FINAL
MAY 20 1986

SUMMARY

ROUTE CONCEPT REPORT
ROUTE 238

ALA 0.000 - ALA 18.296

This report defines the development concept of Route 238 in District 4, over a 20 year planning period (1985-2005).

ROUTE CONCEPT

Segment A:
ALA 0.000 - 5.400 D-40 6-8 Lane Freeway
Route 680 - Unconstructed Routes 84/238 Interchange

Segment B:
ALA 5.400 - 9.500 E-25 6-Lane Conventional
Unconst. Routes 84/238 Interchange - North of Industrial Parkway

Segment C:
ALA 9.500 - 14.571 D-40 6-Lane Expressway/Freeway
North of Industrial Parkway - Route 580

Segment D:
ALA 14.571 - 16.696 D-40 6-Lane Freeway
Route 580 - Route 880

Segment E
ALA 16.696 - 18.296 D-40 4-Lane Freeway
Route 880 - Unconstructed Route 61

CONCEPT RATIONALE

Route 238 parallels Route 880 from Route 680 to Route 580 and serves as an urban arterial linking the east sides of the Cities of Fremont, Union City and Hayward. As a thoroughfare, it takes commuters from their homes to the major freeways (Routes 680, 880 and 580) and carries a large share of personal-trip and commercial traffic. The objective is to provide a facility that will contribute in easing city congestion and take a portion of traffic from the congested Route 880 facility. Partial or total realignment of the route is required to achieve this goal.

As stated in the Route 880 Route Concept Report, Route 880 must be widened to fourteen lanes if it is to meet the projected demand. Since it is questionable whether a single facility can operate efficiently with fourteen lanes, a parallel facility should be constructed to meet the excess in demand along the Route 880 corridor. A Route 238 freeway/ expressway facility could serve as an ideal parallel route between Route 680 in Fremont and Route 580 in Hayward. However, it can not be expected that a new Route 238 facility could handle the entire excess in demand for Route 880. Thus, both a new Route 238 facility and a new Route 61 facility are needed to accommodate the projected excess in demand along the Route 880 corridor.

SUMMARY

ROUTE CONCEPT REPORT
ROUTE 238

ALA 0.000 - ALA 18.296

Further study of the highway network in southern Alameda County is needed to determine the highway needs of the area. A more comprehensive study, with appropriate traffic projections, should be undertaken, with an emphasis on the interrelationships of Routes 880, 580, 92, 84, 61 and Route 238. The study should determine how the existing condition of each route, as well as any improvements made to the routes, affect the operating performance of all the other routes and adjacent local streets.

AREAS OF CONCERN

The growth rate of the cities along Route 238 is expected to far exceed the average growth of the Bay Area. In addition, Route 880, even with its proposed improvements in place, will not be able to accommodate the anticipated demand through these cities. This growth, along with the increased volume on Route 880, increases congestion along the total length of the existing Route 238 facility. The area most adversely affected will be the section through downtown Hayward and the freeway portion of Route 238 between Routes 580 and 880.

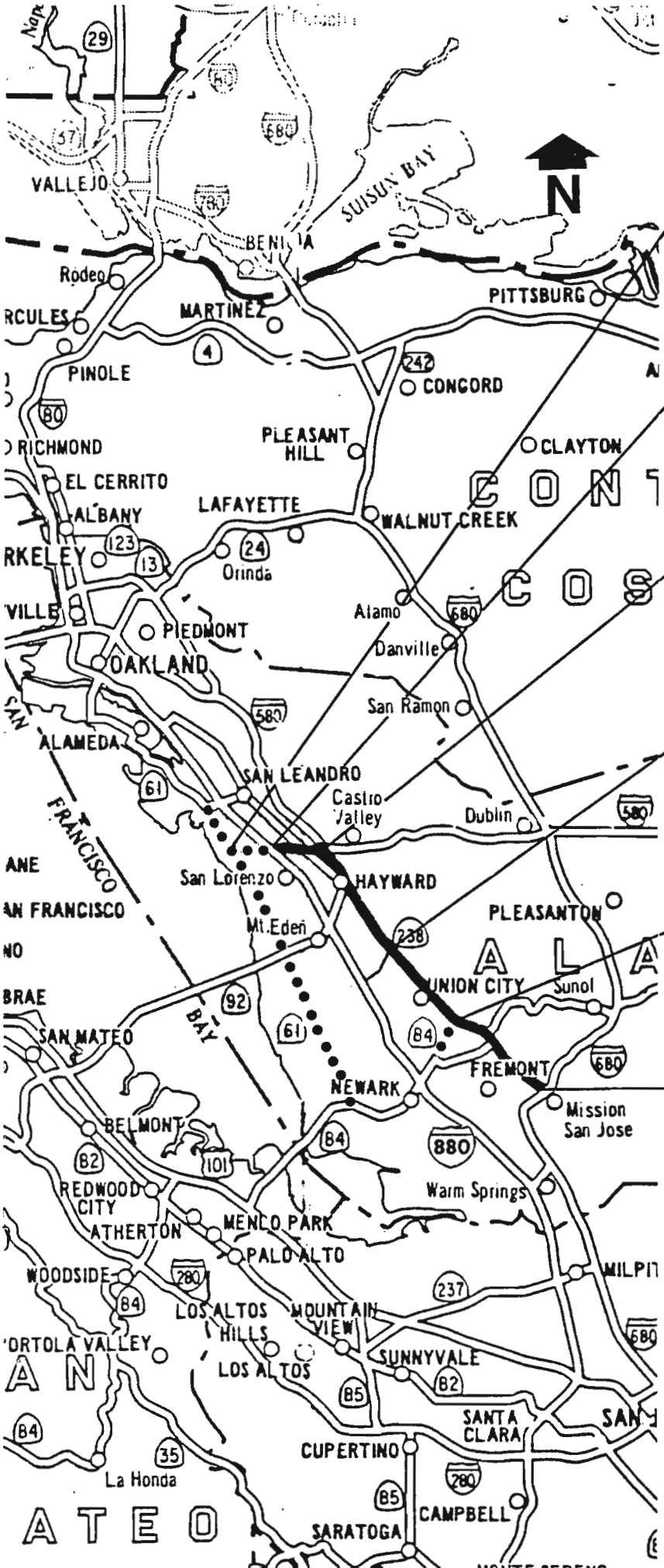
PROBLEM LOCATIONS

ALA 238	0.00 - 3.31	Route 680 to Route 84 Jct. AM & PM Congestion
ALA 238	8.43 - 13.40	Downtown Hayward, AM & PM Congestion
ALA 238	13.83 - 16.70	Existing Route, AM & PM Congestion

IMPROVEMENTS

The following are the improvements necessary to achieve the proposed concept for Route 238:

The realignment and construction of an initial six lane, ultimate eight lane freeway between Route 680 (PM 0.00) and the possible future Route 84/238 freeway to freeway interchange (PM 5.40).
The widening of the existing four lane divided conventional highway to a six lane divided conventional highway, from the presently unconstructed Route 84/238 freeway to freeway interchange (PM 5.40) to north of Industrial Parkway (PM 9.50).
The realignment and construction of a six lane freeway/expressway from north of Industrial Parkway (PM 9.50) to Route 580 (PM 14.57).
The widening of the four lane freeway to a six lane freeway between Route 580 (P.M. 14.57) and Route 880 (P.M. 16.69).
The construction of a four lane freeway between Route 880 (PM 16.69) and presently unconstructed Route 61 (PM 18.29). (The construction of this segment of Route 238 is contingent on the construction of Route 61 south of Route 112.)



E	ALA 18.29
D	ALA 16.69
C	ALA 14.57 ALA 9.40
B	ALA 5.40
A	ALA 0.00

LOCATION MAP
ROUTE 238

ROUTE CONCEPT REPORT

ROUTE 238

ALA 0.000 to ALA 18.296

Prepared under the direction of:

Cecil L. Smith 5/2/86

CECIL L. SMITH, Chief Date
Transportation Planning
District 4

Recommended Approval:

MAY 2 '86

~~GEORGE GRAY~~ Date
Deputy ~~District~~ Director
Planning and Programming

I approve this Route Concept Report as the guide toward which today's decisions and/or recommendations should be directed.

Approved:

Burch Bachtold 5/9/86

BURCH C. BACHTOLD Date
District Director
District 4

Approved:

D. L. WIEMAN, Chief Date
Division of Transportation
Planning

Approved:

ALLAN HENDRIX, Chief Date
Division of Highways
and Programming

Approved:

