

ROUTE CONCEPT REPORT

ROUTE 84

SM PM 0.00 to CC PM 7.10

Prepared under the direction of:

Recommended Approval:

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

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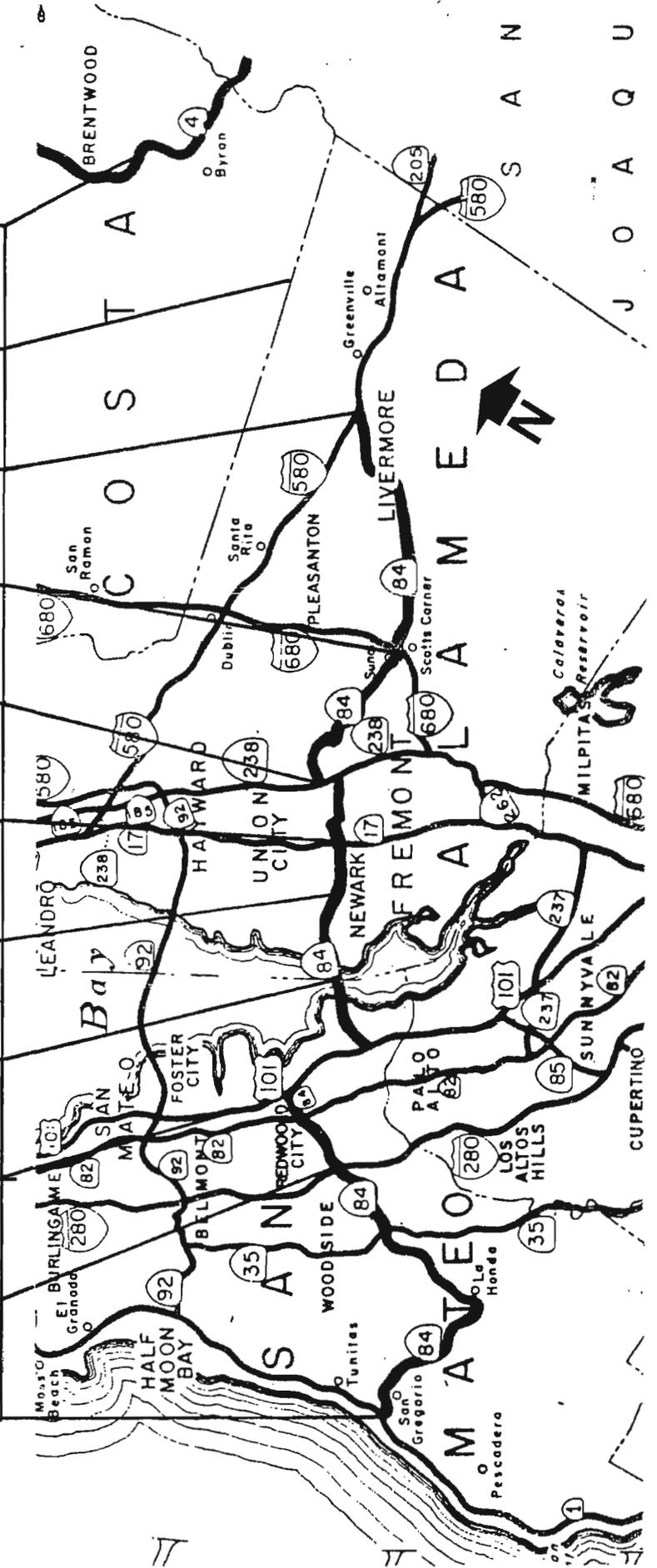
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A	SM 21.54 SM 0.0
B	SM 25.72
C	SM 30.15 ALA 0.0 ALA 3.2
D	ALA 6.92
E	ALA 10.82
F	ALA 17.99
G	ALA 29.71
H	ALA 35.71
I	CC 0.00 ALA 35.71
J	CC 7.10



LOCATION MAP
ROUTE 84

ROUTE CONCEPT REPORT

ROUTE 84

S.M. 0.0/CC 7.1

SUMMARY

This report defines the development concept for Route 84 in District 4, over a 20-year planning period (1985-2005).

ROUTE CONCEPT

<u>Segment A:</u>	SM	0.00-21.54	D-35	2 Lane Conventional
Jct Rte 1 - Jct Rte 280				
<u>Segment B:</u>	SM	21.54-25.72	F-15	4 Lane Conventional
Jct Rte 280 - Jct Rte 101				
<u>Segment C:</u>	SM	25.72-30.20	D-35	6 Lane Freeway
Jct Rte 101 - SM/ALA Co. Line				
<u>Segment D:</u>	Ala	0.00-3.20	D-40	6 Lane Freeway
SM/ALA Co. Line - Dumbarton Toll Plaza				
<u>Segment E:</u>	Ala	3.20-6.92	D-40	6 Lane Freeway
Dumbarton Toll Plaza - Jct Rte 880				
<u>Segment F:</u>	Ala	6.92-10.82	D-40	6 Lane Freeway
Jct Rte 880 - S. Jct Rte 238				
<u>Segment G:</u>	Ala	10.82-17.99	D-40	4 Lane Conventional
N. Jct Rte 238 - S. Jct Rte 680				
<u>Segment H:</u>	Ala	17.99-R29.71	D-35	6 Lane Freeway
N. Jct Rte 680 - Jct Rte 580				
<u>Segment I:</u>	Ala	R29.71-35.71	D-35	4/6 Lane Freeway
Jct Rte 580 - CC Cty Line - UNCONSTR				
<u>Segment J:</u>	CC	0.00-7.10	D-35	4/6 Lane Freeway
ALA Co. Line - Jct Rte 4 - UNCONSTR				

CONCEPT RATIONALE

San Mateo Route 84 serves as a recreational connector between the populous Peninsula cities and the rural coast. Between Woodside and Livermore, it is carrying an increasing amount of commute traffic. The segment between Livermore and Brentwood is unconstructed. However, the traversable route (Vasco Road) is also carrying a growing volume of both recreational and commute traffic.

AREAS OF CONCERN

Commercial development is increasing between Route 101 and the Bay. Peninsula residential potential is nearly saturated so commute pressure on the Dumbarton Bridge will increase. According to the MTC I-680/580 Corridor Study, population in the Brentwood/Antioch/Pittsburg area is projected to increase from 109,000 to 204,000 (87% increase) while the job opportunities (80,000 new jobs) will be near Pleasanton and San Ramon.

The route concepts and conceptual LOS's for Segments A and B do not meet the projected demand for 2005. Therefore, it will be necessary for local cities, counties, and the private sector to actively promote greater use of alternative modes and implementation of TSM techniques.

IMPROVEMENTS (Post 1984 STIP)

Shoulder widening and curve realignment between Route 1 and Route 280 (P.M. SM 0.00 to SM 21.54). Bring route up to standards of a 4 lane conventional between Route 280 and Route 101 (P.M. SM 21.54 to SM 25.72).

Construct 6 lane freeway between Route 101 and Route 238 (P.M. SM 26.75 to Ala 10.82).

Widen to a 4 lane conventional between N. Jct. 238 (Ala 10.82) to S. Jct. 680 (Ala 17.99).

Encourage use of alternate route via Route 238 from Rte 238/84 I/C (Ala-238 P.M. 3.31) to Rte 238/I-680 I/C (Ala-238 P.M. 0.0). Commuters would continue on Route 680 (Ala-680 P.M. R6.40) to Junction 84 near Scotts Corner (Ala-680 R11.04). Expand alternate Route 238 to 8 lanes.

Construct 4/6 lane freeway between Route 580 and Route 4 near Brentwood.

