FINAL
SEP 30 1988

SUMMARY

ROUTE CONCEPT REPORT

ROUTE 237

SCL R0.000 - SCL 11.080
Route 82 - Route 680

This report defines the development concept of Route 237 in District 4, over a twenty year planning period (1985-2005).

ROUTE CONCEPT

Segment:	LOS:*	Facility:
A: SCL R0.000 - 2.480 Route 82 - Route 101	D-40	6-Lane Freeway (Including 2 HOV Lanes)
B: SCL 2.480 - R4.600 Route 101 - Lawrence Expressway	D-40	8-Lane Freeway (Including 2 HOV Lanes)
C: SCL R4.600 - 9.340 Lawrence Expressway - Route 880	D-40	8-Lane Freeway (Including 2 HOV Lanes)
D: SCL 9.340 - 11.080 Route 880 - Route 680	F-10	4-7-Lane Conventional

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

CONCEPT RATIONALE

Route 237 serves as a major commuter route to the high-tech electronics industry located in the Santa Clara Valley. Northern Santa Clara County is experiencing rapid growth as the electronics industry expands into the "Golden Triangle", an area bounded by Route 237 to the north, Route 880 to the southeast and Route 101 to the southwest. It is anticipated that a large portion of the future work force will be commuting from the East Bay. Route 237 will need to be widened and upgraded to freeway status to accommodate the anticipated demand.

The projected traffic figures used in determining the concept for this route tend to be conservative. There are a few reasons for this. First, the unique growth of the Santa Clara Valley is not well represented as a local phenomena: the model used in forecasting the traffic volumes is designed more for regional planning rather than local planning. Second, the 1980 base year used for the projected traffic volumes was prior to the explosive growth within the "Golden Triangle". Third, the expected build-out of the area is 2020: the traffic projections are for the year 2005.

To accommodate the anticipated growth in the area, we must look beyond the twenty year projections, and consider the ultimate build-out of the area. Only then can the preferred alternative for the Route 237 corridor be determined.

SUMMARY

ROUTE CONCEPT REPORT

ROUTE 237

SCL R0.000 - SCL 11.080

AREAS OF CONCERN

As the high-tech industries expand in the "Golden Triangle"; traffic demand will increase dramatically. Route 237 serves a considerable amount of commuter travel as a result of its location among these light industrial developments. The traffic volume on Route 237 has increased 55% between 1978 and 1985, and is expected to continue increasing dramatically.

The following are locations along Route 237 which currently have operating deficiencies:

P.M. SCL R1.32 - SCL 1.74 Middlefield Road to Maude Avenue	Peak hour congestion. At grade intersections.
P.M. SCL 6.12 - SCL 9.34 Lafayette Street to Route 880	Peak hour congestion. At grade intersections.
P.M. SCL 9.34 - SCL 11.08 Route 880 to Route 680	Peak hour congestion. Inadequate access to Route 680.

IMPROVEMENTS *

The following are the improvements necessary to achieve the proposed concept for Route 237:

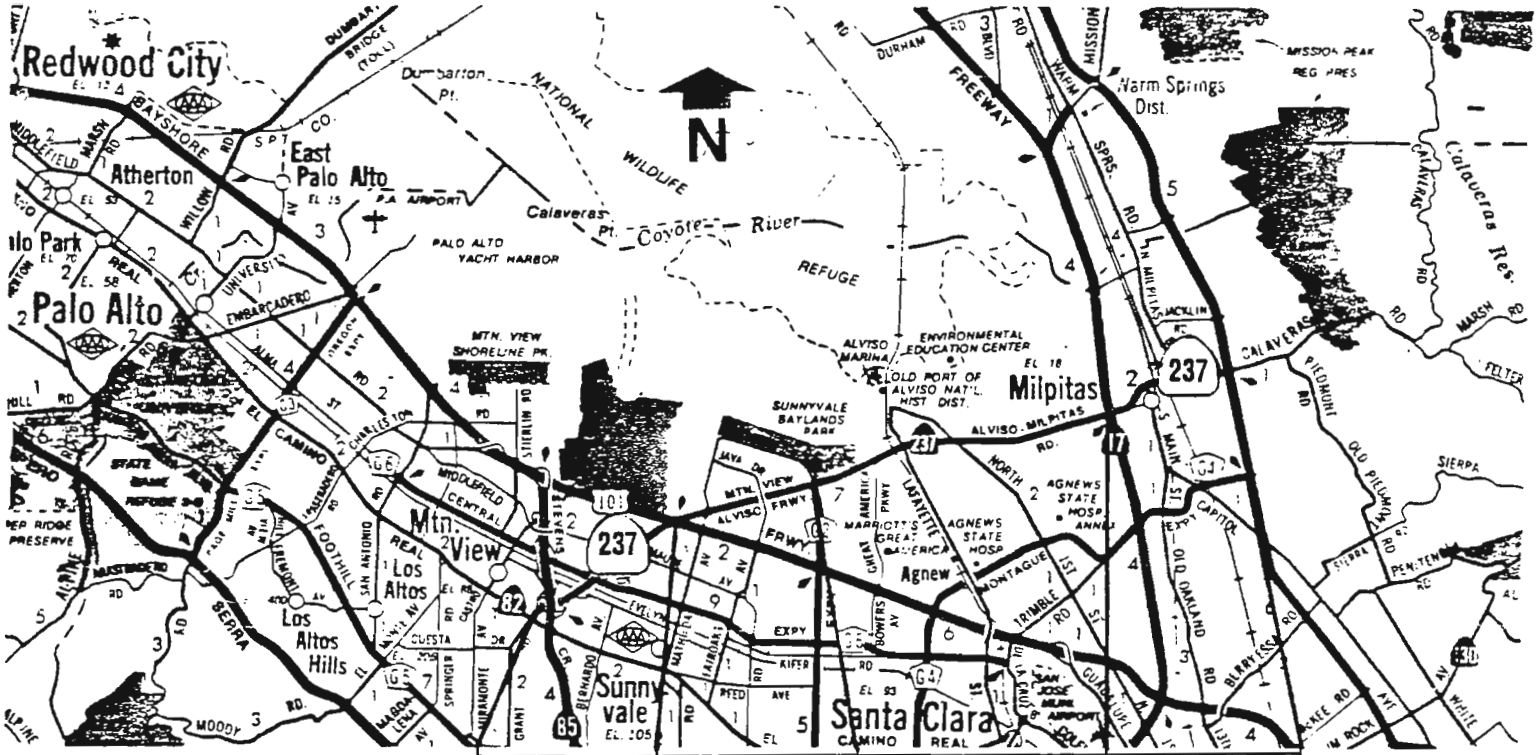
Segment A:
The widening and upgrading of the existing four-lane divided conventional highway/expressway/freeway facility to a six-lane freeway (including HOV lanes), with additional auxiliary lanes, between Route 82 (Post Mile 0.00) and Route 101 (Post Mile 2.48).

Segment B:
The widening of the existing four-lane freeway to an eight-lane freeway (including HOV lanes), with additional auxiliary lanes, between Route 101 (Post Mile 2.48) and Lawrence Expressway (Post Mile R4.60).

Segment C:
The widening and upgrading of the existing four-to-six lane divided conventional highway/expressway/freeway facility to an eight-lane freeway (including HOV lanes), with additional auxiliary lanes between interchanges, from Lawrence Expressway (Post Mile R4.60) to Route 880 (Post Mile 9.34).

Segment D:
No improvements are proposed for Segment D of Route 237. Segment D is to remain a four-to-seven-lane divided conventional highway between 880 (Post Mile 9.34) and Route 680 (Post Mile 11.08).

* The concept for Route 237 is preliminary. The ultimate improvements to the route will be determined in studies still in progress, and will be contingent on funding and right-of-way availability.



A	B	C	D
SCL R 0.00	SCL 2.48	SCL R4.60 SCL 9.34	SCL 11.00

LOCATION MAP

ROUTE 237

BASE MAP REPRODUCED COURTESY
OF THE CALIFORNIA STATE AUTOMOBILE
ASSOCIATION, COPYRIGHT OWNER

ROUTE CONCEPT REPORT

ROUTE 237

SCL R0.00 to SCL 11.08

Prepared under the direction of:

9/26/86

MERLE J. JOHNSON Date
Acting Chief,
Transportation Planning

Recommended Approval:

30 Sept '86

GEORGE E. GRAY Date
Deputy District Director
Planning, Programming and
Public Transportation

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

Approved:

9/30/86

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 -
Program Management

Approved:

VINCE PAUL, Chief Date
Division of Project
Development

STATEMENT OF PLANNING INTENT

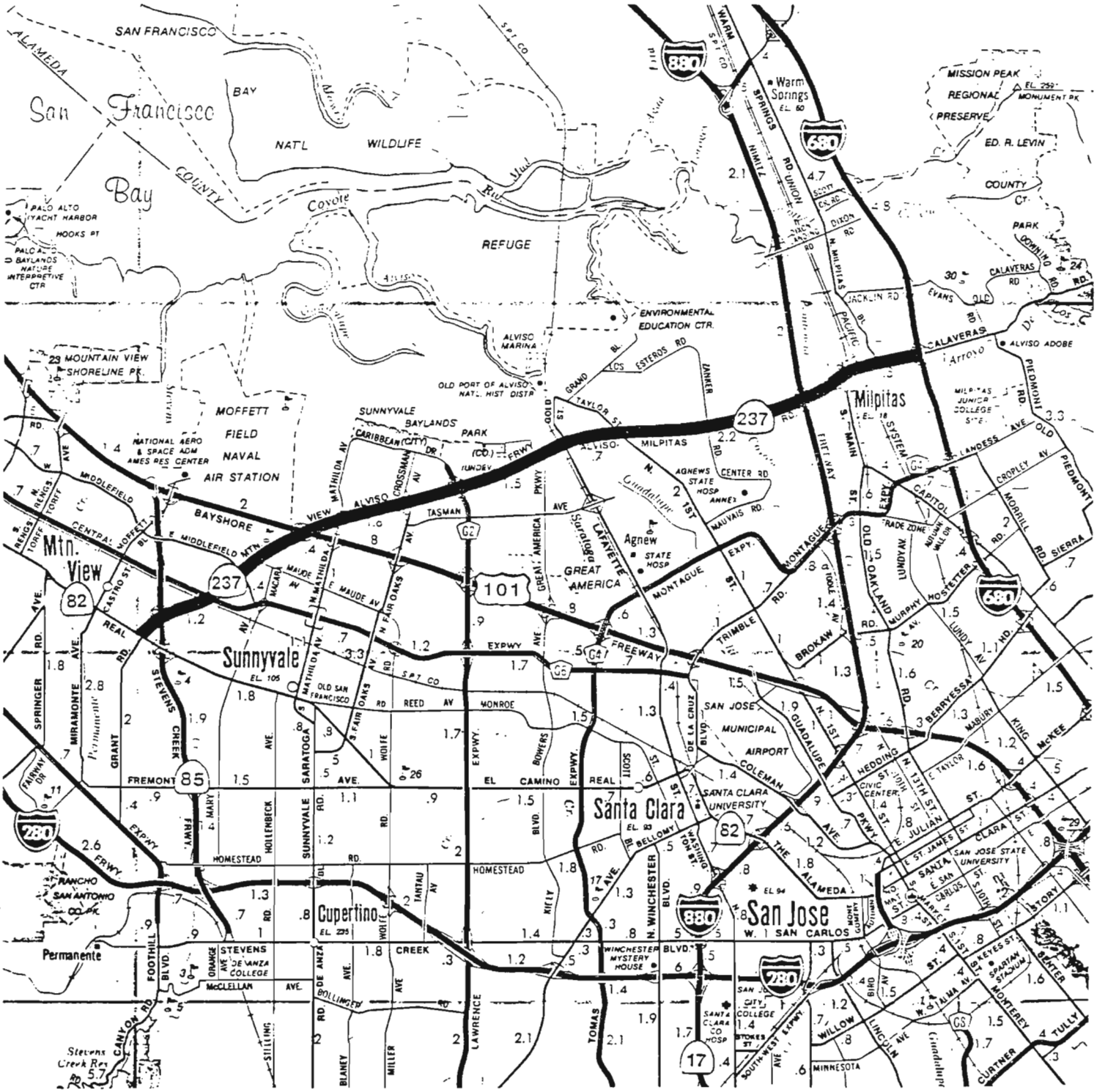
The Route Concept Report (RCR) is a planning document which expresses The Department's judgment on what the characteristics of the state highway should be to respond to the projected travel demand over the 20-year planning period. The RCR contains the Department's goal for the development of each route 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 237

