

## SUMMARY

### ROUTE CONCEPT REPORT

ROUTE 17/880

SCr P.M. 0.0 - SC1 P.M. 13.95 - Ala P.M. 34.52

#### Route Concept

<u>Segment A:</u>	SCr	0.0	to	12.55	F-15	4 lanes divided
<u>Segment B:</u>	SC1	0.00	to	4.06	F-15	4 lanes divided
	SC1	4.06	to	7.07	E-20	6 lanes divided
	SC1	7.07	to	12.53	F-15	8 lanes divided
<u>Segment C:</u>	SC1	12.53	to	18.01	E-20	8 lanes divided
<u>Segment D:</u>	SC1	18.01	to	24.43	D-35	8/10 lanes divided
<u>Segment E:</u>	Ala	0.0	to	21.50	E-20	8/10 lanes divided
<u>Segment F:</u>	Ala	21.50	to	34.31	E-20	8/10 lanes divided

#### Concept Rationale

Route 17/880 is a recreational, commuter and commercial route. It has a high percentage of truck traffic. Maximize capacity within existing R/W or acquisition of strip R/W where economically and politically feasible.

#### Areas of Concern

A rapid commercial growth in the San Jose-Fremont area and Marin-Sonoma Counties has created high demand and increased congestion on Route 17/880. It is one of the most congested routes in the Bay area. Santa Cruz Co. policy states no increased capacity. Highway facility cannot accommodate all anticipated demand. All modes must be improved.

#### Problem Locations are

SC1 17 PM 0.0-24.43 Accident Rate 2.18/MVM (AM & PM congestion)  
Ala 17/880 PM 0.0-2.28 AM & PM congestion  
Ala 17/880 PM 16.70-25.50 AM & PM congestion

#### Improvements

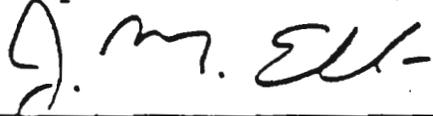
Widen from 4 to 8 lanes from Rte. 1 I/C to Scott's Valley (P.M. SCr 0.00 to SCr 5.99).  
Widen from 4 to 6 lanes from Scott's Valley to SCr/SC1 County line (P.M. SCr 5.99 to SCr 12.55).  
Widen from 4 to 6 lanes from SCr/SC1 county line Los Gatos; widen from 6-8 to Route 237 (PM SC1 0.0 to SC1 22.4).  
Widen from 4 to 10 lanes from Route 237 to Route 262 (PM SC1 22.4 to Ala 2.3).  
Widen from 6 to 8 lanes from Route 262 to Route 92 (PM Ala 2.3 to 16.7).  
Widen from 6 to 10 lanes from Route 92 to Route 238 (PM Ala 16.7 to 20.7).

ROUTE CONCEPT REPORT

ROUTE 17/820

SCR P.M. 0.0 - SCI P.M. 13.95 - Ala P.M. 34.52

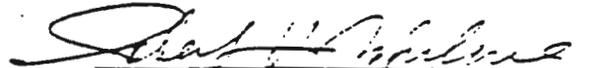
Prepared under the direction of:



GEOLL L. SMITH, Chief  
Transportation Planning, District 4

For

Recommended Approval:



ROBERT H. JAHRLING  
Deputy District Director  
Planning and Programming

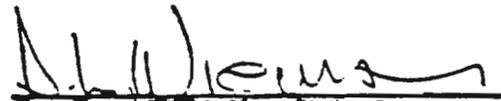
I approve this Route Concept Report as the guide toward which today's decisions and/or recommendations should be directed.

Approved:



BURCH C. BACHTOLD  
District Director of  
Transportation

Approved:



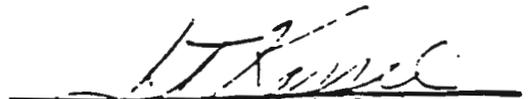
D. L. WIEMAN, Chief  
Division of Transportation  
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Approved:



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Division of Highways and  
Programming

Approved:



JACK KASSEL, Chief  
Division of Project  
Development

ROUTE CONCEPT REPORT

ROUTE 17/880

SCr P.M. 0.0 - SCl P.M. 13.95 - Ala P.M. 34.52

1. ROUTE DESCRIPTION

Route 17 is approximately 100 miles long; and traverses 5 counties: Santa Cruz, Santa Clara, Alameda, Contra Costa, and Marin Counties. It begins at Route 1 in the City of Santa Cruz, and runs northerly through Santa Clara County to Milpitas. From Milpitas, Route 17 runs northwesterly through Alameda, Contra Costa and Marin Counties. In Marin there is a section approximately 20 miles long roughly paralleling Sir Francis Drake Boulevard, that is unconstructed and extends the legislative route further west to Route 1 at Pt. Reyes Station.

The legislative description is as follows:

Route 17 is from:

- a. Route 1 near Santa Cruz to Route 80 in Oakland.
- b. Route 80 near Albany to Route 101 near San Rafael via the Richmond-San Rafael Bridge.
- c. Route 101 near San Rafael to Route 1 near Point Reyes Station.

According to Section 139-A of the Federal Transportation Act the existing Route 17 has been designated Interstate Route 880 from the Route 280 I/C (P.M. R13.95) in the City of San Jose to the Route 80 distribution structure (P.M. 34.52) near the City of Emeryville.

Section 139-A also redefined Interstate Route 580. I-580 now extends from Route 5 near Vernalis to the Alameda/Contra Costa County line near Albany. And from CC17 P.M. 5.29 to Route 101 near San Rafael.

That portion of Route 17 between the Ala/CC County line and P.M. CC17-5.29 has been designated as I-180.

This report will discuss that portion of Route 17 located in Santa Cruz and Santa Clara Counties and that portion designated as I-880. A brief description of the unconstructed segments in Marin County is included in this report but no Route Concept has been addressed.

The remainder of Route 17 will be discussed in the Route 580 Route Concept Report.

Route 17/880 traverses through Santa Cruz, Santa Clara, and Alameda Counties. It begins at Route 1/17 junction in the City of Santa Cruz and runs northerly through Santa Clara County to Milpitas. It proceeds northwesterly to Route 80 I/C near the City of Emeryville in Alameda County via the Cities of Fremont, Hayward and Oakland.

Route 17/880 is a part of the Federal Aid Primary (FAP) and the Interstate System. It is of local, regional and statewide significance. It is functionally classified as an urban principal arterial.

## 2. PURPOSE OF ROUTE

Route 17 has 3 major uses, commute traffic, heavy usage by trucks (both industrial and agricultural) and statewide tourist. Route 17/880 is the fastest route traversing the Bay Area from north to south.

## 3. ROUTE SEGMENTS

### A. Segment A

(04-SCr-17, PM 0.0-12.55)

This segment of Route 17 begins at the Route 1 junction in Santa Cruz and proceeds through Scotts Valley to the Santa Cruz/Santa Clara county line. There is a very heavy northbound commute volume in the morning. The segment also serves as a recreational route between the City of Santa Cruz and the Santa Clara Valley.

#### (1) Existing Facilities

##### a. Highway Facility

There are 2 lanes in each direction with 8 ft. shoulders and a 4 to 22 ft. median. This portion of Route 17 passes through the Santa Cruz mountains. The grade ranges from 3% to more than 6%. The length of grade greater than 6% varies between 1/4 mile to 3/4 mile.

##### 1983 STIP Projects:

FY 83/84 SCr 17

PM 5.2/5.6 Clean and regrade drainage channel PM  
7.7 Replace culvert

FY 84/85 SCr 17

PM 1.4/6.0 Install concrete median barrier PM  
10.5/10.7 Restore off-ramps

FY 86/87 SCr 17 PM 5.4/5.5 New O/C and ramps.

b. Public Transit

Segments A & B - Currently there are three N.B. buses operating from Santa Cruz in the morning beginning at 6:20 a.m. and ending at 10:30 a.m. These buses go north through San Jose up to Oakland. In the afternoon, three buses operate going south to Santa Cruz.

c. Bicycle

Santa Cruz County actively promotes bicycle usage. Bicycles are prohibited between Route 1 and Granite Creek Road. The narrower shoulders along the remainder of this segment pose difficulties for bicyclists.

d. Park and Ride.