ROUTE CONCEPT REPORT

ROUTE 84

SM 0.00- CC 7.10

1. ROUTE DESCRIPTION

That portion of Route 84 in District 4 is approximately 60 miles long and traverses three counties; San Mateo, Alameda and Contra Costa. It begins at Route 1 near San Gregorio in San Mateo County. From there it meanders through the coastal mountains to La Honda and then climbs to the crest of the Santa Cruz Mountain where it intersects Route 35 (Skyline Blvd.). Then it winds steeply down to Woodside and intersects with Route 280. From Route 280, it goes through the densely populated area around Redwood City to Route 101 then via the Dumbarton Bridge to Route 17 and Route 238 in Fremont. From Fremont, Route 84 shares the narrow confines of Niles Canyon with the double track of the Western Pacific Railroad common line to the Bay Area. From the intersection with Interstate 680 at Scotts Corner, Highway 84 leads northeasterly through Livermore to the intersection with Interstate 580. This is the terminus of the constructed portion of Route 84. From Route 580, north to Brentwood, Route 84 is unadopted. Currently traffic is routed via Vasco Road as the traversable Route 84. The designation of an existing road as a traversable route does not necessarily commit any future development of an unconstructed State Highway to the alignment of the existing road.

Section 253.5 of the Statutes describes the portion of Route 84 included in the freeway and expressway system as follows:

Route 84 is from:

- (a) The westerly approach to the Dumbarton Bridge to Route 238.
- (b) Route 680 near Scotts Corner to Route 580.
- (c) Route 580 to Route 4 near Brentwood.

The segment between Route 101 and Route 17 (the Dumbarton Bridge and approaches) is designated as a SHELL (Subsystem of Highways for the Movement of Extra Legal Permit Loads) route.

2. PURPOSE OF ROUTE

Route 84 serves as both commuter and a recreational/tourist route.

3. ROUTE SEGMENTS

A. Segment A (4-SM-84, P.M. 0.00-21.54)

This segment of Route 84 begins at the Route 1 intersection near San Gregorio and proceeds up an over the crest of the Santa Cruz Mountains where it intersects Route 35 (Skyline Blvd.). It then proceeds along Woodside Road to the intersection with Interstate 280.

The rural mountain road serves primarily as a recreational route leading to the coastal beaches.

(1) Existing Facilities

(a) Highway Facilities

There is one lane in each direction with shoulders varying from 0 to 8 feet and no median.

The grade ranges from 3 percent to more than 6 percent.

1984 STIP Projects:

FY 82/83

P.M. 0.00/0.60 Repair slipouts. Est. cost = \$326,000

P.M. 0.20/0.60 Construct retaining walls. Repair slides. Estimated cost = \$1,500,000.

F.Y. 84/85- SM 84

P.M. 3.90 to 12.80 Roadway reconstruction. Estimated cost = \$844,000.

F.Y. 85/86

P.M. 0.00/1.10 Roadway Reconstruction.

(b) Public Transit

No transit service is available.

(c) Bicycle

This is a popular route for recreational riders.

(d) Park and Ride

There is a State owned lot at the 84/280 I/C in Woodside (P.M. 3.30). According to July 1984 survey results, 78% of the 32 spaces were in use.

(e) Rail

No rail service is available.

(2) Current Operating Conditions

AADT for 1982 ranges from 1,000 near Route 1, to 3,000 near Skyline Blvd., to 20,000 in the vicinity of I-280. A.M. peak hour volumes range from 100 in each direction at Route 1, to 500 eastbound and 300 westbound at Skyline Blvd., to a high of 1,000 eastbound and 900 westbound at Canada Road near I-280.

Near Route 1, the V/C ratio is 0.11 and the level of service (LOS) as A-45. Near Skyline Blvd. the V/C is 0.57 and the LOS is C-40. Near Canada Road, the V/C is 1.00 and the LOS is E-25.

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

In the past three years, there were 217 accidents. Seven of these involved fatalities. The majority of all accidents occurred on the weekend and most of them involved speeding. The fatality rate is slightly higher than the Statewide average, but the total accident rate is lower than the average.

(4) Future Operating Conditions (1995 and 2005)

In 1995, the AADT is expected to be 3,000 near Route 1; 7,000 near Route 35; and 32,000 east of Canada Road. A.M. peak hour volumes at these locations will be 700 eastbound, 500 westbound near Route 1; 1100 eastbound, 700 westbound near Route 35; and 2,000 in both directions near Canada Road. The V/C will be 0.63 with a LOS of C-40 near Route 1; 1.29 with a LOS of F-25 near Skyline; and 2.67 with a LOS of F-10 near Canada Road.

In 2005, the AADT will be 4,000 near Route 1; 9,000 near Route 35; and 40,000 east of Canada Road. A.M. peak hour volumes will be 900 eastbound, 600 westbound near Route 1; 1300 eastbound, 900 westbound near Route 35; and 2,500 in both directions near Canada road. The D/C is estimated to be 0.79 with an LOS of D-35 near Route 1; 1.57 with a LOS of F-20 near Route 35; and a D/C of 3.33 with a LOS of F-10 near Canada Road.

(5) Route Concept

Two lane conventional highway with a conceptual LOS of D-35.

(6) Route Improvements

The majority of accidents involved speeding, and 2005 projections indicate a LOS of F with D/C ratios ranging from 1.13 to 3.33 east of Old Coast Highway. Therefore, the following improvement measures should be investigated: 1. widen segment to provide a 40' section, 2. curves should be realigned, and 3. slow vehicle lanes should be provided where possible, 4. provide 4 lanes from Mt. Home Rd. to Rte. 280.

(7) Concept Concerns

These conceptual improvements are consistent with the San Mateo Local Coastal Plan, the Skyline Area General Plan Amendment and the Rural Road Improvements of the tentatively approved General Plan Update. The City of Palo Alto does not oppose any project that would specifically improve a significant and demonstrated safety problem. The City, however, does not support general roadway capacity improvements.

B. Segment B (4-SM-84 P.M. 21.54 to 25.72)

This segment is from Route 280 near Woodside to Route 101 at the Woodside Rd/101 interchange in Redwood City. This segment receives heavy use for local trips. In addition, it is used as a connector to Route 280 and Route 101.

(1) Existing Facilities

(a) Highway Facility

Segment B is 4.18 miles long. There are two lanes in each direction with 0-11 foot shoulders and 6-20 foot medians. This portion of Route 84 passes through a heavily populated urban area. The terrain is flat and the grade is 0 percent to 3 percent.

1984 STIP Projects:

There are no projects listed for this segment.

(b) Public Transit

Currently there is bus service between El Camino and the Woodside shopping center. This service starts at the Redwood City train depot at 6:28 a.m. After 9:00 a.m., the buses run every hour until 3:00 p.m., after which service occurs every half hour until the last bus at 5:48 p.m. This service is Monday through Friday. The Saturday service runs from approximately 9:00 a.m. to 5:00 p.m., with a bus every hour.

(c) Bicycles

Bicycling is very popular in this area. Woodside Road is heavily utilized by both commuters and recreational riders.

(d) Park and Ride

See Segment A.

(e) Rail Service

The only existing rail service is at El Camino where Caltrain operates. Service extends between San Francisco and San Jose.

(2) Current Operating Conditions

The 1982 AADT ranges from 23,000 near Route 280 to 44,000 at Middlefield Road. Near Route 280, the a.m. peak hour volumes are 1,200 eastbound and 1,800 westbound with a V/C ratio of 0.60 and a LOS of "C-45". Near Middlefield Road the a.m. peak hour volumes are 1,900 eastbound and 3,000 westbound with a V/C ratio of 1.00 and a LOS of "F-15".

Approximately 68% of the traffic on this segment is local in origin.

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

During the period, there were 483 accidents, one of which resulted in a fatality. The fatality rate is below the Statewide average for this type of facility, but the total accident rate is slightly higher than the average.