SANTA CLARA COUNTY



ROUTE 237

BASE MAP REPRODUCED COURTESY OF THE CALIFORNIA STATE AUTOMOBILE ASSOCIATION. COPYRIGHT OWNER

ROUTE CONCEPT REPORT

ROUTE 237

SCL R0.000 - SCL 11.080

I. ROUTE DESCRIPTION

Route 237 is approximately eleven miles in length and traverses the northern portion of Santa Clara County. The route begins at Route 82 in the City of Mountain View (Post Mile SCL R0.000) and continues east through the Cities of Sunnyvale, Santa Clara, and San Jose, to Route 680 in the City of Milpitas (Post Mile SCL 11.080). The route is located in an urbanized area, generally serving the industrial and commercial area northwest of San Jose. The route is a major east-west facility, serving as a connector between Route 101 on the Peninsula and Routes 680 and 880 in the East Bay.

The Route is the northern boundary of the "Golden Triangle", an area bounded by Route 880 to the east, and Route 101 to the southwest. Congestion is already increasing along these routes as the electronics industry continues to expand in the South Bay.

The lack of additional land for development in the western and central portions of the Santa Clara Valley has forced development of the agricultural land within the "Golden Triangle". This area is shared by the Cities of Sunnyvale, Santa Clara, San Jose and Milpitas, and is now experiencing extensive development.

In 1984 the voters of Santa Clara County passed Measure "A" to provide funds for major improvements to Routes 85, 101 and 237. Local funding was necessary because State funding alone was insufficient in relieving the projected congestion by the end of the century. The improvements to Route 237 have not been determined, and will be contingent on the ultimate funding available from Measure "A" and the State.

Route 237 is in the Federal-Aid Urban System. Even with the completion of the projects presently in the design stage, and the improvements currently being proposed, the designation of Route 237 is expected to remain Federal-Aid Urban.

The section of Route 237 between Route 82 and Route 880 is classified as Urban Principal Arterial - entirely within an urban area, with access control (freeway or expressway). The section of Route 237 between Route 880 and Route 680 is classified as Urban Principal Arterial - entirely within an urban area, without access control (conventional highway).

The entire route is a Signed Terminal Route for the Surface Transportation Assistance Act (STAA) System for oversized trucks. Route 237 is not a SHELL route (Subsystem of Highways for Extra Legal Loads). The route is not designated as a State Scenic Highway. The entire route, between Route 82 in the City of Mountain View and Route 680 in the City of Milpitas, is in the State Freeway and Expressway System.

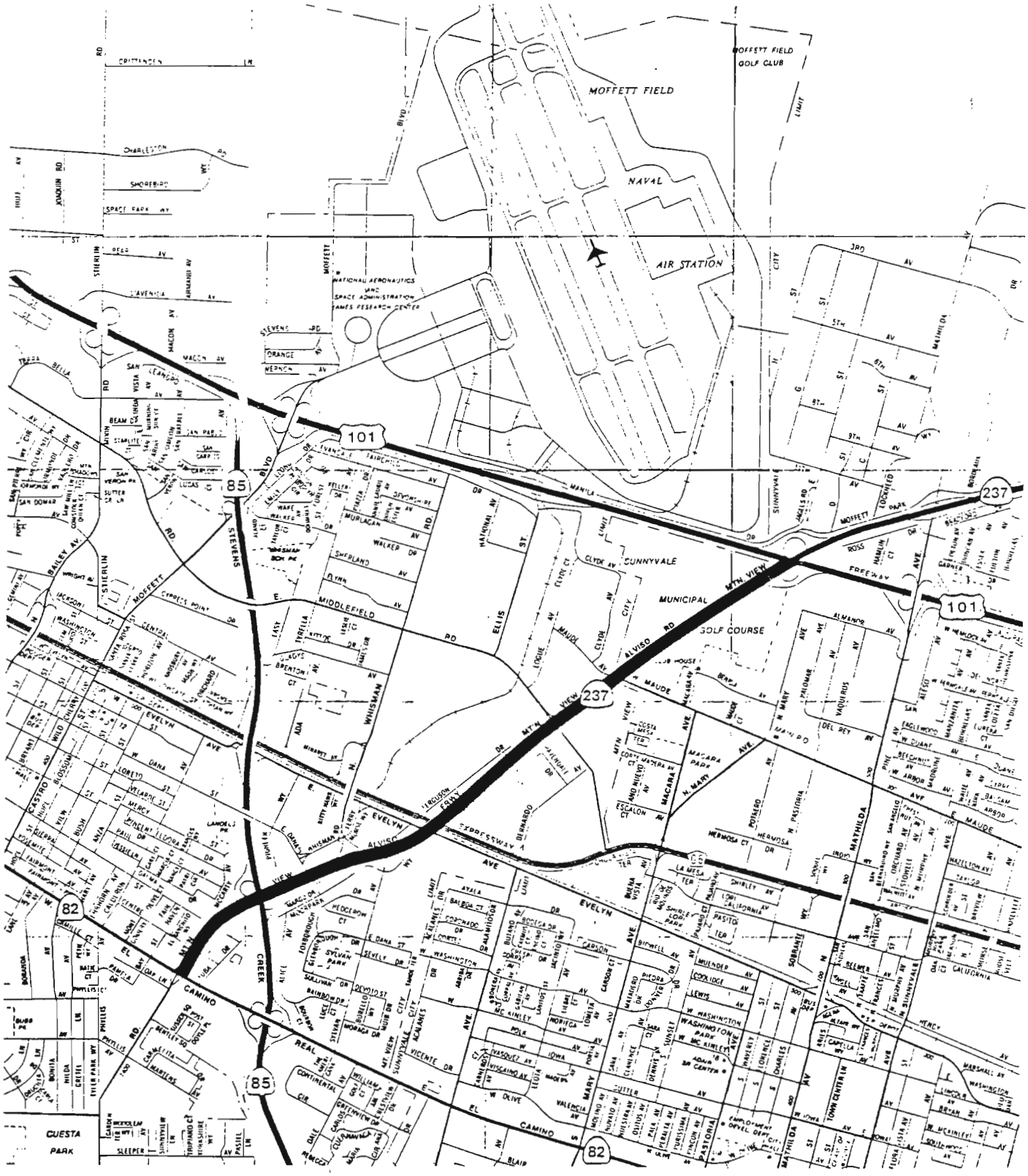
The Legislative description of Route 237 is as follows:

> "Route 237 is from Route 82 near Mountain View to Route 680 near Milpitas."

II. PURPOSE OF ROUTE

Route 237 serves primarily as a commuter route for workers commuting from the East Bay and Peninsula to the electronics industries of the Santa Clara Valley. It also serves as a major link for trucking between the lower peninsula and the East Bay.

SEGMENT A
ROUTE 237



ROUTE 237 - SEGMENT A

Figure A.

BASE MAP REPRODUCED COURTESY OF THE CALIFORNIA STATE AUTOMOBILE ASSOCIATION, COPYRIGHT OWNER

III. ROUTE SEGMENTS

A. Segment A:

04-SCL-237, P.M. SCL R0.000 - 2.480
Route 82 to Route 101

Segment A of Route 237 begins at the junction of Route 82 (El Camino Real) in the City of Mountain View, and extends northeasterly 2.5 miles to the Routes 101/237 Interchange in the City of Sunnyvale. The Routes 85/237 Interchange is located within this segment.

This segment is a four-lane freeway/expressway/divided conventional highway facility and serves commuter and commercial traffic. The facility is known locally as the Mountain View - Alviso highway. The majority of Segment A lies within the City of Mountain View which is a heavily urbanized area. Undeveloped land lies adjacent to the facility at some locations. In the City of Sunnyvale, the facility passes through the Sunnyvale Municipal Golf Course. The land use to the northeast of the Routes 101/237 Interchange is light industrial.

The signed speed limit ranges from 45 to 55 MPH.

Segment A passes through the Cities of Mountain View and Sunnyvale.

1. Existing Facilities

a) Highway Facility

The section of segment A from Route 82 to west of Middlefield Road is a four-lane expressway. The total traveled way width is 48 feet, the outside shoulders are 8 feet wide, and the median is 46 feet wide. The terrain is flat with a grade ranging from 0 to 3%.

The section from west of Middlefield Road to east of Maude Avenue is a four-lane divided conventional highway. The total traveled way width is 48 feet, the outside shoulders are 8 feet wide, and the median is 22 feet wide. The terrain is flat with a grade ranging from 0 to 3%.

The section of Segment A from east of Maude Avenue to Route 101 is a four-lane freeway. The total traveled way width ranges from 48 to 82 feet, the outside shoulders range from 0 to 8 feet in width, and the median width varies from 13 to 22 feet. The terrain is flat with a grade ranging from 0 to 3%.

b) 1986 STIP Projects

The following are the projects programmed in the 1986 State Transportation Improvement Program (STIP) for Segment A of Route 237:

*	FY 86/87 P.M. R0.4/9.5	Route 85 to Route 880 Upgrade to Freeway along Existing Alignment Measure "A" funding Right-of-Way Cost: $84M (1/86) Total Cost: $260.5M (1/86)
	FY 90/91 P.M. 1.8/2.5	Maude Avenue to Route 101 AC Overlay

* It is uncertain whether Measure "A" can fund the entire estimated cost for this project.

c) Public Transit

Santa Clara County Transit provides extensive bus service on several local streets near this segment. Several bus lines cross the segment at Whisman Road and Middlefield Road, however, bus service is not provided along the segment itself.

d) Bicycles

Bicycles are not permitted along the expressway and freeway sections of the segment. Bicyclists are only permitted between Route 82 (El Camino Real) and Centre Street, and from west of Middlefield Drive to east of Maude Avenue. Although not permitted, pedestrians and bicyclists occasionally use the shoulders of the expressway.

There is no direct bicycle route for those wanting to follow this segment of Route 237 between the commercial and residential areas along Route 82 and the business parks and light industry along Route 101; bicyclists must use local streets. Mary Avenue, Central Expressway and Mathilda Avenue are suggested bicycle routes near this segment of Route 237.

The proposed concept for this segment of Route 237 provides for the construction of a bicycle path adjacent to the freeway facility, to meet the bicycle travel demands between the Central Expressway and Route 101.

e) Park and Ride

There is a joint-use (County involvement) park and ride lot approximately 2.5 miles west of the Route 82/237 junction, on Route 82 (El Camino Real). The lot is located at the San Antonio Shopping Center, and has twenty spaces available for commuters.

f) Rail Transit

The Caltrain commuter rail service, which provides service from San Jose to San Francisco, passes Route 237 near post mile R1.00. The Castro Street Caltrain station is located one mile from the Route on West Evelyn Avenue in the City of Mountain View.