VINCE PAUL, Chief Date
Division of Project
Development

STATEMENT OF PLANNING INTENT

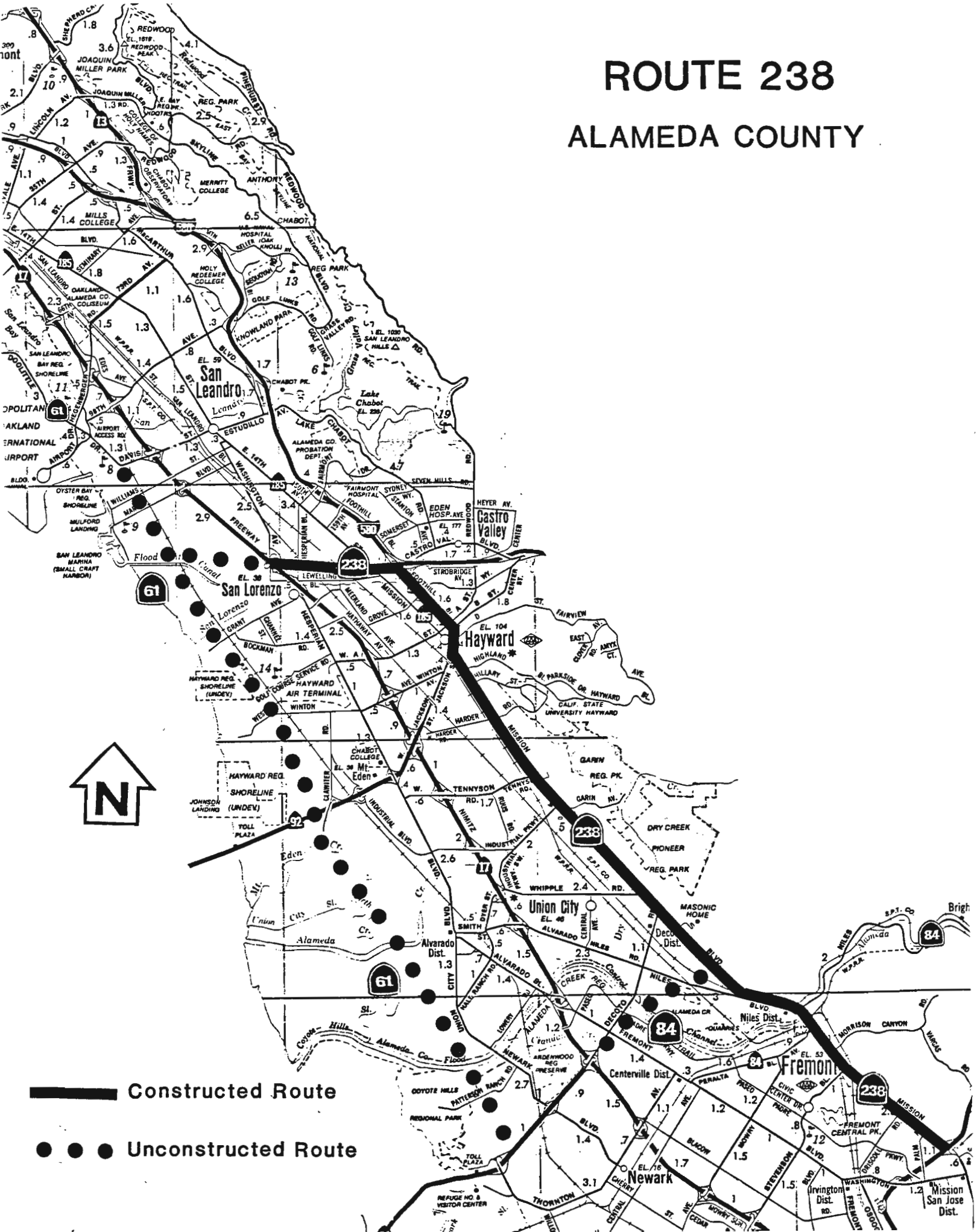
The Route Concept Report (RCR) is a planning document which expresses The Department's judgment on what the characteristics of the state highway should be to respond to the projected travel demand over the 20-year planning period. The RCR contains the Department's goal for the development of each route in terms of level of service and broadly identifies the nature and extent of improvements needed to reach those goals. The RCR then provides the basis for the preparation of Route Development Plans (RDP) and the system analysis which indicates the level of service provided on the system at a given level of funding.

Route concept reports are prepared in the districts and represent the combined expertise of district staff. Facility dimensions (e.g., roadway widths or number of lanes on a multi-laned facility) discussed in the RCR represent an initial planning approach to scoping candidate improvements and determining estimated costs.

All information in the RCR is subject to change as conditions change and new information is obtained. Consequently, the nature and size of identified improvements may change as they move through the project development stages, with final determinations made at the time of project planning and design. If the nature and size of improvements change from that included in this report during later project development stages, this will be cause to review the RCR for this route.

ROUTE 238

ALAMEDA COUNTY



ROUTE CONCEPT REPORT

ROUTE 238

ALA 0.000 - ALA 18.296

I ROUTE DESCRIPTION

Route 238 is approximately 18 miles in length and traverses the southwestern portion of Alameda County. It begins at Route 680 in the City of Fremont and runs northwesterly through Union City and Hayward to Route 580 near Castro Valley. At Route 580 the Route proceeds west to unconstructed Route 61 near San Lorenzo. Route 238 is known as Mission Boulevard from Route 680 in Fremont to the Routes 92/185/238 junction in Hayward. At the Routes 92/185 junction, Route 238 makes a turn and follows Foothill Boulevard to the Routes 238/580 interchange. Mission Boulevard becomes Route 185 north of the Routes 92/185/238 junction. The southern section of the Route is characterized by many intersecting cross streets and signalized intersections. In the central and northern portions, signalized intersections, commercial access, and on-street parking predominate. From the Route 580 interchange the route is a four lane freeway and runs westerly to Route 880. An unconstructed segment approximately 1.5 miles long begins at Route 880 and ends at unconstructed Route 61 (PM 18.29) in the City of San Leandro.

BART provides service along the entire Route 238 corridor. The Fremont-Richmond line parallels most of the route, with service to Oakland, Berkeley and San Francisco. BART stations are located in the Cities of Fremont, Union City, Hayward and San Leandro. All of the stations in these cities are within a mile of Route 238, thus Route 238 serves as a local access route to these BART stations.

Officials of the Bay Area Rapid Transit District, the Metropolitan Transportation Commission, the City of San Jose and Santa Clara County have been considering the feasibility of extending the BART system into Santa Clara County and connecting the system with the Guadalupe Light Rail System and/or Caltrain. A rail transit connection between Fremont and San Jose is needed to handle the projected travel demand along Route 880 between Hayward and San Jose. It cannot be expected that a BART extension into Santa Clara County would alleviate a significant amount of the demand along the Route 880 corridor. Thus, major improvements to the Route 238 facility are still necessary, with or without a BART extension.

The portion of the route between Route 680 and the Routes 92/185/238 junction is a suggested bicycle route.

The portion of Route 238 between Route 680 (PM 0.00) and Route 580 (PM 14.57) is classified as a Federal-Aid Urban State Highway. The portion between Route 580 (PM 14.57) and Route 880 (PM 16.69) is a non-chargeable Federal-Aid Interstate. The functional classification should be re-evaluated. It may be more appropriate to classify Route 238 between Route 680 and Route 580 as Federal-Aid Primary.
The section of Route 238 between Routes 580 and 880 is a designated Surface Transportation Assistance Act (STAA) Route for oversized trucks. The entire Route is in the State Freeway and Expressway System.

The Legislative description is as follows:

> "Route 238 is from Route 680 in Fremont to Route 61 near San Lorenzo via Hayward."

II PURPOSE OF ROUTE

Route 238 serves as a commercial route and local feeder route between Route 680 in Fremont and Route 580 in Hayward. The segment between Route 580 and Route 880 serves as a connector between these two routes for both commercial and commuter traffic. The route also serves as an access to the San Mateo-Hayward Bridge from the Route 580 Corridor via Route 92.

III ROUTE SEGMENTS

A. Segment A:

04-ALA-238, PM 0.000 - 5.400
Route 680 - Unconstructed Routes 84/238 Interchange

Segment A of Route 238 begins at the Route 680 interchange in the City of Fremont and proceeds to the unconstructed junction of Routes 238 and 84 near the Union City/Fremont city limits. The route concept for Route 84 consists of constructing Route 84 as a freeway along a new alignment between Route 880 and Route 238. Segment A of Route 238 lies between Route 680 and the possible new Route 238/84 freeway to freeway interchange. The existing east and west junctions of Route 84 are locating within this segment. A break in Route 84 occurs at Route 238, with the through traffic from Route 84 being directed onto Route 238 for approximately .3 mile.

This segment is a four lane divided conventional highway and serves as a local access route to Route 680 and Route 84 for both commuter and commercial traffic. The route is known locally as Mission Boulevard, and traverses a relatively undeveloped area of Southern Alameda County, which is predominantly low density residential. The signed speed limit along this segment is 45 to 50 MPH.

Segment A is entirely within the City of Fremont.

1. Existing Facilities

a) Highway facility

Segment A is a four lane divided conventional highway with left turn pockets in various locations. For the majority of the segment, the highway has a total traveled way width of 48 feet, 9 foot shoulders, and a 12 to 18 foot wide median. The section of highway from the west junction of Route 84 (PM 3.3) to north of the east junction of Route 84 (PM 3.8) has a total traveled way width varying from 40 to 44 feet, and shoulder widths varying from 0 feet (at the Southern Pacific Railroad underpass at PM 3.76) to 2 feet. There is no median at the Alameda Creek overpass and the Southern Pacific Railroad underpass.

The terrain and grade are generally flat (0-3%). There is a designated bicycle lane from Route 680 to the east junction of Route 84 and from north of the west junction of Route 84 to the end of the segment.

b) Current STIP (1985)

The following is the project listed in the 1985 State Transportation Improvement Program (STIP) for Segment A of Route 238:

Budget Not Awarded PM 0.0 - 1.6	Route 680 to Makintosh Street Drainage Improvements.

c) Public Transit

Several Bus lines operate along this segment of Route 238. A/C Transit operates local bus service, while the Santa Clara County Transit District (SCCTD) operates several bus lines between Santa Clara County and the Fremont BART station via Route 238 (Mission Boulevard) and Route 680.

d) Bicycles

The entire segment is a suggested bicycle route; there is a designated bicycle lane between Route 680 and the east junction of Route 84, and from north of the west junction of Route 84 to the end of the segment.

e) Park and Ride

There is a joint use Park and Ride facility at Mission San Jose Park with 24 spaces.

f) Rail Transit

BART provides service along the entire Route 238 corridor. The Fremont-Richmond line parallels most of the route, with service to Oakland and San Francisco. The Fremont Bart Station is located within a mile of the Route 238/84 Junction. There are plans to extend BART south of the Fremont station whenever funding is available.

2. Current Operating Conditions

The 1982 Annual Average Daily Traffic (AADT) ranges from 30,000 between the east and west junctions of Route 84 to 15,000 at the end of the segment near the Union City/Fremont city limits. The AM Peak Hour traffic volumes between the Route 84 junctions are 1,600 northbound and southbound. The AM peak hour traffic volume near the Union City/Fremont City limits is 1,000 northbound and 800 southbound.
The Volume to Capacity ratio (V/C) ranges from 1.00 (Level of Service of E-25) at Route 84 to .63 (LOS of C-45) near the Union City/Fremont city limits. Truck traffic is four to six percent of the total traffic.

3. Accident Rate (1/81 - 12/83)

There were 262 accidents with 163 injuries and seven fatalities along this segment. The total accident rate was 2.18/MVM (Million Vehicle Miles), which was below the Statewide average total accident rate of 3.50/MVM for similar facilities. The fatality rate was .050/MVM, which was above the Statewide average fatality rate of .024/MVM.

4. Future Operating Conditions (1995-2005)

The projected AADT for 1995 (2005), assuming this segment of Route 238 remains as a conventional highway along the existing alignment, ranges from 36,000 (42,000) between the Route 84 junctions to 18,000 (21,000) at the end of the segment near the Union City/Fremont city limits. The AM peak hour traffic volumes between the Route 84 junctions are projected to be 1,800 (2,000) northbound and 2,100 (2,500) southbound. Near Union City the AM peak hour traffic volumes are projected to be 1,000 (1,100) northbound and 1,000 (1,300) southbound.

The 1995 Demand to Capacity ratio (D/C) is projected to be 1.31 (Level of Service of F-20) between the east and west junctions of Route 84 and .63 (LOS of C-45) near the Union City/Fremont city limits. The 2005 D/C is projected to be 1.56 (LOS of F-15) and .81 (LOS of D-35) at these respective locations.