(4) Future Operating Conditions (1995 and 2005)

In 1995, the AADT is expected to be 33,000 east of Route 280, and 62,000 east of Route 82/El Camino. A.M. peak hour volumes will be 1,700 eastbound and 2,500 westbound, east of Route 280. East of junction Route 82/El Camino, a.m. peak hour volumes are estimated to be 2,700 eastbound and 4,100 westbound. By 1995 the Level of Service will have deteriorated to a LOS of E-30 near Route 280 and a LOS of F-15 for the rest of the segment.

By 2005, the AADT is expected to be 42,000 east of Route 280, and 78,000 east of Route 82/El Camino. A.M. peak hour volumes are projected to be 2,100 eastbound and 3,200 westbound near Route 280. Eastbound a.m. peak hour volumes east of Route 82/El Camino are estimated to be 3,400, while westbound volumes will be 5,200. The D/C ratio is expected to range from 1.07 to 1.73 with a LOS of F-15.

It is likely that the 68% local share of AADT will stay fairly constant in the future.

(5) Route Concept

In order to attain a level of service of "D-35", a 8/10 lane freeway must be provided. Since this is not economically or politically possible, alternate modes of travel must be promoted, and TSM measures must be implemented.

(6) Route Improvements

Bring entire segment up to standards of a 4-lane conventional, with a conceptual LOS of F-15.

Restrict on-street parking, improve local bus service and encourage alternate modes of travel for short trips, and promote other TSM measures.

(7) Concept Concerns

These conceptual route improvements are consistent with San Mateo County's tentatively approved General Plan update. Redwood City recommends widening and upgrading Route 84 to a 6-lane expressway between Rte 280 and Rte 101. In addition, the City recommends that the portion of Woodside Expressway between El Camino Real overhead and Route 101 be viaduct over the existing roadway to accommodate thru traffic, and

the existing portion be relinquished to the city of Redwood City for local traffic.

C. Segment C (4-SM-84 P.M. 25.72 to 30.20)

There is a gap in this segment between Woodside Road/101 I/C and Marsh Road. It runs parallel and easterly of Route 101 from Marsh Rd. I/C, to Willow Road, and onto the new Dumbarton Bridge, where it terminates at the San Mateo-Alameda County line.

Construction of a new approach to the Dumbarton Bridge was completed on 11/14/84. It runs from Route 101/Marsh Rd. I/C (PM R25.81) to Willow Rd. (PM 27.66). There have been requests to extend the new approach from Marsh Rd. easterly of Rte 101 to Woodside Rd. This option will be studied as part of the systems process. Willow Road between Route 101 and new Route 84 is now designated Route 114 (PM 5.00 to PM 5.93).

This segment is a major connector between the south Peninsula and the East Bay.

(1) Existing Facilities

(a) Highway Facility

This segment is 4.48 miles long and at present there are one to two lanes in each direction with 8 foot shoulders and a 0-8 foot median. The terrain is flat with grades from 0-3 percent.

1984 STIP Projects:

SM-84 PM 26.80/26.90- In East Palo Alto at the University Avenue Interchange- Modify ramps, add signal.

SM-84 PM 29.30/30.10- At the Dumbarton Bridge-Bridge removal, trestle renovation.

SM-84 PM 29.00/30.10- At new Dumbarton Bridge-maintenance, communication control.

FY 84/85 SM-84

SM-84 PM 26.10/29.40- Marsh Rd. to West end of Dumbarton Bridge- Highway planting.

SM-84 PM 26.80/27.70- Willow Rd. Extension- Highway planting.

(b) Public Transit

There is no public transit at this time; however, A/C Transit began a one year pilot program in September 1984. This project provides service from the Union City BART Station to Palo Alto twelve times daily (commute hours only) each way. The current ridership is approximately 225 passengers/day. If the pilot program is successful, this service will probably be expanded.

(c) Bicycles

The new Dumbarton Bridge is a very popular bikeway for both commuting and recreational cyclists. A special bike path has been constructed on the south side of the bridge. The number of users has been estimated by local officials to be 850 per week.

(d) Park and Ride

There are no accessible facilities along this segment of Route 84.

(e) Rail

There is no rail service available. There is however, an abandoned S.P. railroad line that parallels this segment which could be used for an alternate mode of transportation, such as light rail, BART, etc.

(2) Current Operating Conditions

The AADT for 1982 ranges from 32,000 at the intersection of Route 101 to 19,000 at the county line on the Dumbarton Bridge. The eastbound a.m. peak hour volume ranges from 1,100 to 600 and the westbound a.m. peak hour volume ranges from 1,800 to 1,500. The V/C ratio ranges from 0.95 to 0.79 with a LOS of E-25 from Route 101 to Hamilton Avenue, and a LOS of D-35 to the San Mateo/Alameda County line.

(3) Accident Rates (1/81 to 12/83)

During this period, there were 236 accidents with 3 involving fatalities. The total accident rate of 3.55 is greater than the statewide average of 3.07. The fatal accident rate of 0.045 is also greater than the Statewide average of 0.030.

(4) Future Operating Conditions

The AADT for year 1995 ranges from 50,000 at the junction with Route 101 to 21,000 at the County Line; and 59,000 to 24,000 at the same locations for the year 2005. Also, the a.m. eastbound peak hour volume ranges from 1,900 to 600 for year 1995; and 2,300 to 600 for year 2005. The a.m. westbound peak hour volume ranges from 3,500 to 1,700 for 1995; and 4,200 to 1,900 for year 2005.

In the year 1995, the D/C ratio will be 1.80 to 1.13 and the LOS will be F-15. the 2005 D/C ratio will be 2.20 to 1.27 and the LOS will be F-15.

(5) Route Concept

In order to achieve the target LOS of D-40, 6 lanes are needed between Route 101 and the San Mateo/Alameda County Line. The potential of TSM and Transit alternatives should also be investigated.

(6) Route Improvements

Widen the west approach to Dumbarton Bridge to 6 lane freeway. Provide 6 lanes on the bridge and maintain the present bikeway facility. These improvements may require further study regarding environmental and political feasibility.

(7) Concept Concerns

The City of Menlo Park expressed a concurrence with the concept of an extension between Marsh Road and Woodside Road parallel and easterly of Route 101. However, the City is strongly opposed to a 6 lane freeway and supports a 4 or 6 lane expressway as an alternate concept. The City of Palo Alto also expressed similar concerns regarding provision of 6 lanes on the bridge.

D. Segment D (4-Ala-84 P.M. 0.00 to 3.20)

This segment begins at the San Mateo/Alameda County line on the Dumbarton Bridge and extends to the toll plaza near Newark. This toll crossing is attaining increasing importance as a commuter route to the growing commercial development along the bay front in San Mateo and Santa Clara Counties.

(1) Existing Facilities

(a) Highway Facility

This toll bridge provides two lanes in each direction with eight foot shoulders and a concrete median barrier. A separated bicycle lane is provided along the south edge of the travelled way.

1984 STIP Projects:

Ala-84 PM R 0.70/R3.00- In Fremont, east approach to Dumbarton Bridge- Construct roadway.

Ala-84 PM 3.20/3.30- At the Dumbarton Bridge- Toll collection equipment installation.

FY 85/86 Ala-84

Ala-84 PM 0.40/6.20- In Fremont Fr. East end of Dumbarton Bridge to Decoto/17 I/C- Highway planting.

(b) Public Transit

See segment C.

(c) Bicycles

Local officials estimate approximately 850 bicyclists travel this segment per week. These users appear to be evenly split between commuter and recreational riders. The intensified commercial development on the Peninsula will tend to increase congestion on this route as well as on all other streets and highways. This may cause more people to consider the bicycle as a viable commute alternative.