There is no operating rail service parallel to this segment of Route 237, and none is planned for the immediate future.

The Metropolitan Transportation Commission has defined several transit alternatives for the Route 237 corridor, including Segment A. The Fremont-South Bay Corridor Study has identified several transit alternatives for the corridor, including BART and Light Rail Transit.

2. Current Operating Conditions

The 1985 Annual Average Daily Traffic (AADT) ranged from 33,000 vehicles at Route 82 to 43,000 vehicles east of Route 85. The heaviest congestion occurred at the Route 85 Interchange, Whisman Road and Maude Avenue. The AM peak hour volumes ranged from 2,100 to 2,800 eastbound, and from 1,200 to 1,600 westbound. Truck traffic ranged from four to seven percent of the total traffic (three to six percent of the AM peak hour traffic).

The Volume to Capacity ratio (V/C) is .67 with a Level of Service-Operating Speed of C-45 throughout most of the segment. At the Middlefield Road and Maude Avenue Intersections, the V/C is 1.00, with an LOS of F-20.

3. Accident Rate (1/83 to 12/85)

During the three year period beginning January 1, 1983 and ending December 31, 1985, there were 152 accidents with 59 injuries and four fatalities along this segment. The total accident rate was 1.52 accidents per MVM (Million Vehicle Miles). This rate was below the Statewide average total accident rate of 1.95 accidents per MVM for similar highway facilities. The fatality rate was .040 fatalities per MVM, which exceeded the Statewide average fatality rate of .022 fatalities per MVM for this type of facility.

4. Future Operating Conditions

The projected 1995 AADT ranges from 37,000 vehicles at Route 82 to 54,000 between Route 85 and Whisman Road. The projected 2005 AADT ranges from 51,000 to 74,000 vehicles at the respective locations. The AM peak hour volumes for 1995 are expected to range from 2,400 to 3,500 eastbound, and from 1,300 to 1,900 westbound. The AM peak hour volumes for 2005 are expected to range from 3,300 to 4,800 eastbound, and 1,800 to 2,600 westbound.

The Demand to Capacity ratio (D/C) for 1995 is expected to be 1.19, with an LOS of F-20. The 2005 D/C is expected to be 1.41, with an LOS of F-15.

These figures are based on unconstrained demand with no improvements to the existing facilities. Since this segment has constraints such as signalized intersections, these figures are for comparison purposes only. See Exhibit F-1 for additional traffic projections.

See Exhibit F-2 for future operating conditions under the proposed concept.

The traffic projections tend to be conservative, as stated in the "Concept Rationale" section of this report.

5. Route Concept

The concept for Segment A of Route 237 is for a six-lane freeway, with four mixed-use lanes, two HOV lanes and additional auxiliary lanes, for the entire segment. The freeway would have a wide median between Route 85 and Route 101 for ultimate expansion to eight lanes or for a future transit system. A bicycle path would be provided adjacent to the facility from Central Expressway to east of Route 101. The conceptual LOS is D-40 for the entire segment.

The concept for this segment will meet the projected traffic demand for the year 2005.

This is a preliminary concept. The concept for the entire route will be determined in studies still in progress, and will be contingent on funding and right-of-way availability.

6. Route Improvement

The following are the improvements necessary, to achieve the proposed concept for Segment A of Route 237:

The widening and improvement of the existing four-lane divided conventional highway/expressway/freeway facility to a six-lane freeway (including HOV lanes) along the entire segment, between Route 82 (Post Mile R0.00) and Route 101 (Post Mile 2.48).

The reconstruction of the Routes 85/237 Interchange (Post Mile R0.37).

The construction of a bicycle trail adjacent to the facility between Central Expressway (Post Mile R1.06) and Route 101 (Post Mile 2.51).

The reconstruction of the Routes 101/237 Interchange (Post Mile 2.48).

7. Concept Concerns

The primary capacity constraints at this time are the at-grade intersections at Maude Avenue and Middlefield Road. The construction of a freeway with full interchanges at these locations would accommodate projected growth at least through the year 1995 without adding any additional lanes. However, by the year 2005, even with this segment at freeway status, a total of six lanes will be needed.

The ultimate concept will be determined by funding and right-of-way availability. The majority of the land adjacent to the existing facility is developed. A few structures are adjacent to the facility near Route 85 and near Middlefield Road. Frontage roads parallel the route near Central expressway, and the existing freeway portion passes through the Sunnyvale Municipal Golf Course. Right-of-way acquisitions for the proposed facility will necessitate the displacement of a few structures. Acquisition of additional right-of-way from the Sunnyvale Municipal Golf Course is subject to Section 4(f) of the Department of Transportation Act. This Federal Environmental Law requires that there must be no other alternative available before parkland is used for highways. Acquisition of parkland for the bicycle path may not be subject to Section 4(f), since bicycle use is compatible with use of parkland.

Six lanes are needed between Route 82 and Route 85 for the appropriate operating efficiency and storage for vehicles approaching the Route 82/237 Junction, and to accommodate through and merging traffic.

A wide median is necessary to provide for future demand along the corridor. A transit system such as BART or a Light Rail Transit system (LRT) could utilize the median between Route 101 and the Central Expressway. The system would connect to a Caltrain station via the Southern Pacific right-of-way adjacent to the Central Expressway. Should transit not be the preferred alternative for this corridor, or should the system utilize an alignment other than Route 237 (North Mary Avenue or North Mathilda Avenue for example), then the median would be used to expand the freeway from six to eight lanes between Route 85 and Route 101.

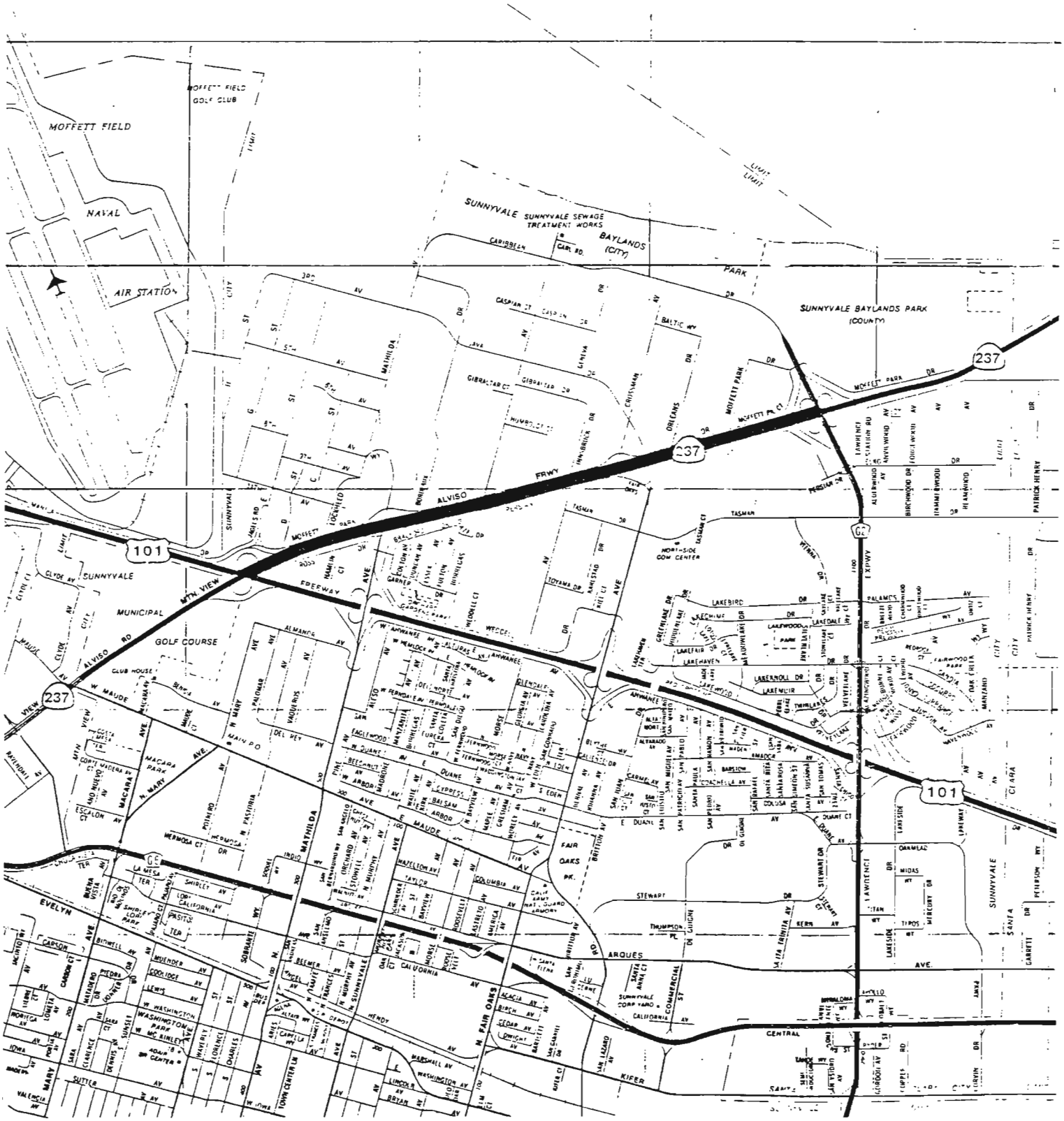
Due to right-of-way constraints, the proposed bicycle facility does not continue to Route 82. It would, however, tie in with the suggested bicycle route along the Central Expressway. Once completed, the bicycle facility would be maintained by a local agency.

8. Local Concerns

Route 237 will receive Measure "A" funds for major improvements. The improvements have not yet been determined. However, assuming sufficient funding is available, Route 237 will be widened and upgraded to a freeway between Route 85 in Mountain View, and Route 880 in Milpitas.

The County, local cities and the Santa Clara County Traffic Authority, have expressed that any improvements to Route 237 include High Occupancy Vehicle (HOV)/commuter lanes. Commuter lanes are lanes reserved for HOV use during peak periods.

SEGMENT B
ROUTE 237



ROUTE 237 - SEGMENT B

Figure B.

BASE MAP REPRODUCED COURTESY OF THE CALIFORNIA STATE AUTOMOBILE ASSOCIATION, COPYRIGHT OWNER

E. Segment B:

04-SCL-237, P.M. 2.480 - R4.600
Route 101 to Lawrence Expressway

Segment B begins at the 101/237 Interchange in the City of Sunnyvale and proceeds east to the Lawrence Expressway Interchange. The route is a four-lane freeway serving as a commuter route for the electronics industries of northern Santa Clara County. The facility is known locally as the Mountain View-Alviso Freeway.

The land use to the south of the segment is primarily residential, with some light industry. The land use to the north is industrial. Moffett Field Naval Air Station, Ames Research Center, and Lockheed Aircraft are located along Route 101 to the north of the Route 101/237 Interchange. Few structures are adjacent to the freeway right-of-way. However, several structures abut the frontage roads that parallel the freeway to the north and south of the facility.

The signed speed limit is 55 MPH.

The entire segment is in the City of Sunnyvale.

