FINAL
APR 10 1985

SUMMARY

ROUTE CONCEPT REPORT
I-680
SCL M0.00 to CC 25.46

This report defines the development concept for I-680 in District 4, over a 20-year planning period (1985-2005).

ROUTE CONCEPT

Segment A:	SCl M0.00-M6.17	D-35	8-12 lane freeway
Segment B:	SCl M6.17-M9.94	D-35	8 lane freeway
Segment C:	Ala M0.00-M2.38	D-35	8 lane freeway
	M2.38-R6.40	D-40	10 lane freeway
Segment D:	Ala R6.40-R11.85	D-40	10 lane freeway
	R11.85-R15.26	D-35	8 lane freeway
Segment E:	Ala R15.26-R21.88	D-35	8 lane freeway
Segment F:	CC R0.00-R4.18	D-35	8 lane freeway*
Segment G:	CC R4.18-R8.75	D-35	8 lane freeway*
Segment H:	CC R8.75-R12.61	D-35	8 lane freeway*
Segment I:	CC R12.61-14.38	D-35	8 lane freeway*
Segment J:	CC 14.38-R18.71	D-35	10 lane freeway
Segment K:	CC R18.71-21.19	D-35	8 lane freeway*
Segment L:	CC 21.19-25.46	D-35	8 lane freeway*

*2005 Traffic demand indicates a need for 10 and 12 lanes, or more. The 8 lane concept is based on the assumption that transit will provide for excess demand. If transit is not provided, the concept will be reassessed at the Route Development Plan stage.

CONCEPT RATIONALE

I-680 is presently a commuter, commercial, and in some degree, a recreational route. The freeway serves as a major transportation corridor between San Jose and Fremont; it is the primary north-south corridor of both the San Ramon Valley and the Walnut Creek/Concord area.

AREAS OF CONCERN

During the next 20 years, the Pittsburg/Antioch/Brentwood areas of northern Contra Costa County are projected to experience an 87 percent increase in population while the central and southern regions of Concord, Walnut Creek, and the San Ramon Valley are

expected to undergo rapid commercial and industrial development. The already congested I-680 facility which connects these communities with each other and with the South Bay Area cannot accommodate the anticipated traffic demands. It is therefore important to actively encourage maximum use of public transportation, staggered work hours, ridesharing, preferential treatment of alternative modes and other TSM measures.

PROBLEM LOCATIONS

SCL 680 M7.65	Jct. Rte. 237	AM & PM Congestion
Ala 680 R11.0-R11.85	Jct. Rte. 84	AM & PM Congestion
CC 680 R10.37-R12.61	San Ramon Valley	AM & PM Congestion
CC 680 13.08-18.71	Walnut Creek	AM & PM Congestion
CC 680 25.46	Benicia-Martinez Bridge	AM & PM Congestion

IMPROVEMENTS

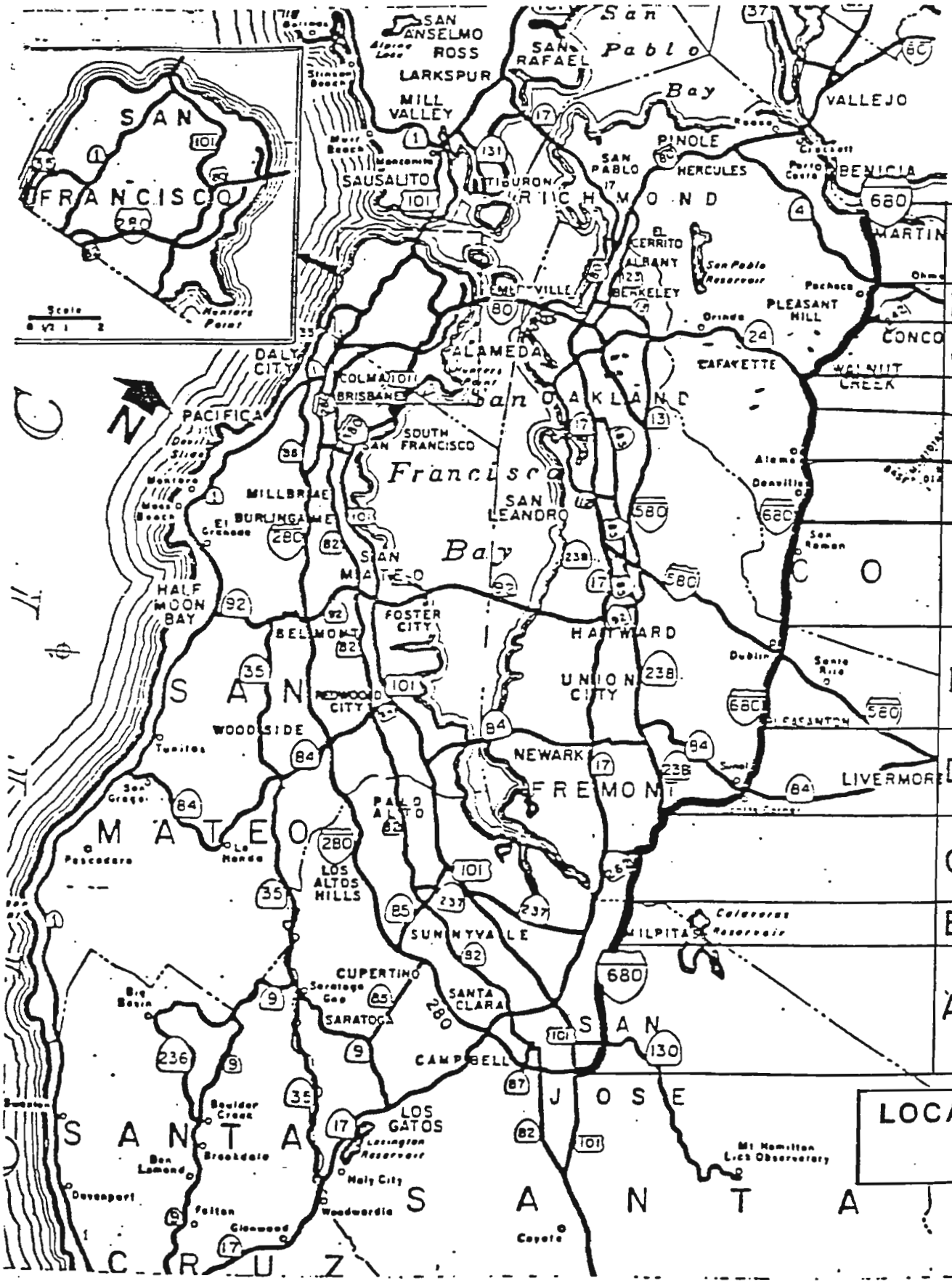
SCl M7.63-Ala M2.38 : Widen from 6 to 8 lanes, from Route 237 to Route 262.

Ala M2.38-Ala R11.85: Widen from 4-6 to 10 lanes from Route 262 to Route 84.

Ala R11.85-R20.06 : Widen from 4-6 to 8 lanes, from Route 84 to Routes 580.

CC 14.38-R18.71: : Widen from 6-8 to 10 lanes, from Junction Route 24 West to Junction Route 242 North.

CC R19.20-R25.46 : Widen from 4-6 to 8 lanes, from Junction Route 242 North to the Solano County Line including a new 4 lane Benicia - Martinez bridge.


SAN FRANCISCO
SAN ANSELMO
ROSS
LARKSPUR
MILL VALLEY
SAUSALITO
TIBURON
SAN RAFAEL
San Pablo Bay
VALLEJO
PINOLE
HERCULES
BENICIA
SAN PABLO
RICHMOND
MARTINEZ
CERRITO
ALBANY
BERKELEY
EMERYVILLE
PLEASANT HILL
CONCORD
LAFAYETTE
WALNUT CREEK
ALAMEDA
DALY CITY
COLMA
BRISBANE
PACIFICA
SOUTH SAN FRANCISCO
San Francisco Bay
OAKLAND
SAN LEANDRO
MILLBRAE
BURLINGAME
SAN MATEO
HALF MOON BAY
FOSTER CITY
BELMONT
HAYWARD
UNION CITY
SAN MATEO
REDWOOD CITY
WOODSIDE
NEWARK
FREMONT
PALO ALTO
LIVERMORE
LOS ALTOS HILLS
SUNNYVALE
MILPITAS
CUPERTINO
SARATOGA
SANTA CLARA
CAMPBELL
SAN JOSE
LOS GATOS
SANTA CRUZ
SANTA CRUZ
Scale
Monterey Point
CC 25.46
CC 21.19
CC R18.71
CC 14.38
CC R12.61
CC R8.75
CC R 4.18
CC R0.00
ALA R21.88
ALA R15.26
ALA R6.40
ALA M0.00
M8.94
SCL M6.17
SCL M0.00
LOCATION MAP
I-680

ROUTE CONCEPT REPORT

ROUTE I-680

SCL M0.00 to CC 25.46

Prepared under the direction of:

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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:

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District Director of Transportation

Approved:

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

Approved:

DONALD L. WATSON
Division of Highways and
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Approved:

JACK KASSEL, Chief
Division of Project
Development

STATEMENT OF PLANNING INTENT

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

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

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

ROUTE CONCEPT REPORT

I-680

SCL M0.00 - CC 25.46

I. ROUTE DESCRIPTION

I-680 is approximately 71 miles long, and traverses four counties. Three of these counties, Santa Clara, Alameda, and Contra Costa, are within District 4 boundaries, for a total distance of about 58 miles. Another 12.5 miles traverse into Solano County in District 10. The freeway traverses through the Cities of San Jose and Milpitas in Santa Clara County; through Fremont, Pleasanton, and Dublin in Alameda County; and the Cities of San Ramon, Danville, Walnut Creek, Pleasant Hill, Concord, and Martinez in Contra Costa County.

I-680 begins at the Route 101/280/680 interchange in San Jose, and runs northwesterly through Santa Clara County to Fremont. From Fremont, I-680 continues northeasterly, to the Route 84 junction, where it swings around to again travel northwesterly through Alameda County to Dublin. The freeway runs northwesterly through Contra Costa County to the Benicia-Martinez Bridge, which spans the Carquinez Strait. The Contra Costa/Solano County line occurs mid-bridge, which also marks the boundary of District 4.

