 MPH Pace:	23- 32
Number in Pace:	94
Percent in Pace:	82%

Date of Survey:	4/23/97	Start Time:	15:40
Weather:	SUNNY	End Time:	16:30
Road Condition:	DRY	Posted Speed:	25
Street Class.:	RESIDENTIAL	Observer:	B SOWERS
Comments:			

Certificate of Calibration

This is to certify that all applicable tests and measurements have been made on Model K-15-2

a "Doppler" Traffic Radar, Serial Number *29963* K-Band

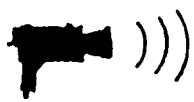
The aforestated radar meets and exceeds all specifications.

Date *1-20-97*

Signed

1643 California Drive
Vacaville, CA 95688

R & L Precision Radar



APPENDIX G

Traffic Issues and Major Findings by Area and Street Location (Neighborhood Areas 1, 2 and 3)

Appendix G
City of Albany Traffic Management Plan
Traffic Issues and Major Findings by Area and Street Location

AREA	LOCATION	ISSUE	MAJOR FINDINGS
1	Adams St. and other streets near the Orientation Center for the Blind (located at the end of Adams St.), including San Pablo Ave.	Blind Pedestrian Safety -- Difficult for blind persons to maneuver around the area. There is a paved pedestrian walkway that connects directly between the school and San Pablo Ave (mid-block between Carlson Blvd. and Brighton Ave.). However, there are no special traffic signal devices at the signalized intersections along San Pablo Ave. and the are no special warning signs for motorists denoting the possible presence of blind persons or pavements markings in the immediate vicinity of this school.	Speed on Adams St. in the vicinity of the Orientation Center for the Blind exceeds posted limits by a maximum of 4mph during the AM peak hour, when students are walking to school. This presence of vehicles exceeding the speed limit near the school for the blind indicates that risky behavior does occur at this location. Accident data near the school during the past 3½ years indicates a history of pedestrian accidents. There has been one pedestrian accident at each of the following intersections : San Pablo Ave. at Castro St., Garfield Ave. and Brighton Ave. There locations are on routes used by some blind students. This indicates that when students are taking routes on San Pablo Ave., they are crossing in an area where pedestrian accidents have occurred.
1	Adams St.	Congestion -- Residents concerned about congestion problems, particularly spot congestion problems which are generated by local businesses.	Although Adams St. is uncongested, resident observations of blocked roadways, due to local business activities may indicate a need for local spot enforcement at specific times of day.
1	Adams St./Washington Ave.	Sight Distance -- Sight distance is poor. The provision of on-street parking on the south side of Washington Ave. as well as the location of bushes on the southwest corner, make it difficult for motorists on the northbound Adams St. approach (stop controlled) to see vehicles coming from eastbound Washington Ave. (uncontrolled) without passing the stop bar in order to clearly see oncoming vehicles from the west, which do not have to stop.	Sight distance from the northbound approach at the intersection does not meet the Caltrans recommendations for an intersection of this type.

Appendix G
City of Albany Traffic Management Plan
Traffic Issues and Major Findings by Area and Street Location

AREA	LOCATION	ISSUE	MAJOR FINDINGS
1	Adams St.	Speeding -- Speeding is encouraged by the one-way character of Adams St. (with curb-to-curb width of approximately 29.5 feet and parking on both sides). Speeding is seen as dangerous to children, pets and students at the nearby Orientation Center for the Blind. Speeding commuters may be using Adams St. as an alternate route from San Pablo Ave. and some local business customers may be speeding on Adams St. in the evening hours.	Highest 85th percentile speed was measured at 4mph over the speed limit in the AM peak hour.
1	Buchanan St./Jackson St.	Child/Pedestrian Safety -- This location has high pedestrian activity by school children traveling to and from the existing Albany Middle School located on the south side of Buchanan St. at Jackson St. Assisted by a school crossing guard, children traveling between the school and San Pablo Ave. use the south crosswalk and cross Jackson St., while those traveling to and from areas north of Buchanan St. use the west crosswalk to cross Buchanan St.. Although there are pedestrian signal heads at this intersection, there are potential left turn phases (i.e., permissive left turn phasing on the east/west Buchanan St. and north/south Jackson St. approaches). Therefore, left turn vehicles from westbound Buchanan St. to southbound Jackson St., and from northbound Jackson St. to westbound Buchanan St., conflict with school children crossing the south and west crosswalks.	Observations indicate that although there have been no accidents involving pedestrians at this location, the volume of pedestrians crossing both at the south and west approaches to this intersection, coupled with vehicles whose drivers are looking for both gaps in traffic and gaps in pedestrian crossings, and the concentrated arrival and departure times associated with the beginning and end of the school day, contribute to the potential for risky behavior at this location. In addition, risky behavior was observed in and around this location, including U-turns and stopping in travel lanes to drop off children without pulling over.
1	Buchanan St. at Jackson St.	Southbound Left Turn Lane -- A left turn lane is needed. Traffic backs up, especially during morning hours when there is traffic from the Albany middle school.	Traffic backs up on Jackson St. due to vehicles making a left turn from Jackson Street to Buchanan Street, during the AM peak hour. If there are any vehicles parked near the intersection it is often not possible for through or right turning traffic to pass cars waiting to turn left.

Appendix G
City of Albany Traffic Management Plan
Traffic Issues and Major Findings by Area and Street Location

AREA	LOCATION	ISSUE	MAJOR FINDINGS
1	Buchanan Street	Speeding -- Speeding as vehicles exit the freeway and travel in the eastbound direction (especially in the morning).	Vehicles speed on Buchanan Ave. during the off peak. 85th percentile speeds exceed the speed limit by a maximum of 17mph.
1	Buchanan St./Marin Ave.	Merging Problem -- Merging problem at Marin Ave. extension into Buchanan St. The westbound Buchanan St. lane merges into the northern-most through lane on westbound Marin Ave. extension. Although there is currently a sign indicating a merge point ahead, some motorists coming from westbound Buchanan St. do not realize they need to merge with traffic from westbound Marin Ave. extension, thus potentially causing collisions.	Although the most recent accident data do not support the issue that the merge point at Buchanan St. and the westbound Marin Ave. extension is problematic, observation of the geometrics indicates that this design could cause motorist confusion and could lead to potential conflicts between merging vehicles.
1	Buchanan St.	Bicyclists Safety -- City of Albany Bicycle Study — Bicyclists find excessive speed to be dangerous in these locations: Buchanan St, San Pablo Ave., Pierce St.	Bicyclist concerns appear to be justified on Buchanan St. and on the northernmost stretch of Pierce St. where vehicles exceed speed limits. Although vehicles do not tend to speed on San Pablo Ave., vehicles traveling at the 35mph speed limit, as well as high traffic volumes, may justify bicyclist safety concerns. Accident data indicates that although risky behavior occurs on Buchanan St. and Pierce St. due to vehicles traveling over the speed limit, thus far this has not translated into bicycle accidents on these streets. There have been no bike accidents on Pierce St. or Buchanan St. between 1994 and 1997. However, six bike accidents have occurred on San Pablo Ave. San Pablo Ave. had the highest rate of accidents overall per million vehicles than on any other City street, therefore more bicycle accidents were reported on San Pablo during the same period.