There are existing joint use lots in Santa Cruz on Route 1 near Route 17 junction and also in Scotts Valley. There are approximately 325 spaces.

e. Rail

No available rail services nearby.

(2) Current Operating Condition

1982 AADT ranges from 52,000 at Route 1/17 jct. to 34,000 south of SCr/SCl County line with about 2,000 vehicles, southbound during AM peak hour and about 1,900 vehicles northbound. The V/C ratio is 0.5 with a level of service "C-50".

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

During this period, there were 880 accidents on this segment with 643 injuries and 19 deaths. 50% of the accidents occurred on weekends. 62.1% of the accidents occurred on the southbound lanes en route to Santa Cruz between 3 p.m. and 6 p.m.

The fatality rate is 0.031/100 MVM and the total accident rate is 1.72/MVM. These rates exceed the statewide average.

(4) Future Operating Conditions (1995 and 2005)

1995 and (2005) AADT ranges from 69,000 (78,000) at Route 1/17 junction to 42,000 (48,000) just south of SCr/SCl County line. SB and NB peak hour volume is 1,300 and 2,000 vehicles by 1995 and 1,800 and 4,200 vehicles by year 2005. The V/C ratio by 1995 (2005) is 1.4 (1.7) with LOS "F-15" (F-15) at the county line.

Although the traffic projections show a need of 8 lanes, political and environmental concerns prohibit the construction to meet this need.

(5) Route Concept

A 4-lane standard freeway with full shoulders and a standard median. Slow vehicle lanes to the SCr/SCl County line near Summit Road.

(6) Route Improvements

In Santa Cruz County as drastic an increase in employment or population will not take place as in the counties to the north. From 1980 to the year 1990 annual employment growth is expected to increase by 2.4%; between the years 1990 and 2000, a projected 2.2% annual employment increase is expected.

The number of commuters who live in Santa Cruz County but work outside the county grew by 8,500 persons between 1976 and 1980, an annual increase of 21%. The people who commute is projected to increase to 23,000 persons at a 1.8% average annual rate to the year 2000. The major destination of commuters is Santa Clara Valley via Route 17.

Based on the traffic forecasts for 2005 the capacity needs to provide a level of service "D" would be 8 lanes from the Rte. 1/17 interchange to Scotts Valley and a 6 lane divided including slow moving vehicle lane to the summit. The provision of additional capacity will not necessarily improve the accident rate. The side friction from abutting owners and gravel trucks will continue to be a problem. Since the future demand cannot be met by the widening of Route 17, Alternate Modes of Transportation must be considered. A combination of Highways and Transit is needed to meet demand. An effort should be made to improve the existing road to meet safety standards wherever possible.

Ideally, it would be desirable to realign some of the sharp curves and provide an access controlled facility, however, because of environmental concerns and the Santa Cruz County Transportation Commission's position regarding freeway construction in Santa Cruz County, our route concept for Rte. 17 from Scotts Valley to the SCr/SCl County line will be a 4 lane divided facility with passing lanes which will provide for slow moving vehicles.

Widen the 4 lanes from Route 1/17 I/C to Scotts Valley (PM SCr 0.0 to SCr 5.99).

Widen to a 4-lane standard section from Scotts Valley to SCr/SCl County line (PM SCr 5.99 to SCr 12.55).

B. Segment B

(04-SC1-17, PM 0.0 - 12.53)

Segment B extends from the Santa Cruz (SCr)/Santa Clara (SCl) county line to Hamilton Avenue in the City of Campbell. It serves as an urban arterial for Santa Clara county commuter traffic. The major traffic flows are northbound AM traffic and southbound PM traffic. The lower portion of the segment is a scenic route.

(1) Existing Facilities

a. Highway Facility

The segment is 12.53 miles long. There are 2 and 3 lanes each direction with 8 ft. shoulder and 6-46 ft. median. There is approximately more than 3/4 mile grade over 6%. The terrain is mountainous.

1983 STIP Projects:

FY 83/84 SC1 17

PM 0.0/1.1 Groove SB lanes

PM 5.9/R24.4 Upgrade ramp terminal signing

PM 3.5/5.0 Hiking trail

PM 6.1/R24.4 Reflectorize overhead guidesigns PM

8.0/R18.2 AC overlay

FY 84/85 SC1 17

PM 0.0/1.1 Drainage improvements

PM 12.3/R14.0 Auxiliary lanes

FY 85/86 SC1 17  
PM 7.1/10.5 HOV by pass lane NB  
PM 9.4/9.6 Class I bikepath on Rte. 85 RW  
PM 12.0/12.1 Bike & ped. undercrossing

FY 86/87 SC1 17  
PM 4.9/6.5 Bike path  
PM 7.0/R18.0 Auxiliary lane at selected  
locations SE

b. Public Transit

The same as Segment A.

c. Bicycle

Bicycles use the shoulders from the county line to Main Street in Los Gatos. This is a popular route for recreational riders.

d. Park and Ride

No available facility is accessible to Route 17.

e. Rail

There is no rail transportation available.

(2) Current Operating Condition

The AADT for 1982 ranges from 34,000 at the SCr/SC1 County line to 115,000 just south of Hamilton Avenue. The southbound peak hour volume ranges from 1,300 to 5,200 and the northbound peak hour volume ranges from 2,000 to 6,600. The V/C ratio is 0.8 with a level of Service "D-40" from SCr/SC1 County line to Lark Avenue and LOS "F-15" to Hamilton Avenue.

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

There were a total of 1,980 accidents with 1,141 injuries and 20 deaths. 50.6% of the total accidents happened on weekends. The peak accident hours are evenly spread from 7 a.m. to 7 p.m. The accident report indicates that 54.6% of the time speeding was a primary collision factor.

The fatality rate is 0.022/100 MVM and total accident rate is 2.18/MVM. These rates exceed the State wide average.

(4) Future Operating Conditions

The AADT for year 1995 ranges from 42,000 at county line to 132,000 near Hamilton Avenue and 48,000 to 143,000 for year 2005 at the same locations. Also, the SB peak hour volume ranges from 1,600 to 4,900 for year 1995 and 1,890 to 5,300 for the year 2005. NB peak hour volume ranges from 3,600 to 9,000 for 1995 and 4,200 to 9,800 for year 2005.

The 1995 V/C will be 1.1 at the county line and 1.6 at Hamilton Avenue. The LOS will be "F-15".

In the year 2005 V/C will be 1.3 and 1.9 with an LOS at "F-15".

A rapid growth of the region will generate increased highway traffic volume on the corridor. Future traffic projections show that 6 lanes are needed. In addition to Environmental and Political opposition, 6 lanes will not solve congestion. Alternative Modes of Transportation must be considered.

(5) Route Concept

As a continuation of segment A, a standard 4 lane section is needed from the county line to the vicinity of Lexington Reservoir. From Lexington Reservoir to the vicinity of Los Gatos a standard 6 lane section is needed. From Los Gatos to the end of the segment an 8 lane section is needed.

(6) Route Improvement

Considerations for alternate modes of transportation such as transit, and its implementation will alleviate congestion on Route 17. In addition, widening in this portion will result in acceptable Levels of Service.

Improve to 4 lane standard section full shoulders, standard median with improvements for safety standards (P.M. SCl 0.0 to SCl 0.7).

Widen existing 4 lanes to a 6 lane divided facility (PM SCl 0.7 to SCl 7.07).

Widen existing 4 lanes to an 8 lane facility (PM SCl 7.07 to 12.34).

C. Segment C

(04-SC1-880, P.M. 12.53-18.01)

Segment C extends from Hamilton Avenue to Route 101/880 I/C. This segment is located in an area where heavy commute traffic is generated for the surrounding electronic industries.

(1) Existing Facilities

a. Highway Facility

This segment is approximately 4.5 miles long. It has 3 lanes both directions with 10 ft. shoulder and 10-22 ft. median. Both grade and terrain are flat.