I-680 is part of the Federal-Aid Interstate (FAI) system throughout District 4, and to the northern limit of the Benicia-Martinez Bridge. From the junction of Route 780 to the Route 80 junction, the route is designated as Federal-Aid Primary (FAP), and is functionally classified as an urban principal arterial.

I-680 is a State Highway Extra Legal Load (SHELL) route, and is included in FHWA's Proposed Final Designation of Routes for Larger Trucks.

I-680 is a Blue Star Memorial Highway from the Alameda/Contra Costa line to the Benicia-Martinez Bridge. It is designated as a State Scenic Highway from the Santa Clara/ Alameda County line to the Route 24 junction in Walnut Creek.

II. PURPOSE OF ROUTE

I-680 is primarily a commuter and commercial route. Commute traffic is most prevalent between San Jose and Fremont, in the San Ramon Valley from Pleasanton to Danville, and in the Walnut Creek/Concord area. Commercial truck traffic is particularly heavy from Fremont, through Alameda County, to San Ramon. Recreational use of I-680 is mostly inter-regional as it provides a link between the South and East Bay Cities to Stockton (via Route 580), Napa-Sonoma, Sacramento, and Lake Tahoe (via Route 80).

III. REGIONAL CHARACTERISTICS

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 I-680 and the other commuting routes of the area (Routes 4, 24, 84, 242, and I-580). In the 20-year period between 1980 and 2000, the population of the 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 a 49% 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 Hills areas) with 162,000 total jobs by year 2000. In the vicinities of Livermore, Pleasanton, Dublin, and the San Ramon Valley, 80,000 new jobs are also predicted. These growth patterns will have the following future effects on highway use in this area:

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 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, and San Francisco areas.

3. Increased work trips into the study area from outside regions: The extensive commercial development in Livermore and the San Ramon Valley in combination with the high cost of housing in the residential sections of Contra Costa County may significantly increase the number of incoming commuters from the South and East Bay areas. I-680 is of particular concern as it is the only north-south route into and out of the study area.

In light of the projected magnitude of growth in Contra Costa and eastern Alameda Counties, it becomes obvious that I-680, no matter what modifications are made to it, will not solely be able to handle expected traffic volumes in the next 20-years. The following additional transportation alternatives need to be investigated as potential measures for reducing congestion problems along this route as well as the area as a whole:

(1) Upgrade and widen existing regional freeway facilities (including Routes 4, 24, 242 and 84).

(2) Extend and expand regional freeway systems. The following modifications could be considered.

(a) Realignment and construction of Route 84 as a freeway between Route 238 and I-680, and from I-680 to Route 4 south of Brentwood.

(b) Realignment and construction of Route 4 as a freeway from east of Antioch through the southern Brentwood area to the Contra Costa/San Joaquin County line.

(c) Realignment and construction of Route 239 as a freeway from south of Brentwood to I-580/205 I/C.

(d) Realignment and construction of Route 24 as a freeway between Walnut Creek and Pittsburg.

(3) Improvement of local streets and roads.

(4) Increase bus service along I-680 between Alameda and Santa Clara Counties and expand regional transit systems within the study area.

(5) Development of rail services paralleling the I-680 corridor.

The Metropolitan Transportation Commission (MTC) is currently conducting a study on the I-680 and I-580 corridors. This study will further investigate the transportation problems along these routes and recommend alternative solutions. Caltrans is participating in the study which is expected to be completed in May 1986.

IV. ROUTE SEGMENTS

In evaluating the statistical projections contained in the following segments, 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), the projections may prove to be conservative in their prediction of future traffic characteristics along I-680.

A. Segment A

(04-SCl-680, PM M0.00-M6.17)

This segment begins in San Jose at the I-280/Highway 101 Junction, where I-280 ends and becomes I-680. The segment continues to the Milpitas City limits at Montague Expressway. The commute hour traffic is split fairly evenly, as northbound traffic moves toward the industrial parks and manufacturing areas of Milpitas and Fremont, and southbound commuters travel to downtown San Jose and to the "Silicon Valley" industrial area.

(1) Existing Facilities

(a) Highway Facility

This segment has 4-6 lanes in each direction, with 0 to 10 ft. shoulders and a 36 ft. median. It passes through the northern corner of the Santa Clara Valley, along flat terrain. The grade is not steeper than 3%.

(b) 1984 STIP Projects

There are no projects in the 1984 State Transportation Improvement Program that are pertinent to the route concept planning process for this segment of Route I-680.

(c) Public Transit

Three Santa Clara County Transit District Express Buses presently serve the Fremont BART Station. Route 180 originates in Downtown San Jose and runs all day. Route 120 (Lockheed Industrial Park-BART) and Route 140 (Mayfield Mall in Mountain View-BART) bring commuters from Alameda County to the Sunnyvale-Mountain View area during the peak period only.

(d) Bicycle

Bicycle riding is prohibited on this route; however, Capitol Avenue closely parallels I-680 from Alum Rock Avenue to Milpitas. This is one of the suggested bike routes between San Jose and Milpitas.

(e) Park and Ride

There are no existing State-owned facilities with direct access to the freeway, and none are planned in the Caltrans Proposed Five Year Park and Ride Program.

(f) Rail

No rail projects presently serve the I-680 corridor within this segment.

The 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, running from the IBM plant and Edenville Industrial Parks in South San Jose to the Southern 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.

A study is underway by MTC for a rail connection between the Fremont BART Station and the South Bay.

A BART extension from Fremont to Warm Springs, and then from Warm Springs to San Jose is included in BART's extension policy. The upcoming "Santa Clara Transportation 2000" report proposes that MTC, BART, and Santa Clara County jointly sponsor this extension.

(2) Current Operating Conditions

The 1982 AADT ranges from 59,000 north of Capitol Expressway (PM 1.43), to 78,000 north of King Road (PM 0.40). The AM peak hour traffic ranges from 3,400 to 4,700 northbound and from 3,200 to 4,700 southbound. The V/C ratio ranges from 0.41 (Level of Service "B-55") to 0.57 (Level of Service "C-50").

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

There are 532 total accidents on this segment, with 207 injuries and 4 fatalities. The PM peak period (3:00-6:00 PM) accounts for 19% of the total accidents during the day. About 35% of accidents occur on Saturday and Sunday. The fatality rate is 0.008/MVM and the total accident rate is 1.14/MVM. These rates exceed the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

1995 AADT projections range from 57,000 north of Capitol Avenue to 90,000 north of King Road. The AM peak hour ranges from 3,500 to 5,300 northbound and from 4,300 to 5,900 southbound. The D/C ratio ranges from 0.48 to 0.70, and is primarily at Level of Service "C-50".

The 2005 AADT ranges from 72,000 to 102,000, at the above locations. The AM peak hour ranges from 4,200 to 6,200 northbound and from 5,700 to 7,500 southbound. The D/C ratio ranges from 0.66 to 0.96, with Levels of Service ranging from "C-50" to "E-35". Between Capitol Expressway (PM M1.43) and Capitol Avenue (PM M5.09), a ten lane freeway would be needed to achieve the target Level of Service "D-35." This LOS is only achievable through increased transit and other alternate modes.

(5) Route Concept

This segment is already at the route concept of an 8 lane freeway. The conceptual "LOS D-35" is based upon the assumption that improvements in public transportation and implementation of aggresive TSM measures will provide for the excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

No improvements to the highway facility are recommended along this segment. Supplemental transportation modes such as bus and rail systems should be considered to offset future highway demands.

B. Segment B

(04-SCl-680, PM M6.17-M9.94)

This segment starts at the Milpitas City limit in the south and continues north to the Fremont City limit/Alameda County line. The predominant land use west of I-680 and east of Highway 17 is a combination of heavy manufacturing plants and light industrial park

complexes with compatible commercial activities such as public storage garages. Single-family and multiple family middle to upper middle class residences are located east of I-680.

(1) Existing Facilities

(a) Highway Facility

This segment has 3 lanes in each direction, with 10-13 ft. shoulders and a 36 ft. median. The terrain is flat with grades of not more than 3%.

(b) 1984 STIP Projects

There are no projects in the 1984 State Transportation Improvement Program that are pertinent to the route concept planning process for this segment of Route I-680.

(c) Public Transit

See Segment A.

(d) Bicycle

Capitol Avenue becomes Warm Springs Road in Milpitas, and this continues to be the suggested bike route that most closely parallels I-680 north to the Irvington District in Fremont.

(e) Park and Ride

See Segment A.

(f) Rail

See Segment A.

(2) Current Operating Conditions.

The 1982 AADT ranges from 54,000 north of Jacklin Road (PM 8.50) to 57,000 north of the junction of Route 237 (PM 7.65). The AM peak hour traffic ranges from 1,700 to 3,100 northbound and from

3,000 to 3,700 southbound. The V/C ratio ranges from 0.49 (Level of Service "B-55") to 0.65 (Level of Service "C-50").

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

There wer 109 total accidents on this segment, with 53 injuries and 1 fatality. The PM peak hour period (3:00-6:00 PM) accounts for only 13% of total accidents. About 32% of all accidents occur on Saturday and Sunday.

The fatality rate is 0.004/MVM and the total accident rate is 0.47/MVM. These rates are lower than the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

The 1995 AADT ranges from 50,000 north of Jacklin Road to 56,000 north of Route 237. The AM peak hour ranges from 2,300 to 3,100 northbound and from 4,300 to 4,600 southbound. The D/C ratio ranges from 0.58 (Level of Service "C-50") to 0.81 (Level of Service "D-40").

The 2005 AADT ranges from 66,000 to 70,000, at the above locations. The AM peak hour ranges from 2,900 to 3,600 northbound and from 6,400 to 6,700 southbound. The D/C ratio ranges from 0.84 (Level of Service "D-40") to 1.18 (Level of Service "F-25").

(5) Route Concept

The route concept is an eight lane freeway along this entire segment which would achieve the target level of service "D-40".

(6) Improvements

Widen from 6 to 8 lanes; supplemental transportation modes such as bus and rail systems should be considered to offset future highway demands.