Should Route 84 be constructed as a freeway between Route 880 and Route 238, and should segment A of Route 238 be constructed as a freeway as well, traffic demand along Route 238 would be greater than the projections mentioned above. These traffic projections do not take into consideration the additional traffic redirected onto Route 238 from Route 84, nor the traffic which would shift over from Route 880.

5. Route Concept

The concept for Segment A of Route 238 is an initial six lane, ultimate eight lane freeway, with a transit right-of-way for a possible future Light Rail Transit (LRT) System, and a bicycle trail adjacent to the freeway right-of-way. The freeway would be depressed where possible, with an earthen berm sound barrier along the edge of the facility. This freeway would help alleviate the congestion along Route 880, and provide for an alternate route to 880. The conceptual LOS is D-40. The freeway could possibly be located along the Southern Pacific right-of-way between the Route 680/238 unconstructed interchange stub (Route 680 ALA PM M5.0) and Mission Boulevard, and approximately parallel Mission Boulevard or BART for the remainder of the segment.

6. Improvements (Post 1985 STIP)

The following are the improvements necessary to achieve the proposed concept for segment A of Route 238:

The realignment of Route 238 and construction of a six lane freeway with a wide median for ultimate expansion to eight lanes, and with a bicycle trail and transit right-of-way. The entire segment would be constructed as a freeway between Route 680 (PM 0.00) and the presently unconstructed Route 84/238 junction near the Union City/ Fremont city limits (PM 5.40), in the City of Fremont.

7. Concept Concerns

It is anticipated that a four lane freeway would be inadequate in handling the increased traffic attracted to the freeway facility from the surrounding local streets, the proposed Route 84 freeway facility and from Route 880. Also, in the Route 84 Route Concept Report, Caltrans suggests the possibility of redirecting traffic from Niles Canyon onto Route 680 via Route 238. As the Route 880 corridor becomes increasingly congested, and as local streets reach capacity as southern Alameda County is developed, a four lane freeway would become inadequate soon after completion. The concept takes into consideration the additional traffic which would be attracted to the freeway facility.

Adoption of the freeway alignment of Route 238 between Route 680 in the City of Fremont and Industrial Parkway in the City of Hayward was rescinded in April of 1980. Portions of the purchased right-of-way were subsequently sold. The southern most part of the freeway alignment is now part of Central Park in the City of Fremont. Other portions of the rescinded right-of-way pass through commercial and residential neighborhoods, the Alameda Creek Quarries, and along the Union Pacific and Southern Pacific Railroad right-of-ways. The alignment approximately parallels the BART tracks.

If the concept is not realized, improvements in public transportation and the implementation of aggressive TSM measures will be needed to provide for the excess in demand, along with possible widening of the existing facility. Also, a study of an LRT System parallel to Route 238 (Mission Boulevard) should be considered, should the concept for all of Route 238 not be realized. A possible location for an LRT System could be along the Southern Pacific or Union Pacific Right-of-Ways.

8. Local Concerns

The City of Fremont would like a freeway on a new alignment so the existing facility (Mission Boulevard) could be kept in operation. The City has expressed a preference that the freeway be built elevated/depressed or under a "freeway lid" depending on the area traversed. The section through Central Park would have to be underground (possibly along the abandoned SP rail alignment).

B. Segment B:

04-ALA-238, PM 5.400 - 9.500
Unconstructed Jct Route 84 - North of Industrial Parkway

Segment B of Route 238 begins in the City of Fremont at the presently unconstructed Route 84/238 junction near the Union City/Fremont city limits, and continues northwest through Union City to just north of Industrial Parkway in the City of Hayward. The segment is a four lane divided conventional highway and serves commuter and commercial traffic. The land use is residential and commercial. The signed speed limit ranges from 40 to 50 MPH.

Segment B is within the Cities of Fremont, Union City and Hayward.

1. Existing Facilities

a) Highway facility

Segment B is a four lane divided conventional highway with left turn pockets in various locations. The total traveled way width is 48 feet, the shoulder widths vary from 8 to 12 feet and the median width varies from 16 to 18 feet. The terrain and grade are generally flat (0-3%). There is a designated bicycle lane from the beginning of the segment to Decoto Road.

b) Current STIP (1985)

There are no projects planned in the 1985 STIP for Segment B of Route 238.

c) Public Transit

A/C Transit provides bus service along this segment. The 21 bus line serves the Hayward Greyhound Bus Station, the Union City, South Hayward and Hayward BART Stations, and downtown Hayward. The RF bus line provides service to the Transbay Bus Terminal in San Francisco during commute hours.

d) Bicycle

The entire segment is a suggested bicycle route. There is a designated bicycle lane from the beginning of the segment in the City of Fremont to Decoto Road in Union City.

e) Park and Ride

There are no Park and Ride facilities along this segment.

f) Rail Transit

BART provides service along the entire Route 238 corridor. The Fremont-Richmond line parallels most of the route, with service to Oakland, Berkeley, Richmond and San Francisco. The Union City and South Hayward BART Stations are located within a half mile of the Route.

2. Current Operating Conditions

The 1982 AADT ranges from 19,000 at Decoto Road to 31,000 north of Industrial Parkway. The AM Peak Hour traffic volume at Decoto Road is 1,300 northbound and 900 southbound. North of Industrial Parkway the AM peak hour traffic volume is 1,900 northbound and 1,100 southbound.

The V/C ranges from .81 (LOS of D-35) at Decoto Road to 1.00 (LOS of F-20) north of the Industrial Parkway/Mission Boulevard intersection. Truck traffic accounts for 6% of the total traffic.

Left turn lanes and transition lanes were not considered in the calculation of the V/C and Level of Service.

3. Accident Rate (1/81 - 12/83)

There were 258 accidents with 135 injuries and two fatalities in this segment. The total accident rate was 2.77/MVM, which was below the Statewide average total accident rate of 4.42/MVM for similar highway facilities. The fatality rate of .021/MVM is below the Statewide average fatality rate of .024/MVM.

4. Future Operating Conditions (1995-2005)

The projected AADT for the year 1995 (2005), assuming this segment of Route 238 remains a conventional highway along the existing alignment, ranges from 23,000 (26,000) at Decoto Road to 35,000 (41,000) north of Industrial Parkway. The AM peak hour traffic volume is projected to be 1,400 (1,400) northbound and 1,100 (1,400) southbound at Decoto Road. North of Industrial Parkway the AM peak hour traffic volume is projected to be 1,900 (2,200) northbound and 1,600 (1,800) southbound.

The 1995 D/C is projected to range from .88 (LOS of D-35) at Decoto Road to 1.25 (LOS of F-20) north of Industrial Parkway. The 2005 D/C is projected to range from .88 (LOS of D-35) at Decoto Road to 1.44 (LOS of F-15) north of Industrial Parkway.

These traffic projections do not take into consideration the additional traffic expected to utilize the facility should Routes 238 and 84 be constructed as freeways south of the segment, and Route 238 be constructed as an expressway/freeway facility north of the segment.

5. Route Concept

The concept for Segment B of Route 238 is a six lane divided conventional highway along the entire segment, from the possible future Route 84/238 freeway interchange near the Union City/Fremont city limits to north of Industrial Parkway. The Conceptual LOS is E-25.

6. Improvements (Post 1985 STIP)

The following is the improvement necessary to achieve the proposed concept for segment B of Route 238:

The widening of Route 238 along the existing alignment from a four lane divided conventional highway to a six lane divided conventional highway. This widening improvement would extend from the possible new Route 84/238 freeway interchange in the City of Fremont (PM 5.40) and near the Union City/Fremont city limits (PM 5.61), to north of Industrial Parkway in the City of Hayward (PM 9.50).

7. Concept Concerns

A continuous freeway/expressway facility is needed along the entire portion of Route 238 between Route 680 and Route 580 to help alleviate the projected traffic demand on Route 880 and provide relief for local city streets. The present concept for Route 238 will not satisfy the demand along the Route 880 corridor. The concept does not propose a continuous freeway/expressway facility; therefore, Route 238 will not be fully utilized as an alternate to Route 880.

The City of Union City is opposed to the construction of Route 238 as a freeway through their city (between PM 5.61 and PM 7.41). However, the City of Fremont would like Route 238 constructed as a freeway along a new alignment, and the City of Hayward has proposed constructing Route 238 as an expressway/freeway facility. Caltrans should work closely with the City of Union City, to eliminate the deficiency in the proposed Route 238 facility.

Adoption of the Route 238 freeway alignment between Route 680 in Fremont and Industrial Parkway in Hayward was rescinded in 1980. Portions of the right-of-way were subsequently sold. The rescinded freeway alignment passes through commercial and residential neighborhoods, and along the Union Pacific and Southern Pacific Railroad right-of-ways, approximately paralleling BART.

Route 238 may be widened to six lanes within the existing right-of-way. However, there is presently not enough right-of-way along Mission Boulevard through Union City to provide for future Light Rail Transit (LRT) in addition to a six lane conventional highway. Thus, provisions for a possible future LRT System are not proposed. A possible location for an LRT System could be along the Southern Pacific or Union Pacific Right-of-Ways.

If the concept is not realized, improvements in public transportation and the implementation of aggressive TSM measures will be needed to provide for the excess in demand. Also, a study of an LRT System parallel to Route 238 (Mission Boulevard) should be considered, should the concept not be realized.

Union City has requested any improvements to Route 238 be confined to the existing Route 238 and the concept should be a six lane conventional facility. The City is concerned any facility beyond the present Mission Boulevard right-of-way, particularly a freeway facility, would disrupt residential communities. There is also concern the proposed concept, with an expressway/freeway facility to the north and south of Union City, may force the City to accept an extension of the freeway facility into their community. The City is beginning the process of revising their General Plan, and has requested that Caltrans work closely with them in exploring long-term alternatives which would minimize the impacts to their community.

C. Segment C:

04-ALA-238, PM 9.500 - 14.571
North of Industrial Parkway - Route 580

Segment C of Route 238 begins north of Industrial Parkway in the City of Hayward and continues to the Route 580 interchange. The segment is a four to six lane conventional highway with left turn pockets in various locations. The segment is known locally as Mission Boulevard from the beginning of the segment to the Routes 92/185/238 junction and foothill Boulevard from the junction to Route 580. The land use is residential and commercial, with the route passing through the Hayward Civic Center and downtown commercial area. The signed speed limit is 25 to 40 MPH.

Segment C is within the City of Hayward, and an unincorporated area of Alameda County near Castro Valley.