1983 STIP Projects:

FY 82/83 SC1 17  
PM 1.40/18.2 Earthquake restrainers

FY 83/84 SC1 17  
PM 14.2 Replace and relocate sign

FY 84/85 SC1 17  
PM 14.3/14.5 Relocation and widening of off-ramp terminous

FY 85/86 SC1 17  
PM 14.0/15.3 Auxiliary lane SB  
PM R16.0/R16.3 Highway soundwall

FY 86/87 SC1 17  
PM R14.6/R17.4 Plant and irrigation upgrade  
PM R16.0/R16.6 Auxiliary lane SB; Widen RR Bridge

b. Public Transit

Bus service is provided by Santa Clara County Transit on approximately 30 minute headways.

c. Bicycle

Bicycles are prohibited on Route 17. However, bicycle travel is very popular in this area. This corridor is served by the Los Gatos Creek Trail as well as by bike lanes on Winchester Boulevard and Bascom Avenue.

d. Park and Ride

No nearby lots.

e. Rail

Santa Clara County Transit District will be building a light rail system through the Guadalupe Corridor located in San Jose. The total length of the system will be 20 miles long, running from the IBM plant and Edenville Industrial Parks in San Jose to the Northern Santa Clara Industrial Parks. A branch line will also extend to the Oakridge Shopping Mall. The first 8 miles of track extending from San Carlos Street to North First Street will be completed in January 1987 with the remaining to be completed in 1989. The transit district has estimated that the rail system will carry 40,000 people a day during the weekdays when the rail system becomes fully operational.

Studies are being conducted to investigate the feasibility of linking the light rail system with BART and Caltrain. At this time, these are both in the planning stages.

(2) Current Operating Conditions

1982 AADT ranges from 115,000 at Hamilton Avenue I/C to 107,000 just south of Route 101 I/C. Southbound peak hour volume ranges from 5,200 to 4,500 just south of Route 101/17 Junction and northbound peak hour volume ranges from 8,100 to 5,300. The V/C ratio between Hamilton Avenue and Route 82 V/C is 1.0 with LOS "F-15". From Route 82 I/C to Route 101 I/C, the V/C ratio is 0.9 with LOS "D-40".

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

20.8% of the accidents occur on Saturday and Sunday. The majority of weekday accidents occur between 7 a.m. - 8 a.m. and 2 p.m. - 5 p.m. Also 52.2% of the accidents took place in the southbound direction.

The accidents on this segment involved 414 injuries and 5 deaths.

Total fatality and accident rates are 0.005 and 1.09, respectively.

(4) Future Operating Condition

AADT ranges from 115,000 at Hamilton Avenue to 107,000 at Route 101 junction for year 1995 and for year 2005 it is 143,000 at both locations. Southbound peak hour volume for 1995 ranges from 4,900 to 6,300 and northbound peak hour volume ranges from 9,000 to 6,300.

6,500 at both locations. The V/C ratio for year 1995 at Route 101 junction is 1.1 with LOS "E-20" and 1.4 for year 2005.

Widening of Route 17 could relieve the congestion of local parallel streets such as Winchester Blvd. An adverse effect could be the possible congestion of cross-streets along Route 17.

(5) Route Concept

An 8 lane freeway is needed throughout the segment.

(6) Route Improvement

Widen the existing 6 lanes to 8 lanes divided freeway. Promote the use of alternate modes of travel.

D. Segment D

(04-SC1-880, PM 18.01 - 24.43)

Segment D runs between Route 101/880 I/C and Santa Clara/Alameda county line in Milpitas. It is located in an area where commuting traffic is very heavy. The majority of the traffic is generated by the surrounding electronic industries.

(1) Existing Facilities

a. Highway Facility

Segment D is approximately 6.5 miles long. There are 4 lanes, 8 ft. shoulder and approximately 40 ft. wide median with flat grade and terrain. The section between Route 101 and Old Bayshore Hwy. has 3 lanes in each direction.

1983 STIP Projects:

FY 83/84 SC1 17  
PM R18.2/R19.3 AC overlay (Rehabilitation)  
PM 22.4/23.2 Construct soundwall on E. side  
PM R24.3/R24.4 Construct NB off-ramp

FY 84/85 SC1 17  
PM R20.2/R21.0 Reconstruct I/C, widen O/C  
PM R22.4/R24.3 South Bay Trans. Master Plan;  
Feasibility Study  
PM R21.0/R24.3 Roadway reconstruction

FY 85/86 SC1 17  
PM R21.3/R22.3 Construct I/C

b. Public Transit

Santa Clara County Transit operates express buses to the Fremont BART station on 30 minute headways during the peak periods. The 1980 Census Journey to Work Tapes indicate that approximately 1,700 daily commuters utilize transit in this corridor.

c. Bicycle

Bicycle access along this corridor is on Montague Expressway, Old Hayward Road, and Warm Springs Road. The 1980 Census Journey to Work Tapes seem to indicate a significant increase in this mode since 1960. There are about 600 daily commuters traveling along the corridor on bicycle or motorcycle.

d. Park and Ride

There are no parking lots along the segment. However, there are about 300 shared ride commuters northbound and 8,600 southbound between Alameda/Contra Costa Counties and Santa Clara County.

e. Rail

At present, no rail service is provided. However, an extension of the BART line to Santa Clara could eliminate part of the commute traffic on the highway.

A transit link to Livermore could also help reduce the highway commute volumes.

(2) Current Operating Conditions

1982 AADT ranges from 107,000 at Route 101/17 Junction to 88,000 at Dixon Landing Road I/C with about 4,100 SB a.m. peak hour and 5,300 NB. The V/C ratio is 0.80 with LOS of "D-40".

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

39.1% of the accidents within this segment occur on Thursday and Friday. With each of the remaining weekdays it varies between 10.5% to 13.7%. 56.5% of the accidents occurred in the northbound lanes. Most accidents took place between 3 p.m. and 5 p.m. This segment had a total of 539 accidents, 296 injuries and 9 deaths. The total fatality and accident rates are 0.015 and 0.92, respectively.

(4) Future Operating Condition

1995 AADT ranges from 133,000 at the Route 101 I/C to 117,000 at the county line (Dixon Road) and for year 2005 it ranges from 154,000 to 150,000. SB peak hour volumes at both locations are 6,500 and 8,000 NB. By year 2005 peak hour volume ranges from 7,000 to 11,300 for SB and 8,500 to 6,100 for NB lanes. The projected V/C ratios is 1.4 with LOS "D-35" at Dixon Landing Road by 1995 and 2.0 with LOS "D-35" by 2005.

Traffic Projections show that a 14 lane facility is needed to meet future demand. This construction is unrealistic. Alternate modes of transportation will help to alleviate congestion, and must be considered.

Route 17 and 680 serve the same corridor in this segment.

Route 17 will need to expand to 10 lanes if Route 237 is not extended up to Route 262. This is due to the heavy commuter traffic heading to "Silicon Valley" in Santa Clara County from areas located in the north. If this portion of Route 237 is constructed to relieve the congestion the number of lanes on this segment of Route 17 could drop to 8 lanes.

(5) Route Concept

8/10 lanes are needed throughout this segment.

(6) Route Improvement

Upgrade and widen the existing 6 lanes to 8 lanes. Between Route 237 and the SCl/Ala County line widen to 10 lanes. Consider alternate modes of transportation, and a parallel facility along the west side of Route 17.

E. Segment E

(04-Ala, PM 0.0 - 21.50)

Segment E runs between the SCl/Ala county line and the Route 238 I/C in the City of San Leandro. It is an industrial area with high density residential development. Perishable produce from Santa Cruz and San Benito counties is trucked through this segment en route to Oakland Airport.

(1) Existing Facilities

a. Highway Facility

There are 3 lanes in each direction between the county line and Route 238 I/C in City of San Leandro. There is also an 8 ft. shoulder and a combination of concrete and metal barrier at the median. Grade and terrain is moderately flat.