C. Segment C

(04-Ala-680, PM M0.00-R6.40)

This segment begins at the Alameda County line/Fremont City limit, and continues north to Route 238 Mission Boulevard). The area west of I-680 is a combination of commercial business parks, light industry, and further north, single-family middle to upper middle class residences. The hills to the east of I-680 are uninhabited north of Route 262. The area around the junction of Route 238 and I-680 is the historic "Mission San Jose" district, built around the old Spanish Mission.

(1) Existing Facilities

(a) Highway Facility

This segment has 3 lanes in each direction, with 10-ft. to 13-ft. outside shoulders and a predominantly 60-ft. median, ranging from 20-ft to 99-ft. The terrain is flat (0-3% grade) south of Durham Road. North of this, the terrain becomes rolling with grades of 3% to 6%.

(b) 1984 STIP Projects

There are no projects in the 1984 State Transportation Improvement Program that are pertinent to the route concept planning process for this segment of Route I-680.

(c) Public Transit

See Segment A.

(d) Bicycle

Warm Springs Boulevard becomes Osgood and then Driscoll Road, until it ends at Mission Boulevard in Fremont. This is the suggested bike route that most closely parallels the freeway through Fremont.

(e) Park and Ride

Presently, there are no State-owned facilities with direct freeway access. Caltrans currently has a "shared-use" agreement with the Mission San Jose Community Park on Mission Boulevard (Route 238). Car and vanpools are allowed to use 24 of the total spaces free of charge. This site is less than 1/4 mile from the Route 238/I-680 interchange. The Caltrans Proposed Five-Year Park and Ride Program includes a 50 space lot at the Route 238 interchange, to be funded in FY 85/86.

(f) Rail

Fremont is currently the southernmost leg of BART. A BART extension to Warm Springs (with an Irving Station) and then to San Jose has been proposed by BART; the priority of this extension has yet to be determined. This extension to Warm Springs is included in MTC Resolution No. 1367 "New Transit Starts and Extension for the San Francisco Bay Area, 1984-2000."

(2) Current Operating Conditions

The 1982 AADT ranges from 52,000 north of Scott Creek Road (PM M0.13) to 56,000 at the Durnham Road interchnge (PM M4.02). The AM peak hour ranges from 1,700 to 1,800 northbound and from 2,900 to 3,100 southbound. The V/C ratio ranges from 0.51 to 0.54, with a Level of Service "B-55").

The existing truck trvel is heavy on this segment, ranging from 10% to 16% of the total traffic (AM peak hour 3-5%).

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

There were 163 total accidents on this segment, with 132 injuries and 1 fatality. The PM peak period (3:00-6:00 PM) accounts for about 25% of the total accidents. Accidents involving trucks (not including pickups) make up almost 22% of the total, due to the high volume of trucks on this segment.

The fatality rate is 0.002/MVM and the total accident rate is 0.41/MVM. Both of these rates are lower than the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

The 1995 AADT ranges from 48,000 north of Scott Creek Road to 66,000 north of Route 262 (PM M2.38). The AM peak hour ranges from 2,200 to 3,000 northbound and from 4,100 to 5,500 southbound. The D/C ratio ranges from 0.72 (Level of Service "C-50") to 0.96 (Level of Service "E-30").

The 2005 projections range from 64,000 to 88,000, at the above-mentioned locations. The AM peak hour ranges from 2,800 to 3,800 northbound and from 6,600 to 8,900 southbound. The D/C ratio ranges from 1.16 to 1.56, resulting in a Level of Service "F-15" along this segment.

See Section III, REGIONAL CHARACTERISTICS, for the impact of growth in the area on an 8 and 10 lane route concept for these segments.

(5) Route Concept

The route concept is an eight lane freeway from the Alameda County Line (PM M0.00) to Route 262 (PM 2.38), and a ten lane freeway from Route 262 to Route 238 (PM R6.40). The conceptual LOS "D-35" (Ala PM M0.00-M2.38) and LOS "D-40" (PM M2.38-R6.40) is based on the assumption that improvements in public transportation and implementation of TSM measures will offset future highway demands. If these assumptions are not realized the concept will need to be reassessed.

(6) Improvements

Widen from 6 lanes to 8 and 10 lanes. Supplemental transportation modes such as bus and rail systems should be considered along this section of the I-680 corridor to offset future highway demands.

D. Segment D

(04-Ala-680, PM R6.40-R15.26)

This segment begins at Route 238 in Fremont, and continues in a northerly direction through a hilly, rural section of unincorporated Alameda County to the Pleasanton City limits. The Hacienda Road/Sunol Boulevard interchange marks the beginning of urbanization, with the downtown portion of Pleasanton located to the east of the freeway. The AM peak-hour of about 63% southbound reflects the fact that southern Alameda County is presently more of a work attraction than the northern portion of the county to commuters in this area.

(1) Existing Facilities

(a) Highway Facility

This segment varies between 2 and 3 lanes in each direction, with 10 ft. shoulders and a median that varies from 34 ft. to 90 ft. The entire segment passes through rolling terrain, with 3% to 6% grades.

(b) 1984 STIP Projects

FY 86/87
PM R6.4/R11.0 Widen to 6 lane freeway
PM 11.0/R20.1 Widen to 6 lane freeway.

(c) Public Transit

This segment is not currently served by public transit.

(d) Bicycle

There are no suggested bike routes that run parallel to I-680 on this segment. The only possible bike route between Fremont and Pleasanton is along Route 84, through Niles Canyon.

(e) Park and Ride

There are no existing park and ride facilities, nor are any planned at this time.

(f) Rail

No passenger rail services exist currently, and none are planned for the future.

(2) Current Operating Conditions

The 1982 AADT ranges from 56,000 north of the junction of Route 238 east, to 50,000 north of the junction with Route 84. The AM peak hour traffic ranges from 1,600 to 1,800 northbound and from 2,700 to 3,100 southbound. The V/C ratio ranges from 0.53 (Level of Service "C-50") to 0.82 (Level of Service "D-40").

This segment has the highest percentage of truck traffic along I-680 (16% to 18% of AADT, 9% to 10% of AM peak hours). I-680 is the fastest route to move goods between the Milpitas/Fremont area to the San Ramon Valley, Livermore, Walnut Creek, and the Central Valley.

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

There were 272 traffic accidents on this segment, with 113 injuries and 9 fatalities. Due to the high percent of total truck volume on this segment, trucks (not including pick-ups) are involved in approximately 27% of all accidents. The PM peak hour (3:00-6:00 PM) accounts for almost 20% of the total accidents on this segment.

The fatality rate, at 0.017/MVM, and the total accident rate, at 0.54/MVM, are both lower than the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

The 1995 AADT projections range from 54,000 north of the junction of Route 84 east, to 65,000 north of Route 238. AM peak hours range from 2,600 to 3,000 northbound, and from 4,900 to 5,600 southbound. The D/C ratio ranges from 0.68 north of Sheridan Road (Level of Service "C-50"), to 0.98

north of the junction of Route 84 west (Level of Service "E-35"). The majority of this segment will operate at Level of Service "E-30".

The 2005 AADT ranges from 68,000 north of the Route 84 east junction to 82,000 north of Vargas Road. The AM peak ranges from 3,100 to 3,600 northbound and from 7,200 to 8,300 southbound. The Level of Service for this segment is "F-15", with D/C ratios ranging from 1.01 to 1.46.

See Section III, REGIONAL CHARACTERISTICS, for the impact of growth in the area on an 8 and 10 lane route concept for these segments.

(5) Route Concept

The route concept is a ten lane freeway from Route 238 (PM R6.40) to Route 84 (PM R11.85) with a conceptual LOS "D-40", and an eight lane freeway from Route 84 to the Pleasanton city limits (PM R15.26) with a conceptual LOS "D-35". The conceptual LOS's are based on the assumption that improvements in public transportation and implementation of TSM measures will provide for excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

Widen from 6 lanes to 8 and 10 lanes. Supplemental transportation modes such as bus and rail systems should be considered along this section of the I-680 corridor to offset future highway demands.

E. Segment E

(04-Ala-680, PM R15.26-R21.88)

Segment E begins at the southern city limit of Pleasanton and continues north through the Cities of Pleasanton and Dublin. The northern boundary of this segment is both the northern city limit of Dublin and the Alameda/Contra Costa County line. This segment includes the intersection of I-680 with I-580 connecting the area with Livermore to the east and Hayward to the west.

(1) Existing Facilities

(a) Highway Facility

This segment has 2 to 3 lanes in each direction, with 0-ft. to 10-ft. outside shoulders and a 46-ft. to 60-ft. median. The terrain is flat for the greater part of the segment (0-3% grade).

(b) 1984 STIP Projects

FY 84/85
PM R18.3 Construct bridge and approaches.

FY 87/88
PM R11.0/R20.1 Widen to 6 lane freeway.
PM R19.2/R19.4 Widen OC, construct ramps, signals.

FY 88/89
PM R20.1/R21.9 Widen to 8 lane freeway.

(c) Public Transit

There is no local transit service presently available in Pleasanton or Dublin. A draft of the Dublin/Pleasanton Short Range Transit Plan, 1984-1990, was published in December 1983. It proposes a Joint Exercise of Power Agreement among the Cities and Alameda County, to provide transit service. A local transit authority could begin providing fixed-route service by 1985.

The BART Express Bus "U" Route originates in Livermore and stops in Pleasanton enroute to the Bayfair and Hayward Stations. The "D" Route originally began in Dublin and ran north through the San Ramon Valley to the Walnut Creek Stations. In December 1981, the terminal point was extended to Stoneridge Shopping Center in Pleasanton, on a trial basis.

(d) Bicycle

Foothill Road, which runs parallel to I-680 is a convenient bicycle route that traverses north through the San Ramon Valley. It becomes San Ramon Valley Road north of I-580. Bicycling should be encouraged along this frontage road, as the area is rapidly developing, and will need to use alternative transportation forms as congestion increases.

(e) Park and Ride

No State-owned facilities exist along this segment, and none are planned for the next five years.

(f) Rail

No passenger rail service currently operates in this area. A BART extension has been proposed from the Bayfair Station to Dublin, and was adopted by the BART Board of Directors (Resolution No. 3098) on March 22, 1984. This "Livermore-Pleasanton Extension" would traverse SR-238 and I-580 right of way, with an intermediate station at Redwood Road in Castro Valley, and a terminal near the I-580/I-680 intersection.