1. Existing Facilities

a) Highway Facilities

The section of Segment C from the beginning of the segment (PM 9.50) to the Routes 92/185/238 junction (PM 12.61) is a four lane divided conventional highway with left turn pockets in various locations. The total traveled way width is 48 feet, the median is 16 feet wide, and the shoulders are 8 feet wide.

The section between the Routes 92/185/238 junction and Grove Way (PM 13.83) is a six lane divided conventional highway with a total traveled way width ranging from 62 to 86 feet. The median is 3 feet wide, and the shoulders are 8 feet in width, except over the San Lorenzo Creek where there are no shoulders.

The section from Grove Way to the end of the segment at Route 580 has two lanes in the northbound direction and three lanes in the southbound direction. The traveled way width varies from 26 to 34 feet, with a total traveled way width of 60 feet. The median width is 17 feet, and the shoulders are 8 feet wide. Left turn pockets are in various locations. The terrain and grade are generally flat (0-3%) along the entire segment.

The Route 580/238 interchange is currently being reconstructed.

b) Current STIP (1985)

There are no projects planned in the 1985 STIP for Segment C of Route 238.

c) Public Transit

A/C Transit operates several bus lines along this segment. The 21 bus line serves the Hayward Greyhound Bus Station, the Union City, South Hayward, and Hayward BART Stations, and downtown Hayward. The 90 and 91 are local bus lines, serving Castro Valley, the City of Hayward and the Hayward BART Station. The RF bus line provides service to the Transbay Bus Terminal in San Francisco during commute hours.

d) Bicycle

The section along Mission Boulevard from the beginning of the segment to the Routes 92/185/238 junction is a suggested bicycle route. The suggested bicycle route continues on Mission Boulevard (Route 185) and parallels Foothill Boulevard.

e) Park and Ride

There are no Park and Ride facilities on this segment.

f) Rail Transit

BART provides service along the entire Route 238 corridor. The Hayward and South Hayward BART Stations are located within a quarter mile of the segment.

2. Current Operating Conditions

The 1982 AADT ranges from 31,000 north of Industrial Parkway to 55,000 at the Routes 92/185/238 junction. The AADT south of the Route 580/238 interchange is 36,000. The AM peak hour traffic volumes are 1,900 northbound and 1,200 southbound north of Industrial Parkway, 3,300 northbound and 2,200 southbound at the Routes 92/185/238 junction, and 2,200 northbound and 1,400 southbound just south of the Route 580 junction.

The V/C ratio is 1.00 (LOS of F-20) north of Industrial Parkway, 1.00 (LOS of F-20) at the Routes 92/185/238 junction, and 1.00 (LOS of F-20) at the Route 580 junction. Truck traffic accounts for 2% of the total traffic.

3. Accident Rate (1/81 - 12/83)

There were 1,126 accidents with 501 injuries and six fatalities in this segment. The total accident rate was 6.00/MVM, which was above the Statewide average total accident rate of 3.31/MVM for similar facilities. The fatality rate was .026/MVM, which was above the Statewide average fatality rate of .022/MVM.

4. Future Operating Conditions (1995-2005)

The projected AADT for 1995 (2005), assuming Route 238 will not be constructed as an expressway along a new alignment, ranges from 35,000 (41,000) north of Industrial Parkway to 61,000 (71,000) at the Routes 92/185/238 junction. The AADT south of the Route 580 is projected to be 41,000 (48,000). The AM peak hour traffic volumes are projected to range from 1,900 (2,200) northbound and 1,600 (1,800) southbound, north of Industrial Parkway to 3,400 (3,900) northbound and 2,800 (3,200) southbound at the Routes 92/185/238 junction. The AM peak hour traffic volumes are projected to be 2,200 (2,600) northbound and 1,800 (2,100) southbound, south of Route 580.

The 1995 D/C, assuming Route 238 remains as a conventional highway along the existing alignment, is projected to range from 1.19 (LOS of F-20) north of Industrial Parkway to 1.42 (LOS of F-15) at the Routes 92/185 junction. The 1995 D/C is projected to be 1.38 (LOS of F-15) south of Route 580.
The 2005 D/C is projected to be 1.13 (LOS of F-20), 1.63 (LOS of F-10), and 1.63 (LOS of F-10) at these respective locations.

The projected AADT for 1995 (2005) along the possible realigned expressway/freeway from north of Industrial Parkway to Route 580 would range from a low of 11,000 (13,000) north of Industrial Parkway to a high of 34,000 (39,000) at "A" Street. The projected AM peak hour traffic volumes would range from 700 (800) northbound and 600 (700) southbound, north of Industrial Parkway to 2,800 (3,200) northbound and 900 (1,100) southbound at "A" Street.

The projected figures for the realigned expressway/ freeway are a conservative estimate, and do not take into consideration any other possible improvements to Route 238 and Route 84. All of the traffic projections will be reexamined in the next cycle of the Route Concept Reports, on the basis of Caltrans' sub-regional network analysis of the Route 880 corridor in Alameda County.

5. Route Concept

The concept for Segment C of Route 238 is a six lane expressway/freeway along a new alignment from north of Industrial Parkway to Route 580. The Conceptual LOS is D-40.

6. Improvements (Post 1985 STIP)

The following are the improvements necessary to achieve the proposed concept for Segment C of Route 238:

The realignment of Route 238 and construction of a six lane expressway/freeway facility from north of Industrial Parkway (Post Mile 9.50) to Route 580 (Post Mile 14.57).

7. Concept Concerns

Caltrans and the City of Hayward are currently studying the possibility of realigning Route 238 and constructing a six lane expressway/freeway through the City of Hayward between Industrial Parkway and Route 580. An adopted, yet unconstructed freeway alignment presently lies to the east of existing Route 238 between these locations.

A six to eight lane freeway is needed along the entire Route 238 facility to improve congestion along local streets, along existing Route 238 (Mission Boulevard and Foothill Boulevard), and on Route 880. The concept for Segment C satisfies the need for that segment of Route 238 for the next twenty years. To meet the needs of Route 238 beyond twenty years, it may be necessary to improve Segment C to a six to eight lane freeway.

Due to funding, and right-of-way constraints, current plans for the new expressway/freeway facility do not include provisions for a separate bicycle path nor a right-of-way for a future LRT System. Bicycle traffic will be directed onto local streets, and any future LRT System will have to utilize the existing local street network. Possible locations for an LRT System could be along existing Route 238 (Foothill Boulevard) through downtown Hayward, or along the Union Pacific right-of-way.

If the concept is not realized, extensive improvements in public transportation and the implementation of aggressive TSM measures will be needed to provide for the excess in demand. TSM measures could include the restriction of parking and restriping of the facility to accommodate an additional lane.

8. Local Concerns

The City of Hayward would like Route 238 to be constructed as an expressway/freeway facility on a new alignment from north of Industrial Parkway to Route 580. The City is currently studying this alternative with Caltrans. The City of Hayward is concerned there is not sufficient right-of-way available to accommodate a separate bicycle trail and median for a future LRT System. Therefore, provisions for these facilities are not being proposed.

The City has expressed concern over the traffic figures quoted within this report. The assumptions used in Caltrans' projections differ from the assumptions used in the DKS Study of the expressway/freeway facility. There are discrepancies between the traffic projections of the two reports. The traffic figures will be updated in the next cycle of the Route Concept Reports. The traffic projections will be reexamined on the basis Caltrans' sub-regional network analysis of the transportation system of southern Alameda County.

D. Segment D:

04-ALA-238, PM 14.571 - 16.696
Route 580 - Route 880

Segment D of Route 238 begins at the Route 580/238 interchange near the City of Hayward and continues west to the Route 880/238 interchange in the City of San Leandro. The Route 185/238 interchange is located within this segment. The segment is a four lane freeway, serving as a commuter and commercial connector between Route 580 and Route 880. The land use along the segment is predominantly residential, with commercial use located along Route 185. The entire segment is classified as a non-chargeable Federal-Aid Interstate.

The Route 580/238 interchange is currently being reconstructed. Construction on a westbound Route 238 to southbound Route 880 connector will begin by the year 1988.

Segment D is within the City of San Leandro and an unincorporated area of Alameda County near San Lorenzo.

1. Existing Facilities

a) Highway Facility

Segment D is a four lane freeway with a total traveled way width of 48 feet. The shoulders are 8 feet wide, and the median is 8 feet in width. The terrain and grade are flat (0-3%).

b) Current STIP (1985)

The following is the project listed in the 1985 STIP for Segment D of Route 238:

FY 87/88	
PM 15.9 - 16.7	Route 238/880 Interchange Westbound Route 238 to Southbound Route 880 Connector

c) Public Transit

Public Transit is not available along this segment.

d) Bicycle

Bicycles are not allowed on this segment of Route 238. Bicycle traffic must use local streets. East Lewelling Boulevard parallels Route 238 between Route 880 and Route 185 (Mission Boulevard), and may be used as an alternate bicycle route. Hesperian Boulevard is a suggested bicycle route, and may also be used as an alternate route for bicyclists.

e) Park and Ride

There are no Park and Ride facilities on this segment.

f) Rail Transit

BART provides service along the entire Route 238 corridor. The Bayfair BART station is located within a half mile of the route. The future BART extension to Livermore will pass near the Routes 238/580 interchange and connect to the existing BART tracks at the Bayfair station. Provisions have been made for this BART extension in the reconstruction of the Routes 238/580 interchange.

2. Current Operating Conditions

The 1982 AADT ranges from 74,000 at Route 580 to 64,000 at Route 880. The AM peak hour traffic volumes range from 4,400 westbound and 3,000 eastbound at Route 580 to 3,700 westbound and 2,600 eastbound at Route 880. The V/C ratio ranges from 1.00 (LOS of F-20) at the Route 580 interchange to .93 (LOS of E-30) at the Route 880 interchange. Truck traffic accounts for 10% of the total traffic.

3. Accident Rate (1/81 - 12/83)

There were 275 accidents with 138 injuries and one fatality along this segment. The total accident rate of 1.65/MVM was above the expected Statewide total accident rate of 1.03/MVM for similar facilities. The fatality rate of .006/MVM was below the Statewide fatality rate of .019/MVM.

4. Future Operating Conditions (1995-2005)

The projected AADT for 1995 (2005) ranges from 82,000 (95,000) at the Route 580 interchange to 70,000 (81,000) at the Route 880 interchange. The AM peak hour traffic volume at Route 580 is projected to be 4,500 (5,200) westbound and 3,700 (4,300) eastbound. The AM peak hour traffic volume at Route 880 is projected to be 3,800 (4,500) westbound and 3,100 (3,700) eastbound.