(d) Park and Ride

There are no facilities provided along this segment.

(e) Rail

See Segment C,

(2) Current Operating Conditions

The 1982 AADT is 19,000 from the S.M./Ala County line to the Toll Plaza. A.M. eastbound peak hour volume is 600. The westbound a.m. peak hour volume is 1,500. The V/C ratio is 0.79 with a level of service "D-40". The new approach roads are scheduled to open in the very near future. When they do the LOS is projected to be "B-55".

(3) Accident Rate (1/1/81 to 12/31/83)

During this period there were 48 accidents with one fatality on this segment.

The total accident rate was 0.92 which is below the Statewide average of 3.00. The fatality rate of 0.019 is also below the Statewide average of 0.031.

(4) Future Operating Conditions

For year 1995, AADT is 20,000. AADT for year 2005 is 24,000. The a.m. eastbound peak hour volume is 600 and the westbound a.m. peak hour volume is 1,700 for 1995.

Eastbound a.m. peak hour volume for 2005 is 600 and westbound a.m. peak hour volume is 1,900.

The V/C ratio for year 1995 is 0.45 with a level of service "B-55" and 0.5 for year 2005 with LOS "B-55".

(5) Route Concept

Because of expected commercial development along the Bay front in San Mateo and Santa Clara counties, coupled with a lag in the growth of housing, commuter traffic is expected to increase. According to ABAG, Projections '83 Study, between 1960-1980, San Mateo County increased its

population by 32% and jobs grew by almost 98%. Menlo Park, Redwood City, San Mateo, and South San Francisco are expected to capture almost 60% of the job growth between 1980-2000. Redwood City and San Mateo are expected to have the greatest job increases. In addition, the Peninsula Mass Transit Study, Interim Summary Report, prepared by Kaiser Engineers and Barton-Aschman Assoc. estimate approximately 9,000 workers traveling between Fremont/Union City and Palo Alto/Mountain View/Menlo Park/San Carlos by Year 2000. The MTC Peninsula Route 101 Study also projects an additional 22,620 p.m. peak hour person trips associated with development in Redwood City, San Carlos, Menlo Park, and Mountain View. Therefore, there is a likelihood that 1995 and 2005 projections may prove to be conservative in their prediction of future traffic characteristics along Route 84.

The route concept for this segment is a 6-lane freeway with conceptual LOS of "D-40". Further study regarding environmental and political feasibility may be needed.

(6) Route Improvements

Provide six lanes on the bridge.

E. Segment E (Ala P.M. 3.20/6.92)

Segment E starts at the Toll Plaza and runs easterly to the intersection with Route I-880 (formally 17).

(1) Existing Facilities

(a) Highway Facility

This section has just been completed. It has two lanes in each direction with provisions for another lane.

1984 STIP Projects:

FY 84/85 Ala 84

PM 3.40/5.20 - In Fremont/Newark- 0.25 miles east of Toll Plaza to 0.20 miles west of Route 17 at Decoto/17 - Highway planting.

FY 85/86 Ala 84

PM 4.00/6.90 - Jarvia Rd. to Rte 17 - Relinquish Thornton Ave. to City of Newark and resurface Jarvis Rd.

FY 86/87 Ala 84

P.M. 6.8/7.1 widen O.C. Class II bike facilities, modify I/C.

FY 87/88 Ala84

PM 3.70/3.80 - At Western Relocation of Thornton I/C - modify interchange.

PM 5.70/6.20 - At new Rte 17/84 I/C (Decoto Rd) - Modify interchange stage II.

(b) Public Transit

See Segment D.

(c) Bicycle

When the new facility is completed, a Class I bicycle path will be provided from Route I-880 to the bridge.

(d) Park and Ride

There is a State owned lot near the end of the bridge with 108 spaces.

(2) Current Operating Conditions

The 1982 AADT ranges from 19,000 at the Toll Plaza to 36,000 just before the junction with Route I-880. The eastbound a.m. peak hour volume is 1,400 and 1,700 in the westbound direction. The V/C ratio is 0.89 with a level of service of "D-35".

(3) Accident Rate (1/1/81 - 12/31/83)

There were 8 total accidents with one accident involving fatalities. The total accident rate was 0.54 and the fatality rate was 0.068. The Statewide average fatality rate for this type of facility was 0.014.

(4) Future Operating Conditions

The 1995 AADT ranges from 21,000 at the Toll Plaza to 20,000 at the junction with Route I-880. For year 2005, the AADT ranges from 24,000 to 23,000 at the same locations. For 1995, the westbound a.m. peak hour volumes are 1,800 at the Toll Plaza and 1,700 at Route I-880 and eastbound a.m. peak hour volumes are 600 at both of the above locations. For year 2005, the westbound a.m. peak hour volumes are 2,000 and 1,900 and the eastbound volumes are 700 and 600 at the same locations.

The projected D/C ratio is 0.45 at Route I-880 for 1995 with a LOS "B-55", and 0.50 at Route I-880 for 2005 with a LOS "B-55".

(5) Route Concept

Based on the discussion given in segment D, the route concept for this segment is for an initial 4, ultimate 6-lane divided freeway through this segment, with a conceptual LOS of "D-40".

(6) Route Improvements

Utilize the provisions for two extra lanes when needed.

F. Segment F (Ala P.M. 6.92 to 10.82)

Segment F begins at Route I-880 (formally 17) and extends to Route 238 (Mission Blvd.) in the City of Fremont.

The present route runs along Thornton Avenue, Peralta Avenue and Mowry Avenue. These streets are all heavily used for access to the central business district of Fremont.

(1) Existing Facilities

(a) Highway Facility

For most of its length, this segment has one lane in each direction with 2-8 foot shoulders. There is a short stretch between Fremont Blvd. and Peralta Blvd. (0.31 miles) that has two lanes in each direction. The grade is flat.

1984 STIP Projects:

FY 85/86 Ala 84

P.M. 7.10/9.50 Blacow Rd. to Paseo Padre Pkwy

Widen to 4 lanes. Estimated state share cost: \$315,000

FY 86/87 Ala 84

P.M. 6.80/7.10 On Thornton Avenue at Route 17

Widen overcrossing, Class II Bike Facilities. Estimated state share cost: \$349,000.

(b) Public Transit

AC Transit provides regular bus service along these streets.

(c) Bicycle

Bicycle riders use Decoto Road, Thornton Avenue, Peralta Avenue and Paseo Padre Parkway.

(d) Park and Ride

There are two shared use lots along this segment:

1. Cabrillo Shopping - 20 spaces- 25% occupancy

2. Mission San Jose Commercial Park - 24 spaces - 52% occupancy.

(e) Rail

None available.

(2) Current Operating Conditions

The 1982 AADT ranges from 26,000 near Route I-880 to 38,000 on the short segment of Fremont Blvd., which doubles up as Rte. 84, to 21,000 near Route 238. The truck percentage is 4%.

A.M. peak hour volumes range from 1,000 eastbound, 1,100 westbound near Route I-880; 1,200 eastbound, 1,400 westbound near Thornton Avenue; and 400 eastbound, 600 westbound near Route 238.

The V/C ratio ranges from 0.73 to 0.47 to 0.40 at these same locations. The level of service is generally "B-50".

(3) Accident Rate (1/1/81 to 12/31/83)

During this period, there were 326 accidents with 2 accidents involving fatalities. The fatality rate of 0.022 MVM is lower than the state-wide rate of 0.032 MVM. However, the overall accident rate of 3.70 MVM is higher than the state-wide rate of 3.18 MVM.