(2) Current Operating Conditions

The 1982 AADT ranges from 49,000 to 62,000. AM peak hour figures range from 1,600 to 2,000 northbound and from 2,700 to 3,400 southbound. The V/C ratio ranges from 0.60 (Level of Service "C-50") to 0.76 (Level of Service "D-40").

Truck traffic remains high on this segment, ranging from 14% to 17% of the AADT (5-9% of AM peak hour).

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

There were 202 total accidents in this segment, with 121 injuries and 3 fatalities. The PM peak

period (3:00 to 6:00 PM) accounted for about 17% of total accidents.

The fatality rate of 0.007/MVM and total accident rate of 0.51/MVM are both below the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

1995 AADT projections range from 48,000 north of Sunol Boulevard to 64,000 at the Alameda County line. The AM peak hour ranges from 2,400 to 3,300 northbound and from 4,200 to 5,000 southbound. The D/C ratio ranges from 0.66 (Level of Service "C-50") to 0.77 (Level of Service "D-40").

The 2005 AADT figures range from 61,000 to 81,000, at the above locations. The northbound AM peak hour projections range from 2,800 to 3,800, while the southbound peak ranges from 6,000 to 7,000. The D/C ratio ranges from 0.92 to 1.14. The Level of Service is at "F-15" south of the I-580 interchange, and is "E-30" north to the Alameda County Line.

The eight lane route concept would accommodate the projected traffic at LOS "D-35." See Section III, REGIONAL CHARACTERISTICS, for the impact of growth in the area on an 8-lane route concept for these segments.

(5) Route Concept

The route concept is an eight lane freeway along this entire segment with conceptual LOS "D-35". The LOS is based on the assumption that improvements in public transportation and implementation of TSM measures will provide for excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

Widen from 6 to 8 lanes between PM R15.26 and PM R20.10. Efforts also need to be made to implement and encourage the use of transit and other transportation modes.

F. Segment F

(04-CC-680, PM R0.00-R4.18)

This segment begins south at the Alameda/Contra Costa County line, which also marks the southern city limit of San Ramon. The City of San Ramon, incorporated on July 1, 1983, exemplifies commercial and residential development underway in this area. The segment continues north to Crow Canyon Road.

Bishop Ranch is the largest industrial park complex in the area, located east of the freeway, between Bollinger Canyon and Norris Canyon Road. The complex covers 300 acres, and has a potential build-out of an additional 300 acres.

(1) Existing Facilities

a. Highway Facilities

This segment consists of 3 lanes in each direction, with 0-ft. to 10-ft. shoulders and a 46-ft. median. This segment passes through the San Ramon Valley, which is flat terrain with a 0% to 3% grade.

(b) 1984 STIP Projects

FY 84/85
PM R2.5/R3.3 Construct I/C and widen O/C.

FY 85/86
PM R0.1/R0.2 Traffic signals and channelization.
PM R3.8/R4.6 Modify ramps.
PM R3.8/R3.9 Widen overcrossing.

FY 88/89
PM R0.0/R12.6 Widen to 8 lane freeway.

(c) Public Transit

The BART Express Bus routes "D" and "DN" both run north through the San Ramon Valley to the Walnut Creek BART Station. The "US" Route is

provided during peak periods only, and runs to the Bayfair Station.

The Central Contra Costa Transit Authority plans to extend Dial-A-Ride service for the elderly and handicapped in Danville, in September 1984.

(d) Bicycle

See Segment E.

(e) Park and Ride

BART has proposed a 200 space facility near the Alcosta Boulevard/I-680 interchange.

There are presently no State-owned facilities along this segment. The Caltrans Five-Year Park and Ride Program proposes two facilities to be funded in FY 85/86: a facility of undetermined size at the Bollinger Canyon Road/I-680 interchange, and a 100 space lot at the Crow Canyon Road/I-680 interchange.

(f) Rail

MTC Resolution No. 1367 has endorsed acquisition of the abandoned Southern Pacific right-of-way in the San Ramon Valley to be used as a future transit corridor. No funding has been obtained at this time. Contra Costa County is developing a plan for acquiring the right-of-way.

(2) Current Operating Conditions

The 1982 AADT of this segment is 63,000. The AM peak hour traffic is 2,200 northbound and 2,700 southbound. The V/C ratio of 0.47 is at Level of Service "B-55".

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

There were 98 total accidents on this segment, with 65 injuries and 2 fatalities. Almost 38% of all accidents occurred on Saturday and Sunday, and

about 23% of all accidents involved driving under the influence of alcohol.

The fatality rate of 0.006/MVM and the total accident rate of 0.33/MVM are both lower than the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

The 1995 AADT projection is 69,000. The AM peak hour is 3,500 northbound and 5,300 southbound. The D/C ratio is 0.70 and the Level of Service is "C-50".

The 2005 AADT projection is 87,000, with an AM peak hour of 4,000 northbound and 7,500 southbound. The D/C ratio is 0.99 and the Level of Service is "E-30".

A ten lane freeway would be needed to accommodate projected traffic at Level of Service "D-40."

Utilization of the Southern Pacific right-of-way for light rail is one viable alternative. Also, local governmental agencies should mitigate traffic impacts by improving and building local arterials while land is still available.

(5) Route Concept

The route concept is an eight lane freeway along this entire segment. Transit and other alternative modes will need to be utilized to reach the targeted conceptual LOS "D-35".

(6) Improvements

STIP project No. 272C 680 FY 88/89 will bring this segment up to the route concept of 8 lanes. Local agencies should actively take part in providing and encouraging use of other modes. Sunset Development Company has already provided BART shuttle service to the Walnut Creek Station. The population of the San Ramon Valley is projected to increase over 20% from 1980 to 1990, and alternative modes need to be made available and actively encouraged.

G. Segment G

(04-CC-680 PM R4.18-R8.75)

This segment traverses through the City of Danville and ends just south of the northern city limits at El Pintado Road. Danville is older and more established than San Ramon to the south. Residential areas consist primarily of upper middle class single family housing. The neighborhoods along the Camino Ramon frontage road are clustered in planned residential developments which are centered around shared recreational facilities. A major commercial strip has developed along the San Ramon Valley frontage road, west of I-680.

(1) Existing Facilities

(a) Highway Facilities

This segment has 3-4 lanes in each direction, with 0-ft. to 10-ft. shoulders and a 46-ft. median. The entire segment is on a flat grade of 0-3%.

(b) 1984 STIP Projects

FY 84/85
PM R8.2/15.8 Ramp roadway reconstruction.

FY 85/86
PM R3.8/R4.6 Modify ramps.

FY 86/87
PM R6.4/R7.2 Widen OC and modify existing ramps.

FY 87/88
PM R0.0/R12.6 Widen to 8 lane freeway

(c) Public Transit

See Segment F.

(d) Bicycle

See Segment F.

(e) Park and Ride

There are no existing State-owned facilities along this segment. A State-owned lot at the Sycamore Valley Road I/C is planned for FY 87/88. The 1981/82 BART Express Bus Plan proposes a 230 space facility at the El Cerro Road/Route 680 interchange in FY 85/86.

(f) Rail

See Segment F.

(2) Current Operating Conditions

The 1982 AADT ranges from 79,000 north of Crow Canyon Road (PM R4.18) to 92,000 north of El Cerro Boulevard (PM R8.18). The AM peak hour ranges from 3,000 to 3,800 northbound and from 3,600 to 3,700 southbound. The V/C ratio ranges from 0.50 (Level of Service "B-50) to 0.67 (Level of Service "C-50").

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

There were 157 total accidents on this segment, involving 90 injuries and 3 fatalities. The PM peak period (3:00-6:00 PM) accounts for almost 22% of total accidents. Almost 30% of all accidents occurred on Saturday and Sunday.

The fatality rate is 0.007/MVM and the total accident rate is 0.37/MVM. Both of these ratios are lower than the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

The 1995 AADT projections range from 86,000 north of Crow Canyon Road to 101,000 north of El Pintado Road. The AM peak hour ranges from 4,000 to 4,700 northbound and from 6,000 to 7,000 southbound. The D/C ranges from 0.79 (Level of Service "D-40") to 0.92 (Level of Service "E-35").

The 2005 AADT ranges from 108,000 to 127,000, at the above locations. The northbound AM peak hour

ranges from 4,600 to 5,400, and the southbound AM peak hour ranges from 8,600 to 10,000. The D/C ranges from 1.13 to 1.32. The entire segment will operate at Level of Service "F-15" in 2005.

A twelve lane freeway would be needed to achieve a Level of Service "D-40". A more realistic solution would be to increase transit and explore light rail possibilities along the Southern Pacific right-of-way.

(5) Route Concept

The route concept is an eight lane freeway along this entire segment. The conceptual LOS "D-35" is based upon the assumption that improvements in public transportation and implementation of aggressive TSM measures will provide for the excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

STIP project No. 272C 680 FY 87/88 will bring this segment up to the route concept of 8 lanes. However, efforts also need to be made to implement and encourage the use of transit and other modes. See Section III, REGIONAL CHARACTERISTICS, for the impact of growth in the area on an 8 and 10 lane route concept for these segments.

H. Segment H

(04-CC-680, PM R8.75-R12.61)

This segment begins in northern Danville at El Pintado Road. The terrain is very hilly east of the freeway with virtually no development south of the Stone Valley Road interchange. North of this, the eastern residential area consists of very low density, upper-middle class housing set into the hills, interspersed with a few older country-style homes. The area west of I-680 is flat valley land, covered with upper middle class residences and a business strip along the Danville Boulevard frontage road. This is the unincorporated "Alamo" area. The Rudgear Road

interchange lies within the city limits of Walnut Creek.

(1) Existing Facilities

(a) Highway Facilities

This segment consists of 3 lanes in each direction, with 0-ft. to 10-ft. outside shoulders and a median that varies from 36-ft. to 46-ft. Although the terrain is hilly east of the freeway, the roadbed traverses flat lands with a grade of 0% to 3%.

(b) 1984 STIP Projects

FY 84/85
PM R8.2/15.8 Ramp roadway reconstruction.

FY 85/86 - FY 98/88
PM R12.3/R15.5 Reconstruct 24/680 freeway to freeway connection.

FY 87/88
PM R0.0/R12.6 Widen to 8 lane freeway.