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AREA	LOCATION	ISSUE	MAJOR FINDINGS
1	Cerrito St./Washington Ave.	Intersection Geometrics -- Intersection geometrics are an issue at this location due to the acute angle created as northbound Cerrito St. meets Washington Avenue. Persons in vehicles on the northbound Cerrito St. approach (stop sign controlled) must turn their heads more than 90° to the left when looking for vehicles on the eastbound Washington Ave. approach (stop sign controlled). At the same time they have limited sight distance to the east where westbound vehicles on Washington Avenue are not stop sign controlled.	The sight distance to westbound Washington Avenue from both eastbound and northbound traffic is less than the minimum corner sight distance recommended by the Caltrans Highway Design Manual.
1	Cerrito St./Hillside Ave.	Intersection Geometrics -- The sight distance from eastbound Hillside Ave. to northbound Cerrito St. is limited to 55 feet at the stop bar. From a point 35 feet past the stop bar, the sight distance is increased to 160 feet. However, this is less than the sight distance recommended by the Caltrans Highway Design Manual. For situations where environmental, economic or other factors make it unfeasible to meet the recommended sight distance the Caltrans Highway Design Manual allows a sight distance based on the minimum stopping distance. For a street with a 30 mph design speed this would be 200 feet. However, a design speed of 25 mph may be more applicable at this location, which would reduce the minimum allowable sight distance to 150 feet, which can be achieved by pulling out beyond the stop bar.	The sight distance at this location does not meet the 330 feet recommended by the Caltrans Highway Design Manual for corner sight distance on a street with 30 mph design speed. However, if vehicles pull out 35 feet past the stop bar it is possible to meet the minimum of 150 feet stopping sight distance for a street with a 25 mph design speed.

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1	Cleveland Ave. at Washington Ave., Johnson St., Solano Ave., and Buchanan St.	Commute/Truck Cut-through Traffic -- Excessive left turns from southbound Cleveland Ave. onto the neighborhood streets. Vehicles are currently cutting through the residential neighborhoods to access Buchanan St. or San Pablo Ave. Similar to truck traffic, vehicles destined for Buchanan St. tend to access it from the north side via the neighborhood streets, rather than drive southbound to the end of Cleveland Ave., proceed under the Buchanan St. overpass, and access Buchanan St. from the south side. --High truck traffic cutting through the neighborhoods from Cleveland Ave. Currently, Cleveland Ave. and Buchanan St. are designated truck routes. However, trucks have been observed cutting through the residential neighborhoods to access Buchanan St. from the north side, rather than drive southbound to the end of Cleveland Ave., proceed under the Buchanan St. overpass, and access Buchanan St. from the south side. When trucks cut through the neighborhoods, they turn left to either eastbound Solano Ave. or Washington Ave. Some truck drivers that may not be familiar with the area even turn left onto Johnson St. as well. --The poor transition from southbound Cleveland Ave. to eastbound Buchanan St. encourages cut-through traffic to access Buchanan St. Vehicles destined for Buchanan St. from the Cleveland Ave. off-ramp tend to avoid the horizontal S- curve (located underneath the Buchanan St. overpass) by using the residential streets to access Buchanan St. from the north side instead. *Data results showed that automobiles do cut through the neighborhood, however, they are cars bound for the westbound I-80, or cars traveling to the City of Berkeley	The car following results tend to confirm that a majority of vehicles entering the neighborhood are destined for locations outside of the City of Albany. However, both the turning movement counts and the car following observations tend to contradict the observation by residents that the transition from Cleveland Ave. to westbound Buchanan via the overpass is so poor that most vehicles enter the neighborhood in order to turn westbound on Buchanan. In fact, the vast majority of vehicles moving southbound on Cleveland Ave (70%) remain on Cleveland Ave., and travel via the overpass to westbound Cleveland. Only a small percentage of vehicles observed in the car following exercise entered Buchanan St. via the neighborhood, but these vehicles turned right from Pierce St. and entered the westbound I-80. The AM peak period turning movement counts confirm the neighborhood's concern that the majority of trucks traveling southbound on Cleveland enter the neighborhood rather than proceeding to Buchanan via the underpass at Cleveland and Buchanan. However, since no heavy trucks were observed by the car following team, it is unknown whether these trucks are destined for locations internal to the City of Albany, and perhaps the neighborhood (as might be the case for parcel delivery trucks, for example), or whether these trucks are truly cross-cutting the neighborhood in order to reach commercial destinations within the City of Albany or outside of the City.

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1	Cleveland Ave.	Commuter Speeding in AM Peak -- Speeding cut-through vehicles use this street to avoid freeway traffic in the AM peak hour.	The 85th percentile vehicle speed on Cleveland Ave. during the off peak hour exceeds the posted speed limit by 13 mph.
1	Jackson St., north of Buchanan St.	Child Pedestrian Safety -- It is difficult for school children to cross Jackson St. north of Buchanan St. Some school children walking to or leaving the Albany Middle School or Vista Elementary School need to cross Jackson St. at unsignalized intersections located north of Buchanan St. There are no school crossing guards at any of these intersections. However, at Jackson St./Solano Ave. (a 4-Way STOP controlled intersection), there is a special "School Crossing STOP" sign located on the eastbound Solano Ave. approach.	There have been no accidents involving any pedestrians at this location from 1994 through 1997. However, the volume of pedestrians in the AM peak and in the midday "school peak", coupled with the relatively large number of vehicles arriving at the Solano Avenue and Jackson Street intersection which cross the path of north-and-southbound pedestrians, contribute to the potential for risky behavior at this location.