1983 STIP Projects:

FY 82/83 Ala 17

PM 3.3/4.5 Truck scale & inspection facility

PM 11.8/26.6 Earthquake restrainers

FY 83/84 Ala 17

PM R0.1/R0.2 Widen OC, modify I/C

PM 2.16/10.7 Replace PCC slab

PM 4.8/9.7 Replace PCC slab

PM 10.9/11.0 Widen O/C

FY 84/85 Ala 17

PM 2.3/2.5 Modify I/C Phase I

PM 7.7/11.4 Highway Planting

PM 7.2/7.3 Modify Ramps and Traffic Signals

PM 15.6/0.0 Roadway reconstruction

(Resurfacing)

PM 13.7/15.0 Roadway reconstruction

FY 85/86 Ala 17 PM R0.0/34.5 Revise sign and route designation  
PM 11.4/25.5 Auxiliary lane/ramp metering, NB and SB

FY 86/87 Ala 17  
PM 2.3/2.5 Modify I/C Phase II  
PM 0.0/5.2 Modify I/C's and add lanes  
PM 3.1/3.3 Widen O/C, modify I/C  
PM 3.3/4.7 Highway Planting  
PM 13.4/15.2 Highway Planting  
PM 18.3/24.8 Highway Planting  
PM 20.7/22.8 Auxiliary lane

b. Public Transit

Segments E through J - The Alameda-Contra Costa Transit District operates lines along Route 17 in these segments.

c. Bicycle

Bicycle use is becoming increasingly popular along this segment. Currently, access is along Warm Springs Road and N. Main Street in Milpitas. As commercial development continues and traffic congestion worsens, the non-motorized commuter has fewer options.

d. Park and Ride

There are 37 spaces in a State-owned lot at Dumbarton Bridge Toll Plaza. Existing joint use lots are available in the City of Newark and Fremont adjacent to Route 17.

e. Rail

BART

BART parallels Route 17 from Fremont to Oakland (Segments E to F), this greatly alleviates congestion along the Highway 17 corridor.

BART trains are currently running approximately 15 minutes apart during peak hours. Rail service is provided between the hours of 5 a.m. and 12 midnight during weekdays.

(2) Current Operating Condition

1982 AADT varies from 8,800 at south of Route 262 Jct. to 158,000 at Route 238 I/C. The SB peak hour volume ranges from 4,900 to 6,100. NB peak hour volume is between 2,000 and 5,800. The V/C ratio is approximately 0.9 with LOS "E-20" from Route 262 I/C to Alvarado Niles I/C and LOS "E-20" for the rest of the segment.

Southern Alameda County has traditionally served as a source of housing for workers in Oakland/San Francisco area. Presently, with the burgeoning of employment opportunities in Santa Clara County, the new residents are commuting to the south. The SB peak hour demand is rapidly increasing.

Furthermore, the Fremont/Hayward area is heavily industrialized with nearly 10% truck traffic. This area has an increasing amount of local employment with a corresponding number of short distance work trips.

The interchanges along this segment are heavily congested and have numerous accidents. These might be caused by the short weaving sections and tight ramp geometrics. Ramp traffic frequently backs up onto the mainline.

There is also very heavy congestion at Route 17/238 junction. There is no direct connection from westbound 238 to southbound 17, and the SB direction drops from 4 lanes to 3 lanes and causes a very long queue. This condition encourages motorists to utilize local street and has a negative impact on local traffic. The southbound connection is in the STIP for 87/88 for Route 238.

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

Monday through Friday receives the largest percentage of all accidents. 23.4% of the total accident on Segment E took place on Saturday and Sunday only. 50.7% of the total accidents happened on SB direction between 1 p.m. and 5 p.m. There were also 1,590 injuries and 18 death.

Total fatality and accident rates are 0.005 and 0.91, respectively.

(4) Future Operating Condition

The projected AADT for 1995 ranges from 117,000 at Dixon Landing Road to 181,000 at Route 238 Jct. (Washington Ave. I/C) and 154,000 to 227,000 for year 2005. 1995 SB and NB peak hour volumes are 9,700 and 8,000 at Route 238 Jct. respectively and 11,200 and 9,200 for year 2005. The V/C ratios are 1.3 and 1.5 with LOS "E-20" for both forecasted years.

The highway facility cannot be expected to accommodate all of the anticipated demand. Improvements in all modes will be necessary in order to adequately provide for the transportation needs in this corridor.

According to the Hayward Comprehensive traffic study widening Route 17/880 will reduce traffic on some of the east-west arterial streets and increase traffic on others. Subsequently, some of the traffic that uses Route 238 will utilize the improved Route 17/880. This will increase the traffic on some of the arterial streets. Also, as brought up in the traffic study, traffic will be reduced on some streets along the Route 17/880 and parallel Route 238 Corridor because traffic will stay on 17/880 longer due to the decreased congestion.

(5) Route Concept

8 lanes plus auxiliaries are needed for the whole segment.

Between Ala/SC1 county line and Route 262 widen to 10 lanes.

(6) Improvement

Widen the existing 6 lanes to 8/10 lanes.

F. Segment F

(04-Ala, PM 21.50 - 34.31)

Segment F extends from Route 238 I/C to Route 80 I/C in the City of Emeryville. The entire segment is in an industrial and densely populated area. Truck traffic is very heavy.

(1) Existing Facilities

a. Highway Facility

Segment F is approximately 13 miles long. There are 4 lanes in each direction with approximately 10 ft. shoulder. Grade and terrain are flat.

1983 STIP Projects:

PM 23.3/23.6 Highway soundwall

PM 24.8/25.2 Highway soundwall

FY 84/85 Ala 17

PM 23.3/23.6 Highway soundwall

PM 24.8/25.2 Highway soundwall

b. Public Transit

The same as Segment E.

c. Bicycle

Access along this segment is provided by alternate routes.

d. Park and Ride

An existing 115 spaces State-owned park and ride lot is available at 7th and Cypress Street in Oakland.

e. Rail

BART trains run parallel to Route 17 from Fremont to Oakland. During peak hours trains run every 15 minutes.

(2) Current Operating Condition

1982 AADT volume between Marina Boulevard I/C and 32nd Street connection varies from 188,000 to 138,000. SB peak hour volume ranges from 6,000 to 4,600 and NB volume ranges from 8,200 to 5,600. The V/C ratio is 1.0 from Marina Blvd. I/C to 10th/5th Street connection with LOS "F-15" and approximately 0.6 from 10th/5th Street to 32nd Street with LOS "C".

There are 2 major freeway problems in San Leandro. One is the deficient interchange between Routes 238 and 17. The severe local street congestion could be substantially reduced by a direct freeway-to-freeway connection.

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

As with Segment E the most accidents on this segment occur during the weekday between 3 p.m. to 5 p.m. accounted for 78% of the total. 54% occurred on NB lane. The total accidents resulted in 1,511 injuries and 23 deaths.

Total fatality and accident rates are 0.008 and 1.06, respectively. It exceeds Statewide average rate.

(4) Future Operating Condition

The projected 1995 and 2005 AADT volumes are 164,000 and 178,000 at south Route 80 Jct. in Emeryville. The SB and NB peak hour volumes are 8,100 and 6,600 for 1995 and 8,800 and; 7,200 for year 2005. The V/C ratios are 1.1 and 1.2 with LOS "E-20", at the same location.

As in Segment E, building a large facility to meet demand is unreasonable. Alternate modes of transportation must be emphasized to diminish congestion and maintain an acceptance Level of Service.

According to the Hayward Comprehensive traffic study widening Route 17/880 will reduce traffic on some of the east-west arterial streets and increase traffic on others. Subsequently, some of the traffic that presently uses Route 238 will utilize the improved Route 17/880. This will increase the traffic on some of the arterial streets. Also, as brought up in the traffic study, traffic will be reduced on some streets along the Route 17/880 and parallel Route 238 Corridor because traffic will stay on 17/880 longer due to the decreased congestion.

(5) Route Concept

As in Segment E, 8/10 lanes are needed up to route 13 separation:

(6) Improvements

Provide auxiliary lanes wherever possible.

Alternate modes must be implemented.