(c) Public Transit

BART Express Bus routes "D" and "DN" run through this segment, from Pleasanton/San Ramon to the Walnut Creek BART Station.

(d) Bicycle

San Ramon Valley Road becomes Danville Boulevard and continues to run parallel to I-680, until it becomes North Main Street north of Rudgear Road. Bicycling is a very feasible form of transportation, as this frontage road provides access to all the Cities in the San Ramon Valley.

(e) Park and Ride

The State-owned 60 space facility at the Rudgear Road/I-680 interchange will be

constructed and ready for operation in FY 85/86.

(f) Rail

See Segment F.

(2) Current Operating Conditions

The 1982 AADT ranges from 93,000 north of El Pintado Road (PM R8.75) to 101,000 north of Livorna Road (PM R11.28). The northbound AM peak hour ranges from 3,700 to 4,500 while the southbound ranges from 3,400 to 3,600. The V/C ratio ranges from 0.65 (Level of Service "C-50") to 0.79 (Level of Service "D-40").

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

There were 136 total accidents, with 77 injuries and 5 fatalities. The PM peak period (3:00-6:00 PM) accounted for 12.5% of all accidents, and Saturday and Sunday accounted for about 29% of accidents.

The fatality rate is 0.012/MVM and the total accident rate is 0.32/MVM. Both of these rates are lower than the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

The 1995 AADT projections range from 102,000 north of El Pintado Road to 114,000 north of Livorna Road. The AM peak ranges from 4,800 to 6,400 northbound and from 7,200 to 7,900 southbound. Note that the peak direction has changed from southbound in 1982 to northbound in 1995. The D/C ratio ranges from 0.95 (Level of Service "E-30") to 1.04 (Level of Service "F-25").

The 2005 AADT ranges from 129,000 north of El Pintado Road to 141,000 north of Stone Valley Road. The northbound AM peak ranges from 5,500 to 6,400, and the southbound peak ranges from 10,200 to 12,000. The D/C ratio ranges from 1.34 to 1.58, and the Level of Service is "F-15". See Section III, REGIONAL CHARACTERISTICS, for the impact of

growth in the area on an 8 lane route concept for these segments.

(5) Route Concept

The route concept is an eight lane freeway along this entire segment. The conceptual LOS "D-35" is based upon the assumption that improvements in public transportation and implementation of TSM measures will provide for excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

STIP project No. 272C 680 FY 87/88 will bring this segment up to the route concept of 8 lanes. However, the projected traffic demand indicates the need for more than ten lanes to achieve LOS "D-40." Transit usage and other alternate modes will be needed to alleviate anticipated congestion. Utilizing the Southern Pacific right-of-way for light rail and construction of a parallel route are two possible alternatives.

I. Segment I

(04-CC-680, PM R12.61-14.38)

This segment traverses through the southern portion of Walnut Creek, north to the "Y" junction of I-680 and Route 24 west. This junction is presently the worst bottleneck along Route 680. The residential areas on either side of I-680 are composed primarily of middle to upper middle class single family housing. East of the freeway, Main Street is the primary business arterial that leads to downtown Walnut Creek.

(1) Existing Facilities

(a) Highway Facilities

This segment varies from 3 to 4 lanes in each direction. The outside shoulders vary from 0 ft. to 10 ft. and the median varies from 16 ft. to 99 ft. The terrain is flat, with grades of 0-3%.

(b) 1984 STIP Projects

FY 84/85
PM R8.2/15.8 Ramp roadway reconstruction.

FY 85/86 to FY 87/88
PM R12.3/15.5 Reconstruct 24/680 freeway to freeway connection.

FY 86/87
PM R12.6/R17.7 Construct bike path.

(c) Public Transit

Central Contra Costa Transit Authority provides service throughout this segment.

(d) Bicycle

The 1983 STIP includes a bike path to be constructed along the abandoned SP right-of-way, from Rudgear Road to Monument Boulevard in FY 86-87.

(e) Park and Ride

See Segment H.

(f) Rail

See Segment F.

(2) Current Operating Conditions

The 1982 AADT ranges from 92,000 north of South Main Street (PM 13.08) to 112,000 north of Newell Avenue (PM 13.67). The AM peak hour ranges from 4,100 to 4,900 northbound and from 3,000 to 3,700 southbound. The V/C ratio ranges from 0.62 to 0.72. The segment presently operates at Level of Service "F-15", as traffic bottlenecks at the I-680/Rt. 24 Interchange.

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

There were 294 total accidents, with 145 injuries and 1 fatality. About 31% of these accidents

occurred during the PM peak period (3:00-6:00 PM). The fact that almost 48% of all accidents were rear-end collisions indicates sudden slowing or stop and go traffic, due to heavy congestion.

The fatality rate is 0.004/MVM, which is lower than the Statewide average. The total accident rate is 1.37/MVM, which is higher than the Statewide average.

(4) Future Operating Conditions

The 1995 traffic projections range from 105,000 north of South Main Street to 140,000 north of Newell Avenue. The AM peak hours range from 5,900 to 7,900 northbound and from 7,200 to 9,600 southbound. Note that the AM peak direction has changed from northbound in 1982 to southbound in 1995. The D/C ratio ranges from 0.95 (Level of Service "E-30") to 1.39 (Level of Service "F-15").

The projected 2005 AADT ranges from 133,000 to 177,000, at the above locations. The northbound AM peak hour ranges from 5,900 to 7,900 and the southbound from 11,000 to 14,700. The D/C ranges from 1.45 to 2.14 and the Level of Service is "F-10". See Section III, REGIONAL CHARACTERISTICS, for the impact of growth in the area on an 8 lane route concept for these segments.

(5) Route Concept

The route concept is an eight lane freeway along this entire segment. The conceptual LOS "D-35" is based upon the assumption that improvements in public transportation and implementation of TSM measures will provide for excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

STIP project No. 224 FY 85/86 will bring this segment up to the route concept of 8 lanes. However, the projected traffic shows freeway needs to be beyond the scope of one route. Improvement of local streets and roads needs to be considered

along with alternate modes such as light rail, HOV, and transit.

J. Segment J

(04-CC-680, PM 14.38-R18.71)

This is presently the most heavily travelled segment of I-680; traffic projections show this to continue through 2005. The segment starts at the Route 24 West Junction in Walnut Creek, passes through the City of Pleasant Hill, and ends at the Route 242 North Junction in Concord. These three cities have large middle to upper middle class suburban communities, and the area is already extensively developed.

North Main Street runs fairly parallel to the freeway from Ygancio Valley Road to Oak Park Boulevard. This commercial business strip is also very overcrowded, as it runs through downtown Walnut Creek. Therefore, it is not a good freeway alternative during the commute peak.

(1) Existing Facilities

(a) Highway Facilities

This segment has 3 to 4 lanes in each direction and predominantly 8 ft. outside shoulders that vary from 7 ft. to 20 ft. The predominantly 16 ft. median varies from 2 ft. to 99 ft. wide. The terrain is flat along the entire segment, with 0-3% grades.

(b) 1984 STIP Projects

FY 84/85
PM R8.2/15.8 Ramp roadway reconstruction.

FY 85/86-FY 87/88
PM R12.3/15.5 Reconstruction 24/680 freeway to freeway connection.
PM 15.6/19.0 Modify I/C's and widen freeway
PM 16.4/16.7 Pleasant Hill BART Parking facilities.

FY 86/87
PM R12.6/R17.7 Construct bike path.

FY 87/88
PM 15.6/R19.0 Modify IC's and construct auxiliary lanes.
PM R17.5/R18.7 SB Auxiliary lane relocate Gregory off-ramp.

(c) Public Transit

Central Contra Costa Transit Authority provides service throughout this segment.

(d) Bicycle

See Segment I.

(e) Park and Ride

There are no existing State-owned facilities along this segment, and none are planned at this time.

(f) Rail

The abandoned Southern Pacific right-of-way continues through this segment, and could be a viable light rail alternative.

There are existing BART Stations in Lafayette, Walnut Creek, Pleasant Hill and Concord; all of these are located on the Concord line. The Concord line runs parallel to I-680 between the Walnut Creek and Pleasant Hill Stations.

BART trains are very crowded during the peak periods. Patronage is expected to reach the maximum capacity of the trains in 1985. Also, the BART parking situation will be a serious constraint after 1989.

The 1983 STIP includes adding a parking structure at the Pleasant Hill BART Station (1,200 new spaces). This project is proposed for FY 86/87.

(2) Current Operating Conditions

The 1982 AADT ranges from 122,000 north of Ygnacio Valley Road (PM 14.85) to 153,000 north of the Route 24 west junction (PM 14.38). The AM peak hour ranges from 4,200 to 5,400 northbound and from 4,200 to 6,300 southbound. The V/C ratio ranges from 0.57 (Level of Service "B-50") to 1.00 (Level of Service "F-25").

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

There were 883 total accidents on this segment, with 300 injuries and 6 fatalities.

Due to the heavy congestion, the PM peak period (3:00-6:00 PM) accounts for almost 35% of the daily accidents. About 59% of all accidents are caused by slowing, stopping, or stopped traffic.

The fatality rate is 0.009/MVM, which is lower than the Statewide average. However, the total accident rate, at 1.35/MVM, is higher than the Statewide average.

(4) Future Operating Conditions (1995 and 2005)

The 1995 projected AADT ranges from 154,000 north of Ygnacio Valley Road to 195,000 north of the Route 24 west Junction. The AM peak hour ranges from 6,800 to 8,600 northbound and from 10,200 to 12,900 southbound. The Level of Service is predominately "F" with a D/C ratio ranging from 0.89 (LOS "D-40") to 1.62 (LOS "F-15).

The 2005 projections range from 176,000 to 222,000 at the above locations. The northbound AM peak hour ranges from 8,100 to 9,700 and the southbound ranges from 14,300 to 18,000. The Level of Service is "F-10", with a D/C ratio ranging from 1.25 to 2.24.

(5) Route Concept

The route concept is a ten lane freeway along this entire segment. The conceptual LOS "D-35" is based on the assumption that improvements in public

transportation and implementation of TSM measures will provide for excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

Widen to 10 lanes. The projected traffic predicts travel demands that are beyond the scope of one route. Improvements of local streets and roads needs to be considered, along with alternate modes. The Southern Pacific right-of-way continues through this segment, and is a possible light rail corridor.