1. Existing Facilities

a) Highway Facility

Segment B is a four-lane freeway with a total traveled way width of 48 feet. The outside shoulder widths are 8 feet, and the median width varies from 22 to 46 feet. The terrain is flat, with a grade ranging from 0 to 3%.

b) 1986 STIP Projects

The following are the projects programmed in the 1986 STIP for Segment B of Route 237:

*	FY 86/87 P.M. R0.4/9.5	Route 85 to Route 880 Upgrade to Freeway along Existing Alignment Measure "A" funding Right-of-Way Cost: $84M (1/86) Total Cost: $260.5M (1/86)
*	FY 88/89 P.M. R4.5/6.4	Great America Parkway (Lafayette) Interchange Right-of-Way Protection Measure "A" Funding Estimated Cost: $8.5M

* It is uncertain whether Measure "A" can fund the entire estimated cost for these projects.

c) Public Transit

Santa Clara County Transit provides extensive local and regional service in the area. An express bus line utilizes this segment of Route 237, serving the California Avenue Caltrain station in Palo Alto, and the Cities of Mountain View, Milpitas and San Jose.

d) Bicycles

Bicycles are prohibited on this segment of Route 237. The suggested bicycle route along this segment is via North Mathilda Avenue Ross Drive, Weddell Drive, Morse Avenue, and Tasman Drive.

There is a strong demand for a bicycle path along this segment of the Route 237 corridor. Many bicyclists commute to work, and it is conceivable that an improved bicycle route could attract more local bicycle commute trips along this segment.

e) Park and Ride

There are no park and ride lots located along this segment.

f) Rail Transit

There are no rail facilities along this segment. However, the Metropolitan Transportation Commission (MTC) has studied various transit alternatives for the Fremont-South Bay Corridor which directly impact Route 237. Transit studies have identified several rail transit alternatives for this segment, including BART and Light Rail Transit. A specific transit alternative has not been determined for this segment of the Route 237 corridor.

2. Current Operating Conditions

The 1985 AADT was 46,000 for the entire segment. The AM peak hour volumes ranged from 2,300 to 2,100 vehicles eastbound, and from 2,300 to 2,500 westbound. Trucks accounted for five percent of the total daily traffic.

The V/C is .63, with an LOS of C-50.

3. Accident Rate (1/83 to 12/85)

During the three year period beginning January 1, 1983 and ending December 31, 1985, there were 83 accidents with 49 injuries and no fatalities along this segment. The total accident rate was 0.84 accidents/MVM (Million Vehicle Miles). This rate was below the Statewide average total accident rate of 0.91 accidents/MVM for similar highway facilities. The fatality rate was .000 fatalities/MVM, which was below the Statewide average fatality rate of .010 fatalities/MVM for this type of facility.

4. Future Operating Conditions

The projected 1995 AADT ranges from 63,000 vehicles at Mathilda Avenue to 53,000 vehicles at Lawrence Expressway. The projected 2005 AADT ranges from 81,000 to 69,000 at these respective locations. The AM peak hour volumes for 1995 are expected to range from 3,100 to 2,400 in the eastbound direction and from 3,100 to 2,900 in the westbound direction. For the year 2005, the eastbound AM peak hour volumes are expected to range from 4,100 to 3,100 and in the eastbound direction and from 4,100 to 3,800 in the westbound direction.

The 1995 D/C is expected to be .78, with an LOS of C-50. The 2005 D/C is expected to be 1.03 with an LOS of F-20.

These figures are based on unconstrained demand with no improvements to the existing facilities. See Exhibit F-1 for additional traffic projections.

See Exhibit F-2 for future operating conditions under the proposed concept.

The traffic projections tend to be conservative, as stated in the "Concept Rationale" section of this report.

5. Route Concept

The concept for Segment B of Route 237 is for an eight-lane freeway, with six mixed-use lanes, two HOV lanes and auxiliary lanes. The freeway would have a wide median reserved for a possible future transit system. A bicycle path would be provided adjacent to the freeway facility. The conceptual LOS for this segment is D-40.

The concept for this segment will meet the projected traffic demand for the year 2005.

This is a preliminary concept. The concept for the entire route will be determined in studies still in progress, and will be contingent on funding and right-of-way availability.

6. Route Improvement

The following are the improvements necessary to achieve the proposed concept for Segment B of Route 237:

The widening of the existing four-lane freeway to an eight-lane freeway (including two HOV lanes), with auxiliary lanes, and a wide median, for the entire segment, between Route 101 (Post Mile 2.48) and Lawrence Expressway (Post Mile R4.60).

The provision of a bicycle path adjacent to the freeway facility or along a frontage road, from Route 101 (Post Mile 2.48 to Lawrence Expressway (Post Mile 9.34).

The reconstruction and improvement of the Route 101/237 Interchange (Post Mile 2.48).

The reconstruction and improvement of the Lawrence Expressway/Route 237 Interchange (Post Mile R4.60).

7. Concept Concerns

Height restrictions imposed by the Federal Aviation Administration (FAA), to protect the landing approach to Moffett Field Naval Air Station, restricts the improvements which can be made to the Route 101/237 Interchange.

The bicycle facility along this segment would serve to connect the proposed bicycle facilities along Segments A and C. If right-of-way is available along this segment, the bicycle path would be placed adjacent to the freeway facility. If right-of-way is not available, then a designated bicycle lane should be provided along frontage roads and local streets to accommodate bicyclists along this segment. Since the type and location of the bicycle facility for Segment C has not been determined, it is difficult to establish the location of the bicycle facility for Segment B. Any bicycle facility would be maintained by a local agency.

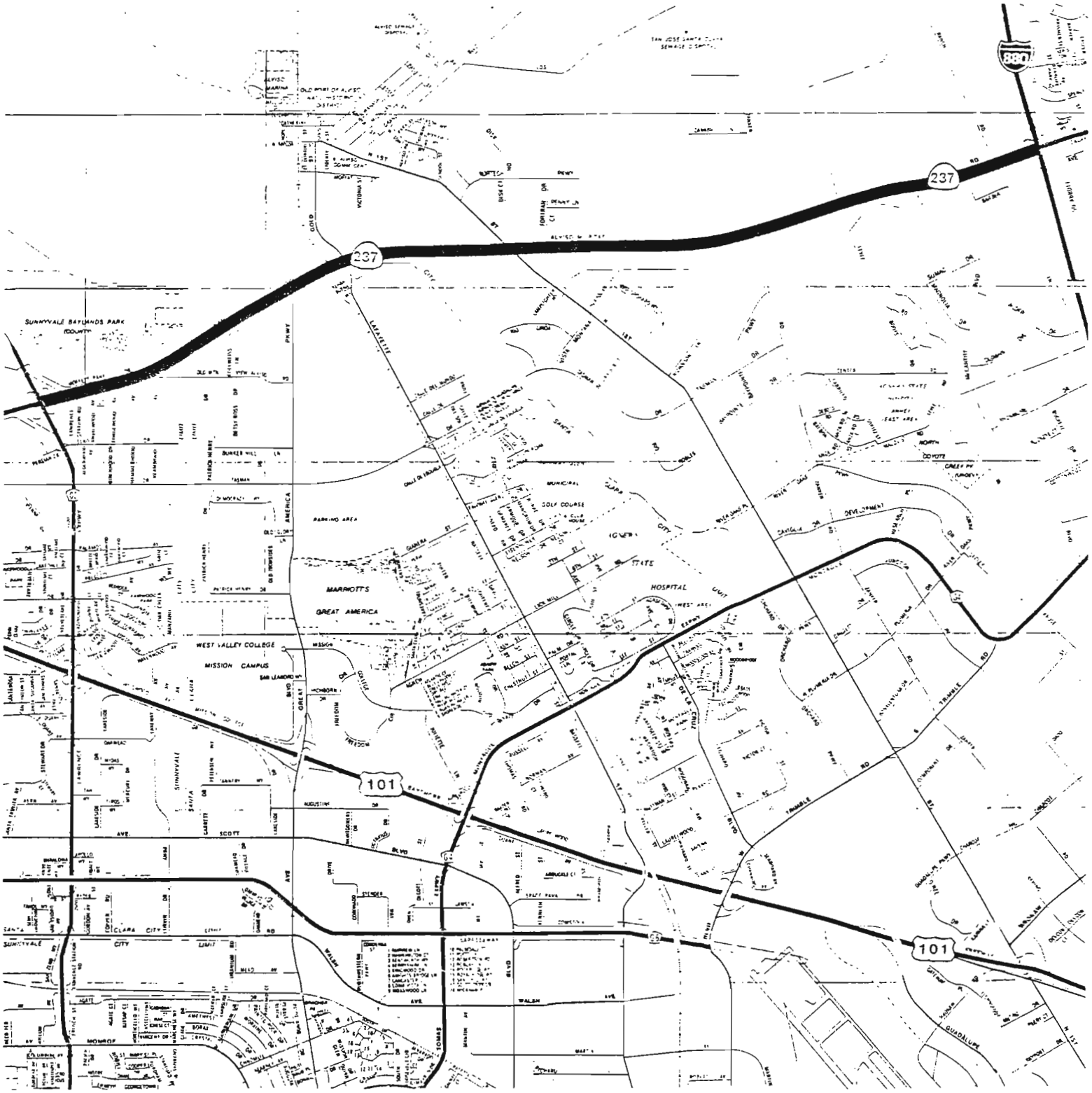
A wide median is necessary to provide for future demand along the corridor. A transit system such as BART or a Light Rail Transit system (LRT) could utilize the median. Should transit not be an alternative for this corridor, or should the system utilize an alignment other than Route 237, then the median could be used to expand the freeway from eight to ten lanes, providing for express bus lanes, or for additional HOV lanes.

Whatever alternative is chosen, provisions should be made for a future rail transit system in the Route 237 corridor. If additional right-of-way is not available along Route 237, efforts should be undertaken to secure right-of-way along Tasman Drive, to the south of the route.

8. Local Concerns

Route 237 will receive Measure "A" funds for major improvements. The ultimate improvements have not yet been determined. It is uncertain whether Measure "A" can fund all of the proposed improvements for Routes 85, 101 and 237.

SEGMENT C
ROUTE 237



ROUTE 237 - SEGMENT C

Figure C.

BASE MAP REPRODUCED COURTESY OF THE CALIFORNIA STATE AUTOMOBILE ASSOCIATION, COPYRIGHT OWNER

C. Segment C:

04-SCL-237, P.M. R4.600 - 9.340
Lawrence Expressway to Route 880

Segment C begins at the Lawrence Expressway Interchange in Sunnyvale and proceeds east approximately five miles to the Routes 880/237 Interchange in Milpitas. The route is a four-to-six-lane freeway/expressway/conventional highway facility, serving as a commuter route for the electronics industry of Santa Clara Valley. The facility is known locally as Alviso-Milpitas Road and passes near environmentally sensitive areas, including Sunnyvale Baylands Park, Guadalupe Creek, and Coyote River.

This area of Santa Clara Valley is undergoing extensive development. Much of the land use is still agricultural. However, the area is being developed rapidly as business parks and light industrial parks. The land immediately adjacent to the right-of-way is either developed as business parks or residential communities, or is planned for development. Now is the time to acquire additional right-of-way for freeway expansion.

The signed speed limit is 55 MPH.

Segment C passes through the Cities of Sunnyvale, Santa Clara, San Jose, and Milpitas, and an unincorporated area of Santa Clara County near San Jose.

1. Existing Facilities

a) Highway Facility

The section of Segment C from Lawrence Expressway to Calabazas Creek (Post Mile 4.59 to 5.28) is a four-lane freeway. There are two lanes in the eastbound direction and two lanes with an additional auxiliary lane in the westbound direction. The total traveled way width is 48 feet, the median width is 36 feet, and the outside shoulder widths range from eight to ten feet.