The 1995 D/C is projected to be 1.13 (LOS of F-20) at Route 580, and .95 (LOS of E-30) at Route 880. The 2005 D/C is projected to be 1.30 (LOS of F-15) at Route 580, and 1.13 (LOS of F-20) at Route 880.

Traffic projections indicate a six lane freeway is needed for the entire segment.

5. Route Concept

The concept for Segment D of Route 238 is a six lane freeway between Route 580 and Route 880.

6. Improvements (Post 1985 STIP)

The following are the improvements necessary to achieve the proposed concept for segment D of Route 238:

The Widening of the four lane freeway to a six lane freeway between Route 580 (Post Mile 14.57) and Route 880 (Post Mile 16.69).
The improvement of the Routes 238/880 interchange (Post Mile 16.69) to accommodate the additional traffic.

7. Concept Concerns

Most of the freeway may be widened within the existing right-of-way. Widening of the freeway will require the removal of several large trees.

Widening of the freeway and improvement of the 238/880 interchange are necessary to provide an appropriate Level of Service for the facility, which serves as an important connector between Routes 880 and 580.

If the concept is not realized, improvements in public transportation and the implementation of aggressive TSM measures will be needed to provide for the excess in demand.

8. Local Concerns

The City of San Leandro has expressed concern that the existing Routes 238/880 interchange, including the proposed westbound 238 to southbound 880 connection, will be deficient, and will need further improvements beyond those planned in the 1985 STIP.

E. Segment E

04-ALA-238, PM 16.696 - 18.296
Route 880 - Jct Unconstructed Route 61

Segment E of Route 238 begins at the Route 880/238 interchange in the City of San Leandro and proceeds west to unconstructed Route 61. This segment is unconstructed and there is no adopted alignment for the Route. The land use is residential to the south of the segment, and industrial to the north along Doolittle Drive. This segment of Route 238 was intended to connect Route 61 with Route 880 and Route 580. Since Route 61 is presently unconstructed south of Route 112 (Davis Street) in San Leandro, this segment of Route 238 remains unconstructed.

Segment E is entirely within the City of San Leandro.

1. Existing Facilities

Segment E is unconstructed. There is presently no adopted alignment for this segment of Route 238.

2. Current Operating Conditions

Segment E is unconstructed.

3. Accident Rate (1/81 - 12/83)

Segment E is unconstructed.

4. Future Operating Conditions (1995-2005)

The projected AADT for 1995 (2005), should this segment be constructed, would be 23,000 (27,000). The AM peak hour traffic volumes would be 1,300 (1,500) westbound and 1,000 (1,200) eastbound.

It was assumed the traffic equivalent to one third of the volume of traffic on Route 238 between Hesperian Boulevard and Route 880 would travel on this segment. The traffic projections do not take the possibility of Route 61 being constructed as a freeway between Route 84 and Hegenberger Road into consideration.

The traffic projections will be reexamined in the next cycle of the Route Concept Reports, on the basis of Caltrans' sub-regional network analysis of the Route 880 corridor in Alameda County.

5. Route Concept

The concept for Segment E of Route 238 is a four lane freeway along the entire segment, between Route 880 and Route 61. The conceptual LOS is D-40.

Should Route 61 remain unconstructed south of Route 112 in San Leandro, the Route Concept for this segment of Route 238 would be re-evaluated.

6. Improvements (Post 1985 STIP)

The following is the improvement necessary to achieve the proposed concept for segment E of Route 238:

The construction of a four lane freeway between Route 880 (PM 16.69) and Route 61 (PM 18.29).

7. Concept Concerns

This segment of Route 238 would serve as a vital connection between Route 61 and Route 880, and provide improved access for truck traffic traveling to the Route 580 corridor from the Route 61/Doolittle Drive industrial corridor.

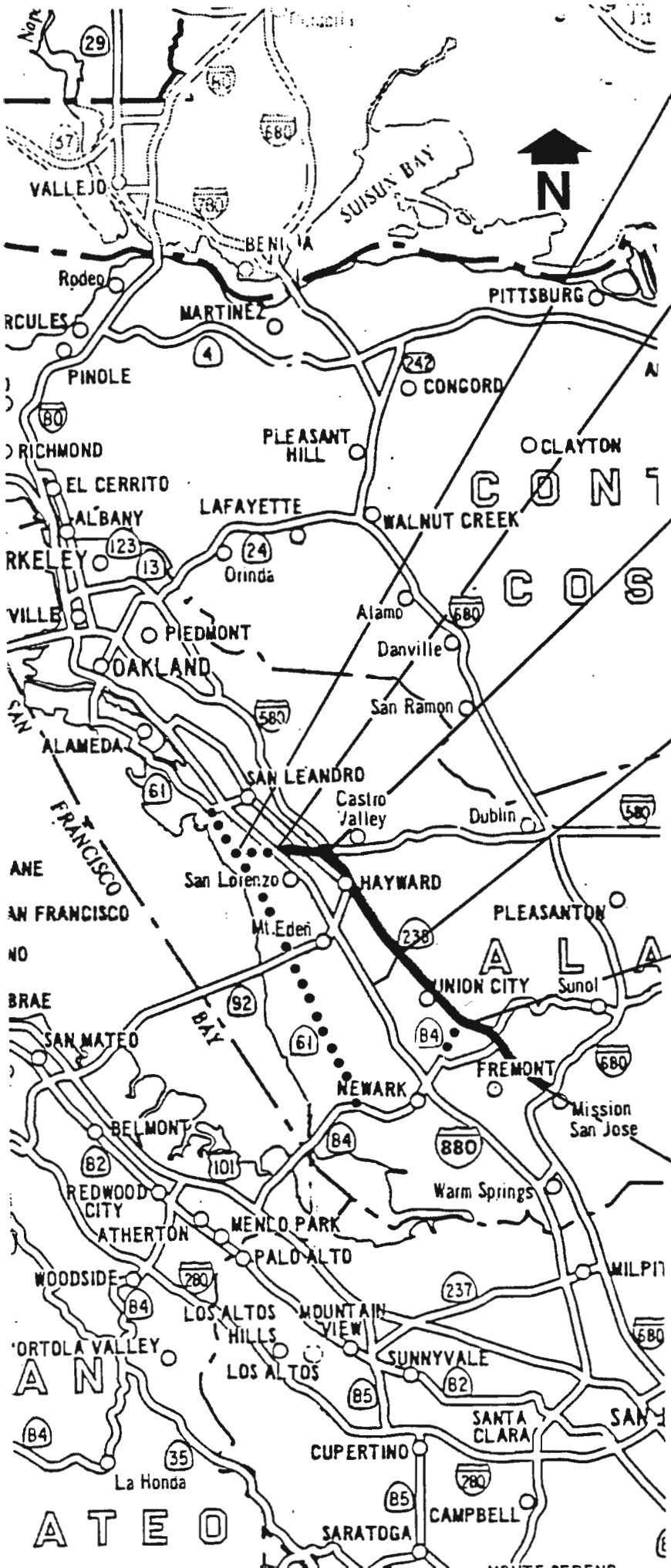
The construction of a freeway along this segment would disrupt existing businesses and established residential areas. Residents may oppose construction of a freeway through their neighborhood.

The traffic projections do not indicate a four lane freeway is necessary for this segment. This is because the traffic figures do not take the construction of Route 61 as a freeway south of Hegenberger Road into consideration. The expected increase in demand for this segment, due to the construction of Route 61, as well as the high percentage of trucks which will utilize the facility, indicate a freeway is necessary for this segment of Route 238.

Should Route 61 remain unconstructed south of Route 112 (Davis Street) in San Leandro, the concept for this segment would be reconsidered.

8. Local Concerns

The City of San Leandro is concerned with the disruption a new freeway facility would have on existing commercial establishments and residential areas.



SEGMENT		A	B	C	D	E
		ALA 0.00	ALA 5.40	ALA 9.40	ALA 14.57	ALA 16.69
						ALA 18.29
NO. OF LANES	PRESENT	4C	4C	4C-6C	4F	---
	1995	4C	4C	4C-6C	4F	---
	2005	4C	4C	4C-6C	4F	---
LEVEL OF SERVICE	PRESENT	E-20	F-10	F-10	F-20	---
	1995	F-15	F-10	F-05	F-20	---
	2005	F-10	F-05	F-05	F-15	---
TERRAIN		FLAT	FLAT	FLAT	FLAT	FLAT
GRADES		0-3%	0-3%	0-3%	0-3%	0-3%
ACTUAL: Accidents Per MVM		2.18	2.77	6.00	1.65	---
ACTUAL: Fatalities Per MVM		3.50	4.42	3.31	1.03	---

EXHIBIT A

EXPLANATION TO EXHIBIT A

LEVEL OF SERVICE

The Level of Service (LOS) on a roadway is a measure of the speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience, and operating cost. A roadway designed for a certain level of service will actually operate at different levels throughout the day. The level of service on a roadway varies inversely as some function of the traffic volume. The level of service indicated in Exhibit A represents the level of service during the morning (AM) peak hour. The level of service in this report is followed by the minimum operating speed.

TERRAIN

Terrain describes the adjacent topography as to its effect on construction cost. (F-Flat, R-Rolling, M-Mountainous) Flat reflects minor grading; rolling reflects moderate grading; mountainous reflects heavy grading as economic considerations. (Note that terrain is a measure of construction cost while grade is a measure of operating cost as used in this report.)

GRADES

Grade line, a generalization of the grades along the center line of the highway. Four types of codes are used. They are:

F - Flat grade, 0-3 percent upgrades and downgrades.

R - Rolling, 3-6 percent upgrades and downgrades and sustained grades less than 1/4 mile.

M - Moderate, grades greater than 6 percent for one-half or less of the segment length and sustained grades 1/4 to 3/4 mile in length.