Route 17 Existing Facilities

<u>Route Segment</u>	<u>County</u>	<u>From PM</u>	<u>To PM</u>	<u>Segment Length (Miles)</u>	<u>Traveled Way Width (Feet)</u>	<u>Number of Lanes</u>	<u>Shoulder Width (Feet)</u>	<u>Median Width (Feet)</u>
A	SCr	0.00	12.55	12.55	24	4F	8	4 to 22
B	SCl	0.00	12.53	12.53	24 to 36	4F, 6F	8	6 to 40
C	SCl	12.53	18.01	5.48	36	6F	10	10 to 22
D	SCl	18.01	24.43	6.42	24	4F	8	40
E	Ala	0.00	21.50	21.50	24 to 48	4F, 6F, 8F	8	12 to 40
F	Ala	21.50	34.31	12.81	36 to 48	7F, 8F	10	12 to 99
J	Mrn	2.31	5.91	3.6	Unconst.	Unconst.	Unconst.	Unconst.
K	Mrn	5.91	25.21	19.30	Unconst.	Unconst.	Unconst.	Unconst.

EXISTING FACILITIES (BRIDGES)

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	POST MILE	DIST	CO	RTE	CITY	STRUCTURE TYPE		WID OR	LENGTH	WIDTH	
								OR PUC NUMBER	TYPE	EXT TYPE			Prot
	37	131 S	RTE 17 280 SEP	01393	04	SCL	17	SJS	SGA		195	27	
	37	131 K	RTE 17 280 SEP	01393	04	SCL	17	SJS	SGA		194	32	
	37	131	RTE 17 280 SEP	01393	04	SCL	17	SJS	SGA		195	131	
	37	50	W CONN VIADUCT	R01395	04	SCL	17	SJS	SGA			72	
	37	193 L	N CONN VIADUCT	R01404	04	SCL	17		SGA			72	
	37	191	SBD COLL RD OC	01405	04	SCL	17		CGB			24	
	37	191	SBD COLL RD OC	01405	04	SCL	17		CGB		330	28	
	37	132	STEVENS C BL O	R01434	04	SCL	17	SJS	CGB	CGB		72	
	37	132	STEVENS CR OC	R01434	04	SCL	17	SJS	CGB	CGB	312	80	
	37	173 W	FOREST A UC PM	01456	04	SCL	17	SJS	2W	E			
	37	173	FOREST AVE UC	R01460	04	SCL	17	SJS	CGBCG		CGB	130	108
	37	125 W	HEDDING S UC PM	01476	04	SCL	17	SJS	1W	E			
	37	125	HEDDING ST UC	R01481	04	SCL	17	SJS	CGBCG		CGB	127	76
	37	126 W	BASCOM A UC PM	01516	04	SCL	17	SJS	1W	E			
C	37	126	BASCOM AVE UC	R01518	04	SCL	17	SJS	CGC		CGC	163	96
	37	127	PARK AVENUE OC	R01566	04	SCL	17	SJS	CGBCG			72	
	37	127	PARK AE OC	R01566	04	SCL	17	SJS	CGBCG			159	46
	37	128 W	RTE 82 17 S PM	01600	04	SCL	17	SJS	2W	E			
	37	128	RTE 82 17 SEP	R01600	04	SCL	17	SJS	CGBCG			72	
	37	129	LAUREL ST OH	R01631	04	SCL	17	SJS	CGQCG		CGQ	208	76
	37	130 W	CLNN ST OC PMP	01660	04	SCL	17	SJS	2W	E			
	37	130	COLEMAN ST OC	R01660	04	SCL	17	SJS	CGC			229	52
	37	130	COLEMAN ST OC	R01660	04	SCL	17	SJS	CGC			72	
	37	176	GUADALUPE RIV	R01708	04	SCL	17	SJS	SGA		SGA	205	92
	37	181	GOLPE PKWY OC	R01714	04	SCL	17	SJS	SGACG			72	
	37	181	GUADALUPE P OC	R01714	04	SCL	17	SJS	SGACG			182	28
	37	182	GUADALUPE P OC	R01715	04	SCL	17	SJS	SGACG			182	28
	37	182	GOLPE PKWY OC	R01715	04	SCL	17	SJS	SGACG			72	
	37	140	N FIRST ST UC	R01750	04	SCL	17	SJS	SGACG		SGA	172	96
	37	141	N FOURTH ST UC	R01772	04	SCL	17	SJS	SGA		SGA	135	86
	37	119 R	RTE 17 101 SEP	R01799	04	SCL	17	SJS	SGA			198	38
	37	119 L	RTE 17 101 SEP	R01799	04	SCL	17	SJS	SGA			198	38
	37	120 R	OLD BSHR HY OH	R01820	04	SCL	17	SJS	SGA			194	38
	37	120 L	OLD BSHR HY OH	R01820	04	SCL	17	SJS	SGA			194	38
	37	65 R	COYOTE CREEK	R01927	04	SCL	17		CGC			470	28
	37	65 L	COYOTE CREEK	R01927	04	SCL	17		CGC			506	28
D	37	68	TRIMBLE RD OC	R02064	04	SCL	17	SJS	CGBCSC			256	28
	37	68	TRIMBLE RD OC	R02064	04	SCL	17	SJS	CGBCSC				48
	37	109 R	RTE 237 17 SEP	R02235	04	SCL	17		CGQ				48
	37	109 L	RTE 237 17 SEP	R02235	04	SCL	17		CGQ				48

EXISTING FACILITIES (BRIDGES)

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	POST MILE	DIST	CO	RTE	CITY	STRUCTURE TYPE OR PUC NUMBER	WID OR EXT TYPE	LENGTH Prot	WIDTH	
D	37 112 R	PENETENCIA CR	R02431	04	SCL	17		CSC		96	37	
	37 112 L	PENETENCIA CR	R02431	04	SCL	17		CSC		96	37	
	37 110	DIXON ROAD OC	R02434	04	SCL	17		CSC			48	
	37 110	DIXON RD OC	R02434	04	SCL	17		CSC		101	26	
			ALAMEDA CO L	R02443	04	SCL	17					
			JCT RTE 17	00000	04	SCL	35					
	37 343	SUMMIT RD SEP	R00003N	04	SCL	35		CGQCGB I		240	32	
			JCT RTE 9	01410	04	SCL	35					
			SAN MATEO CL	01712	04	SCL	35					
			JCT RTE 101	00000	04	SCL	82	SJS				
	37 51 L	FORD ROAD SEP	00001	04	SCL	82	SGC			225	28	
	37 101	HLSDL CAP EXP O	00281	04	SCL	82	SJS	CGQCG I	CGQ		80	
	37 101	HLSDL CAP E OC	00281	04	SCL	82	SJS	CGQCG I	CGQ	308	102	
	37 62	S SAN JOSE SP	00520	04	SCL	82		E 50.40C		4K	92	
	37 53	S SAN JOSE GR	00577	04	SCL	82		4G 19.70		4K	92	
	37 279 R	FIRST ST SEP	00690	04	SCL	82	SJS	CGQCGB			64	
	37 279 L	FIRST ST SEP	00690	04	SCL	82	SJS	CGQCGB			64	
	37 43	GUADALUPE RIV	00809	04	SCL	82	SJS	CGC		102	68	
	37 44	LOS GATOS CR	00820	04	SCL	82	SJS	CGC		86	82	
	37 45 W	S JOSE UP PUMP	00840	04	SCL	82	SJS	2W F				
	37 45	S JOSE UP	00840	04	SCL	82	SJS	SS			57	
	37 107	HESTER PUC	00910	04	SCL	82	SJS	CS		8	78	
	37 128	RTE 82 17 SEP	00990	04	SCL	82	SJS	CGBCG		201	74	
	37 214	D LA CRUZ B OC	01138	04	SCL	82	SCL	CGQ I			58	
	37 214	DE LA CRUZ OC	01138	04	SCL	82	SCL	CGQ I		186	52	
	37 11	S TOMAS AQU CR	01281	04	SCL	82	SCL	CS		18	104	
	37 12	SARATOGA CREEK	01307	04	SCL	82	SCL	CS	CS	57	99	
	37 13	CALABAZAS CR	01366	04	SCL	82	SCL	CS	CS	26	104	
	37 337	LAWRENCE EX OC	01426	04	SCL	82	SCL	CGQCS I			140	
	37 337	LAWRENCE EX OC	01426	04	SCL	82	SCL	CGQCS I		226	46	
	37 338	LAWRENCE EX OC	01427	04	SCL	82	SCL	CGQCS I		226	46	
	37 338	LAWRENCE EX OC	01427	04	SCL	82	SCL	CGQCS I			140	
	37 204	RTE 82 85 SEP	01882	04	SCL	82	MVW	CGB		242	105	
37 14	STEVENS CREEK	01896	04	SCL	82	MVW	CAFCG	CG	43	68		
		JCT RTE 237 RT	01909	04	SCL	82	MVW					
37 15	PERMANENTE CR	02046	04	SCL	82	MVW	CS		25	97		
37 16	ADOBE CREEK	02234	04	SCL	82	PA	CAFCG	CG	42	99		
37 17	MATADERO CREEK	02363	04	SCL	82	PA	CG	CG	28	99		