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1	Pierce St./Washington Ave.	Auto/Truck Volumes, Speeding -- High traffic volumes (including truck traffic) and travel speeds at this 2-way stop controlled intersection. Since this intersection is located near the freeway ramps on Pierce St. and Cleveland Ave., vehicles use this intersection and cut-through the residential neighborhoods. There are STOP signs on the east/west Washington Ave. approaches only. Trucks are prohibited on both of these streets in this area.	Resident perceptions that relatively high volumes of traffic are cutting through the neighborhood in the AM and PM peak hour on Pierce St. appear to be confirmed. Additionally, resident perceptions that relatively high volumes of traffic are cutting through the neighborhood on Washington Ave, chiefly from Cleveland, are confirmed by the turning movement data collected at the intersection of Washington Ave. and Pierce St. The traffic volumes and speeds on Pierce Street indicate that residents would perceive that this street is highly vehicle-dominated, and that perceptions of the safety and comfort of activities such as walking, cycling, or playing on this street would be negative. ADT data is not available for Washington Avenue, but a comparison of the peak period traffic volumes at the intersection of Pierce Street and Washington Avenue suggests that the daily traffic volumes on Washington Avenue might lead to a perception of the street as moderately vehicle dominated . Available truck volumes tend to confirm resident concerns that a few trucks do enter the neighborhood from Cleveland Ave. via Washington Avenue, and that there are through truck trips on Pierce Street in the PM peak period. Speed studies tend to confirm that for both Washington Avenue and Pierce Street, AM and PM peak period 85th percentile speeds tend to exceed the posted speed limit. Speeds on Pierce Street in the PM peak period were the highest for the two streets.

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1	Pierce St.	Bicyclists Safety -- City of Albany Bicycle Study — Bicyclists find excessive speed to be dangerous in these locations: Buchanan St, San Pablo Ave., Pierce St.	Bicyclist concerns appear to be justified on Buchanan St. and on the northernmost stretch of Pierce St. where vehicles exceed speed limits. Although vehicles do not tend to speed on San Pablo Ave., vehicles traveling at the 35mph speed limit, as well as high traffic volumes, may justify bicyclist safety concerns. Accident data indicates that although risky behavior occurs on Buchanan St. and Pierce St. due to vehicles traveling over the speed limit, thus far this has not translated into bicycle accidents on these streets. There have been no bike accidents on Pierce St. or Buchanan St. between 1994 and 1997. However, six bike accidents have occurred on San Pablo Ave. San Pablo Ave. had the highest rate of accidents overall per million vehicles than on any other City street, therefore more bicycle accidents were reported on San Pablo during the same period.
1	Pierce St.	Speeding -- Since Pierce St. serves as a frontage road to the freeway, vehicles tend to speed between Central Ave. in the City of Richmond and on Solano Ave.	Vehicles exceed the speed limit on Pierce St. during the AM and PM peak hours. The highest 85th percentile speed occurs during the PM peak (9mph over the speed limit).
1	Pierce St. (500 block)	Commuter Speeding/Traffic Volumes -- Increased vehicle volumes and speeds in the AM and PM peak hours cause dangerous pedestrian crossing conditions for bus patrons leaving the Gateview garage to cross the street to access the bus stop. Vehicles bound for I-80 in the evening exit onto Pierce and speed to Central where they reenter the I-80. The reverse pattern occurs in the morning when the traffic is heading towards the Bay Bridge.	Vehicles speed on Pierce St. during the AM and PM peak hours. During the AM peak hour speeds in the northbound direction are higher than speeds in the southbound primary commute direction. During the PM peak hour speeds in the northbound direction are still higher than in the southbound direction. The higher northbound speeds are most likely due to the downhill slope in that direction.

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AREA	LOCATION	ISSUE	MAJOR FINDINGS
1	Pierce St. (500 block)	Sight Distance -- Sight distance problem for residents exiting gate at the Bridgewater Complex due to large vans, trucks, campers, etc. parking at the gate.	The sight distance at this location does not meet the 330 feet recommended by the Caltrans Highway Design Manual for corner sight distance on a street with a 30 mph design speed, whether or not buses or other vehicles are present.
1	Polk St.	Speeding -- Speeding tends to be in the southbound direction as vehicles drive down the hill toward Buchanan St. Polk St. has a curb-to-curb width of approximately 29.5-feet with parking on both sides.	Vehicles exceed the speed limit on Polk St. during the AM and PM peak hours. The highest 85th percentile speeds were observed during the AM peak, where the 85th percentile of southbound speeds was 10mph greater then the speed limit.

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1	San Pablo Ave./Marin Ave.	Child Pedestrian Safety -- Children traveling to and from the nearby schools are only allowed to use the south crosswalk to cross San Pablo Ave. (assisted by a school crossing guard). --The high number of right-turn-on-red vehicles on all approaches at this intersection creates hazards for all pedestrians crossing the street. --Traffic traveling eastbound needs a longer green time for through traffic; through traffic must wait while westbound traffic turning left goes first, so their through time is shortened so that only 8-10 cars go through. --Vehicles turning from eastbound Marin Ave. extension to southbound San Pablo Ave. (during the green phase) conflict with school children crossing the south crosswalk (during the walk phase). --Vehicles turning (during the red phase) from northbound San Pablo to eastbound Marin Ave. conflict with school children crossing the south crosswalk. --Insufficient time for school children to cross San Pablo Ave. (i.e., a total of 20 seconds: 5 seconds of "walk" and 15 seconds of flashing "don't walk"). --Reduce street width and use the section near the school for school loading. Commuters will use Marin and San Pablo instead which are more appropriate.	Observations indicate that there are no pedestrian accidents and one bicycle accident at this location. The single bicycle accident occurred in 1996; the bicyclist was traveling northbound on San Pablo on a Friday at 1:30 in the afternoon, and ran the red light, hitting a vehicle traveling westbound on Marin Ave. This appears to be unrelated to the safety of schoolchildren at this location. In the AM peak hour, the concentration of vehicular and pedestrian activity in the could contribute to risky behavior as both vehicles and child pedestrians attempt to arrive at school on time. No risky behavior or accidents were observed during the AM peak period. During the PM peak hour, the very large volume of pedestrian traffic, most of which is comprised of schoolchildren leaving just after the end of the school day, during this midday "school peak", could contribute to risky behavior as vehicles and child pedestrians attempt to leave school as quickly as possible. Videotaped observations of this location during school start and ending times indicates that although no risky behavior was occurring, the potential for this behavior exists.