The section from Calabazas Creek to just west of Great America Parkway (Post Mile 5.28 to 5.80) is a four-lane expressway with a total traveled way width of 48 feet. The median is 36 feet wide, and the outside shoulders are twelve feet wide. Motorcycles and High Occupancy Vehicles (HOVs) are permitted on the shoulders in the eastbound direction during the evening commute period between 3:00 PM and 7:00 PM. Motorcycles and HOVs are permitted on the outside shoulder in the westbound direction during the morning commute period between 5:00 AM and 9:00 AM. HOVs are considered to be vehicles with two or more occupants.

The section from Great America Parkway to North First Street (Post Mile 5.84 to 6.80) is a six-lane expressway. The outside lane in the eastbound direction is reserved for HOVs during the evening commute period between 3:00 PM and 7:00 PM. The outside lane in the westbound direction is reserved for HOVs during the morning commute period between 5:00 PM and 9:00 PM. There is an at-grade railroad crossing just west of Lafayette (Post Mile 6.05).

The section from North First Street to the end of the segment at Route 880 is a six-lane divided conventional highway. The outside lane in the eastbound direction, between North First Street and west of Barber Lane at Coyote Creek, is reserved for HOVs during the evening commute period from 3:00 PM to 7:00 PM. The outside lane in the westbound direction, from just west of the Route 880/237 Interchange to North First Street, is reserved for HOVs during the morning commute period between 5:00 PM and 9:00 PM. Seasonal fruit stands and located along the roadway, and a few farm residences are located along a frontage road just to the north of the segment. A gasoline station/convenience store is located along the eastbound side of Route 237 between Barber Lane and Route 880.

b) <u>1986 STIP Projects</u>

The following are the projects programmed in the 1986 STIP for Segment C of Route 237:

*	FY 86/87 P.M. R0.4/9.5	Route 85 to Route 880 Upgrade to Freeway along Existing Alignment Measure "A" funding Right-of-Way Cost: $84M (1/86) Total Cost: $260.5M (1/86)
*	FY 88/89 P.M. R4.5/6.4	Great America Parkway (Lafayette) Interchange Right-of-Way Protection Measure "A" Funding Estimated Cost: $8.5M
	FY 86/87 P.M. 8.4/9.0	E/Zanker Road to Barber Lane Upgrade to 6-Lane Freeway/ McCarthy Interchange Local Funding Estimated Cost: $9.8M

* It is uncertain whether Measure "A" can fund the entire estimated cost for these projects.

c) Public Transit

Santa Clara County Transit provides both local and express bus service along this segment, serving the Cities of Mountain View, Sunnyvale, Santa Clara and San Jose.

d) Bicycles

Bicycles are prohibited on the section of the route between Lawrence Expressway and Great America Parkway. Bicycles are permitted on the shoulders of the route between Great America Parkway and Lafayette Street, except in the Westbound direction from 5:00 AM to 9:00 AM, when the shoulder serves as an HOV lane. The section of the route between Lafayette Street and Route 880 is a suggested bicycle route: bicyclists may use the shoulders of the route. This corridor is popular for commuting by bicycle.

e) Park and Ride

There are no park and ride lots located along this segment. A park and ride lot is to be located at the proposed McCarthy Boulevard/237 Interchange.

f) Rail Transit

No rail service is provided along this segment of Route 237. However, construction of the rail line for the Guadalupe Corridor Light Rail Transit system on Tasman Drive to the south of Route 237 will begin approximately in November of 1986. The entire LRT system is expected to be in place by the summer of 1989. The LRT will serve the residential area of south San Jose and the electronic industries north of Route 101. The LRT will parallel Route 237 along Tasman Drive from North First Street to Great America Parkway. The $372M project is jointly funded by the Santa Clara County Transportation Agency, City of San Jose, City of Santa Clara, Santa Clara County, Caltrans and UMTA (Urban Mass Transportation Administration).

2. Current Operating Conditions

The 1985 AADT ranged from 54,000 at Lawrence Expressway to 62,000 at Route 880. The largest volumes occurred between Zanker Road and the Route 880/237 Interchange. The AM peak hour volumes ranged from 2,200 to 2,500 eastbound, and from 3,200 to 3,700 westbound. Truck traffic accounted for seven percent of the total daily traffic and five percent of the AM peak hour traffic.

The V/C is presently .92 with an LOS of E-30.

3. Accident Rate (1/83 to 12/85)

During the three year period beginning January 1, 1983 and ending December 31, 1985, there were 246 accidents with 134 injuries and two fatalities along this segment. The total accident rate was 2.00 accidents/MVM (Million Vehicle Miles). This rate was below the Statewide average total accident rate of 2.10 accidents/MVM for similar highway facilities. The fatality rate was .016 fatalities/MVM, which was below the Statewide average fatality rate of .022 fatalities/MVM for this type of facility.

4. Future Operating Conditions

The projected 1995 AADT ranges from 62,000 vehicles west of Zanker Road to 69,000 east of Zanker Road. The projected 2005 AADT ranges from 78,000 to 90,000 west and east of Zanker Road respectively. The 1995 AM peak hour volumes are expected to range from 2,500 to 2,800 eastbound, and from 3,700 to 4,100 westbound. The 2005 AM peak hour volumes are expected to range from 3,100 to 2,900 eastbound, and from 4,700 to 5,500 westbound.

The 1995 D/C is expected to be 1.01 with an LOS of F-20. The 2005 D/C is expected to be 1.36 with an LOS of F-15.

These figures are based on unconstrained demand with no improvements to the existing facilities. Since this segment has constraints such as signalized intersections, these figures are for comparison purposes only. See Exhibit F-1 for additional traffic projections.

See Exhibit F-2 for future operating conditions under the proposed concept.

The traffic projections tend to be conservative, as stated in the "Concept Rationale" section of this report.

5. Route Concept

The concept for Segment C of Route 237 is an eight-lane freeway with six mixed-use lanes, two HOV lanes, and auxiliary lanes between interchanges. A wide median would be reserved for a possible future transit system or for ultimate expansion to ten lanes. Provisions for a bicycle facility parallel to the route would be provided. The conceptual LOS is D-40.

The concept for this segment will meet the projected traffic demand for the year 2005.

This is a preliminary concept. The concept for the entire route will be determined in studies still in progress, and will be contingent on funding and right-of-way availability.

6. Route Improvement

The following are the improvements necessary to achieve the proposed concept for Segment C of Route 237:

The widening and improvement of the existing six-lane conventional highway/expressway/freeway facility to an eight-lane freeway (including HOV lanes), with auxiliary lanes, and a wide median. The entire segment would be widened, between the Lawrence Expressway (Post Mile R4.60) and Route 880 (Post Mile 9.34).

The construction of a separate bicycle facility parallel to the segment from Lawrence Expressway (Post Mile R4.60) to Route 880 (Post Mile 9.34).

7. Concept Concerns

The route concept for Route 237 will be reassessed after completion of the Route 237 EIS, and Phase II of the Fremont-South Bay Corridor Study. The concept proposed is a preliminary concept. Funding limitations and right-of-way availability restricts the alternatives which may be chosen for the corridor.

An eight-lane freeway with a median for a possible future LRT system would require the acquisition of additional right-of-way. The majority of the land use immediately adjacent to the existing right-of-way is under development. However, at some locations structures would have to be displaced. The major constraint would be the lack of funding which would allow the acquisition of additional right-of-way.

Existing plans for the new freeway facility for Segment C call for the modification of the two existing interchanges, and the construction of five additional interchanges. This will result in an average of one interchange for every .7 mile. Since merging and weaving at interchanges affect overall capacity, it is expected that the operational efficiency of the freeway will suffer. Interchanges less than a mile apart could be constructed to form couplets, where one offramp and one onramp serve two interchanges. A "frontage road" type facility, separate from the main flow of the freeway, would connect the two interchanges. This configuration confines most weaving and merging to the frontage road facility, thus improving overall capacity.

Acquisition of additional right-of-way from the Sunnyvale Baylands Park is subject to Section 4(f) of the Department of Transportation Act.

Whatever alternative is eventually chosen, provisions should be made for a future rail transit system in the Route 237 corridor. If additional right-of-way is not available along Route 237, then efforts should be undertaken to secure right-of-way along Tasman Drive, to the south of the Route.

Since upgrading this segment of Route 237 to a freeway will eliminate a suggested bicycle route, an alternate route will be provided. Three alternatives presently exist: the provision of a designated bicycle lane on Nortech Boulevard, a proposed east-west road to the north of Route 237, the construction of a separate bicycle path adjacent to the freeway right-of-way, and the provision of a designated bicycle lane on Tasman Drive as that road is extended and improved. A separate bicycle facility along the freeway right-of-way may be more desirable for bicycle commuters. The preferred alternative will be selected through Public Hearings and in a separate study to be conducted in the near future. Once upgraded to freeway status, bicycles will be prohibited from this segment. Since there is a strong demand for commuting by bicycle along this corridor, existing bicycle facilities should be improved.

The concept will be reassessed after completion of studies now in progress. If rail transit along Route 237 is not a preferred alternative, then it will not be necessary to reserve the median for transit. However, a ten-lane freeway may be necessary for part of Route 237, should Route 61 in Alameda County be extended to Route 237. Right-of-way should be reserved for this possible connection, which could attract additional traffic to Route 237.

The Route Concept Report for Route 61 suggests the possibility of extending Route 61 beyond its Legislative terminus at Route 84, to Route 237. The Route 61 Corridor Study, now in progress, will address the feasibility of such an extension. If Route 61 is to be extended to Route 237, additional traffic could utilize Route 237 as an access to Route 61.

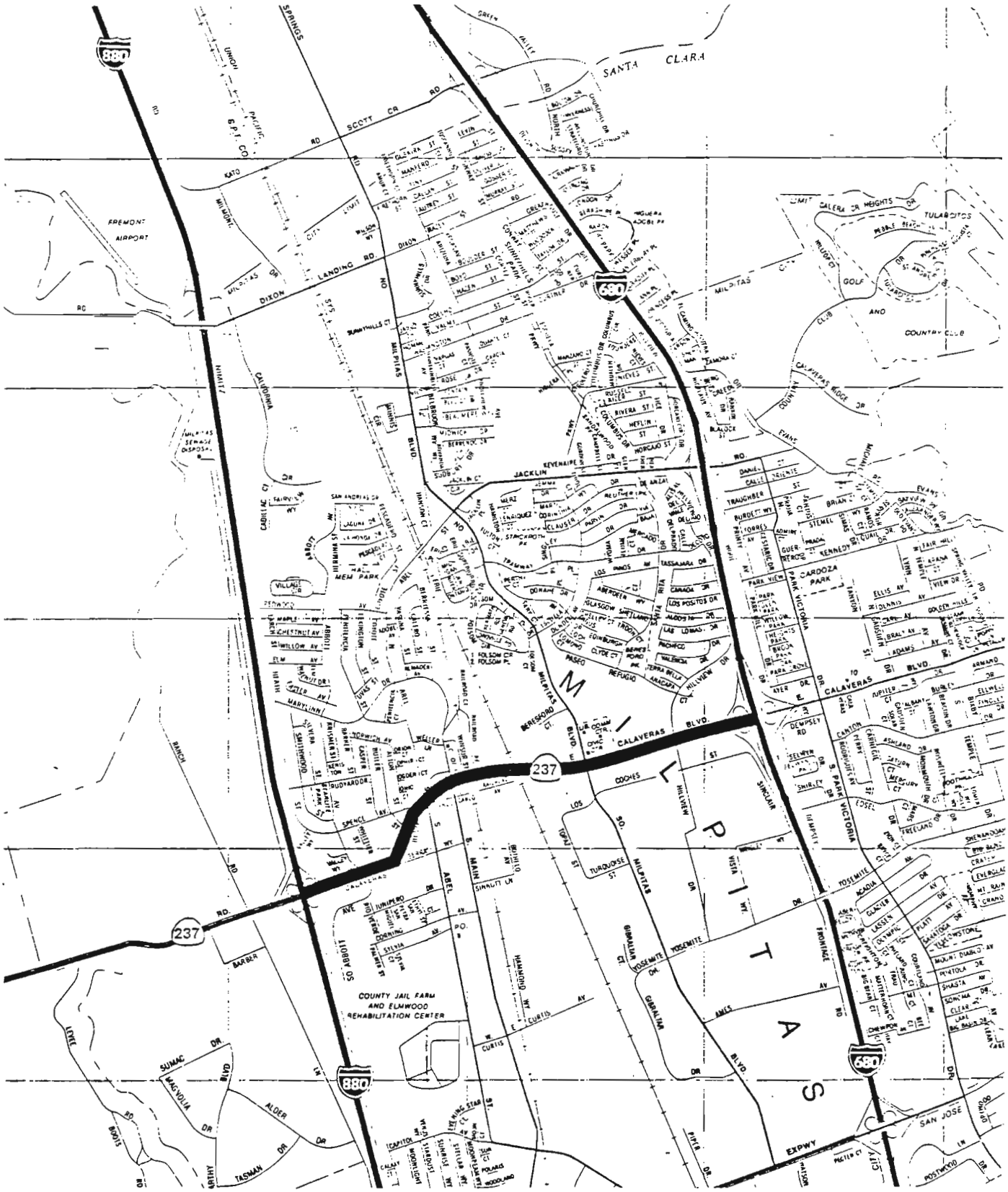
The Route Concept Report does not consider Right-of-way constraints, nor funding constraints. The report addresses the transportation needs for Route 237. Although the report addresses specifically the twenty year need, the ultimate build-out of the Golden Triangle and of Northern Santa Clara County has been taken into consideration. This is an idealistic concept. The ultimate concept for the route has yet to be determined.