## EXISTING FACILITIES (BRIDGES)

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	POST MILE	DIST	CO	RTE	CITY	STRUCTURE TYPE OR PUC NUMBER	WID OR EXT TYPE	LENGTH Prot	WIDTH
		SANTA CLARA C	R00000	04	ALA	17	FMT	SCL FMT			
	33 242	SCOTT CREEK	R00026	04	ALA	17	FMT	CSC		26	48
	33 269	WRM SPR CON OC	R00187	04	ALA	17	FMT	CGB		223	23
	33 269	WRM SPR CON OC	R00187	04	ALA	17	FMT	CGB			48
		JCT RT 262	R00195	04	ALA	17	FMT				
	33 270	WARM SPRINGS S	R00228	04	ALA	17	FMT	CGB			48
	33 292	AGUA CLIENTE C	00277	04	ALA	17	FMT	CS		23	72
	33 237	LANDING RD OC	00325	04	ALA	17	FMT	CGC			72
	33 237	LANDING RD OC	00325	04	ALA	17	FMT	CGC		221	28
	33 291	AR DE LA LGNA	00367	04	ALA	17	FMT	CS		40	72
	33 268	DURHAM RD OC	00471	04	ALA	17	FMT	SCA			72
	33 268	DURHAM RD OC	00471	04	ALA	17	FMT	SCA		239	26
	33 449	STEVENSON BV OC	00623	04	ALA	17	FMT	SCA			72
	33 449	STEVENSON B OC	00623	04	ALA	17	FMT	SCA		290	26
	33 266	STEVNSON BVD OC	00624	04	ALA	17	FMT	SS SGA	SGA		72
	33 266	STEVENSON B OC	00624	04	ALA	17	FMT	SS SGA	SGA	290	26
	33 267	MOWRY AVE OC	00718	04	ALA	17	FMT	SGA			72
	33 267	MOWRY AVE OC	00718	04	ALA	17	FMT	SGA		245	26
	33 272	HETCH HETCHY A	00732	04	ALA	17	FMT	CSC	CSC	109	135
E	33 261	CENTRAL AVE CO	00825	04	ALA	17	FMT	SGA			72
	33 261	CENTRAL AVE CO	00825	04	ALA	17	FMT	SGA		224	26
	33 286	PG&E PIPELN OC	00852	04	ALA	17	FMT	SP			72
	33 262	E NEWARK UP	00854	04	ALA	17	FMT	SGD			72
	33 263W	BAINES AVE PP	00862	04	ALA	17	FMT	2W	E		
	33 264	RTE 84 17 SEP	00884	04	ALA	17	FMT	SGA			72
	33 243	DECOTO RD OC	01030	04	ALA	17	FMT	SGA		230	26
	33 243	DECOTO RD OC	01030	04	ALA	17	FMT	SGA			72
	33 273	CRANDALL CREEK	01066	04	ALA	17	FMT	CSC	CSC	147	96
	33 248	FREMONT BL OC	01140	04	ALA	17	FMT	CGC			72
	33 248	FREMONT BVD OC	01140	04	ALA	17	FMT	CGC		307	28
	33 249	FREMONT BL OC	01158	04	ALA	17	FMT	CGC			72
	33 249	FREMONT BVD OC	01158	04	ALA	17	FMT	CGC		307	28
	33 250	PATTERSON SLU	01180	04	ALA	17	FMT	CGC	CGC	458	96
	33 240	ALAMEDA CREEK	01278	04	ALA	17	UNC	CGC	CGC	218	108
	33 241	ALVARADO OC	01302	04	ALA	17	UNC	CGB			72
	33 241	ALVARADO OC	01302	04	ALA	17	UNC	CGB		321	52
	33 265	WHIPPLE OVFLOW	01344	04	ALA	17	UNC	CSC	CSC	193	106
	33 245	WHIPPLE RD UC	01367	04	ALA	17	HAY	CGC	CGC	148	103
	33 246	ALQUIRE RD OH	01381	04	ALA	17	UNC	SGA	SGA	242	106
	33 251	WARD CREEK	01418	04	ALA	17	UNC	CGC	CGC	266	96

EXISTING FACILITIES (BRIDGES)

ROUTE SEGMENT	BRIDGE NUMBER	NAME OF DESCRIPTION	POST MILE	DIST	CO	RTE	CITY	STRUCTURE TYPE OR PUC NUMBER	WID OR EXT	LENGHT Prot	WIDTH	
E	20	398 INDUSTRIAL PK OC	01454	04	ALA	17	HAY	CGQ	I		72	
	398	INDUSTRIAL OC	01454	04	ALA	17	HAY	CGQ	I	396	52	
	19	399	WARD CREEK	01456	04	ALA	17	HAY	CSC		102	37
		236	TENNYSON RD OC	01565	04	ALA	17	HAY	CGC		290	52
	19	236	TENNYSON RD OC	01565	04	ALA	17	HAY	CGC			72
		282	FLDRIDGE AV PO	01603	04	ALA	17	HAY	CGT			72
	188W	92 17 SEP PMP	01630	04	ALA	17	HAY	2W	E			
	188	RTE 92 17 SEP	01670	04	ALA	17	HAY	CGC			72	
	181	WINTON AVE OC	01760	04	ALA	17	HAY	CGQ			72	
	181	WINTON AVE OC	01760	04	ALA	17	HAY	CGQ			76	
	238	SULPHUR CREEK	01813	04	ALA	17	HAY	CS		277	72	
	179	A STREET UC	01835	04	ALA	17	HAY	CGC	CGC	155	92	
	182	SUNSET BLVD PU	01865	04	ALA	17	HAY	CS		9	72	
	180W	HTHWY A OC PUM	01925	04	ALA	17	HAY	2W	E			
	180	HACIENDA AV OC	01927	04	ALA	17	HAY	CGC		214	25	
	180	HACIENDA AV OC	01927	04	ALA	17	HAY	CGC			48	
	174	PASEO GRANDE O	01976	04	ALA	17	HAY	CGC			48	
	174	PASEO GRANDE OC	01976	04	ALA	17	HAY	CGC		226	28	
	175S	SAN LORENZO CR	02011	04	ALA	17	HAY	SS		83	20	
	175	SAN LORENZO CR	02011	04	ALA	17	HAY	SGA	SGA	100	88	
170	HESPERIAN BD U	02016	04	ALA	17	HAY	SGA	SGA	100	88		
176	LEWELLING BD U	02032	04	ALA	17	HAY	SGA	SGA	101	88		
172	RTE 17 238 SEP	02068	04	ALA	17	HAY	SS	SS	91	100		
173Y	17 CR 238 SEP	02078	04	ALA	17	HAY	SS	SS	85	20		
166W	WSHTNG A OC PH	02080	04	ALA	17	HAY	2W	E				
166	WASHINGTON AVE O	02082	04	ALA	17	HAY	SS			72		
166	WASHINGTON A OC	02082	04	ALA	17	HAY	SS		481	52		
239	ORA LOMA DITCH	02095	04	ALA	17	HAY	CS		22	72		
293	FLORESTA BV OC	02156	04	ALA	17	HAY	SGA	SGA		96		
293	FLORESTA BV OC	02156	04	ALA	17	HAY	SGA	SGA		96		
167	MARINA BLVD OC	02284	04	ALA	17	HAY	SGASSC	SGA		96		
167	MARINA BLVD OC	02284	04	ALA	17	HAY	SGASSC	SGA	255	56		
169	WILLIAMS ST OC	02312	04	ALA	17	HAY	SSC	SSC	199	28		
169	WILLIAMS ST OC	02312	04	ALA	17	HAY	SSC	SSC		88		
169W	WMS ST OC PUMP	02315	04	ALA	17	HAY	2W	E				
168	RTE 112 17 SEP	02364	04	ALA	17	HAY	SS			88		
100	SAN INDO CR BO	02418	04	ALA	17	HAY	SSC	SSC	1411	128		
110	98TH AVE OC	02477	04	ALA	17	HAY	SSC	SSC	402	26		
110	98TH AVE OC	02477	04	ALA	17	HAY	SSC	SSC		96		
88	HEGENBERGER OC	02550	04	ALA	17	HAY	SS	SS		92		



TRAVEL DEMAND PROJECTIONS METHODOLOGY (ABSTRACT)

1995 & 2005 Demand Person Trips 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 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:** Implied; it was assumed that, on the segments evaluated, modal percentages and occupancy rates would remain essentially unchanged.