K. Segment K

(04-CC-680, R18.71-21.19)

This segment starts at the junction of Route 242 North and continues north through Concord and Pleasant Hill, to the unincorporated Pacheco area at the Route 4 Junction. The City of Clayton is also in the vicinity east of Concord. The Willow Pass Road area is comprised of several office parks and complexes. Diablo Valley College is located to the west of the freeway, and is a major trip attraction. The County-owned Buchanan Field general aviation airport is located to the west of the freeway, between Concord Avenue and Route 4.

(1) Existing Facilities

(a) Highway Facilities

There are 2 to 3 lanes in each direction, with 10-ft. outside shoulders and a predominantly 46-ft. median. The terrain is rolling, with 0-3 grades.

(b) 1985 STIP Projects

FY 86/87

PM 19.1/19.8	Modify Concord Avenue auxiliary lane.
PM 15.6/19.0	Modify I/C's and construct auxiliary lane.

FY 88/89
PM 19.1/24.3 Widen to 6 lanes.
PM 20.4/22.0 Upgrade freeway to freeway connectors.

(c) Public Transit

Central Contra Costa Transit Authority provides service throughout this segment.

(d) Bicycle

Contra Costa Boulevard/Pacheco Boulevard is the route that most nearly parallels I-680 along this segment and is used by bicyclists.

(e) Park and Ride

There are no existing State-owned facilities along this segment, and none are proposed at this time.

(f) Rail

The abandoned Southern Pacific right-of-way continues north to Clayton Road, and is being considered for light rail possibilities.

(2) Current Operating Conditions

The 1982 AADT ranges from 72,000 north of the Concord Avenue interchange (PM 19.86) to 82,000 north of the Route 242 north junction (PM 21.19). The northbound AM peak hour ranges from 2,500 to 3,300 while the southbound ranges from 2,300 to 2,400. The V/C ratio ranges from 0.58 to 0.74, and the Level of Service is "C-50".

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

There were 193 total accidents, with 72 injuries and 2 fatalities. Almost 22% of the daily accidents occurred during the PM peak period (3:00-6:00 PM).

The fatality rate is 0.009/MVM and the total accident rate is 0.91/MVM. Both of these rates are below the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

The 1995 AADT projections range from 93,000 north of Concord Avenue to 113,000 north of the Route 242 junctions. The AM peak ranges from 4,100 to 4,900 northbound and from 6,100 to 7,400 southbound. The D/C ratio ranges from 1.07 to 1.30, which is at Level of Service "F-25".

The 2005 AADT ranges from 112,000 to 135,000, at the above-mentioned locations. The northbound AM peak ranges from 4,500 to 5,500 and the southbound peak ranges from 8,400 to 10,100. The D/C ratio ranges from 1.47 to 1.77, for a Level of Service "F-15".

(5) Route Concept

The route concept is an eight lane freeway along this entire segment. The conceptual LOS "D-35" is based on the assumption that improvements in public transportation and implementation of TSM measures will provide for excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

The projected traffic shows the need for a ten to twelve lane freeway along this segment in order to achieve Level of Service "D-40". Due to the intensive development along this route, a 10 to 12 lane facility would not seem to be environmentally feasible. Therefore, increased utilization of transit, HOV lanes, auxiliary lanes and other modes should be encouraged.

L. Segment L

(04-CC-680, PM 21.19-25.46)

Commuter traffic drops off sharply north of the Route 4 junction as the surrounding area becomes less populated. The City of Martinez to the west is characterized by its large oil refineries and many County facilities, as it is the Contra Costa County seat. The Martinez residential area is predominantly older middle class

1983/4 ROUTE CONCEPT STUDY
ROUTE 680

EGMENT	CO	MILE POST	DESCRIPTION	1982 AADT	1982 AM AH	1982 PK BK	1982 NO L S/N	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM AH	1995 PK BK	1995 NO L S/N	1995 V/C	1995 LOS	1995 LN	2005 AADT	2005 AM AH	2005 PK BK	2005 NO L S/N	2005 V/C	2005 LOS	2005 LN	TRUCK % AADT	TRUCK % PK HR
	CC	R11.28	LIVORNA ROAD I/C	101	45	35	3	0.79	D	3	114	64	79	4	1.04	F	5	140	64	120	4	1.58	F	7	7	4
I	CC	R12.61	RUDGEAR ROAD I/C	102	47	31	3/4	0.62	F	3	116	65	79	3/4	1.39	F	5	146	65	122	3/4	2.14	F	8	7	4
	CC	13.08	SOUTH MAIN STREET	92	41	30	3	0.72	F	3	105	59	72	4/5	0.95	E	5	133	59	110	4/5	1.45	F	7	7	4
	CC	13.67	NEWELL AVENUE	112	49	37	4	0.64	F	4	140	79	96	5/6	1.01	F	6	177	79	147	5/6	1.55	F	9	7	4
J	CC	14.38	JCT. ROUTE 24 WEST	153	54	63	3	1.00	F	4	195	86	129	6	1.13	F	7	222	97	180	6	1.58	F	10	6	4
	CC	14.85	YGNACIO VALLEY RD.	122	42	50	3	0.88	F	4	154	68	102	6	0.89	D	6	176	77	143	6	1.25	F	9	7	4
	CC	15.61	NORTH MAIN STREET	146	49	59	4	0.78	D	4	185	81	122	4/5	1.61	F	8	211	91	170	4/5	2.24	F	10	7	4
	CC	16.40	GEARY ROAD	125	48	56	3	0.98	E	4	157	69	103	5/6	1.08	F	6	179	77	144	5/6	1.52	F	9	7	4
	CC	16.89	OAK PARK BLVD.	144	43	42	4	0.57	C	4	180	82	123	4/5	1.62	F	8	214	89	166	4/5	2.18	F	10	7	4
	CC	R17.70	MONUMENT BLVD.	129	46	48	4	0.63	C	4	164	72	108	5/6	1.14	F	7	187	81	151	5/6	1.59	F	9	7	4
K	CC	R18.71	JCT. ROUTE 242 NORTH	82	33	24	3	0.58	C	3	113	49	74	3/4	1.30	F	5	135	55	101	3/4	1.77	F	6	7	4
	CC	R19.24	WILLOW PASS ROAD	74	28	23	3/2	0.74	C	2	99	44	66	3	1.16	F	4	119	49	90	3	1.58	F	6	7	4

1983/4 ROUTE CONCEPT STUDY

ROUTE 680

EGMENT	CO	MILE POST	DESCRIPTION	1982 AADT	1982 AM AH	1982 PK BK	1982 NO L S/N	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM AH	1995 PK BK	1995 NO L S/N	1995 V/C	1995 LOS	1995 LN	2005 AADT	2005 AM AH	2005 PK BK	2005 NO L S/N	2005 V/C	2005 LOS	2005 LN	TRUCK % AADT	TRUCK % PK HR
	CC	19.86	CONCORD AVENUE	72	25	23	2	0.66	C	2	93	41	61	3	1.07	F	4	112	45	84	3	1.47	F	5	8	5
L	CC	21.19	JCT. ROUTE 4	63	26	25	2	0.68	C	2	91	35	66	4	0.87	D	4	114	40	93	4	1.22	F	6	5	3
	CC	22.43	EAST MARTINEZ	49	20	20	2	0.53	C	2	69	27	50	3	0.66	C	3	86	30	71	3	1.25	F	5	5	3
	CC	22.70	ARTHUR ROAD	52	22	21	2	0.58	C	2	74	28	52	2/3	1.37	F	4	92	31	73	2/3	1.92	F	5	5	3
	CC	24.26	ESCOBAR STREET	51	21	21	2	0.55	C	2	74	29	54	2/3	1.42	F	4	94	32	76	2/3	2.00	F	5	5	3
	CC	25.46	MARTINEZ-BENICIA BR.																							

EXPLANATION TO TRAFFIC VOLUME TABLES

COLUMN	DESCRIPTION
SEGMENT	Route Segment
CO	County Abbreviations
MILE POST	Mile Post in County
DESCRIPTION	Description of the Route Segment
AADT	Annual Average Daily Traffic Count (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 Traffic to Max. No. of Traffic/Hr.
LOS	Level of Service According to the Functional Classification of the Route Relative to the Terrain and Facility
LN	Number of Lanes Needed to Meet LOS "D" One Direction
% TRUCK AADT	Truck % of Average Annual Daily Traffic Count
% TRUCK PK HR	Truck % at Peak Hour

EXHIBIT A

I-680 EXISTING FACILITIES

Route Segment	County	From PM	To PM	Length (Miles)	Traveled Way Width (Feet)	Number of Lanes	Outside Shoulder Width (Feet)	Median Width (Feet)
A	SCl	M0.00	M6.17	6.17	48-86	8F	0-10	36
B	SCl	M6.17	M9.94	3.77	36-68	6F	10-13	36
C	Ala	M0.00	R6.40	6.52	36	6F	10, 13	20-99
D	Ala	R6.40	R15.26	8.34	24-48	4F,5F	10	34-90
E	Ala	R15.26	R21.88	6.62	24-51	4F,6F	0-10	46-60
F	CC	R0.00	R4.18	4.18	36,51	6F	0-10	46
G	CC	R4.18	R8.75	2.37	36,51	6F	0-10	46
H	CC	R8.75	R12.61	3.86	36-75	6F	0-10	36-46
I	CC	R12.61	14.38	1.88	24.48	6F	0-10	16-99
J	CC	14.38	R18.71	4.33	24-60	6F	7-20	2-99
K	CC	R18.71	21.19	2.68	24-56	4F,6F	10	22,46
L	CC	21.19	25.46	4.27	24-39	4F	0-10	10-46

EXHIBIT B

RELATIONSHIP OF LEVEL OF SERVICE TO OPERATING SPEED

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

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

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

* Not all conditions are represented by this chart.