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1	San Pablo Ave./Marin Ave.	Motorist Right Turns on Red -- Lack of exclusive westbound right turn lane on Marin Ave. causes queues to develop in the shared through-right turn lane on the westbound Marin Ave. approach. The westbound approach is striped with one exclusive left turn lane, one through lane, and one shared through-right turn lane. No on-street parking is allowed on the north side of the street at this location. When a through vehicle is stopped in the shared lane, there is not enough roadway width to allow any vehicles to make right-turns-on-red. In some instances, impatient motorists cut through the existing Shell gas station to get to northbound San Pablo Ave. --Pedestrians are at risk when crossing gas station driveways. This occurs when drivers make sudden turns into driveways immediately after crossing the intersection, especially following left turns.	A separate right turn lane for westbound Marin Ave, would have greater negative effects on other traffic flow, causing delays and queuing which could obstruct traffic exiting the gas station. The additional right turns on red would detract from pedestrian feeling of safety and could promote risky behavior by drivers focused on finding gaps in the approaching traffic on San Pablo Ave.
1	San Pablo Ave.	Bicyclists Safety -- City of Albany Bicycle Study — Bicyclists find excessive speed to be dangerous in these locations: Buchanan St, San Pablo Ave., Pierce St.	Speed was not found to be an issue at this location, although data indicates that other concerns may exist.
1	San Pablo Ave.	Retime Traffic Signals -- Traffic signals along the San Pablo Ave. Corridor need to be re-timed. Within the City of Albany, there are a total of seven traffic signals located along San Pablo Ave. As a major arterial and a reliever route for the I-80 freeway, San Pablo Ave. carries a lot of traffic, particularly during the AM and PM peak periods.	Since San Pablo Avenue is under the jurisdiction of Caltrans, they will maintain and control signal timings along San Pablo Avenue.

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1	San Pablo/Solano Ave.	Pedestrian Safety -- Want "no turn on red" sign to make corner safer for pedestrians	Observations indicate that one of two pedestrian accidents recorded at this intersection was related to the issue raised by residents, although the circumstances are not clearly reported. However, this accident, coupled with the high number of pedestrian and vehicle movements opposing each other in the midday "school peak" could contribute to risky behavior at this location, especially if a high proportion of pedestrians are children, who might be more inattentive at this heavily traveled intersection. Some risk also exists in the AM and PM peak hour as well, since a significant number of vehicles do make left turns from Solano to San Pablo, although pedestrian volumes over the two-hour peak periods are relatively light at around 25 pedestrians per hour.
1	San Pablo Ave. Corridor	Pedestrian Crossing Time -- Insufficient time for pedestrians to cross San Pablo Ave.	Assuming a walking speed of 3.5 feet per second there is generally adequate time for pedestrians to safely cross San Pablo Avenue if they begin crossing near the beginning of the green walk phase.
1	San Pablo Ave./Solano Ave.	Pedestrian Safety -- There are currently protected left turns on the north/south San Pablo Ave. approaches and permissive left turns on the east/west Solano Ave. approaches. Pedestrians crossing San Pablo Ave. do so concurrently with the east/west left turns from Solano Ave. to San Pablo Ave., resulting in pedestrian-vehicle conflicts.	Although the accident record shows no pedestrian accidents resulting from right turns on red there may be the potential for risky behavior due to the volume of pedestrian and right turn movements.

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AREA	LOCATION	ISSUE	MAJOR FINDINGS
1	San Pablo Ave.	Center Left Turn Lane -- Two-way left turn lanes are dangerous vs. raised median islands are inconvenient. Within the City of Albany, center two-way left turn lanes along San Pablo Ave. are provided for left turn access to local businesses fronting the street. Some residents feel these types of lanes are dangerous, creating potential for head-on collisions. On the other hand, some residents prefer these turn lanes over raised medians with left turn pockets at intersections. The center two-way left turn lanes along San Pablo are seen by residents as causing excessive U-turns at downstream intersections, or increased travel times at upstream intersections as vehicles need to turn left and drive around the block.	Based on the low rate of accidents attributable to the center left turn lane there dies not appear to be a major safety problem associated with it.

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AREA	LOCATION	ISSUE	MAJOR FINDINGS
1	San Pablo Ave./Monroe St.	Pedestrian Safety -- At this intersection, there are low levels of pedestrian activity by school children traveling through the University Village to and from the existing Albany Middle School. However, unlike the intersection of San Pablo Ave./Marin Ave. extension, where there is a school crossing guard during the periods before and after school, there are no crossing guards at this intersection.	Observations indicate that there are no pedestrian accidents at this location. However there are relatively large volumes of traffic which cross the path of pedestrians in the south crosswalk on San Pablo Ave., which may indicate a potential for risky behavior. In the AM peak hour, the concentration of vehicular and pedestrian activity in the could contribute to risky behavior; since 110 child pedestrians are arriving during a concentrated period of time in the south crosswalk across San Pablo, and a total of 348 vehicles in the AM peak period make left or right turns in the path of this crosswalk at the same time. This provides an opportunity for risky behavior at this location. Approximately 136 pedestrians were counted during the midday school peak at the south crosswalk; the number of vehicles crossing their path at the same time is unknown but given the high traffic volumes on San Pablo Ave. in general it is likely that this situation would also indicate that the potential for risky behavior exists at this location.
1	San Pablo Ave./ Washington Ave.	Pedestrian Safety -- Existing signal timing plan does not allow enough time to cross San Pablo Ave. There is adequate crossing time overall at this location, however, pedestrian green walk time could be made shorter in order to encourage pedestrian to stars across the street earlier.	

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1	Solano Ave., West of San Pablo Ave.	Speeding -- Speeding over the hill in the eastbound direction on Solano Ave., with potential rear-end collisions with vehicles queued at Jackson St. The posted speed limit along the Solano Ave. hill is 15mph, with the crest of the hill located between Taylor St. and Polk St. Jackson St. (an 4-way STOP controlled intersection) is located at the bottom of the hill, two blocks east of Polk St. Since some vehicles may not know there is a STOP sign at the bottom of the hill, they speed over and down the hill in the eastbound direction and pick up enough speed that could prevent them from stopping safely at the back of a queue at Jackson St. A similar situation could occur in the westbound direction, since a STOP sign is also located at the bottom of the hill at Pierce St.	Vehicles speed on Solano Ave. during the AM. The highest 85th percentile speed was measured at 3mph over the speed limit during the AM peak.
1	Washington Ave.	Speeding -- Speeding tends to be in the eastbound direction from the freeway to the hillside area. Washington Ave. has curb-to-curb widths of approximately 29.5 feet with parking on both sides.	The highest 85th percentile speeds observed at this location occurred in the off-peak eastbound (uphill direction). The highest speeds exceeded the speed limit by 7mph.