8. Local Concerns

Route 237 will receive Measure "A" funds for major improvements. The ultimate improvements have not yet been determined. However, Route 237 will definitely be widened between the Lawrence Expressway and Route 880.

The City of San Jose's position on Route 237 is that an eight-lane freeway with auxiliary lanes is necessary to meet the anticipated demand through the City for the year 2010.

SEGMENT D
ROUTE 237



ROUTE 237 - SEGMENT D **Figure D.**

BASE MAP REPRODUCED COURTESY OF THE CALIFORNIA STATE AUTOMOBILE ASSOCIATION. COPYRIGHT OWNER

D. Segment D:

04-SCL-237, P.M. 9.340 - 11.080
Route 880 to Route 680

Segment D begins at the Routes 880/237 Interchange in Milpitas and proceeds east approximately two miles to the terminus of the Route at the Routes 680/237 Interchange. The segment is a four-to-seven-lane conventional highway, serving as a commercial street, and as a connector for commercial and commuter traffic accessing Route 680. The facility is known locally as Calaveras Boulevard, and is a major east-west arterial for the City of Milpitas.

The land use immediately adjacent to the segment is commercial, with small business parks located throughout the route. To the east, the land use is predominantly residential. New development is occurring along the route, including a new commercial center. It is expected that local traffic demand will increase for this segment of the route, as the adjacent land becomes fully developed. Driveways to commercial establishments and business parks are located at various locations, and left turn pockets are located throughout the segment.

The signed speed limit ranges from 35 to 40 MPH.

The entire segment is within the City of Milpitas.

1. Existing Facilities

a) Highway Facility

The section of Segment D from the Route 237/880 Interchange to Abel Street is a six-to-seven lane conventional divided highway. The eastbound direction has four lanes between Route 880 and Serra Way, and three lanes between Serra Way and Abel Street. There are three lanes in the westbound direction. Parking is not permitted, and there are driveways into commercial establishments at various locations.

The section between Abel Street and Milpitas Boulevard is a four lane divided conventional highway with controlled access. The facility crosses over the Southern Pacific and Union Pacific railroad tracks. Parking is not permitted.

The section between Milpitas Boulevard and Route 680 is a six-lane divided conventional highway. On-street parking is permitted, and driveways into commercial establishments are at various locations.

b) 1986 STIP Projects

There are no projects programmed in the 1986 STIP for Segment D of Route 237.

c) Public Transit

Santa Clara County Transit provides local and express service along Route 237, as well as throughout the City of Milpitas. Bus turn-outs are located at various bus stop locations along the segment.

d) Bicycles

Bicycles are permitted on this segment of Route 237. However, in some areas along the route there is not adequate width, and heavy traffic poses conflicts between the two transportation modes. The section of the segment between Route 880 and North Main Street, is a suggested bicycle route.

e) Park and Ride

There is a joint use park and ride lot located in Milpitas, at the K-Mart Store at 75 Weller Lane (at Main Street). The lot has 100 spaces.

f) Rail Transit

Rail transportation is not available along this segment of Route 237. The Metropolitan Transportation Commission has studied various transit alternatives in the Fremont-South Bay Corridor which directly impact Route 237. Several alternatives have been developed. These include: expansion of express bus service, BART extensions, Light Rail Transit extensions, various combinations of the above, and TSM actions. A specific transit alternative for the Route 237 corridor has not been determined.

2. Current Operating Conditions

The 1985 AADT ranged from 49,000 at Main Street to 40,000 at Route 680. The AM peak hour volumes ranged from 1,700 to 1,400 vehicles eastbound and from 3,200 to 2,600 vehicles westbound. Truck traffic accounted for six percent of the total traffic and five percent of the AM peak hour traffic.

During the AM peak period, congestion along Segment C causes traffic delay along the western section of this segment. Both AM and PM congestion occurs at the intersections of Abel Road and Milpitas Boulevard.

The V/C is 1.00 with a Level of Service of F-15.

3. Accident Rate (1/83 - 12/85)

During the three year period beginning January 1, 1983 and ending December 31, 1985, there were 414 accidents with 171 injuries and one fatality along this segment. The total accident rate was 5.30 accidents/MVM (Million Vehicle Miles). This rate was above the Statewide average total accident rate of 3.38 accidents/MVM for similar highway facilities. The fatality rate was .012 fatalities/MVM, which was below the Statewide average fatality rate of .023 fatalities/MVM for this type of facility.

4. Future Operating Conditions

The projected 1995 AADT ranges from 53,000 vehicles east of Route 880 to 46,000 west of Route 680. The projected 2005 AADT ranges from 65,000 to 56,000 at these respective locations.

The 1995 AM peak hour volumes are expected to range from 1,900 to 1,600 eastbound, and from 3,500 to 3,000 westbound. The 2005 AM peak hour volumes are expected to range from 1,900 to 1,700 eastbound, and from 4,500 to 3,900 westbound.

The 1995 D/C is expected to be 1.46 with an LOS of F-10. The 2005 D/C is expected to be 1.88 with an LOS of F-10.

These figures are based on demand with no constraints, with no improvements to the existing facilities. Since this segment has several constraints, including signalized intersections, driveways, and on-street parking, these figures are for comparison purposes only.

5. Route Concept

The concept for Segment D of Route 237 is for the segment to remain a four-to-seven lane conventional divided highway. The conceptual LOS is F-10.

The concept for this segment will not meet the projected traffic demand for the year 2005.

6. Route Improvements

No improvements are proposed for Segment D of Route 237. The segment is to remain a four-to-seven lane conventional divided highway.

7. Concept Concerns

Segment D of Route 237 (Calaveras Boulevard) is a major city arterial, traversing the Milpitas Civic Center. The route provides major cross-town access to the city's growing industrial and commercial areas. Traffic projections for the year 2005 indicate a tremendous increase of the traffic along this segment. The existing commercial development adjacent to the route precludes the widening of Segment D to meet the projected demand.

As traffic congestion increases in northern Santa Clara County, a new connector between Route 880 and Route 680 should be constructed. A possible new alignment could begin at Route 880 in the vicinity of Dixon Landing Road, and proceed east to Route 680 in the vicinity of Scott Creek Road. The alignment would be entirely within the County of Alameda. To determine the feasibility of this location, a separate study should be conducted.

If this new connection is constructed, it would become new Route 237 and the existing alignment of Segment D of Route 237, between Routes 880 and 680, (Calaveras Boulevard) would be relinquished to the City of Milpitas. Route 262, a connector between Routes 680 and 880 would be relinquished to the City of Fremont, for, as stated in the Legislative Statutes for Route 262,: "Route 262 shall cease to be a state highway when Route 237 is constructed between Route 880 and Route 680."

8. Local Concerns

The City of Milpitas is concerned with the increased congestion on Calavaras Boulevard. The City is trying to discourage through traffic between Routes 880 and 680. The proposed improvements to the Route 880/237 Interchange, and the widening of Route 880 to ten lanes between Routes 237 and 262, should help divert traffic away from Segment D (Calaveras Boulevard). The City supports the idea of constructing a new connection between Routes 880 and 680 to divert commuter traffic away from Calaveras Boulevard.

9. Current Transportation Studies

Under the management of the Metropolitan Transportation Commission, a study is currently in progress to identify the best form of transit to connect Fremont with the San Jose-Mountain View area. In addition to considering immediate needs, the Fremont-South Bay Corridor Study, will have a long range view to consider transportation needs for the year 2000. Phase I of the study has been completed and has defined several transit alternatives, including Light Rail, a BART extension, and increased Express Bus Service. Phase II of the study is presently under way. This phase will identify the preferred alternative for the corridor.

Another study is being conducted by Santa Clara County to determine future transportation needs within the County. The "Transportation 2000" study, has defined nine transportation corridors within the county. The study established various alternatives within the nine specified corridors. Although Fremont is located in Alameda County, a Fremont to South Bay Corridor was established due to the proximity of Fremont to Santa Clara County. The Fremont to South Bay corridor is a major commuter corridor into the County.

Phase I of the Transportation 2000 study has been completed. Phase II, which is the final phase, will focus more on the total transportation system, rather than the individual corridors as was the case in Phase I. Key areas of Phase II could include; bus fleet size, land use, costs and needs associated with additional freeway and expressway improvements, and financing options.