EXHIBIT C

I-680 ACCIDENT REPORT BETWEEN 1/81 AND 12/83

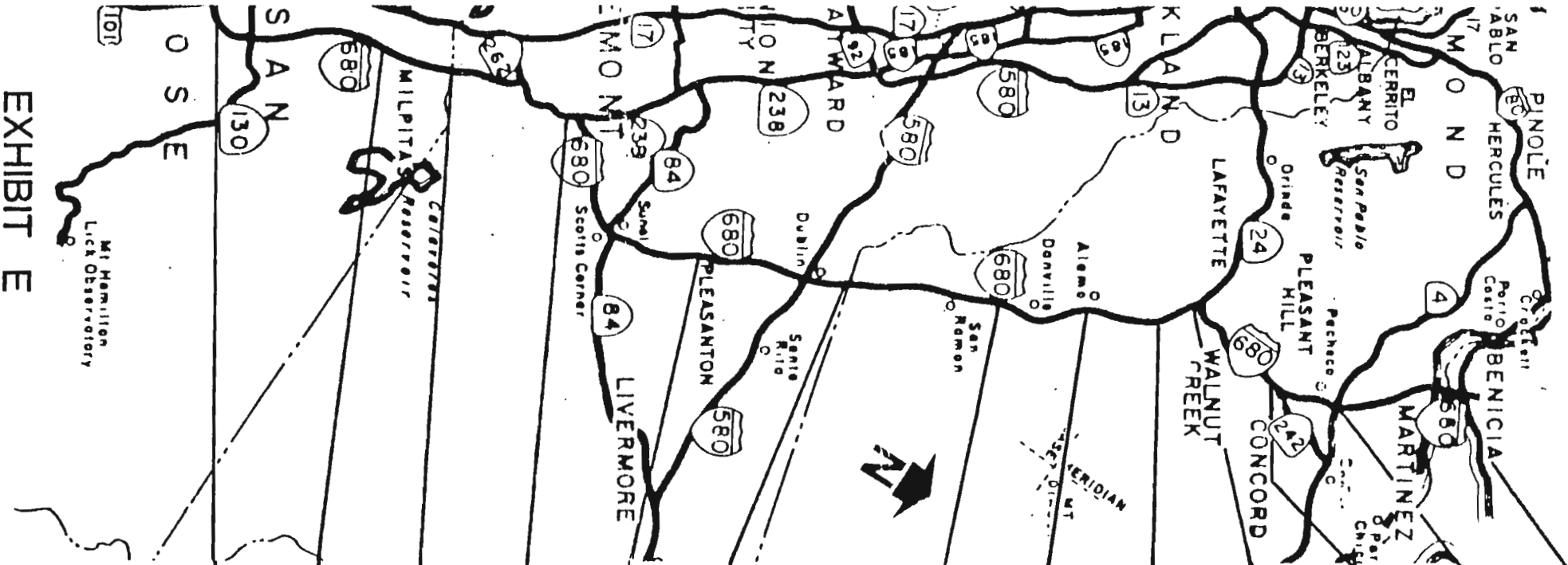
LOCATION PM	SEGMENT	NO. OF ACCIDENTS TOTAL	FATAL	INJ.	F+I	PERSONS KILLED	ACCIDENT RATE* FATAL	F+I	TOTAL	STATEWIDE RATE*□ FATAL	F+I	TOTAL
SCL 0.00 to 6.17	A	532	4	207	211	4	.008	.45	1.14	.007	.30	.79
SCL 6.17 to 9.94	B	109	1	53	54	1	.004	.23	.47	.007	.31	.84
ALA 0.00 to 6.40	C	163	1	74	75	1	.002	.19	.41	.007	.33	.88
ALA 6.40 to 15.26	D	272	9	113	122	12	.017	.24	.54	.023	.36	.82
ALA 15.26 to 21.88	E	202	3	85	88	3	.007	.22	.51	.017	.42	1.03
CC 0.00 to 4.18	F	98	2	41	43	2	.006	.14	.33	.014	.32	.80
CC 4.18 to 8.75	G	157	3	65	68	3	.007	.16	.37	.009	.41	1.08
CC 8.75 to 12.61	H	136	5	47	52	5	.012	.12	.32	.013	.43	1.12
CC 12.61 to 14.38	I	294	1	103	104	1	.004	.48	1.37	.012	.45	1.19
CC 14.38 to 18.71	J	883	6	300	306	7	.009	.47	1.35	.012	.49	1.28
CC 18.71 to 21.19	K	193	2	72	74	2	.009	.34	.91	.018	.49	1.22
CC 21.19 to 25.46	L	189	1	82	83	1	.003	.32	.72	.017	.39	.95

*Rates are per MVM (million vehicle miles)

*□Statewide averages for this type of facility

EXHIBIT D

EXHIBIT E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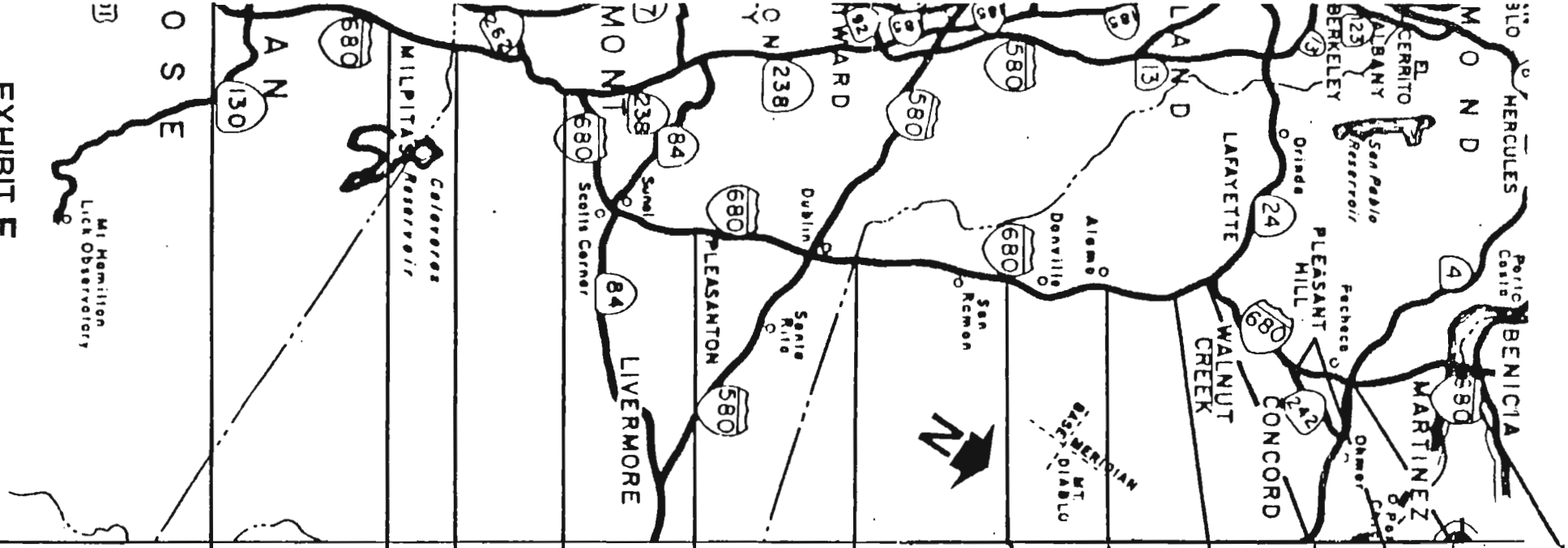
MILPITAS
Calaveras Reservoir
Mt Hamilton Lick Observatory
Scotts Corner
LIVERMORE
PLEASANTON
Sunol
Dublin
Santa Rita
San Ramon
Alamo
Danville
Orinda
LAFAYETTE
WALNUT CREEK
CONCORD
PLEASANT HILL
Pacheco
MERIDIAN
ALBANY
BERKELEY
EL CERRITO
San Pablo Reservoir
SAN PABLO
PINOLE
HERCULES
Pacheco
Port Chicago
MARTINEZ
BENICIA
Crockett
Rodeo
Pinole
Hercules
Pacheco
Port Chicago
Martinez
Benicia

EXHIBIT F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RICHMOND
EL CERRITO
ALBANY
BERKELEY
San Pablo Reservoir
Orinda
LAFAYETTE
PLEASANT HILL
Pacheco
Port Costa
BENICIA
MARTINEZ
Ohmer
WALNUT CREEK
CONCORD
Alamo
Danville
San Ramon
MT. DIABLO BASE & MERIDIAN
Dublin
Sunol
Scotts Corner
PLEASANTON
LIVERMORE
Calaveras Reservoir
MILPITAS
Mt Hamilton Lick Observatory
680
580
238
84
24
130
13
4
680
680
680

Route I-680 EXHIBIT G

COMPARISON OF FUTURE LOS WITH ROUTE CONCEPT

SEGMENT	NO. LANES/LOS			ROUTE CONCEPT		NEEDS	
	1982	1995	2005	Proposed Lanes	LOS	Lanes	Target LOS
A-SCl-0.00 to 6.17	8-12/C-50	8-12/C-50	8-12/E-30	8-12	E-30	12	D-35
B-SCl-6.17 to 9.94	6-8/C-50	6-8/D-40	6-8/F-25	8	D-35	8	D-35
C-Ala-0.00 to 6.40	6/B-55	6/E-30	6/F-15	8 & 10	E-30 D-35	10	D-35
D-Ala-6.40 to 15.26	4-6/D-40	6/E-35	6/F-15	8 & 10	E-30 D-35	10	D-35
E-Ala-15.26 to 21.88	4-6/D-40	6/D-40	6/F-15	8	E-35	10	D-35
F-CC-0.00 to 4.18	6/B-55	8/C-50	8/E-30	8	E-30	10	D-35
G-CC-4.18 to 8.75	6-8/C-50	8/E-35	8/F-15	8	F-15	12	D-35
H-CC-8.75 to 12.61	6/D-40	8/F-25	8/F-15	8	F-15	14	D-35
I-CC-12.61 to 14.38	6-8/F-15	8/F-15	8/F-10	8	F-10	18	D-35
J-CC-14.38 to 18.71	6-8/F-25	8/F-15	8/F-10	10	F-15	20	D-35
K-CC-18.71 to 21.19	4-6/C-50	6/F-25	6/F-15	8	E-30	12	D-35
L-CC-21.19 to 25.46	4/C-50	6/F-25	6/F-15	8	E-30	12	D-35

ROADWAY LEVEL OF SERVICE

EXPLANATION

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

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

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

Stable flow conditions
Operating speeds beginning to be restricted

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

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

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

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

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

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

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

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

EXHIBIT H

single-family housing. The Contra Costa County Sanitation District facility is located in the northeastern quadrant of the I-680/Route 4 junction.