ASSUMPTION: 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.

## TRAVEL DEMAND PROJECTIONS METHODOLOGY

### 1995 and 2005 Demand Traffic Projections for State Routes in Santa Cruz County

#### METHODOLOGY:

Traffic projections for all State routes in Santa Cruz County are developed with a trend line method. A linear regression analysis was performed at strategic locations of each route using historical traffic data from the 1963 through 1982 traffic census volumes. This procedure developed ADT and peak-hour projections for the years 1995 and 2005 on all main line segments. Caltrans' "Annual Average Daily Truck Traffic or the California State Highway System," and various special counts were used to determine truck percentages and peak hour directional splits.

#### ASSUMPTIONS:

1. Santa Cruz County population will continue to grow at a rate similar to the growth for the previous 20 years.
2. Traffic volumes, as a function of population, will grow at a rate similar to the previous 20 years.
3. Basic travel patterns will remain essentially unchanged.

TRAFFIC PROJECTION

1983/4 ROUTE CONCEPT STUDY				TRAFFIC PROJECTION																						
ROUTE 17				1982						1995						2005						TRUCK				
SEGMENT	CO	MILE POST	DESCRIPTION	AADT	NO			L		AADT	NO			L		AADT	NO			L		AADT	PK HR			
					AM	PK	L	V/C	S		N	AM	PK	L	V/C		S	N	AM	PK	L			V/C	S	N
	SCR	0.00	JCT. RTE. 1	52	19	20	2	0.5	C	2	69	60	26	2	1.6	F	4	70	68	29	2	1.8	F	4	5	2
	SCR	0.74	PASATIEMPO	47	26	17	2	0.7	C	2	62	54	23	2	1.4	F	3	70	62	26	2	1.6	F	4	5	2
A	SCR	2.18	SIMS RD.	46	27	17	2	0.7	C	2	60	54	23	2	1.4	F	3	69	62	26	2	1.6	F	4	5	2
	SCR	3.44	SCOTT VALLEY RD.	34	19	13	2	0.5	C	2	42	36	16	2	1.0	F	3	48	42	18	2	1.2	F	3	5	2
	SCR	5.45	GRANITE CREEK RD.	34	20	13	2	0.8	D	2	42	36	16	2	1.4	F	3	48	42	18	2	1.7	F	4	5	2
		12.55	SANTA CRUZ CO. LINE																							
		0.00	SANTA CLARA CO. LINE																							
	SCL	0.11	JCT. RTE. 35 NW	38	31	14	2	0.9	D	2	47	40	17	2	1.1	F	3	54	46	20	2	1.3	F	3	6	2
			SEVERAL INTERSECTIONS	43	31	16	2	0.9	D	2	52	45	19	2	1.3	F	3	60	52	23	2	1.4	F	3	6	2
			SEVERAL INTERSECTIONS	45	32	17	2	0.9	D	2	56	48	21	2	1.3	F	3	60	52	22	2	1.4	F	3	6	2
B	SCL	1.25	REDWOOD DR.	48	32	18	2	0.9	D	2	60	52	22	2	1.4	F	3	64	56	24	2	1.6	F	4	6	2
			SEVERAL INTERSECTIONS	51	32	19	2	0.9	D	2	62	55	23	2	1.5	F	4	67	59	25	2	1.6	F	4	7	2
	SCL	4.06	BEAR CREEK RD.	55	33	21	2	0.9	D	2	66	57	25	2	1.6	F	4	71	62	26	2	1.7	F	4	8	3
			SEVERAL INTERSECTIONS	55	33	21	2	0.9	E	3	66	58	25	2	1.6	F	4	71	63	27	2	1.8	F	4	8	3
	SCL	6.16	SANTA CRUZ AVE.	49	33	18	2	0.9	D	2	58	50	21	2	1.3	F	3	63	54	23	2	1.4	F	3	7	4
	SCL	7.07	JCT. RTE. 9 W	60	34	20	2	0.9	D	2	67	48	26	2	1.3	F	3	73	52	28	2	1.4	F	3	6	3
		8.39	LARK AVE.	81	39	32	2	0.9	F	4	92	66	36	2	1.7	F	4	100	72	39	2	1.9	F	4	6	3

TRAFFIC PROJECTION

SEGMENT	MILE POST	DESCRIPTION	1982												1995												2005											
			L				O				L				L				L				L				L											
			AA	PK	NO	V/C	AA	PK	NO	V/C	AA	PK	NO	V/C	AA	PK	NO	V/C	AA	PK	NO	V/C	AA	PK	NO	V/C												
B	10.50	CAMDEN AVE.	115	66	52	3	0.9	F	5	132	90	49	3	1.6	F	5	143	98	55	3	1.7	F	6	6	3													
	12.34	HAMILTON AVE.	150	81	50	4	0.9	F	6	173	99	66	4	1.3	F	6	187	107	71	4	1.4	F	6	5	3													
	13.95	JCT. RTE. 280	127	67	48	3	1.0	F	5	145	85	55	3	1.5	F	5	157	90	60	3	1.6	F	5	5	3													
	15.18	BASCOM AVE.	121	67	46	3	1.0	F	4	139	73	59	3	1.0	E	4	151	79	64	4	1.1	F	6	5	3													
C	16.01	JCT. RTE. 82	122	67	46	3	0.9	D	3	152	79	65	4	1.1	F	5	164	85	70	4	1.1	F	5	6	4													
	16.01	COLEMAN AVE.	116	57	44	3	1.0	E	4	144	68	68	3	1.2	F	4	155	79	79	3	1.4	F	5	6	4													
	17.50	N. FIRST ST.	107	53	41	3	0.9	E	4	133	63	63	3	1.1	F	4	143	65	80	3	1.4	F	5	7	4													
	18.01	JCT. RTE. 101	90	47	45	3	0.8	D	3	112	61	61	3	1.1	F	4	120	63	78	3	1.4	F	5	10	6													
D	18.21	OLD BAYSHORE HWY.	84	41	47	2	1.0	E	3	104	57	57	2	1.5	F	3	120	56	84	2	2.2	F	5	11	7													
	19.27	COYOTE CREEK	75	37	29	2	0.8	C	2	92	46	56	2	1.5	F	3	114	53	80	2	2.1	F	5	12	8													
	20.64	TRIMBLE RD.	79	39	31	2	0.8	F	2	105	52	64	3	1.2	F	4	127	56	85	3	1.3	F	5	13	9													
	22.55	JCT. RTE. 237	92	45	38	2	1.0	F	3	123	54	81	3	1.4	F	5	158	61	113	3	2.0	F	6	14	9													
E	24.34	DIXON RD. 1/C	88	20	49	2	1.0	E	3	117	54	80	3	1.4	F	5	150	61	113	3	2.0	F	6	12	9													
	2.28	JCT. RTE. 262 EAST	88	20	48	3	0.6	C	3	118	56	77	3	1.4	F	5	143	58	108	3	1.9	F	6	10	6													