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2	Albany High School area streets	Child Pedestrian Safety, Parking Problems -- Albany High School borders Key Route Boulevard, Thousand Oaks Boulevard, and Portland Avenue, streets which also have relatively high traffic speeds. In addition, since Albany High School does not provide any off-street parking facilities, all students who drive to school must park in the neighborhood and walk to the school, crossing these busy streets. Recently, a student was hit on Portland Avenue as she stepped out from behind a parked car. Finally, jaywalking frequently occurs along Portland Avenue. --Residential permit parking with parking permits available to students should be the only parking allowed in the area of the high school/adult school. Unacceptable social behavior should be grounds for revoking permits.	The data validates resident concerns that on some streets there is heavy parking occupancy resulting from high school activity, and shows that parking occupancies adjacent to the high school are unbalanced; some areas have significant parking capacity available and some streets are heavily parked. In addition, resident concerns regarding speeding near the high school are confirmed on Portland Avenue, and confirmed at the end of the school day on Thousand Oaks Boulevard These would be representative streets, so it is likely that some speeding may be occurring on other streets adjacent to the high school. Videotaped observation of the street activity around the high school during critical periods also validates resident concerns regarding risky behavior and blocked traffic. This evidence, coupled with observed vehicle speeding on adjacent streets, leads to the conclusion that risky behavior is occurring which could result in pedestrian accidents; one pedestrian accident did occur from 1994-1997, which tends to bear out this potential.
2	BART bicycle trail crossings at Brighton Ave., Portland Ave., and Washington Ave.	Mid-Block Crossings -- The bike/walking path under the BART tracks along Masonic Ave. is misaligned. Instead of crossing the street at the intersections, the path crosses mid-block just east of the intersections. Although there are signs posted, drivers are often unprepared to encounter a bicyclist or pedestrian at this location. In order to alleviate this problem, the path should be reconfigured to cross the street at the intersection.	Although no bicycle accidents have occurred at the mid-block crossings along the BART trail, the placement of the trail crossings at mid-block creates the possibility of risky behavior as drivers may not expect a mid-block bicycle so close to a crosswalk, even though bicyclists are supposed to observe the STOP signs on the BART trail.

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2	Brighton Ave. near Mc Gregor Primary School	Child Pedestrian Safety -- Passenger unloading for school children should not be allowed and a no stopping or no parking zone should be put there. --McGregor Primary School children have a difficult time crossing Brighton Ave., which has relatively high traffic speeds. --Addition of a new Middle School may increase problems and congestion.	The highest observed 85th percentile speed was 6mph in the PM peak hour. There were no pedestrian accidents on Brighton Ave. at Spokane or at San Gabriel which are locations in the vicinity of the school.
2	Brighton Ave. between San Pablo Ave. and Cornell Ave.	Speeding -- Excessive speeding causes hazards to pedestrians and other drivers. Streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). Most perpendicular streets are stop controlled. Residents suggest more speed limit signs. Speeding is a hazard to the new school.	Vehicles exceed the speed limit on Brighton Ave. during the AM and PM peak hours. The highest 85th percentile speed at this location was measured at 7mph over the speed limit.
2	Carmel Ave. between Solano Ave. and Washington Ave	Speeding -- Dangerous speeding vehicles; residents suggest speed humps; danger seen to children and pets in the street.	The highest observed 85th percentile speed on Carmel Ave. between Solano and Washington was 5mph over the posted 25mph speed limit.
2	Garfield Ave.	Speeding -- Vehicle speeds along Garfield are relatively high. In general, most these streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). Most perpendicular streets are stop controlled.	The highest 85th percentile vehicle speed was measured to be 8 mph over the speed limit during the PM peak hours.

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2	Kains Avenue/Solano Avenue*	Wrong-way Driving On Kains Ave. -- Kains Avenue is a one-way, southbound roadway. Vehicles travel the wrong way (northbound) on Kains Avenue from Solano Avenue This seems to be done to access one of the driveways or parking lots in the block between Solano and Washington, but not to avoid the intersection of Solano/San Pablo. Kains Avenue is clearly marked as a one- way southbound street, with dual DO NOT ENTER signs, dual ONE WAY signs, and a westbound NO RIGHT TURN sign. *Wrong way driving behavior was observed at this location.	Observations show that vehicles do turn onto Kains Avenue from Solano Avenue traveling the wrong way.
2	Key Route Blvd. at the El Cerrito City limits	Commuter Traffic Volumes -- Should be blocked off by a parkway to decrease commuter traffic on Key Route Blvd.	Peak hour and peak direction volumes on Key Route are roughly 10 to 13 percent of the daily traffic volumes. A typical peak hour volume is approximately 10 percent of the daily traffic volume. Thus, Key Route does not exhibit substantially greater than normal peaking characteristics such as would be expected on a roadway carrying heavy commuter volumes.
2	Key Route Blvd.	Speeding -- Speeding occurs on Key Route Blvd.	The maximum observed 85th percentile speed exceeded the posted speed by 7mph.
2	Masonic Ave.	Speeding -- Speeding occurs on Masonic Ave. It is approximately 40 feet wide with parking on both sides of the street. In general, blocks are over 500 feet long. Along the east side of the street is the BART tracks and the greenway, which makes Masonic appear to be much wider than it actually is. Vehicles drive on the wrong side when turning from Brighton.	The maximum observed 85th percentile speed exceeded the 25mph speed limit by 9mph.

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2	Pomona Ave./Thousand Oaks Blvd.	Sight Distance -- Pomona has a T-intersection with Thousand Oaks Blvd. on the north side of Albany High School. In general, speeds are relatively high on Thousand Oaks Blvd.. To the west, a large tree and parked cars tend to block the view to Thousand Oaks Blvd., resulting in poor sight distances. This makes entering the intersection difficult.	To the west, sight distance is less then that recommended by the Caltrans Traffic Manual whether or not parked cars ate present, due to vegetation. To the east, parked card limit sight distance to 60 feet. However, without parked cars a clear line of sight which meets Caltrans design standards is possible.
2	Pomona Ave./Washington Ave.	Intersection Geometrics, Sight Distance -- The intersection of Pomona/Washington is currently mis-aligned. This is a 2-way STOP controlled intersection. Pomona St. (north- south) is STOP controlled, while Washington (east-west) is uncontrolled. Vehicles on Washington are forced to "jog" to the left to continue on the street. Due to the poor sight lines (plus the presence of trees and bushes), vehicles on Pomona are forced to venture out into the intersection in order to see oncoming vehicles. With the high speeds on Washington, vehicles on Pomona find it difficult to safely enter the intersection.	Sight distance is inadequate at this location and may encourage risky behavior by drivers who do not take adequate care to check for cross traffic before entering the intersection.
2	Portland Avenue	Speeding -- Vehicle speeds along Portland Avenue are relatively high. In general, these streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). Most perpendicular streets are stop controlled.	The speed limit posted is 25 mph on Portland Ave. 85th percentile speeds exceed the limit by 6mph.