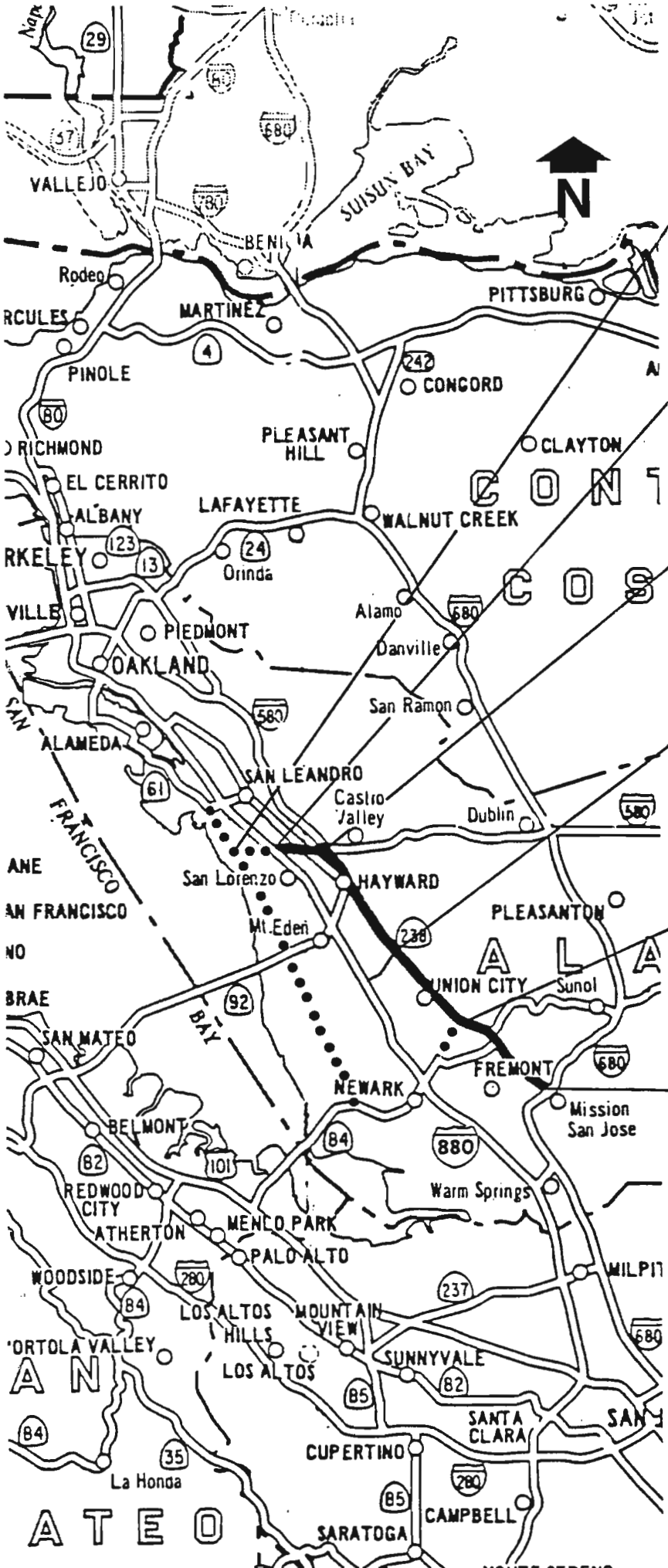
S- Steep, grades greater than 6 percent for more than one-half the segment length and sustained grades greater than 3/4 mile in length.

ACCIDENTS PER MVM

The number of accidents per million vehicle miles driven along the segment.

FATALITIES PER MVM

The number of fatalities per million vehicle miles driven along the segment.



SEGMENT		A	B	C	D	E
		ALA 0.00	ALA 5.40	ALA 9.40	ALA 16.89	ALA 18.29
A.A.D.T. (000)	1982	30–15	19–31	31–55	74–64	UNCONSTRUCTED
	1995	36–18	23–35	35–61	82–70	
	2005	42–21	26–41	41–71	95–81	
P.H.V. (00)	1982	16–8	9–19	12–33	44–26	
	1995	21–10	11–19	16–34	45–31	
	2005	25–13	14–22	18–39	52–37	
AVE. HWY SPEED		50	45	45	65	
OPERATING SPEED		S	S	S	30	
V/C	1982	1.00	1.00	1.00	1.00	
D/C	1995	1.31	1.25	1.42	1.15	
	2005	1.56	1.44	1.63	1.3	
YEAR CAPACITY WILL BE REACHED		1986	1982	1978	1980	

EXHIBIT B

EXPLANATION TO EXHIBIT B

AADT

Annual Average Daily Traffic (In Thousands) in both directions.

P.H.V.

Peak Hour Vehicles (In Hundreds). Number of vehicles in one direction during the morning (AM) Peak Hour.

AVE HWY SPEED

The Average Highway Speed is the weighted average of the design speeds within a highway section. (Design speed is a speed selected to establish specific minimum geometric design elements for a particular section of highway.) On non-engineered roads the average highway speed has been estimated.

OPERATING SPEED

A computed value based on the V/C ratio and the average highway speed. Basically, it represents the present operating speed during the present design hour volume of traffic on existing highway geometric. For segments of highway controlled by traffic signals, an "S" replaces the operating speed and generally represents speeds of 15 to 30 MPH.

V/C

Ratio of Volume to Capacity. Volume represents the number of vehicles per hour that want to travel the highway as represented by the present design hour volume. Capacity represents the maximum number of vehicles per hour the highway can carry as indicated in the Highway Capacity Manual.

D/C

Ratio of Demand to Capacity. Demand represents the projected number of vehicles per peak hour that will want to travel the highway. Capacity represents the maximum number of vehicles per hour the highway can carry.
(Projected Peak Hour Demand/Design Capacity).

ROUTE 238 EXISTING FACILITIES EXHIBIT C

ROUTE SEGMENT	COUNTY	FROM PM	TO PM	LENGTH	TOTAL TRAVELED WAY WIDTH (FEET)	NUMBER OF LANES	OUTSIDE SHOULDER WIDTH (FEET)	MEDIAN WIDTH (FEET)
A	ALA	0.000	5.400	5.400	40-48	4C	0-9	0, 12-18
B	ALA	5.400	9.500	4.100	48	4C	8-12	16-18
C	ALA	9.500	14.571	5.071	48-86	4-6C	8	0, 3-17
D	ALA	14.571	16.696	2.125	48	4F	8	8
E	ALA	16.696	18.296	1.600		--UNCONSTRUCTED--		

EXISTING FACILITIES (BRIDGES)
ROUTE 238

EXHIBIT D

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	ROUTE	POST MILE	COUNTY	CITY	STRUCTURE TYPE OR PUC NUMBER	WID OR XTE TYPE	LENGTH (PROT)	WIDTH
A	33 366L	FUTURE 238/680	238	0.00	ALA	FMT	QB		151	51
A	33 366R	FUTURE 238/680	238	0.00	ALA	FMT	QB		151	51
A	33 294	MISSION SJS SP	238	0.01	ALA	FMT	CBC	QB	178	116
A	33 02	EDENVALE UP	238	2.19	ALA	FMT	SS CG		88	
A	33 24	SOUTH NILES UP	238	3.40	ALA	FMT	SGT		54	
A	33 24W	S NILES UP PUM	238	3.41	ALA	FMT	2W P O			
A	33 03	ALAMEDA CREEK	238	3.46	ALA	FMT	CGC		433	43
A	33 04	NORTH NILES UP	238	3.77	ALA	FMT	SGT		75	
B	33 05	DRY CREEK	238	7.19	ALA		CG	CS	28	92
C	33 32	EAST CREEK	238	10.97	ALA		CC	CC	16	
C	33 06	SAN LORENZO CREEK	238	13.21	ALA		CGCCAF	CGC	151	99
C	33 202F	CASTRO VALLEY BD U	238	14.50	ALA		CGC		319	28
C	33 214L	RTE 580/238 SEP	238	14.50	ALA		CBC		488	28
C	33 214R	RTE 580/238 SEP	238	14.50	ALA		CBC		317	28

EXHIBIT D

EXISTING FACILITIES (BRIDGES)
ROUTE 238

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	ROUTE	POST MILE	COUNTY	CITY	STRUCTURE TYPE OR PUC NUMBER	WID OR XTE TYPE	LENGTH (PROT)	WIDTH
D	33 212	238/185 SEP	238	14.93	ALA		CBC		139	68
D	33 217	KENT AVE OVHD	238	15.41	ALA		SGA		406	56
D	33 221	ASHLAND AVE UC	238	15.67	ALA		CB		64	68
D	33 218	CLARK AVE OVHD	238	16.14	ALA		SGA		237	56
D	33 216	HESPERIAN BL U	238	16.28	ALA		CB		85	96
D	33 173S	880 OR 238 SEP	238	16.65	ALA		SS		85	20
D	33 172	RTE 880/238 SEP	238	16.70	ALA		SS	SS	91	107

ROUTE 238

ACCIDENT REPORT BETWEEN 1-81 AND 12-83

EXHIBIT E

LOCATION POST MILE	SEGMENT	NO. OF ACCIDENTS TOTAL	FATAL	INJ	F+I	PERSONS KILLED	PERSONS INJURED	ACCIDENT RATE* FATAL	F+I	TOTAL	STATEWIDE RATE** FATAL	F+I	TOTAL
ALA 0.000 - 5.399	A	262	6	106	112	7	163	.050	.93	2.18	.024	1.35	3.50
ALA 5.400 - 9.499	B	258	2	87	89	2	135	.021	.95	2.77	.024	1.57	4.42
ALA 9.500 - 14.538	C	1126	5	356	361	6	501	.026	1.92	6.00	.022	1.29	3.31
ALA 14.571 - 16.695	D	275	1	103	104	1	138	.006	.62	1.65	.019	.42	1.03
ALA 16.696 - 18.296	E						--UNCONSTRUCTED--						

* RATES ARE PER MVM (MILLION VEHICLE MILES)