TRAFFIC PROJECTION

1983/4 ROUTE CONCEPT STUDY				TRAFFIC PROJECTION																							
ROUTE 17				1982						1995						2005						TRUCK					
SEGMENT	CD	MILE POST	DESCRIPTION	AADT	AM AH	PK BK	NO L	V/C	L O S	L N	AADT	AM AH	PK BK	NO L	V/C	L O S	L N	AADT	AM AH	PK BK	NO L	V/C	L O S	L N	AADT	PK HR	
		20.32	LEWELLING BLVD. I/C	158	65	64	4	0.9	F	4	181	80	97	4	1.3	F	6	227	92	112	4	1.5	F	6	11	7	
E		20.68	WASHINGTON/RTE. 238	188	80	60	4	1.0	F	5	216	107	87	5	1.1	F	6	252	125	102	5	1.3	F	7	10	6	
		22.84	MARINA BLVD. I/C	188	80	60	4	1.0	F	5	216	108	88	5	1.1	F	6	252	126	103	5	1.3	F	7	8	6	
ALA		23.64	DAVIS/RTE. 112	186	81	58	4	1.0	E	5	208	112	75	4	1.5	F	6	237	127	84	4	1.7	F	7	9	6	
		24.77	98TH AVE. I/C	180	75	57	4	1.0	E	5	204	111	74	4	1.5	F	6	221	120	80	4	1.6	F	7	11	7	
		25.50	HEGENBERGER RD. I/C	185	69	67	4	0.9	E	5	209	115	75	4	1.5	F	6	226	122	82	4	1.6	F	7	12	8	
		26.61	66TH AVE. I/C	189	68	68	5	0.7	C	5	214	116	77	5	1.2	F	7	231	126	84	5	1.3	F	7	13	8	
		27.71	HIGH/42ND/RTE. 77 I/C	184	69	66	4	0.9	E	5	208	112	74	4	1.5	F	6	225	121	81	4	1.6	F	7	12	8	
F		28.69	29TH/FRUITVALE I/C	182	69	65	4	0.9	E	5	205	110	73	5	1.2	F	6	222	119	80	5	1.3	F	7	12	8	
		28.95	23RD AVE. I/C	189	73	68	4	1.0	E	5	215	116	77	4	1.5	F	7	233	126	84	4	1.7	F	7	12	8	
		29.80	EMBARCADERO CONN.	191	73	69	4	1.0	E	5	217	117	78	4	1.5	F	7	235	127	85	4	1.7	F	7	12	8	
		30.17	10TH/5TH AVE. CONN.	183	68	74	4	0.9	D	4	208	102	84	4	1.3	F	6	225	111	91	4	1.5	F	6	11	7	
		30.87	OAK ST. CONN.	154	56	70	4	0.7	C	4	175	79	79	4	1.0	F	5	190	86	86	4	1.1	F	5	11	7	
		31.12	JACKSON ST. CONN.	174	70	49	4	0.6	D	4	198	80	98	4	1.3	F	6	214	87	106	4	1.4	F	6	11	7	
		31.42	BROADWAY CONN.	164	66	47	4	0.6	C	4	186	75	92	4	1.2	F	5	201	81	99	4	1.3	F	6	11	7	
		31.62	JEFFERSON ST. CONN.	140	56	41	4	0.5	C	4	157	65	77	4	1.0	F	5	170	68	84	4	1.1	F	5	11	7	



## LEVEL OF SERVICE

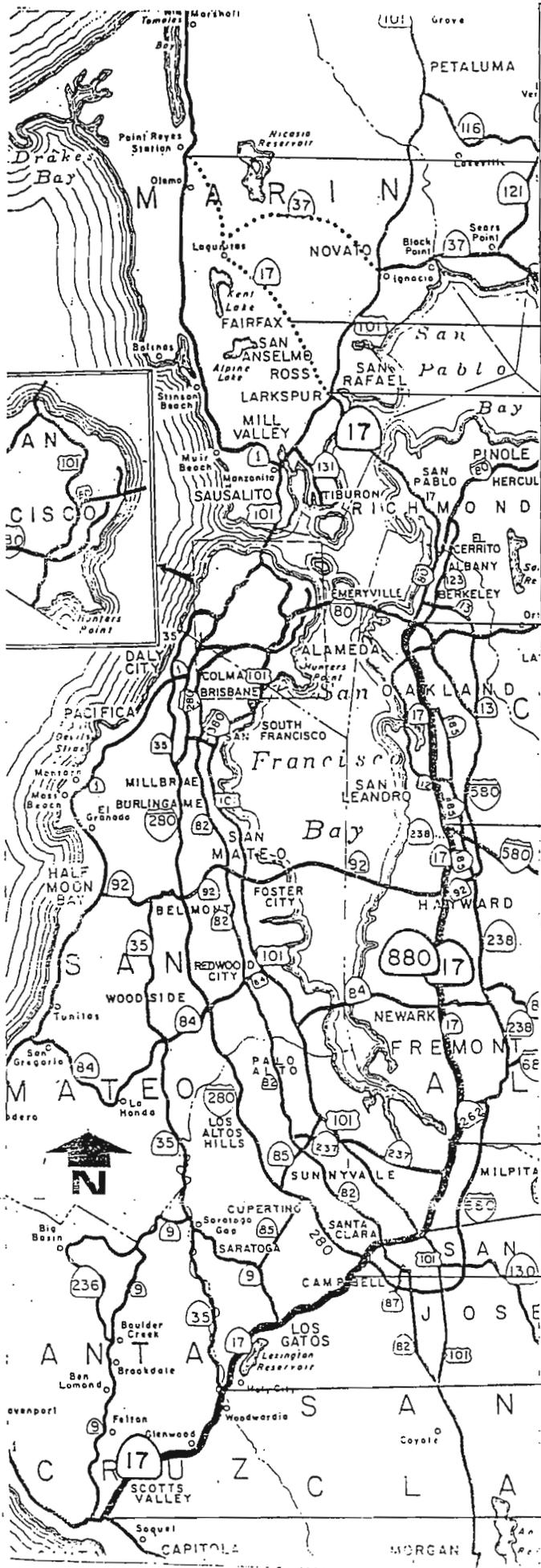
This exhibit indicates the relationship between Level of Service and minimum operating speed for a given facility type.

### Exhibit 2

<u>Assigned Level of Service</u>	<u>Facility Type</u>	<u>Minimum Operating Speed</u>
B	Freeways, expressways, or multilane conventional highways	55 MPH
B	Two-lane conventional highways	50 MPH
C	Freeways or expressways	50 MPH
C	Multilane conventional highways	45 MPH
C-45	Two-lane conventional highways	40 MPH
C	Two-lane conventional highways	40 MPH
D	Freeways or expressways	40 MPH
D	Conventional highways	35 MPH
D	Conventional highways with controlling traffic signals	15-30 MPH*

\* This condition is shown on the tabulation of route segments under the "LOS" headings as D35.

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.



SEGMENT	A.A.D.T. (.000)		P.H.V. (00)		AVE. HWY SPEED	OPERATING SPEED	V/C	YEAR CAPACITY WILL BE REACHED
	1982	1995	1982	1995				
K	3	15	2	2	45	35	UNKNOWN	
	4	19	2	11	35	0.2		
J	4	19	2	11	45	35	UNKNOWN	
	4	25	2	13	45	0.5		
F	188-138	164	60-46	81-66	70	35	1995	
	178	154-227	88-72	97-80	70	1.0		
E	8.8-158	117-181	49-61	97-80	35	0.9	1995	
	154-227	112-92	70	112-92	70	1.3		
D	107-82	133-111	65-80	70-113	65	0.8	1995	
	115-107	115-107	41-53	53-80	70	1.4		
C	34-115	42-132	52-45	36-90	31	1.0	1995	
	34-115	42-132	52-45	36-90	31	1.1		
B	34-115	42-132	52-66	36-90	31	0.8	1995	
	34-115	42-132	52-66	36-90	31	1.1		
A	52-34	69-42	20	13-20	70	0.5	1995	
	52-34	69-42	20	13-20	70	1.4		
							1995	

EXHIBIT D