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2	Ramona Ave./Thousand Oaks Blvd.	Speeding, Sight Distance -- Southbound Ramona has a T-intersection with Thousand Oaks Blvd. on the north side of Albany High School. In general, speeds are relatively high on Thousand Oaks Blvd. To both the east and the west, trees, bushes and parked cars tend to block the view to Thousand Oaks Blvd., resulting in poor sight distances. This makes entering the intersection difficult.	The maximum observed 85th percentile speed was 6mph over the posted speed limit. Sight distance both east and west on Thousand Oaks Blvd. from the stop bar on Ramona Ave. is inadequate.
2	San Pablo Ave. at Solano Ave.	Bicycle/Vehicle Conflicts -- Difficult for bicyclists to travel through this intersection due to heavy vehicle traffic	Analyzing the 1994-97 accident data, there were total of 51 accidents reported at this intersection of which two involved bicycle and a vehicle. There were two accidents in this intersection vehicle and bicycle related, however with high ADT on both San Pablo Ave. and Solano Ave., there is a higher possibility of conflicts occurring between vehicles and bicycles.
2	San Gabriel Ave. between Brighton Ave. and Portland Ave. (North end)	Speeding -- Request for speed humps to mitigate speeding traffic. Cul-de-sac to preclude through traffic on this street. There is also a new proposed Middle School nearby which may increase problems and congestion.	Vehicles exceed the speed limit on San Gabriel Ave. during the PM peak hours. The highest observed 85th percentile speed was measured at 3mph over the posted speed limit. However, the presence of the new school near this location may increase the potential for risky behavior in the future.
2	Santa Fe Ave.	Speeding -- Speeding occurs on Santa Fe Ave. Santa Fe is a minor arterial, approximately 35 feet wide, with parking on both sides of the street. From Solano, there is a mild downslope to the north, which leads to increased speeds. The blocks on Santa Fe are also long, approximately 700 feet.	Vehicles exceed the speed limit on Santa Fe Ave. The maximum observed 85th percentile speed exceeded the posted speed by 6mph.

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AREA	LOCATION	ISSUE	MAJOR FINDINGS
2	Solano Ave., East of Masonic Ave.	Traffic Volumes, Speeds Affecting Bicycle Safety -- The recent City of Albany Bicycle Study stated that on Solano Ave. narrow sidewalks are used by cyclists who must use them because of the street's high traffic volumes and speeds.	Vehicles do not speed on the Solano Ave., but there is a high volume of vehicles that travel on Solano Ave. and relatively high number of bike and pedestrian accidents.
2	Solano Ave./Santa Fe Ave.	Traffic Diverted to Curtis St. -- At the signalized intersection of Solano Ave./Santa Fe Ave., substantial queues tend to develop along westbound and eastbound Solano Ave. As a result, westbound vehicles tend to turn off Solano Ave. onto Curtis St. and then continue onto Washington Ave. or other east-west streets. This diversion leads to increased volumes and higher speeds on Curtis St., which is a narrow (30 feet wide) and quiet residential street.	The number of vehicles traveling on Curtis St. during the PM peak period is very small (approximately 45 vehicles per hour). Of these, approximately 10 vehicles per hour appear to be making the cut-through movement described by residents. However, a virtually all westbound vehicles on Solano Ave. (482) remain on Solano Ave. and pass through the intersection at Solano and Santa Fe. Therefore it does not appear that a significant amount of cut-through traffic is occurring at this location.
2	Thousand Oaks Blvd.	Speeding -- Vehicle speeds along Thousand Oaks Blvd. are relatively high. In general, these streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). Most perpendicular streets are stop controlled.	The speed limit posted is 25 mph on Thousand Oaks Blvd. 85th percentile speeds exceed the limit by 6mph.
2	Washington Ave. and Masonic Ave.	Bicycle, Pedestrian, Motorist Safety — Petition for a four way stop at this location due to residents' observation of accidents and need to slow down traffic for the safety of pedestrians, bicyclists, and automobile drivers.	A STOP sign has been installed.
2	Washington Avenue	Speeding -- Vehicle speeds along Washington Avenue are relatively high. In general, these streets are 35 to 45 feet wide, with short block lengths (approximately 200 feet). All cross streets in this area, except San Pablo Avenue are stop controlled.	The highest 85th percentile speed was measured at 8 mph over the speed limit during the PM peak hours.

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3	Community Center parking lot	Cut-through Traffic -- Community center parking lot used as shortcut; vehicles driving too fast through the parking lot.	Virtually no vehicles were detected making a cutting through the Community Center parking lot in the PM peak hour. The two vehicles that were observed traveled at slow speed through the parking lot, and were ultimately headed northbound on Masonic Ave., and therefore used the Community Center lot to avoid the left turn at Marin and Masonic. However, the PM LOS for this intersection is very good (LOS B), and the vast majority of drivers desiring to travel northbound on Masonic Ave. from Marin Ave. make a left turn at the intersection of Marin and Masonic.
3	Curtis St.	Speeding -- Speeding occurs on Curtis St. despite the narrow roadway and the proximity of Marin Elementary School. Heading south from Marin School and the stop controlled intersection with Sonoma Ave., Curtis St. initially slopes downhill then slopes back up as it approaches Berkeley. This general dip in the roadway promotes speeding as it is easier to accelerate downhill and drivers feel comfortable that the uphill section will make it easy for them to stop.	Vehicles exceed the speed limit on Curtis Ave. during the AM and PM peak hours. The highest 85th percentile vehicles speed recorded was 8mph over the posted speed limit.
3	Dartmouth St./Talbot Ave.	Pedestrian Safety/Stop Sign -- There is a small children's playground on the northwest corner of Dartmouth St./Talbot Ave. Many pass by on Dartmouth St., including cut-through traffic from San Pablo Ave. traveling to Marin Ave. by way of Dartmouth St. and Masonic Ave. Residents would like a 4 way STOP here.	This intersection does not meet the warrants for four way stop control. No accidents have been reported at this location during the study period. However, the potential exists for risky behavior when small children cross Dartmouth Street. 85th percentile speeds on Dartmouth St. were measured at a maximum of 30mph, which is 5mph over the posted speed limit.