** STATEWIDE AVERAGES FOR THIS TYPE OF FACILITY

ROUTE 238 TRAFFIC TABLE EXHIBIT F

SEG	CO	POST MILE	TRUCK% AA DT	TRUCK% PK HR	1982 AA DT	1982 AM-PK AH	1982 AM-PK BK	1982 NO L	1982 V/C	1982 LOS	1982 LN	1982 CAP	1995 * AA DT	1995 * AM-PK AH	1995 * AM-PK BK	1995 * NO L	1995 * D/C	1995 * LOS	1995 * LN	2005 * AA DT	2005 * AM-PK AH	2005 * AM-PK BK	2005 * NO L	2005 * D/C	2005 * LOS	2005 * LN
A	ALA	0.00				JCT ROUTE 680																				
			4	3	19	12	15	2	0.94	E	3	800	23	13	19	2	1.19	F	3	27	15	23	2	1.44	F	4
A	ALA	1.60				SEVERAL INTERSECTIONS																				
			4	3	20	12	14	2	0.88	D	2	800	25	13	19	2	1.19	F	3	29	15	23	2	1.44	F	4
A	ALA	3.31				JCT ROUTE 84 WEST																				
			5	3	30	16	16	2	1.00	E	3	800	36	18	21	2	1.31	F	3	42	20	25	2	1.56	F	4
A	ALA	3.64				JCT ROUTE 84 EAST																				
			5	3	21	13	13	2	0.81	D	2	800	26	14	17	2	1.06	F	3	30	16	20	2	1.25	F	3
A	ALA	4.03				SEVERAL INTERSECTIONS																				
			5	3	19	12	12	2	0.75	C	2	800	23	12	15	2	0.94	E	3	27	14	17	2	1.06	F	3
A	ALA	4.30				SULLIVAN UNDERPASS																				
			6	4	17	12	9	2	0.75	C	2	800	21	13	13	2	0.81	D	2	24	13	17	2	1.06	F	3
A	ALA	4.72				NURSERY AVENUE																				
			6	4	15	10	8	2	0.63	C	2	800	18	10	10	2	0.63	C	2	21	11	13	2	0.81	D	2
B	ALA	5.48				SEVERAL INTERSECTIONS																				
			6	4	19	13	9	2	0.81	D	2	800	23	14	11	2	0.88	D	2	26	14	14	2	0.88	D	2
B	ALA	6.78				DECOTO ROAD																				
			6	4	21	14	9	2	0.88	D	2	800	25	15	12	2	0.94	E	3	28	15	15	2	0.94	E	3
B	ALA	7.35				SEVERAL INTERSECTIONS																				
			6	4	21	13	9	2	0.81	D	2	800	23	14	11	2	0.88	D	2	28	16	13	2	1.00	E	3
B	ALA	8.43				GRESEL STREET																				
			6	4	24	14	10	2	0.88	D	2	800	28	15	12	2	0.94	E	3	32	18	14	2	1.13	F	3
B	ALA	8.80				SEVERAL INTERSECTIONS																				
			6	4	33	20	13	2	1.00	F	3	1000	36	20	16	2	1.25	F	3	42	23	19	2	1.44	F	4
B	ALA	9.32				INDUSTRIAL PARKWAY																				

* The 1995 and 2005 traffic projections are based on the assumption that Route 238 and Route 84 will remain as conventional highways on the existing alignments. Additional traffic would be expected to utilize Segments A and B of Route 238 should Routes 238 and 84 be constructed as a freeways.

ROUTE 238 TRAFFIC TABLE EXHIBIT F

SEG	CO	POST MILE	TRUCK% AA DT	TRUCK% PK HR	1982 AA DT	1982 AM-PK AH	1982 AM-PK BK	1982 NO L	1982 V/C	1982 LOS	1982 LN	1982 CAP	1995 * AA DT	1995 * AM-PK AH	1995 * AM-PK BK	1995 * NO L	1995 * D/C	1995 * LOS	1995 * LN	2005 * AA DT	2005 * AM-PK AH	2005 * AM-PK BK	2005 * NO L	2005 * D/C	2005 * LOS	2005 * LN
B	ALA	9.32				INDUSTRIAL PARKWAY																				
			6	4	31	19	12	2	1.00	F	3	950	35	19	16	2	1.19	F	3	41	22	18	2	1.38	F	4
C	ALA	9.60				SEVERAL INTERSECTIONS																				
			6	4	25	15	10	2	0.94	E	3	800	28	15	12	2	0.94	E	3	32	18	14	2	1.13	F	3
C	ALA	9.94				TENNYSON ROAD																				
			6	4	28	17	11	2	1.00	F	3	850	31	17	14	2	1.06	F	3	36	20	16	2	1.25	F	3
C	ALA	10.50				SEVERAL INTERSECTIONS																				
			5	3	30	18	12	2	1.00	F	3	900	34	18	15	2	1.13	F	3	39	22	18	2	1.38	F	4
C	ALA	11.20				HARDER ROAD																				
			4	3	33	20	13	2	1.00	F	3	1000	36	20	16	2	1.25	F	3	42	23	19	2	1.44	F	4
C	ALA	11.79				SEVERAL INTERSECTIONS																				
			3	2	42	25	17	3	1.00	F	4	833	47	26	21	3	1.08	F	4	55	30	25	3	1.25	F	5
C	ALA	12.61				JCT ROUTES 92/185																				
			2	1	55	33	22	3	1.00	F	5	1100	61	34	28	3	1.42	F	5	71	39	32	3	1.63	F	6
C	ALA	12.90				SEVERAL INTERSECTIONS																				
			2	1	34	20	14	3	0.83	D	3	800	37	20	17	3	0.83	D	3	43	24	20	3	1.00	E	4
C	ALA	13.12				"A" STREET																				
			2	1	28	17	11	3	0.71	C	3	800	31	17	14	3	0.71	C	3	36	20	16	3	0.83	D	3
C	ALA	13.50				SEVERAL INTERSECTIONS																				
			2	1	35	21	14	3	0.88	D	3	800	38	21	17	3	0.88	D	3	45	25	20	3	1.04	F	4
C	ALA	13.83				GROVE WAY																				
			2	1	34	20	14	2	1.00	F	3	1000	37	20	17	2	1.25	F	3	43	24	20	2	1.50	F	4
C	ALA	14.10				SEVERAL INTERSECTIONS																				
			2	1	36	22	14	2	1.00	F	4	1100	41	22	18	2	1.38	F	4	48	26	21	2	1.63	F	4
C	ALA	14.29				MATTOX ROAD																				
			2	1	35	21	14	2	1.00	F	3	1050	38	21	17	2	1.31	F	3	45	25	20	2	1.56	F	4
C	ALA	14.54				JCT ROUTE 580																				

* The 1995 and 2005 traffic projections are based on the assumption that Route 238 and Route 84 will remain as conventional highways on the existing alignments.

ROUTE 238 TRAFFIC TABLE EXHIBIT F

SEG	CO	POST MILE	TRUCK% AA DT	PK HR	AA DT	1982 AM-PK AH	BK	NO L	V/C	LOS	LN	CAP	1995 * AA DT	AM-PK AH	BK	NO L	D/C	LOS	LN	2005 * AA DT	AM-PK AH	BK	NO L	D/C	LOS	LN
D	ALA	14.54				JCT ROUTE 580																				
			10	7	74	44	30	2	1.00	F	3	2200	82	45	37	2	1.13	F	3	95	52	43	2	1.30	F	3
D	ALA	14.95				JCT ROUTE 185																				
			10	7	74	44	30	2	1.00	F	3	2200	83	46	37	2	1.15	F	3	97	53	43	2	1.33	F	3
D	ALA	16.28				HESPERIAN BLVD																				
			10	7	64	37	26	2	0.93	E	3	2000	70	38	31	2	0.95	E	3	81	45	37	2	1.13	F	3
D	ALA	16.70				JCT ROUTE 880																				
			12	8		--UNCONSTRUCTED--							23	13	10	2	0.33	A	2	27	15	12	2	0.38	A	2
E	ALA	18.10				WICKS BLVD																				
			12	8		--UNCONSTRUCTED--							23	13	10	2	0.33	A	2	27	15	12	2	0.38	A	2
E	ALA	18.60				JCT UNCONST. ROUTE 61																				

* The traffic projections do not take the possibility of Route 61 being constructed as a freeway between Route 84 and Hegenberger Road into consideration. Additional traffic would be expected to utilize Segment E of Route 238 should Route 61 be constructed as a freeway.

ROUTE 238 TRAFFIC TABLE EXHIBIT F

SEG	CO	POST MILE	TRUCK% AA DT	TRUCK% PK HR	1982 AA DT	1982 AM-PK AH	1982 AM-PK BK	1982 NO L	1982 V/C	1982 LOS	1982 LN	1982 CAP	1995 * AA DT	1995 * AM-PK AH	1995 * AM-PK BK	1995 * NO L	1995 * D/C	1995 * LOS	1995 * LN	2005 * AA DT	2005 * AM-PK AH	2005 * AM-PK BK	2005 * NO L	2005 * D/C	2005 * LOS	2005 * LN
C	ALA	R9.5			NORTH OF INDUSTRIAL PARKWAY																					
			7	5	--UNCONSTRUCTED--								11	7	6	3	0.16	A	3	13	8	7	3	0.18	A	3
C	ALA	R11.4			HARDER ROAD																					
			7	5	--UNCONSTRUCTED--								15	9	8	3	0.20	A	3	17	11	9	3	0.24	A	3
C	ALA	R11.8			CARLOS BEE BLVD																					
			6	4	--UNCONSTRUCTED--								26	19	10	3	0.42	B	3	30	22	12	3	0.49	B	3
C	ALA	R12.6			2ND STREET																					
			6	4	--UNCONSTRUCTED--								28	22	11	3	0.49	B	3	33	26	13	3	0.58	B	3
C	ALA	R12.8			"E" STREET																					
			5	3	--UNCONSTRUCTED--								33	26	11	3	0.58	B	3	38	30	13	3	0.67	C	3
C	ALA				SEVERAL INTERSECTIONS																					
			5	3	--UNCONSTRUCTED--								34	28	9	3	0.62	C	3	39	32	11	3	0.71	C	3
C	ALA	R13.2			"A" STREET																					
			6	4	--UNCONSTRUCTED--								29	22	9	3	0.49	B	3	34	26	10	3	0.58	B	3
C	ALA	R14.4			JCT ROUTE 580																					

* Traffic figures for realigned Expressway through Hayward. Mile Posts are approximate.
Year 2005 volumes are based on 5/83 forecasts for "Route 238 Alternative Transportation Facility".
Year 1995 volumes are back-cast from 2005 volumes.