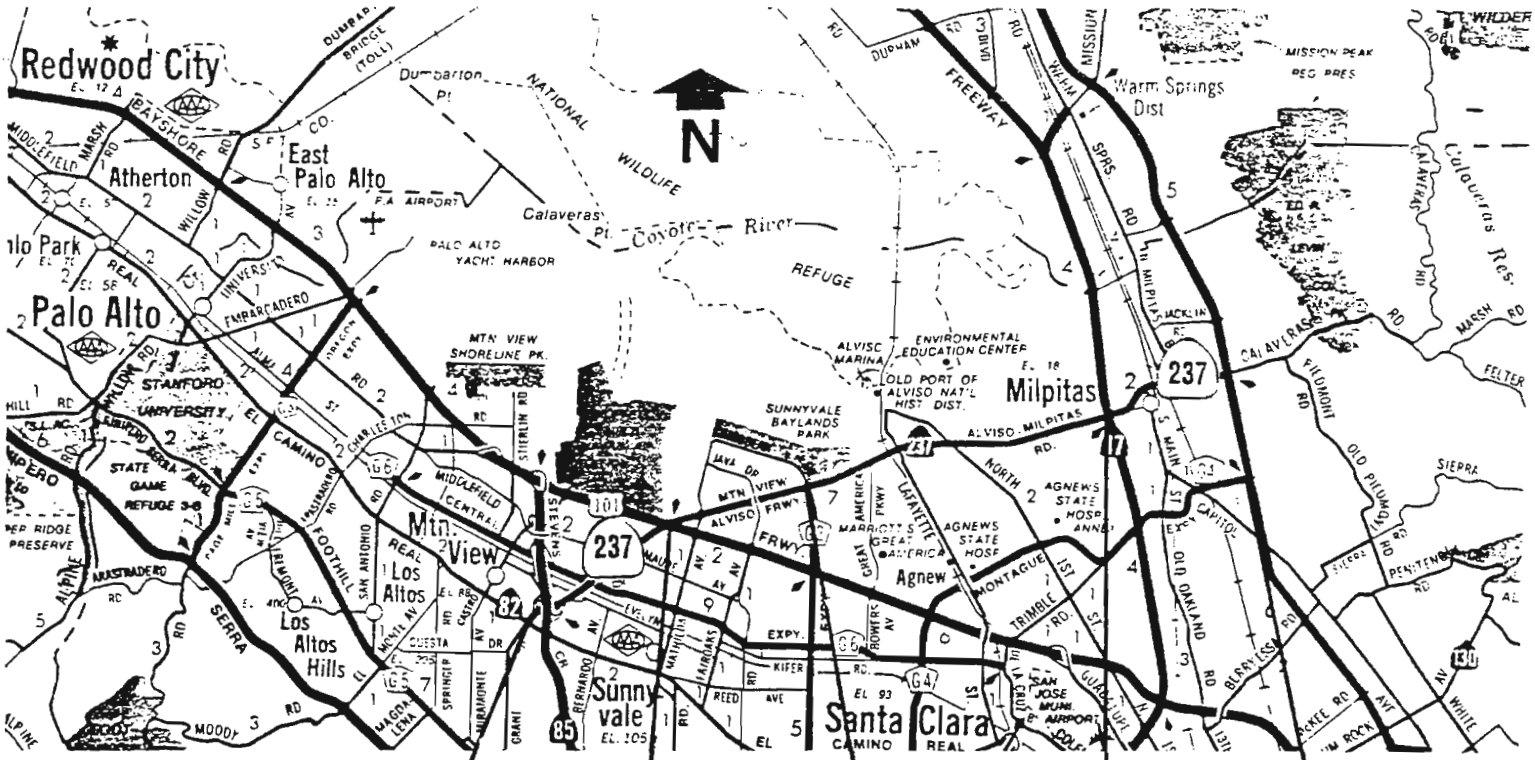
10. Future Transportation Studies

The Route 61 Corridor Study will consider the feasibility of constructing Route 61 as a freeway to Route 237. Such an extension will undoubtedly have an impact on Route 237.

* The Route Concept Report does not consider Right-of-way constraints, nor funding constraints. The report addresses the transportation needs for Route 237. Although the report addresses specifically the twenty year need, the ultimate build-out of the Golden Triangle and of Northern Santa Clara County has been taken into consideration. This is an idealistic concept. The ultimate concept for the route has yet to be determined.

ROUTE 237

EXHIBIT A



SEGMENT		SCL R0.00 A	SCL 2.48 B	SCL R4.60 C	SCL 9.34 D	SCL 11.08
NO OF LANES	PRESENT	4C,4E,4F	4F	6C,4-6E,4F	4-7C	
	1995	4C,4E,4F	4F	6C,4-6E,4F	4-7C	
	2005	4C,4E,4F	4F	6C,4-6E,4F	4-7C	
LEVEL OF SERVICE	PRESENT	F-20	C-50	E-30	F-15	
	1995	F-20	C-50	F-20	F-10	
	2005	F-15	F-20	F-15	F-10	
TERRAIN		F	F	F	F	
GRADES		0-3%	0-3%	0-3%	0-3%	
ACTUAL	Accidents Per MVM	1.52	0.84	2.00	5.30	
	Fatalities Per MVM	.040	.000	.016	.012	

BASE MAP REPRODUCED COURTESY
OF THE CALIFORNIA STATE AUTOMOBILE
ASSOCIATION, COPYRIGHT OWNER

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

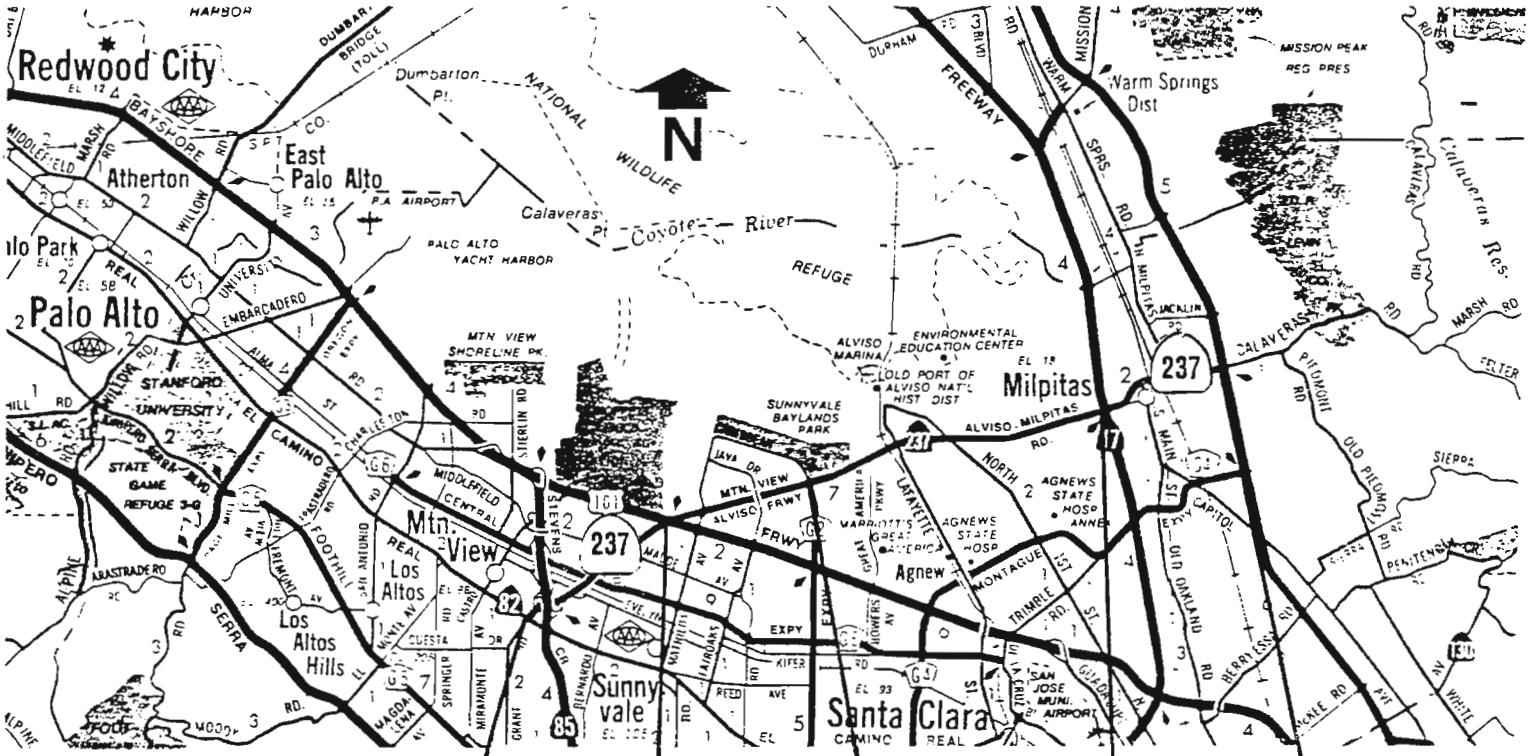
The number of accidents per million vehicle miles driven along the segment.

FATALITIES PER MVM

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

ROUTE 237

EXHIBIT B


Redwood City
Atherton
East Palo Alto
Palo Alto
Stanford University
Mountain View
Los Altos
Los Altos Hills
Sunnyvale
Santa Clara
Milpitas
Agnew
Warm Springs Dist
Alviso Marina
Environmental Education Center
Old Port of Alviso Nat'l Hist Dist
Sunnyvale Baylands Park
Palo Alto Yacht Harbor
Calaveras Pt.
Coyote River
National Wildlife Refuge
Dumbarton Pt.
Dumbarton Bridge (Toll)
Mission Peak Reg Pres
Calaveras Res.
N
237
85
82
17
101
880
680
Freeway
Expy
Alviso-Milpitas Rd.
North Main St.
Old Oakland Rd.
Trimble Rd.
Montague Expy
Kifer Rd.
Calaveras Rd.
Piedmont Rd.
Old Piedmont Rd.
Berryessa Rd.
Mission Blvd.
Warm Springs Rd.
Jacklin Rd.
Milpitas Blvd.
Capitol Expy
Lafayette St.
Great Mall Pkwy
Mathilda Av.
Fair Oaks Av.
Lawrence Expy
Kifer Rd.
Reed Ave.
Grant St.
Mirmonte Av.
Sierra Rd.
Alpine Rd.
Foothill Expy
Stevens Creek Blvd.
Mt. View Shoreline Pk.
Middlefield Rd.
Embarcadero Rd.
Bayshore Freeway
Dumbarton Bridge (Toll)
Marsh Rd.
Felter
Sierra
Penitencia Cr.
Wheeler
San Jose Muni. Airport
Agnews State Hosp.
Marriott's Great America
Stanford Shopping Center
Stanford Stadium
Stanford Linear Accelerator Ctr.
Palo Alto Airport
Stanford Univ. Hosp.
Stanford Univ. Med. Ctr.
Veterans Hosp.
Ames Research Ctr.
Moffett Field
Lockheed Missiles & Space Co.
Lockheed Aircraft Co.
Hewlett Packard Co.
Fairchild Semiconductor Corp.
Intel Corp.
Advanced Micro Devices Inc.
Signetics Corp.
Amdahl Corp.
Tandem Computers Inc.
Apple Computer Inc.
Cupertino Sunnyvale Sanitary Fill
Stevens Creek Dam
Lexington Res.
Calero Res.
Anderson Res.
Coyote Res.
Chabot Res.
Lake Elizabeth
Lake Cunningham
Lake Del Valle
Lake Shadow
Lake Ranch
Lake Cecilia
Lake Ogier
Lake Lucille
Lake Ellen
Lake Ann
Lake Mary
Lake Jean
Lake Ida
Lake Lucy

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 237 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	SCL	R 0.000	2.480	2.480	48-82	4C,4E,4F	0-8	13-46
B	SCL	2.480	R 4.600	2.120	48	4F	8	22-46
C	SCL	R 4.600	9.340	4.740	48-72	6C,4-6E,4F	8-10	36-42
D	SCL	9.340	11.080	1.740	48-84	4-7C	0-8	4-12

* Widths are approximate.