(4) Future Operating Conditions

In 1995 the AADT is expected to be 31,000 near Route I-880, 47,000 at Fremont/Thornton Avenue and 26,000 near Route 238. The a.m. peak hour volumes will be 1,100 eastbound, 2,500 westbound near Route I-880; 1,600 eastbound, 3,600 westbound at Thornton Avenue; and 1,000 eastbound, 1,900 westbound near Route 238.

If no improvements are made the 1995 D/C and level of service will be 1.67 ("F-10") near Route I-880, 1.20 ("F-10") at Thornton Avenue, and 1.30 ("F-10") near Route 238.

In the year 2005, for the same locations, the AADT will increase to between 36,000 and 54,000 vehicles per day and the a.m. peak hour volumes are expected to range from 1,600 to 2,400 eastbound and 2,400 to 3,600 westbound. If no improvements are made, the D/C can be expected to range between 0.47 and 1.60 with a level of service of "F-25".

(5) Route Concept

An initial four, ultimate six-lane freeway should be provided between Route I-880 and Route 238, with a conceptual LOS of "D-40".

(6) Route Improvements

Construct an initial four, ultimate six-lane freeway from I-880 to Rte 238 near Mission San Jose de Guadalupe via the Niles District of Fremont.

This segment traverses city streets in a highly developed area. The possibility of widening these streets in order to provide additional capacity is remote. The traffic projections suggest the need for two lanes in each direction. However, most of the local streets are approaching capacity. For this reason, it is believed that a four-lane freeway would be inadequate soon after completion. Therefore, the freeway should provide for an ultimate of six lanes.

(7) Concept Concerns

The City of Fremont is withholding their comment to these proposed improvements until further studies are prepared indicating the locations of future roadway facilities

G. Segment G (Ala P.M. 10.82 to 17.99)

This segment extends from Route 238 in Fremont to Route 680 at Scotts Corner. This two-lane conventional highway winds its way through the picturesque Niles Canyon. This canyon is historically important as the site of many early western movies. Numerous black hatted bad men staged train robberies along the tracks of the two railroads that share the narrow confines of this canyon with Route 84.

(1) Existing Facilities

(a) Highway Facilities

Segment G is 7.17 miles long. There is one lane in each direction. The horizontal alignment is generally adequate for 45 to 50 mph except in those places where the highway must curve to avoid railroad structures. These curves are designed for 25 to 30 MPH. The shoulders are 8-foot wide except for the bridges that are only 24-foot wide.

1984 STIP Projects:

There are no projects listed for this segment.

(b) Public Transit

None available.

(c) Bicycle

The Niles Canyon is one of the few routes available for bicyclists between the Eastbay communities and the Livermore Valley.

(d) Park and Ride

None available.

(e) Rail

None available.

(2) Current Operating Conditions

The 1982 AADT is 21,000 north of Jct Route 238; about 9,000 to 10,000 through the canyon until Pleasant-Sunol Road; and drops to 4,000 near Route 680 (0.7 miles). The a.m. peak hour volumes are 400 eastbound, 700 westbound near Route 238; about 300-400 eastbound, 400-500 westbound through the canyon; and 200 eastbound, 300 westbound near Route 680.

The V/C and LOS range from 0.61 (LOS "C-40") near Route 238 to 0.28 (LOS "A-50") near Route 680. The truck percentage is 9%.

(3) Accident Rate

There were 232 total accidents with 9 accidents involving fatalities. The total accident and fatality rates are 3.20 and 0.124, respectively. Both are higher than the Statewide rates, 2.79 and 0.045, for this type of facility.

(4) Future Operating Conditions

If this segment remains as a 2-lane highway, the 1995 AADT is expected to range from 16,000 near Route 238 to 5,000 near Route 680. A.M. peak hour demand volumes will be 900 eastbound, 1,300 westbound near Route 238 and 300 eastbound, 500 westbound near Route 680.

D/C and LOS will be 1.2 ("F-10") near Route 238 and 0.44 ("B-45") near Route 680.

In 2005, the AADT will be 19,000 near Route 238 and 6,000 near Route 680. A.M. peak hour demand volumes will be 1,400 eastbound, 1,100 westbound near Route 238 and 500 eastbound, 400 westbound near Route 680.

The 2005 D/C and LOS will be 1.40 ("F-10") near Route 238 and 0.50 ("B-45") near Route 680.

(5) Route Concept

The route concept for this segment is a four lane conventional highway with a projected Level of Service "D-40". The narrow confines of Niles Canyon serve to make extensive capacity improvements extremely difficult. However, one alternative that may avail itself in the future for possibilities of widening this section of roadway, is if a railroad right-of-way that runs parallel to Route 84, would be relinquished by Southern Pacific to the County of Alameda. However, this alternative may not meet the future traffic demand for this section of highway.

A second alternative could be to by-pass Niles Canyon and use an alternative route. A faster commute from Fremont/Newark area into the Livermore/Pleasanton area and vice-versa would be via Route 238 from Route 84 junction (238, Ala, P.M. 3.31) to the northern I-680/238 I/C (238, Ala, P.M. 0.0). Route 238 would need to be expanded to 8 lanes to accommodate traffic from Route 238 and 84. Commuters would then continue on I-680 from I-680/238 I/C (680, Ala, P.M. R6.40) to Junction Route 84 near Scotts Corner (680, Ala, P.M. R11.04).

This alternative route would also relieve some of the congestion from I-680 and I-880 as travelers have a direct route to the Dumbarton Bridge. (See Segment H, Future Conditions).

(6) Route Improvements

Encourage use of alternate route via expanded 8 lane Route 238 and I-680.

H. Segment H (Ala P.M. 17.99 to 29.71)

This segment extends from Route 680 at Scotts Corner to Route 580 in Livermore. The proposed alignment near Livermore runs parallel to Isabel Avenue and Kitty Hawk Road, and intersects with I-580.

(1) Existing Facilities

(a) Highway Facility

Segment H is 11.7 miles long. Between Scotts Corner and Alden Lane (7.25 miles). This two lane conventional highway has 13 foot lanes with 3 to 5 foot shoulders.

At post mile 21.6 there is a culvert type structure with 10 foot lanes and one foot shoulders.

From Alden Lane to the easterly end of Bridge #04-33-59 there are two 12-foot lanes with 2 to 10-foot shoulders in each direction with a paved median varying between 2 and 12-feet in width.

1984 STIP Projects:

FY 83/84 Ala-84
P.M. 29.30/29.50- E. of N. Mines Rd. to W. of Southfront Rd.- Widen highway. Funded by City of Livermore.

FY 85/86

P.M. 19.40/24.30- 1.2 mi. E/Rte. 680 to Vineyard Rd. (4 locations).- Curve correction. Estimated cost: \$1,130,000.

FY 86/87

P.M. 21.10/25.30- 3.6 miles E/Rte 680 to Alden Lane Roadway Reconstruction.

(b) Public Transit

Rideo provides service in the City of Livermore.

(c) Bicycle

This is a popular recreational route as well as being a commuter route. The Lawrence Livermore Laboratory actively promotes bicycle use.

(d) Park and Ride

No facilities available.

(e) Rail

None available.

(2) Current Operating Conditions

The 1982 AADT is 9,000 near Route 680 and it steadily increases to 20,000 near Stanley Blvd. (P.M. 26.91). It then declines slightly to 15,000 near route 580. A.M. peak hour volumes are 400 eastbound, 600 westbound near Route 680; 700 eastbound, 500 westbound at Stanley Blvd. and 400 eastbound, 600 westbound near Route 580. The V/C and LOS at these same locations are V/C = 0.5, LOS = B-45 at Route 680; V/C = 0.47, LOS = B-45 at Stanley Blvd; and V/C = 0.50, LOS = B-45 at Route 580.

(3) Accident Rate (1/1/82 to 12/31/83)

There were 402 total accidents with 7 accidents involving fatalities along this segment. The total accident rate, 2.98 and the fatality rate 0.051 were both below the Statewide average for this type of facility.