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3	Kains Ave./Marin Ave.	Inadequate Signage -- Inadequate warning of one-way streets. "No right turn" sign on north leg of the intersection should be placed further east for better visibility.	The westbound sign indicating the one way nature of Kains Avenue is currently located 17 feet east of the corner. The sign can be seen by approaching vehicles 165 feet east of the sign. A recently removed tree branch may previously have restricted the view of the sign.
3	Marin Ave.	Pedestrian Safety -- There are pedestrian crossing problems all along Marin Ave., especially near Marin School at Santa Fe Ave. Residents want Marin signals to be coordinated in favor of pedestrians. Need safety in middle of Marin for pedestrian crossing.	Of the two pedestrian accidents occurring on Marin Avenue only one involved a pedestrian crossing Marin Avenue. The other involved a pedestrian crossing in a crosswalk at a signal controlled intersection. Both accidents were the fault of the driver and involved senior citizen pedestrians in crosswalks.
3	Solano Ave.	Drivers Do Not Yield to Pedestrians -- Drivers ignore pedestrians at crosswalks and don't yield right of way.	On Solano Ave., there were twelve accidents observed which involved pedestrians, and 13 accidents which involved bicyclists. On-street observations made on Solano Ave. indicate that there are cases where drivers do not yield to pedestrians. Accident data and other data and observations may indicate a need for additional pedestrian and bicycle safeguards.
3	Marin Ave.	Drivers Do Not Yield to Pedestrians -- Drivers ignore pedestrians at crosswalks and don't yield right of way.	On Marin Ave., there were three accidents observed which involved pedestrians, and ten accidents which involved bicyclists. On-street observations made on and Marin Ave. indicate that there are cases where drivers do not yield to pedestrians. Accident data and other data and observations may indicate a need for additional pedestrian and bicycle safeguards.

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3	Marin Avenue/Ramona Avenue	Stop signs -- Stop signs have been requested for Marin at this location	Need warrant analysis (being completed).
3	Marin Ave./Santa Fe Ave.	Turns at High Speed -- Northbound drivers turn east on Marin; position of crosswalk and wide curve of sidewalk allows vehicles to turn fast at this location on a green light.	There is 47 feet from the stop bar on the south leg of Santa Fe ave. To the crosswalk at the east leg of Marin Ave. The curb return radius is not the cause of vehicles making unsafe turns. Instead, the crosswalk at the east leg of the intersection is offset, and this creates space for right turning vehicles to accelerate as they approach the crosswalk.
3	Marin Ave./Santa Fe Ave.	Sight Distance -- Large vehicles parking on street at crossings with Marin create sight distance problems. Such vehicles include vans, sport utility vehicles and a variety of large trucks.	Large vehicles parked near the corner of intersections along Marin Avenue have the potential to obscure sight distance of vehicles on the cross street. This may reduce the sight distance for the cross street to less than the 330 feet recommended by the Caltrans Highway Design Manual for the corner sight distance on a street with a 30 mile per hour design speed.

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3	Marin Ave./Peralta Ave.	Increase Vehicular Crossing Time -- Green time at Peralta Ave. is only 6 seconds and on Marin is 90 seconds.	The Marin Avenue Signal Timing Study provides for greater preference for cross streets along Marin Avenue. It recommends that the green phase for Peralta Avenue operate with an initial minimum of six seconds. This could then be increased by means of vehicle actuation over detector loops to as much as 24 seconds of green time. Additionally, this intersection has pedestrian actuation which can call for a combined walk and don't walk duration of 27 seconds. Thus, it is possible that a single vehicle crossing Marin will receive a 24 second green phase if the pedestrian button is pushed. The crossing time on the west side crosswalk of Marin Avenue is 6 sec. of walk time and 15 sec. of flashing don't walk. The crossing time on the south side crosswalk of Peralta Avenue is 7 sec. of walk time and 13 sec. of flashing don't walk.
3	Marin Ave./Santa Fe Ave.	Child Pedestrian Safety -- Drivers turning right on a red light at this location refuse to yield to pedestrians including children in the crosswalk or preparing to enter on the green light--prohibit right turns on red at this location. --Increase monitoring of this location for unsafe driving behavior endangering children walking. --School Crossing" signs should be posted --Add a second crossing guard at this location due to width of Marin and need for children to cross Santa Fe as well. --School Crossing signs and a No Right Turn on Red sign should be installed --A deadly combination of speeding commuters and parents loading children while double-parking and remaining in their vehicles occurs at this location.	Our speed survey data validates resident concerns that risky behavior is occurring at the Marin School; speeds are over 5mph in the vicinity of the school on Marin and Santa Fe. Our videotaped observation of the street activity around the school during critical periods also validates resident concerns regarding risky behavior, including loading children in traffic lanes in mid-block, and blocked traffic. We conclude that this evidence, coupled with observed vehicle speeding on adjacent streets, leads to the conclusion that risky behavior is occurring which could result in pedestrian accidents although no pedestrian accidents were recorded from 1994-1997

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3	Marin Ave./Masonic Ave.	Child Pedestrian Safety -- Need increased pedestrian green times for children crossing at Masonic Ave./Marin Ave. A class sized group of children with two adult supervisors were observed by residents as being unable to cross completely within the allotted pedestrian green time.	There is more than enough crossing time for pedestrians crossing Masonic Ave. (62 seconds of walk time and 10 seconds of flashing don't walk). There is no record of a pedestrian accident at this intersection for the past four years. The crossing time on the east and west crosswalks across Marin Avenue is 7 sec. of walk time and 13 sec. of flashing don't walk. The *Marin Avenue Signal Timing Study* recommends 10 seconds of walk duration and 12 seconds of don't walk duration. Therefore, for the crosswalk across Marin Avenue, there is adequate crossing time at a rate of 3.5 feet per second if pedestrians begin to cross before the end of the green phase.
3	Marin Ave. and Santa Fe Ave.	Speeding, Endangering Bicyclists -- Bicyclists find excessive speed to be dangerous on both Marin Ave. and Santa Fe Ave., south of Marin Ave.	On Marin Ave., the maximum 85th percentile speed observed was 36mph, 11mph over the posted speed limit. On Santa Fe Ave., the maximum 85th percentile speed observed was 36mph, 11mph over the posted speed limit. There were 10 accidents on Marin Ave. involving a bicyclist and one accident involving a bicyclist on Santa Fe Ave. This indicates that bicyclist concerns are borne out by the data analysis, especially on Marin Ave.
3	Marin Ave.	Speeding -- On Marin Ave. westbound at The Alameda in Berkeley, 2 lanes become 4 lanes. By the time westbound traffic reaches Albany this promotes speeding as people try to make up time. Synchronize lights on Marin Ave. to reduce speeding. the posted limit.	Vehicles exceed the speed limit on Marin Ave. during the PM peak hour. The highest 85th percentile speed was measured at 11 mph over the speed limit during the PM peak hour.