EXPLANATION TO TRAFFIC VOLUME TABLES

COLUMN	DESCRIPTION
SEG	Route Segment
CO	County Abbreviations
POST MILE	Post Mile in County
AADT	Annual Average Daily Traffic (Thousands)
AM-PK	Morning Peak Hour Traffic
AH	Volume - Ahead Direction (Hundreds)
BK	Volume - Back Direction (Hundreds)
NO L	Number of Lanes (Existing) - One Direction
V/C	Volume/Capacity: Ratio of Peak Hour Volume to Maximum Number of Vehicles per Hour for Peak Direction During Peak Hour (Peak Hour Volume/Capacity)
D/C	Demand/Capacity: Ratio of Volume of Projected Demand to Maximum Number of Vehicles per Hour (Projected Peak Hour Demand/Design Capacity)
LOS	Level of Service According to Functional Classification of the Route Relative to the Terrain and Facility
LN	Number of Lanes Needed to Meet the Conceptual LOS
CAP	Capacity of Facility (Capacity per Lane)

Facility	Vehicles per Hour per Lane
	Expected Pk Hr Capacity
Freeway	2000
Expressway or Divided/ One-Way Arterial	1500
Other Type of Arterial	1350
Rural Road	1200
City Street or Mountainous Road	800

% TRUCK AADT	Truck Percent of the Average Annual Daily Traffic Count
% TRUCK PK HR	Truck Percent at Peak Hour

ROUTE 238 FACILITY TABLE

EXHIBIT G

SEG	COUNTY	POST MILES BEGIN	END	LOCATION	1985 -PRESENT- LOS	1985 -PRESENT- FACILITY	1995 -1985 STIP- LOS	1995 -1985 STIP- FACILITY	2005 -NO BUILD- LOS	2005 -NO BUILD- FACILITY	2005 -ROUTE CONCEPT- LOS	2005 -ROUTE CONCEPT- FACILITY	2005 TARGET -NEED- LOS	2005 TARGET -NEED- FACILITY
A	ALA	00.00	5.40	ROUTE 680 - UNCONST. JCT ROUTE 84	E-20	4C	F-20	4C	F-15	4C	D-40	6-8F	D-40	6-8F
B	ALA	5.40	9.50	UNCONST. RTE 84 - N. OF IND. PARK.	F-20	4C	F-20	4C	F-15	4C	E-25	6C	D-40	6F
C	ALA	9.50	14.57	N. OF IND. PARK. - ROUTE 580	F-20	4C-6C	F-15	4C-6C	F-10	4C-6C	D-40	6E/F	D-40	6F
D	ALA	14.57	14.57	ROUTE 580 - ROUTE 880	F-20	4F	F-20	4F	F-15	4F	D-40	6F	D-40	6F
E	ALA	16.69	16.69	ROUTE 880 - UNCONSTRUCTED ROUTE 61	UNCONSTRUCTED		UNCONSTRUCTED		UNCONSTRUCTED		D-40	4F	D-40	4F

RELATIONSHIP OF LEVEL OF SERVICE TO OPERATING SPEED

Level of Service	Facility Type	Minimum Operating Speed	Assigned Operating Level of Service
B	Freeways, Expressways, or Multi-Lane Divided Conventional Highways	55 MPH	B-55
B	Two-Lane Conventional Highways	50 MPH	B-50
C	Freeways or Expressways	50 MPH	C-50
C	Multi-Lane Conventional Highways	45 MPH	C-45
C	Two-Lane Conventional Highways	45 MPH	C-45
C	Two-Lane Conventional Highways	40 MPH	C-40
D	Freeways or Expressways	40 MPH	D-40
D	Conventional Highways	35 MPH	D-35
D	Conventional Highways with controlling traffic signals	15-30 MPH	D-35

The operating level of service on a roadway is a measure of the speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience, and operating cost. A roadway designed for a certain level of service will actually operate at different levels throughout the day. The level of service on a roadway varies inversely as some function of the traffic volume.

In the Route Concept Report, the level of service is followed by the minimum operating speed.

* Not all conditions are represented by this chart.

ROADWAY LEVEL OF SERVICE

EXPLANATION

LEVEL OF SERVICE A — VOLUME/CAPACITY RATIO = .00 - .40

Free flow conditions
Low volumes
High operating speed
Uninterrupted flow
No restriction on maneuverability
Drivers maintain desired speeds
Little or no delays

LEVEL OF SERVICE B — VOLUME/CAPACITY RATIO = .41 - .58

Stable flow conditions
Operating speeds beginning to be restricted

LEVEL OF SERVICE C — VOLUME/CAPACITY RATIO = .59 - .80

Stable flow but speed and maneuverability
restricted by higher traffic volumes
Satisfactory operating speed for urban conditions
Delays at signals

LEVEL OF SERVICE D — VOLUME/CAPACITY RATIO = .81 - .90

Approaching unstable flow
Low speeds
Major delays at signals
Little freedom to maneuver

LEVEL OF SERVICE E — VOLUME/CAPACITY RATIO = .91 - 1.00

Lower operating speeds
Volumes at or near capacity
Unstable flow
Major delays and stoppages

LEVEL OF SERVICE F — VOLUME/CAPACITY RATIO = 1.01 OR MORE

Forced flow conditions
Low speeds
Volumes below capacity, may be zero
Stoppages for long periods because of
downstream congestion

TRAVEL DEMAND PROJECTIONS METHODOLOGY (ABSTRACT)

1995 & 2005 Demand Person Trip Projections
34 x 34 ABAG/MTC Region Superdistricts Matrix
Computer-Assisted Four-Step Conventional Gravity Model
(Housing & Employment based on ABAG's "Projections 83")

December 1983

INTRODUCTION: This modeling procedure developed traffic volume expansion factors and applied them to "census" volumes ("1980 Traffic Volumes on California State Highways") of state Highway segments at ABAG/MTC superdistrict (SD) borders (screenlines).

These projected 1995 and 2005 volumes were the basis for projecting volumes on on all mainline segments for the 1983/84 "Route Concept Reports".

In essence, this methodology is consistent with the elements of the conventional "four-step" procedure for travel demand forecasting as summarized in the FHWA/UMTA outline for UTPS models and as described in the NCHRP guide for urban travel estimations ("Quick Response").

SUMMARY: Criteria and methods used in each one of the four "steps":

1. Trip Generation: Based on ABAG projections per 34 MTC "superdistrict." Productions per MTC-observed person trips produced and households; attractions per employment (and housing), adjusted to observed attractions.

2. Trip Distribution: Based on zonal trips produced and attracted, distribution factors based on travel times, and calibration factors derived from MTC-observed vs. simulated 1980 trip interchanges.

3. Assignment: Based on zonal trip interchanges, "fastest path" criteria and experience of travel patterns.

4. Modal Split: Implies; it was assumed that, on the segment evaluated, modal percentages and occupancy rates would remain essentially unchanged.

ASSUMPTIONS: The following parameters would remain essentially unchanged between 1980 and 2005:

1. Trip production rates, as functions of the number of households and their superdistrict of location.

2. Trip attraction rates and adjustment factors, as functions of jobs, housing units and superdistrict of location.

3. Speeds: Change in corridor speeds may be proportional to regionwide speed changes, or may differ without significantly affecting distribution or assignment.

4. Time vs. Distribution Factor Functions, and Calibration Factors. Increased socio-economic densities vs. higher fleet efficiencies and/or real earnings would have compensatory effects on trip lengths.

EXPLANATION TO EXISTING FACILITIES (BRIDGES) TABLE

ROUTE SEGMENT:

Segment of route in which bridge is located.

BRIDGE NUMBER: Suffix, when used, is coded as follows:

J - Outer Outer Left
K - Left Outer Highway Structure
L - Left Structure or Left Inner Structure
C - Center Structure
R - Right Structure or Right Inner Structure
S - Right Outer Highway Structure
T - Outer Outer Right
Y - Structure or Grade Xing on State-owned and Maintained Connections not on main Highway (May be Closed)
W - Drainage Pumping Station
M - Buried Hazard or Miscellaneous Structure
Z - Access to Private Property or Closed with no access
E - Connector Structure
F - Connector Structure
G - Connector Structure
H - Connector Structure

NAME OR DESCRIPTION:

May contain miscellaneous information. Additional miscellaneous information may be found on the same line under the heading "Structure Type or PUC number or Pump Data".

ROUTE:

State highway route.

POST MILE:

Prefixes of R, M, and N refer to realigned routes. The prefix C refers to commercial routing. The prefix L refers to section paralleling another route (Non-Add). Post miles are to 1/100 mile.

COUNTY:

County in which bridge is located (Caltrans "Alpha" Code).

CITY:

City in which bridge is located (Caltrans "Alpha" Code).

EXPLANATION TO EXISTING FACILITIES (BRIDGES) TABLE

STRUCTURE TYPE OR PUC NUMBER:

Structure type - Three types may be shown for multiple-type structures. Spacings are 3-Column, 3-Column, and 3-Column.

Coding 1st two columns of all three types:

LS - Log Stringer
TS - Timber Stringer
TT - Timber Truss
TA - Timber Arch
SP - Steel Pipe (Girder)
SS - Steel Stringer (Rolled Sections)
SG - Steel Plate Girder
TB - Timber Slab (Laminated)
SB - Steel Box Girder
ST - Steel Truss
SA - Steel Arch
CS - Concrete Slab
PS - Precast Concrete Slab
PB - Precast Concrete Box Girder
CA - Concrete Arch
CB - Concrete Box Girder
CC - Concrete Box Culvert
CG - Concrete Girder
CP - Concrete Pipe
CU - Concrete Arch Culvert
PG - Precast Concrete Girders

QB - Cast in Place Prestressed Box Girder
QG - Cast in Place Prestressed Girder (Not in Box)
QS - Cast in Place Prestressed Slab
QX - Precast Prestressed Box Girder
QI - Precast Prestressed "I" Girder
QJ - Precast Prestressed Double "T" Girder
QK - Precast Prestressed "T" Girder
QT - Precast Prestressed Inverted "T" Girder
QU - Precast Prestressed Inverted "U" Girder
QW - Precast Prestressed Inverted "W" Girder
QA - Precast Prestressed Slab

SU - Suspension
MP - CMP or Multi Plate
TU - Tunnel
MA - Masonry Arch
CT - Combination Truss (Steel and Timber)
TW - Timber Retaining Wall
CW - Concrete Retaining Wall
SW - Steel Retaining Wall
CD - Concrete Dam
ED - Earth Dam
SLS- Seal Slab
FER- Ferry Boat

Third Column is coded, where it applies, as follows:

A - Welded
B - Welded Continuous
T - Through
L - Through Continuous
D - Deck
H - Deck Continuous
P - Pony
O - Open Spandrel
F - Earth Fill
B - Box (Box Girder)

C - Continuous
E - Continuous with Std. Cantilevered Ends (No Abuts.)
W - Sidewalk
K - Pier or Tower Span
I - Continuous over Inclined Bents
Q - Prestressed (Use Other Coding if Possible)
S - Stayed
R - Orthotropic

PUC Number (For Railroad Grade Crossing).

EXPLANATION TO EXISTING FACILITIES (BRIDGES) TABLE

WID. OR EXT. TYPE:

Latest widening or extension.
See code explanation under STRUCTURE TYPE OR PUC NUMBER.

LENGTH (PROT):

Total bridge length (Feet) or grade crossing protection.
Main type of signal only coded as follows:

FLC - Flashing Lights on Cantilever Arms
FL - Flashing Light Signals
G - Manual Gates
H - Human Flagmen
K - Automatic Gates
M - Flashing Light Signals with Rotating Stop Banner
O - Standard Overhead Sign
T - Traffic Signals Synchronized
W - Standard Wigwag
WM - Magnetic Wigwag Flagmen or Other Type of Wigwag with Flashing Light Aspect
X - Standard Crossbuck
XR - Reflectorized Crossbuck

WIDTH:

Bridge width (in feet).