(4) Future Operating Conditions

By the year 1995, the AADT is expected to be 27,000 near Stanley Blvd. and 21,000 at Route 580. A.M. peak hour volumes will be 1,800 eastbound and 1,500 westbound. The D/C will be over 1.00 for most of the segment with the greatest being 1.20. The level of service will be E to F.

In 2005, AADT will be 32,000 with an a.m. peak hour volume of 2,300 eastbound and 1,900 westbound near Stanley Blvd. Near Route 580, AADT will be 27,000 with a peak hour volume of 1,200 eastbound and 2,800 westbound.

D/C will have a high of 2.0, level of service will be "F-10".

In evaluating these statistical projections, it should be kept in mind that there is considerable uncertainty about the magnitude and timing of future growth east of the East Bay Hills of Alameda and Contra Costa Counties. Based on growth studies by ABAG and regional travel studies by MTC for this area, (ref. I-680 Corridor Study) there is a likelihood that these projections may prove to be conservative in their prediction of future traffic characteristics along Route 84.

ABAG has predicted significant residential and commercial growth in a study area which consists of Alameda and Contra Costa counties east of the East Bay Hills. This growth will directly affect traffic concentrations on Rte 84 and the other commuting routes of the area (Routes 4,24,680,242, and I-580). In the twenty year period between 1980 and 2000, the population of that region is projected to grow from 578,000 to 793,000 reflecting a 37% overall increase. The cities of Pittsburg, Antioch, and Brentwood will see the most residential growth (about an 87% increase) with other rapidly growing areas including Livermore, Pleasanton, and Dublin (about 51% increase) and the San Ramon Valley (about a 36% increase). Almost half of this total growth (approximately 45,000 new households) will occur in the northern cities of Pittsburg, Antioch, and Brentwood, and will be reflected in the form of medium and high cost housing. During the same time period, commercial development is expected to dramatically increase in the central and southern regions of the study area, creating 156,000 new jobs-an 84% increase over 1980. The largest number of employment opportunities will be found in central Contra Costa County (Walnut Creek, Concord, Martinez, and Pleasant Hill areas) with 162,000 total jobs. 80,000 new jobs are also predicted for the vicinities of Livermore, Pleasanton, Dublin and San Ramon Valley. These growth patterns will have the following effects on highway use in the area described above:

1. Increased Work Trips Within the Study Area. Since an intra-city highway system does not exist that would provide non-freeway connections between communities, I-680 and Routes 4,24,84, and 242 will be used by regional commuters to get to and from residences in the Pittsburg, Antioch, and Brentwood areas to jobs located in Concord, Walnut Creek, Pleasanton, and other central and southern cities.

2. Increased Work Trips from the Study Area to Outlying Regions. Increased population in Contra Costa County will contribute to commuter traffic traveling southbound along I-680 to jobs in the South Bay area. Outgoing traffic will also increase on I-580 and Route 24 as these routes provide access to the Oakland-Hayward areas.
3. Increased Work Trips into the Study Area from Outside Regions. The extensive commercial development in the San Ramon Valley and Livermore in combination with the high cost of housing in the residential sections of Contra Costa county will significantly increase the number of incoming commuters from the South and East Bay areas. Route 84 and especially I-680 may be overwhelmed with this traffic because they are the only two routes connecting the South Bay and these commercial developments. The existing freeways in the Livermore/Pleasanton area, I-580 and I-680 may be completely congested even with the conceptual idea of additional widening suggested from their respective Route Concept Reports. The logical alternative would be to make Route 84 a multilane freeway. This would not only relieve traffic due to commuters but those vehicles traveling to and from the South/East Bay and the Central Valley.

(5) Route Concept

Based upon the above discussion, the route concept for this segment is an initial 4, ultimate 6 lane freeway with a conceptual LOS of "D-35".

(6) Route Improvements

Construct an initial 4, ultimate 6 lane freeway partially on new alignment.

On June 20, 1974, the California Highway Commission passed a Notice of Intention Resolution to Rescind Freeway Adoption on State Highway Route 84 in Alameda County from Route 680 near Scotts Corner to Route 580 near Livermore (#NIU-74-13). However, MTC, Alameda County, and the City of Livermore requested that the freeway adoption be retained and the corridor protected for future freeway development. On February 19, 1975, in response to the local requests, the California Highway Commission passed a Notice of Intention of Conditionally Retain the Freeway Adoption (NIU-75-6).

According to the resolution, the California Highway Commission suspended consideration of rescission of the freeway adoption and disposal of acquired rights of ways subject to the following:

1. That the City of Livermore and Alameda County jointly assume 100 percent of acquisition cost of the Elliott protection parcel;
2. That the above local agencies enter into a cooperative agreement with Caltrans by June 1, 1975 to assume financial responsibility for all further hardship and protection acquisition until such time as regular funding of right of way and construction is possible.
3. That if either of the above conditions are not met, the Highway Commission may proceed with rescission of the route adoption and disposal of acquired rights of way.

The local agencies informally agreed to the conditions set by the Highway Commission. By November, 1975, the City of Livermore and County of Alameda demonstrated their commitment and good faith by entering into an agreement to jointly assume 100 percent of the acquisition cost of a real property parcel identified as the "Elliott protection parcel".

Unfortunately, preliminary review indicates that during the subsequent years, an industrial complex and residential development have encroached upon this proposed alignment which would make it costly to provide access to I-580 as originally intended. An economic analysis will need to be conducted to assess the feasibility of such an alignment.

I. Segment I (Ala P.M. 29.71 to 35.71)

This is an unconstructed State highway. The traverseable route follows Vasco Road. The designation of an existing road as a traversable route does not necessarily commit any future development of an unconstructed State Highway to the alignment of the existing road. This segment extends from Route 580 to the Alameda/Contra Costa County line.

This segment will be discussed concurrently with Segment J.

J. Segment J (CC P.M. 0.00 to 7.10)

This is an unconstructed State Highway. A traversable highway not maintained by the State extends from the ALA/CC county line to Route 4 near Brentwood. As was stated in Segment I, the same qualifications regarding an existing road as a traversable route applies to this segment of Route 84.

(1) Existing Facilities

(a) Highway Facility

Vasco Road is a two-lane conventional highway that wanders through rolling hills.

For the most part, it is about 24 feet wide with no shoulders. The horizontal alignment allows a 40-45 MPH driving speed and there are numerous no passing zones.

(b) Public Transit

None available.

(c) Bicycle

Recreational bicyclists use this route extensively.

(d) Park and Ride

None available.

(e) Rail

None available.

(2) Current Operating Conditions

The existing traffic volumes range from 4,000 to 6,000 with a a.m. peak hour volume of about 700.

(3) Accident Rate

Not available.

(4) Future Operating Conditions

The growth projections for this area are dramatic. By the year 2000 this area could well be supporting a population of 204,000 residents. Most of the employment will be near Pleasanton with most residential development centered near Antioch and Brentwood.

(5) Route Concept

Based upon the discussion in Segment H and the above discussion, the route concept for these segments is for a 4 lane freeway with R/W for 6 lanes, and a conceptual LOS of "D-35".

(6) Route Improvements

Construct a four, ultimate 6 lane freeway. Initiate studies to determine the possibility of providing bus and rail transit along this corridor.