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3	Marin Ave./Talbot Ave.	Child Pedestrian Safety -- Residents want pedestrian activated signal at Talbot Ave./Marin Ave. because of children crossing.	The highest pedestrian volumes at this location were on the south crosswalk with a few additional pedestrians on the north crosswalk. Both of these approaches are stop controlled. Crossing guards are present at this location during school start/stop times. There were no reported accidents at the location which involve pedestrians. Given these child pedestrian safety appears to be adequate.
3	Marin Ave. /Cornell Ave.	Child Pedestrian Safety -- Residents want pedestrian activated signal at Cornell Ave./Marin Ave. because of children crossing.	The most substantial pedestrian volumes at this intersection occur on the south crosswalk, which is stop sign controlled. The east crosswalk which crosses Marin Avenue and serves children traveling to Cornell School is controlled by a crossing guard during the periods when school children are present. SWITRS accident records indicate one reported accident involving pedestrians at this location (not a child).
3	Masonic Ave.	Speeding -- Vehicles tend to speed after passing the Berkeley speed humps located on a relatively narrow roadway. The northernmost speed hump is ironically placed on an already arched section of roadway (possibly over a culvert for a stream) making it quite a significant hump. The roadway then opens up as it enters Albany and vehicles accelerate due to the higher design speed on the Albany section of Masonic. The street also feels wider here because of the green belt and pedestrian/bike trails along the BART right-of-way on the east side of Masonic Ave. This wide open feeling contributes to higher vehicle speeds. --Speeding between Marin and Berkeley is intimidating.	Vehicles exceed the speed limit on Masonic Ave. The highest 85th percentile speed was measured at 7mph over the posted speed limit.

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AREA	LOCATION	ISSUE	MAJOR FINDINGS
3	Ordway Ave. (900 and 1000 Blocks) between Sonoma Ave. and Posen St.	Speeding -- Discussion of lane channelization, speed humps, and lane dividers by residents in letter to City. Residents report speeds from 35 to 45 mph on Ordway Ave. They inquired if speed tables could be installed.	Vehicles exceed the speed limit on Ordway Ave. The highest 85th percentile speed was measured at 8mph over the posted speed limit.
3	Peralta Ave./Francis St.	Sight Distance -- Sight distance is an issue at this location due to vertical curves, parked cars and physical obstructions. This makes it particularly difficult to make a left turn from Francis St. onto Peralta Ave.	On the southbound approach on Peralta Ave., the sight distance is 200 feet from the centerline of the eastbound Francis St. crosswalk. Form the stop bar, sight distance was 150 feet. Sight lines are interrupted by trees, plantings, and parked vehicles.
3	Pomona Ave.	Speeding -- Speeding on Pomona Ave. The long blocks and straight wide streets tend to promote speeding in this area.	Vehicles exceed the speed limit on Pomona Ave. The highest 85th percentile speed was measured at 9mph over the posted speed limit.
3	San Pablo Ave.	Wrong-way Bicycle Travel -- Bikes ignore traffic control, ride wrong way on San Pablo Ave.	Analysis of the 1994-97 accident data for incidents occurring due to bicycles riding on the wrong side of the street on San Pablo Ave., shows there were no accidents during the four year period out of a total of 6 bicycle.
3	Santa Fe Ave. at Pomona Ave., Ramona Ave., and Key Route Blvd.	Intersection Geometrics -- Confusing geometrics at the intersections of Santa Fe Ave. with Pomona Ave., Ramona Ave., and Key Route Blvd. The intersection of Santa Fe Ave./Pomona Ave. currently has raised medians and islands on Pomona Ave. as well as signs which make it less confusing than the other intersections.	Observations of street geometrics indicates that channelization of vehicles causes potential driver confusion, especially for northbound vehicles on Santa Fe Ave. turning left (westbound) at the island.
3	Santa Fe Ave. at Pomona Ave., Ramona Ave. and Key Route Blvd.	Child Pedestrian Safety -- Dangerous conditions for school children and others crossing at this location.	****MUST BE TOTALLY REWRITTEN****

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3	Santa Fe Ave. at Marin School	School Employee Parking -- Residents do not want school employees to park on Santa Fe Ave.	The parking occupancy on Santa Fe Avenue on the block adjacent to the school was 78 percent. This is less than the 85th percentile percent occupancy, which is considered to be full occupancy.
3	Santa Fe Ave. between Marin Ave. And Gilman St.	Speeding -- Speeding occurs on the long straight portion of Santa Fe Ave., which is uninterrupted by STOP signs and which passes by Marin Elementary School. This has led to requests for stop signs or other traffic control devices at this location. Additional enforcement has also been requested.	Vehicles exceed the speed limit on Santa Fe Ave. The highest 85th percentile speed was measured at 11 mph over the speed limit northbound in 1997. This speed study was repeated in the AM and PM peak hour in 1998 on Santa Fe Ave. The highest 85th percentile speed measured at that time was also 11 mph over the speed limit.
3	Santa Fe Ave	Speeding Hazard for Bicyclists -- Speeding vehicles cause a danger to bicyclists.	Based on the occurrence of bicycle accidents in this area and 85th percentile speeds 11 mph above the speed limit, bicyclists concerns appear tp be validated.
3	Solano Ave. from Key Route Blvd. to Ventura Ave.	Residential Permit Parking -- Permit parking within one block of Solano Ave. to avoid conflicts between commercial employee/patrons and residents.	Parking occupancies are significantly high on Solano Ave. during the weekday evening survey period (up to 97% occupancy east of Ramona Ave.) However, residential parking occupancy exceeded 80% on only one street : Ordway Ave. from Solano to Marin (85% occupancy).
3	Solano Ave./Ventura Ave.	Sight Distance -- Parking too close to the intersection causes sight distance problems.	The sight distance from the northbound Ventura Avenue stop bar to the eastbound Solano Avenue approach is 90 feet, if a car is parked in the first stall to the west of the intersection. Even if the first two stalls are empty, the sight distance only increases to 120 feet which is still less than the 330 feet recommended by the Caltrans Highway Design Manual. It is necessary to pass the stop bar and pull up to the edge of the curb bump-out to clearly see traffic on Solano Avenue.

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3	Sonoma Ave.	Speeding due to Cut-through Traffic -- Seen as a cut through traffic route for commuters avoiding Marin Ave. --Severe speeding problems observed by residents make crossing dangerous; residents requested "Slow Down" signs on Sonoma as is posted on other streets in the area. --Speeding vehicles due to cut-through Berkeley traffic; requested stop signs or other devices to slow traffic.	Vehicles exceed the speed limit on Sonoma Ave. during the AM and PM peak. The highest 85th percentile speed was measured at 8mph over the speed limit.

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