EXISTING FACILITIES (BRIDGES) EXHIBIT D

04-SCL-237

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	POST MILE	CITY	LENGTH (PROT) (FT)	WIDTH (FT)	SIDEWALKS OR CURBS LT	SIDEWALKS OR CURBS RT
		JCT RTE 82	000	MVW				
	37 201L	STEVENS CREEK	R 032	MVW	83	37		
	37 201R	STEVENS CREEK	R 032	MVW	83	56		
	37 201F	STEVENS CREEK	R 033	MVW	80	23		2.0
	37 200F	STEVENS CREEK	R 035	MVW	188	23	2.0	
	37 198L	RTE 83/237 SEP	R 037	MVW	310	41	2.0	
A	37 198R	RTE 85/237 SEP	R 037	MVW	310	41		2.0
		JCT RTE 85	R 038	MVW				
	37 205W	DANA ST OC PMP	060	MVW				
	37 205	DANA ST OC	R 061	MVW	250	70		
	37 80L	E MTN VIEW OH	R 099	MVW	422	40		
	37 80R	E MTN VIEW OH	R 099	MVW	422	37	0.7	0.7
	37 314	GOLF COURSE UC	208	SUNV	19	120		
	37 314W	GOLF COURSE PP	208	SUNV				
	37 178	RT 237 191 SEP	245	SUNV	323	82		
		JCT RTE 101	284	SUNV				
	37 220	SUNNYVALE W CR	280	SUNV	13			
B	37 179	N MATHILDA A U	299	SUNV	183	86		
	37 248	FAIR OAKS AV O	R 397	SUNV	288	56	5.0	2.0
	37 04L	SUNNYVALE E CH	R 416	SUNV	58	37		
	37 04R	SUNNYVALE E CH	R 416	SUNV	58	37		
	37 246	LAWRENCE EXP O	R 460	SUNV	274	40	5.0	
	37 247	LAWRENCE EXP O	R 460	SUNV	247	40	2.0	2.0
	37 171L	CALABAZAS CR	528	SUNV	95	28		
	37 171R	CALABAZAS CR	528	SUNV	91	39		
	37 159L	SAN TOMAS AQ C	568	SJS	184	28		
	37 159R	SAN TOMAS AQ C	568	SJS	182	39		
	37 160L	SAN TOMAS AQ C	598	SJS	99	28		
C	37 82	SO ALVISO GR X	606		4K			
	37 161L	AGNEW OVERFLOW	607		137	50		
	37 244L	GUADALUPE RIV	641	SJS	234	37		
	37 244R	GUADALUPE RIV	641	SJS	232	37		
	37 163L	GUADALUPE RI O	676	SJS	232	28		
	37 163R	GUADALUPE R OF	676	SJS	26			
	37 84L	COYOTE CREEK	872		194	40		
	37 84R	COYOTE CREEK	872		194	37		
	37 109L	RTE 237/17 SEP	930		316	43	5.0	
	37 109R	RTE 237/17 SEP	930		316	43		5.0
		JCT RTE 17	933	MPS				

(Continued)

EXISTING FACILITIES (BRIDGES)
04-SCL-237

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	POST MILE	CITY	LENGTH (PROT) (FT)	WIDTH (FT)	SIDEWALKS OR CURBS LT	SIDEWALKS OR CURBS RT
	37 379	PENITENCIA CR	T 985	MPS	30			
	37 355L	MAIN ST OH	1000	MPS	564	30	5.0	
	37 355R	MAIN ST OH	1000	MPS	570	32		
D	37 380L	CALAVERAS B OH	1020	MPS	392	30	5.0	
	37 380R	CALAVERAS B OH	1020	MPS	392	32		
	37 381	BERRYESSA CR	1084	MPS	47			
		JCT RTE 680	1108	MPS				
	37 302L	CALAVERAS B SE	1108	MPS	188	85		
	37 302R	CALAVERAS B SE	1108	MPS	188	85		

ROUTE 237

ACCIDENT REPORT BETWEEN 1/83 AND 12/85

EXHIBIT E

LOCATION PM	SEGMENT	TOTAL	NO. OF ACCIDENTS FATAL	INJ	F+I	PERSONS KILLED	PERSONS INJURED	ACCIDENT RATE* FATAL	F+I	TOTAL	STATEWIDE RATE** FATAL	F+I	TOTAL
SCL R0.000 - 2.479	A	152	4	44	48	4	59	.040	.48	1.52	.022	.82	1.9[illegible]
SCL 2.480 - R4.599	B	83	0	37	37	0	49	.000	.37	.84	.010	.37	.91
SCL R4.600 - 9.339	C	246	2	82	82	2	143	.016	.68	2.00	.022	.89	2.1[illegible]
SCL 9.340 - 11.079	D	414	1	125	126	1	171	.012	1.61	5.30	.023	1.30	3.38

* RATES ARE PER MVM (MILLION VEHICLE MILES)

** STATEWIDE AVERAGES FOR THIS TYPE OF FACILITY

ROUTE 237 TRAFFIC TABLE
-Existing Conditions-

EXHIBIT F-1

SEG	CO	POST MILE	TRUCK% AA DT	TRUCK% PK HR	1985 AA DT	1985 AM-PK AH	1985 AM-PK BK	1985 NO L	1985 V/C	1985 LOS	1985 LN	1985 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	SCL	R0.00			ROUTE 82																					
			4	3	33	21	12	2	0.60	C	2	1800	37	24	13	2	0.67	C	2	51	33	18	2	0.92	E	3
A	SCL	R0.38			ROUTE 85																					
			7	6	43	28	15	2	0.78	C	2	1800	54	35	19	2	0.97	E	3	74	48	26	2	1.33	F	3
A	SCL	R0.61			WHISMAN ROAD																					
			6	5	37	24	13	2	0.67	C	2	1800	51	33	18	2	0.92	E	3	60	43	23	2	1.19	F	3
A	SCL	R0.81			SYLVAN AVENUE																					
			6	5	42	27	15	2	1.00	F	3	1365	49	32	17	2	1.19	F	3	64	38	26	2	1.41	F	4
A	SCL	2.31			BEGIN FREEWAY																					
			5	4	40	24	16	2	0.60	C	2	2000	49	30	20	2	0.75	C	2	64	38	26	2	0.95	E	3
B	SCL	2.48			ROUTE 101																					
			5	4	46	23	23	2	0.58	B	2	2000	63	31	31	2	0.78	C	2	81	41	41	2	1.03	F	3
B	SCL	2.99			MATHILDA AVENUE																					
			6	5	46	21	25	2	0.63	C	2	2000	53	24	29	2	0.73	C	2	69	31	38	2	0.95	E	3
C	SCL	R4.60			LAWRENCE EXPRESSWAY																					
			6	5	54	22	32	3	0.54	B	3	2000	62	25	37	3	0.62	C	3	78	31	47	3	0.78	C	3
C	SCL	R5.07			END FREEWAY																					
			6	5	54	22	32	3	0.80	C	3	1350	62	25	37	3	0.91	E	4	78	31	47	3	1.16	F	4
C	SCL	6.12			LAFAYETTE STREET																					
			7	6	55	22	33	3	0.81	D	3	1350	62	25	37	3	0.91	E	4	78	31	47	3	1.16	F	4
C	SCL	6.87			NORTH FIRST STREET																					
			7	6	62	25	37	3	0.92	E	4	1350	69	28	41	3	1.01	F	4	90	29	55	3	1.36	F	5
D	SCL	9.34			ROUTE 880																					
			6	5	49	17	32	3	1.00	F	5	1061	53	19	35	3	1.46	F	5	65	19	45	3	1.88	F	7
D	SCL	10.00			MAIN STREET																					
			4	3	40	14	26	3	1.00	F	4	867	46	16	30	3	1.25	F	5	56	17	39	3	1.63	F	6
D	SCL	11.08			ROUTE 680																					

* 1995 and 2005 Traffic projections from Route 237 Freeway Study completed 3-30-84
Projected figures based on unconstrained demand with no improvements
to existing facilities. This is for comparison purposes only.
Traffic projections are conservative.

ROUTE 237 TRAFFIC TABLE
-Route Concept-

EXHIBIT F-2

S E G	CO	POST MILE	TRUCK% AA DT	TRUCK% PK HR	1985 AA DT	1985 AM-PK AH	1985 AM-PK BK	1985 NO L	1985 V/C	1985 LOS	1985 LN	1985 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	2005 CAP
A	SCL	R0.00			ROUTE 82																						
			4	3	33	21	12	2	0.60	C	2	1800	37	24	13	3	0.40	A	3	51	33	18	3	0.55	B	3	2000
A	SCL	R0.38			ROUTE 85																						
			7	6	43	28	15	2	0.78	C	2	1800	54	35	19	3	0.58	C	3	74	48	26	3	0.80	C	3	2000
A	SCL	R0.61			WHISMAN ROAD																						
			6	5	37	24	13	2	0.67	C	2	1800	51	33	18	3	0.55	B	3	60	43	23	3	0.72	C	3	2000
A	SCL	R0.81			SYLVAN AVENUE																						
			6	5	42	27	15	2	1.00	F	3	1365	49	32	17	3	0.53	B	3	64	38	26	3	0.63	C	3	2000
A	SCL	2.31			BEGIN FREEWAY																						
			5	4	40	24	16	2	0.60	C	2	2000	49	30	20	3	0.50	B	3	64	38	26	3	0.63	C	3	2000
B	SCL	2.48			ROUTE 101																						
			5	4	46	23	23	2	0.58	B	2	2000	63	31	31	4	0.39	A	4	81	41	41	4	0.51	B	4	2000
B	SCL	2.99			MATHILDA AVENUE																						
			6	5	46	21	25	2	0.63	C	2	2000	53	24	29	4	0.36	A	4	69	31	38	4	0.48	B	4	2000
C	SCL	R4.60			LAWRENCE EXPRESSWAY																						
			6	5	54	22	32	3	0.54	B	3	2000	62	25	37	4	0.46	B	4	78	31	47	4	0.59	C	4	2000
C	SCL	R5.07			END FREEWAY																						
			6	5	54	22	32	3	0.80	C	3	1350	62	25	37	4	0.46	B	4	78	31	47	4	0.59	C	4	2000
C	SCL	6.12			LAFAYETTE STREET																						
			7	6	55	22	33	3	0.81	D	3	1350	62	25	37	4	0.46	B	4	78	31	47	4	0.59	C	4	2000
C	SCL	6.87			NORTH FIRST STREET																						
			7	6	62	25	37	3	0.92	E	4	1350	69	28	41	4	0.51	B	4	90	29	55	4	0.69	C	4	2000
D	SCL	9.34			ROUTE 880																						
			6	5	49	17	32	3	1.00	F	5	1061	53	19	35	3	1.46	F	5	65	19	45	3	1.88	F	7	800
D	SCL	10.00			MAIN STREET																						
			4	3	40	14	26	3	1.00	F	4	867	46	16	30	3	1.25	F	5	56	17	39	3	1.63	F	6	800
D	SCL	11.08			ROUTE 680																						

* 1995 and 2005 Traffic projections from Route 237 Freeway Study completed 3-30-84
All 1995 and 2005 projections assume the realization of the Route Concept.
Traffic Projections are conservative.

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 237 FACILITY TABLE

EXHIBIT G

SEG	COUNTY	POST MILES BEGIN END LOCATION	1985 -PRESENT- LOS	1985 -PRESENT- FACILITY	1995 -NO BUILD- LOS	1995 -NO BUILD- 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	SCL	R0.00 - 2.48 ROUTE 82 - ROUTE 101	F-20	4C,4E,4F	F-20	4C,4E,4F	F-15	4C,4E,4F	D-40	6F	D-40	6F
B	SCL	2.48 - R4.60 ROUTE 101 - LAWRENCE EXPWY	C-50	4F	C-50	4F	F-20	4F	D-40	8F	D-40	8F
C	SCL	R4.60 - 9.34 LAWRENCE EXPWY - ROUTE 880	E-30	6C 4-6E,4F	F-20	6C 4-6E,4F	F-15	6C 4-6E,4F	D-40	8F	D-40	8F
D	SCL	9.34 - 11.08 ROUTE 880 - ROUTE 680	F-15	4-7C	F-10	4-7C	F-10	4-7C	F-10	4-7C	D-40	6F

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).