SEGMENT		SM 0.0	SM 21.54	SM 25.72	SM 30.15	ALA 0.0	ALA 3.2	ALA 6.92	ALA 10.82	ALA 17.99	ALA 29.71	ALA 35.71	CC 0.00	CC 7.10
NO. OF LANES to build on	PRESENT	2	4	2	2	4	2	4	2	2	2-4			
	1995	2	4	2	2	4	4	4	4	2	2-4			
	2005	2	4	2	2	4	4	4	4	2	2-4			
LEVEL OF SERVICE to build on	PRESENT	C-40	D-40	D-40	C-50	N/A	B-50	C-45	B-50					
	1995	F-15	F-15	F-20	B-55	B-55	F-25	F-25	E-25					
	2005	F-10	F-15	F-15	B-55	C-50	F-25	F-15	F-10					
TERRAIN		MOUNTAIN	FLAT	FLAT	FLAT	FLAT	FLAT	FLAT	ROLLING	R / F				
GRADES		3-6%	0-3%	0-3%	0-3%	0-3%	0-3%	0-3%	0-6%	0-6%				
ACTUAL	Accidents Per MVM	2.72		3.55	0.92	0.54	3.70	3.20	2.98					
	Fatalities Per MVM	0.087		0.045	0.019	0.068	0.022	0.124	0.051					

UNCONSTRUCTED

UNCONSTRUCTED

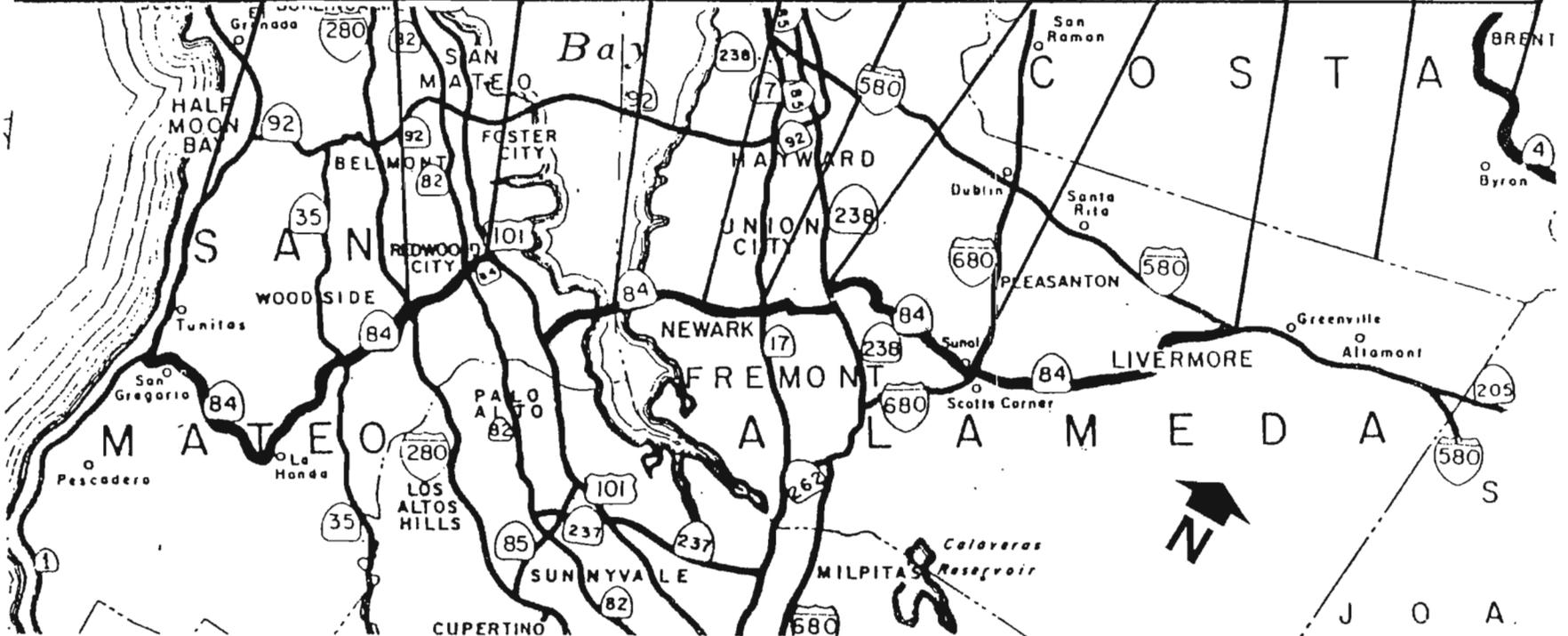


EXHIBIT A

EXISTING FACILITY (HIGHWAY)

<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	SH	0.00	21.54	21.54	8-24	2C	0-0	0
B	SH	21.54	25.72	4.18	24-36	4C, 4E	0-11	6-20
C	SH	25.72	30.20	4.48	12-24	2-4C	0	0-0
D	ALA	0.00	3.20	3.20	12-70	4F	0	0-48
E	ALA	3.20	6.92	3.72	12-36	4F	4-10	34
F	ALA	6.92	10.82	3.90	11-32	2-4C	2-0	0-4
G	ALA	10.82	17.99	7.17	10-15	2C	0-0	0
H	ALA	17.99	29.71	11.72	12-24	2-4C	0-12	0-→
I		Unconstructed						
J		Unconstructed						

ROUTE 84 ACCIDENT REPORT BETWEEN 1/81 AND 12/83

Location PM	Segment No.	No. of Accidents		Persons Killed	Persons Injured	Accident Rate*		Statewide Rate**			
		Fatal	Inj.			Fatal	F+I	Fatal	F+I	Total	Total
SM 0.00 to 21.54	A	7	110	7	165	0.087	1.46	2.72	0.076	1.75	3.54
SM 21.54 to 25.72	B	-	-	-	-	-	-	-	-	-	-
SM 25.72 to 30.20	C	3	76	5	121	0.045	1.18	3.55	0.030	1.20	3.07
ALA 0.00 to 3.20	D	1	27	1	43	0.019	0.53	0.92	0.011	1.18	3.00
ALA 3.20 to 6.92	E	1	3	2	5	0.068	0.27	0.54	0.014	0.45	1.14
ALA 6.92 to 10.82	F	2	158	2	230	0.022	1.81	3.70	0.032	1.24	3.18
ALA 10.82 to 17.99	G	9	141	10	238	0.124	2.06	3.20	0.045	1.17	2.79
ALA 17.99 to 29.71	H	7	227	7	348	0.051	1.73	2.98	0.063	1.50	3.38
	I										
	J										

Unconstructed

Unconstructed

*Rates are per MVH (Million Vehicle Miles)
 **Statewide averages for this type of facility in comparable terrain

Exhibit E

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

<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	45 MPH
C	Two-lane conventional highway	40 MPH
D	Freeway 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.

EXPLANATION TO TRAFFIC VOLUME TABLES

<u>COLUMN</u>	<u>DESCRIPTION</u>
SEGMENT	Route Segment
CO	County Abbreviations
POST MILE	Post Mile in County
DESCRIPTION	Description of the route segment
AADT	Annual Average Daily Traffic (Thousands)
AM PK	Morning Peak Hour Traffic
AH	Volumes Ahead Direction (Hundreds)
BK	Volumes Back Direction (Hundreds)
NO L	Number of Lanes (Existing) One Direction
V/C	Volume/Capacity: Ratio Volume to Max. No. of Vehicles/Hr. for Peak Direction During Peak Period
D/C	Demand/Capacity: Ratio Volume of Projected Demand to Max. No. of Vehicles/Hr.
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
% TRUCK AADT	Truck % of the Average Annual Daily Traffic Count
% TRUCK PK HR	Truck % at Peak Hour

TRAVEL DEMAND PROJECTIONS METHODOLOGY (ABSTRACT)

1995 & 2005 Demand Person Trips Projects
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.

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.

1983/1984 ROUTE CONCEPT STUDY

TRUCK %

1 9 8 2

1 9 9 5

2 0 0 5

ROUTE 84

Sheet 2 of 5

SEGMENT	CD	MILE POST	DESCRIPTION	1 9 8 2				1 9 9 5				2 0 0 5													
				AA DT	PK HR	AA DT	AM PK AH BK	NO L	V/C	L O S	L L N	AA DT	AM PK AH BK	NO L	V/C	L O S	L L N								
	SM	20.92	Whiskey Hill Rd.	4	3	14	6 7	1	0.68	C	1	24	14	18	1	1.68	F	2	29	17	21	1	2.00	F	2
			Several Intersections	5	4	16	7 8	1	0.79	D	1	26	15	18	1	1.74	F	2	31	18	22	1	2.11	F	2
		21.54	Jct. Rte. 280	5	4	23	12 18	2	0.60	C	2	33	17	25	2	0.83	E	3	42	21	32	2	1.07	F	4
		22.69	Alameda De Las Pulgas	5	4	32	15 23	2	0.77	D	2	44	22	32	2	1.07	F	4	55	27	33	2	1.10	F	4
		23.50	Valetta Rd.	5	4	43	19 28	2	0.93	F	3	59	26	39	2	1.30	F	4	74	33	49	2	1.63	F	5
	B	24.71	Jct. Rte 82, El Camino	5	4	44	19 30	2	1.00	F	3	62	27	41	2	1.37	F	4	78	34	52	2	1.73	F	5
		25.06	Middlefield Rd.	5	4	39	17 26	2	0.87	E	3	56	24	36	2	1.20	F	4	70	30	46	2	1.53	F	5
		25.72	Jct. Rte. 101	9	6	32	11 18	1	0.95	E	2	50	19	35	1	1.8	F	3	59	23	42	1	2.2	F	5
			Several Intersections	7	5	24	9 16	1	0.84	D	1	31	10	24	1	1.3	F	2	37	12	29	1	1.5	F	5
	C	27.52	Hamilton Ave.	5	4	19	6 15	1	0.79	D	1	21	6	17	1	1.13	F	2	24	6	19	1	1.27	F	5
		29.39	Dumbarton Bridge																						
		30.15	San Mateo Co. Line																						
	D	Ala 0.00	Alameda Co. Line	5	4	19	6 15	1	0.79	D	1	20	6	17	2	0.45	B	2	24	6	19	2	0.50	B	5

1983/1984 ROUTE CONCEPT STUDY

TRUCK %

1 9 8 2

1 9 9 5

2 0 0 5

ROUTE 84 Sheet 3 of 5

SEGMENT	CO	MILE POST	DESCRIPTION	1982					1995					2005												
				AA DT	PK HR	AA DT	AM AH	PK BK	NO L	V/C	L \$	L N	AA DT	AM AH	PK BK	NO L	V/C	L \$	L N	AA DT	AM AH	PK BK	NO L	V/C	L \$	L N
	A1a	R3.3	Dumbarton Br. Toll Plaza	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		R4.1	Paseo Padre Pkwy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E		R5.1	Newark Blvd	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		R6.2	No. Jct. Rte 17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		R7.7	So. Jct. Rte 17	5	4	26	10	11	1	0.73	C	1	31	11	25	1	1.67	F	2	36	16	24	1	1.60	F	
			Several Intersections	5	4	19	7	8	1	0.53	C	1	23	8	19	2	0.63	C	2	27	13	19	2	0.63	B	
		8.02	Fremont/Thornton	5	4	38	12	14	2	0.47	B	1	47	16	36	2	1.20	F	3	54	24	36	2	1.20	F	
F		8.33	Fremont/Peralta	4	3	17	5	6	1	0.40	B	1	21	8	15	2	0.50	C	2	24	12	15	2	0.50	B	
			Several Intersections	4	3	13	4	4	1	0.27	A	1	16	8	14	2	0.47	B	2	10	11	14	2	0.47	B	
		9.92	Mowry Ave.	4	3	24	6	7	1	0.47	B	1	29	11	21	1	1.40	F	2	33	17	21	1	1.40	F	
			Several Intersections	4	3	21	4	6	1	0.40	B	1	26	10	19	1	1.30	F	2	30	15	18	1	1.20	F	
		10.82	So. Jct. Rte 238	6	4	30	6	8	1	0.53	C	1	36	16	23	1	1.53	F	3	45	23	23	1	1.53	F	

ROUTE 84 Sheet 4 of 5

SEGMENT	CO	MILE POST	DESCRIPTION	L		L		L		L		L		L																						
				AA PK	AA DT	AA DT	AA PK	AA PK	AA DT	AA DT	AA PK	AA PK	AA DT	AA DT	AA PK	AA PK	AA DT	AA DT																		
G		10.83	No. Jct. Rte 238	9	6	21	4	7	1	0.61	C	1	16	9	13	1	1.2	F	2	19	14	11	1	1.40	F	2										
				Several Intersections																																
				13.00		Palomares Rd	9	6	19	4	6	1	0.56	C	2	10	7	10	1	0.94	E	2	13	11	9	1	1.11	F	2							
							Several Intersections																													
							17.29		Pleasanton Sunol Rd	9	6	10	4	5	1	0.50	C	2	13	8	12	1	1.1	F	2	16	12	10	1	1.5	F	2				
										11	7	4	2	3	1	0.28	B	1	5	3	5	1	0.44	B	1	6	5	4	1	0.50	C	2				
							H		R17.99	No. Jct. Rte 680	3	2	9	4	6	1	0.50	C	1	10	6	9	1	0.75	D	1	13	7	11	1	0.90	E	2			
											Several Intersections																									
											24.36		Vineyard Ave	3	2	8	3	3	1	0.32	A	1	10	9	6	1	0.79	D	1	13	10	7	1	0.89	E	2
														3	2	8	3	4	1	0.39	B	1	11	11	7	1	1.00	E	2	14	13	9	1	1.22	F	2
25.24		Alden Lane	3								2	8	3	4	1	0.37	B	1	11	11	7	1	0.95	E	2	14	13	9	1	1.16	F	2				
			3								2	9	3	4	1	0.37	B	1	13	12	8	1	1.05	F	2	15	16	10	1	1.37	F	2				
26.91		Stanley Blvd	3	2	10	4					3	2	0.27	A	2	13	12	8	2	0.80	D	2	15	14	10	2	0.93	E	2							
			3	2	20	7					5	2	0.47	B	2	27	18	15	2	1.20	F	3	32	23	19	2	1.53	F	2							

COMPARISON OF FUTURE LOS WITH ROUTE CONCEPT

SEGMENT	NO. LANES/LOS			ROUTE CONCEPT		NEEDS	
	1992	1995	2005	Proposed Lanes	LCS	Lanes	Target Los
A EM 0.00 to 21.54	2 / C-40	2 / F-15	2 / F-10	2	D-35	4	B-50
B EM 21.54 to 25.72	4 / D-40	4 / F-15	4 / F-15	4	F-15	E/10	D-40
C EM 25.72 to 30.20	2 / D-40	2 / F-20	2 / F-15	6	D-35	6	D-40
D Ala 0.00 to 3.20	2 / C-50	4 / B-55	4 / B-55	6	D-40	4	D-40
E Ala 3.20 to 6.92	NA	4 / B-55	4 / C-50	6	D-40	4	D-40
F Ala 6.92 to 10.82	2 / B-50	4 / F-25	4 / F-25	6	D-40	6	D-40
G Ala 10.82 to 17.99	2 / C-45	2 / F-25	2 / F-15	4	D-40	4	D-40
H Ala 17.99 to 29.71	2-4 / B55 / C40	2-4 / E25 / M5	2-4 / F-10	6	D-35	6	D-40
I Ala 29.71 to 35.71	UNCONSTRUCTED			4/6	D-35	4	D-40
J CC 0.00 to 7.10	UNCONSTRUCTED			4/6	D-35	4	D-40