This segment ends at the Solano County line, midway over the Martinez, Benicia Bridge, which spans the Carquinez Strait. In Solano County, I-680 continues for another 12.5 miles, where it joins I-80 at the Cordelia Junction.

(1) Existing Facilities

(a) Highway Facility

There are 2 lanes in each direction with 0-ft. to 10-ft. shoulders. The median varies from 10-ft. before the bridge approach to 46-ft. north of the Route 4 junction. This segment traverses rolling hills, with grades of 3% to 6%.

(b) 1984 STIP Projections

FY 87/88

PM 19.1/24.3	Widen to 6 lanes
PM 20.4/22.0	Upgrade freeway to freeway connectors.

(c) Public Transit

Two BART Express buses presently serve Martinez: The "M" Route from the Concord Station, and the "Z" Route from Richmond.

(d) Bicycle

Pacheco Boulevard continues to be an arterial route through this segment. It turns into Pine Street in downtown Martinez, and is utilized by bicyclists.

(e) Park and Ride

There are no existing or proposed State-owned facilities along this segment.

(f) Rail

There are no existing or proposed rail facilities along this segment.

(2) Current Operating Conditions

The 1982 AADT ranges from 49,000 north of the East Martinez interchange (PM 22.43) to 63,000 north of the Route 4 junction (PM 21.19). The northbound AM peak hour ranges from 2,000 to 2,600, while the southbound ranges from 2,000 to 2,500. The V/C ratio ranges from 0.53 to 0.68, and the Level of Service is "C-50".

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

There were 189 total accidents on this segment, with 82 injuries and 1 fatality. A litte over 26% of daily accidents occurred during the PM peak period (3:00-6:00 PM). Almost 44% of all accidents were due to slowing, stopping, or stopped vehicles.

Both the fatality rate (0.003/MVM) and the total accident rate (0.72/MVM) are below the Statewide averages.

(4) Future Operating Conditions (1995 and 2005)

The 1995 AADT projections range from 69,000 north of the East Martinez interchange to 91,000 north of the junction of Route 4. The AM peak ranges from 2,700 to 3,500 northbound and from 5,000 to 6,600 southbound. The D/C ratio ranges from 0.66 (Level of Service "C-50") to 1.42 (Level of Service "F-25").

The 2005 AADT ranges from 86,000 to 114,000, at the above locations. The northbound AM peak ranges from 3,000 to 4,000 and the southbound peak ranges from 7,100 to 9,300. The D/C ratio ranges from 1.22 to 2.00, and the Level of Service "F-15".

The projected traffic shows the need for a ten to twelve lane freeway along this segment in order to achieve a Level of Service "D-40". Due to the intensive development along this route, a 10 to 12

lane facility would not seem to be environmentally feasible. Therefore, increased utilization of transit and other modes should be considered.

(5) Route Concept

The route concept is an eight lane freeway along this entire segment. The conceptual LOS "D-35" is based on the assumption that improvements in public transportation and implementation of TSM measures such as HOV lanes will provide for excess demand. If these assumptions are not realized, the concept will need to be reassessed.

(6) Improvements

Widen from 6 to 8 lanes. A new 4 lane Benicia-Martinez Bridge will be necessary to accommodate this route concept.

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 medeling 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 elments of the conventional "four-step" procedure for travel demand forecasting as summarized in the FHWA/UMTA outline for UTPS models and as described in the NCHRP guide for urban travel estimations ("Quick Response").

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

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

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

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

4. Modal Split: Implies; it was assumed that, on the segments evaluated, modal percentages and occupacy 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.

TRAFFIC PROJECTION

1983/4 ROUTE CONCEPT STUDY
ROUTE 680

EGMENT	CO	MILE POST	DESCRIPTION	1982 AADT	1982 AM AH	1982 PK BK	1982 NO L S/N	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM AH	1995 PK BK	1995 NO L S/N	1995 V/C	1995 LOS	1995 LN	2005 AADT	2005 AM AH	2005 PK BK	2005 NO L S/N	2005 V/C	2005 LOS	2005 LN	TRUCK % AADT	TRUCK % PK HR
A	SCR																									
	SCR	M0.00	JCT. RTE. 101 & RTE. 280 WEST	67	34	34	4/6	0.45	B	4	84	38	47	4/6	0.62	C	4	96	47	57	4/6	0.75	C	4	3	2
	SCL	0.40	KING ROAD	78	47	47	6	0.41	B	6	90	48	59	6	0.52	C	6	102	62	75	6	0.66	C	6	2	2
	SCL	M1.21	JACKSON AVENUE	68	40	40	5/4	0.53	C	4	83	47	57	5/4	0.62	C	4	100	59	72	5/4	0.78	D	4	2	2
	SCL	M1.43	CAPITOL EXPRESSWAY	59	39	32	4	0.51	C	4	83	53	53	4	0.70	C	4	100	60	73	4	0.96	E	5	2	2
	SCL	M1.74	JCT. ROUTE 130	73	47	38	5	0.49	B	5	78	49	49	5	0.52	C	5	95	59	72	5	0.76	D	5	3	2
	SCL	M2.38	McKEE ROAD	68	43	36	4	0.57	C	4	73	45	45	4	0.59	C	4	88	57	69	4	0.91	E	5	3	2
	SCL	M3.84	BERRYESSA ROAD	70	41	41	5	0.43	B	5	63	37	46	5	0.48	B	5	81	46	69	5	0.73	C	5	3	2
	SCL	M4.80	HOSTETTER ROAD	62	36	36	4	0.47	B	4	63	37	46	4	0.61	C	4	81	46	69	4	0.91	E	5	4	3
	SCL	M5.09	CAPITOL AVENUE	60	36	36	4	0.47	B	4	57	35	43	4	0.57	C	4	72	42	63	4	0.83	D	4	5	3
B	SCL	M6.17	MONTAGUE EXPRESSWAY	56	30	37	4	0.49	B	4	54	29	44	4	0.58	C	4	68	35	64	4	0.84	D	4	6	4
	SCL	M7.65	JCT. ROUTE 237	57	31	37	3	0.65	C	3	56	31	46	3	0.81	D	3	70	36	67	3	1.18	F	4	6	4
	SCL	M8.50	JACKLIN ROAD	54	17	30	3	0.53	B	3	50	23	43	3	0.75	D	3	66	29	67	3	1.18	F	4	10	7

1983/4 ROUTE CONCEPT STUDY

ROUTE 680

SEGMENT	CO	MILE POST	DESCRIPTION	1982 AADT	1982 AM AH	1982 PK BK	1982 NO L S/N	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM AH	1995 PK BK	1995 NO L S/N	1995 V/C	1995 LOS	1995 LN	2005 AADT	2005 AM AH	2005 PK BK	2005 NO L S/N	2005 V/C	2005 LOS	2005 LN	TRUCK % AADT	TRUCK % PK HR
	SCL	M9.94	SANTA CLARA CO. LINE																							
C	ALA	M0.00	ALAMEDA COUNTY LINE																							
	ALA	M0.13	SCOTT CREEK ROAD	52	17	29	3	0.51	B	3	48	22	41	3	0.72	C	3	64	28	66	3	1.16	F	4	13	3
	ALA	M2.38	ROUTE 262 (MISSION BOULEVARD)	56	18	31	3	0.54	B	3	66	30	55	3	0.96	E	4	88	38	89	3	1.56	F	5	16	5
	ALA	M4.02	DURHAM ROAD	56	18	31	3	0.54	B	3	63	28	52	3	0.91	E	4	84	36	84	3	1.47	F	5	16	5
	ALA	M5.37	WASHINGTON BLVD.	55	18	30	3	0.53	B	3	63	28	52	3	0.91	E	4	84	34	80	3	1.40	F	5	15	5
D	ALA	R6.40	JCT. ROUTE 238 (MISSION BOULEVARD)	56	18	31	2/3	0.82	D	2	65	29	54	3/4	0.95	E	4	82	34	80	3/4	1.40	F	5	16	10
	ALA	R7.48	VARGAS ROAD	56	18	31	3	0.54	C	2	63	29	53	4	0.70	C	4	82	34	79	4	1.04	F	5	16	10
	ALA	R8.31	SHERIDAN ROAD	55	18	30	3/2	0.53	C	2	63	28	52	4/3	0.68	C	4	80	33	77	4/3	1.01	F	5	16	10
	ALA	R9.71	ANDRADE ROAD	56	18	31	2	0.82	D	2	63	28	52	3	0.91	E	4	80	33	77	3	1.35	F	5	16	10
	ALA	R11.04	JCT. ROUTE 84 WEST	52	17	29	2/3	0.76	D	3	63	30	56	3	0.98	E	4	80	36	83	3	1.46	F	5	18	9
	ALA	R11.85	JCT. ROUTE 84 EAST	50	16	27	2	0.71	C	2	54	26	49	3	0.86	D	3	68	31	72	3	1.26	F	5	16	9
	ALA	R12.44	SUNOL ROAD	53	17	29	2	0.76	D	2	59	28	52	3	0.91	E	4	74	33	77	3	1.35	F	5	16	9

1983/4 ROUTE CONCEPT STUDY
ROUTE 680

EGMENT	CO	MILE POST	DESCRIPTION	1982 AADT	1982 AM AH	1982 PK BK	1982 NO L S/N	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM AH	1995 PK BK	1995 NO L S/N	1995 V/C	1995 LOS	1995 LN	2005 AADT	2005 AM AH	2005 PK BK	2005 NO L S/N	2005 V/C	2005 LOS	2005 LN	TRUCK % AADT	TRUCK % PK HR
E	ALA	R15.26	HACIENDA/SUNOL BLVD.	49	16	27	2	0.71	C	2	48	24	44	3	0.77	D	3	61	28	65	3	1.14	F	4	16	9
	ALA	R16.75	BERNAL AVENUE	52	17	29	2	0.76	D	2	51	28	42	3	0.74	C	3	65	32	60	3	1.05	F	4	17	9
	ALA	R20.06	JCT. ROUTE 580																							
	ALA	R21.83	ALAMEA COUNTY LINE	62	20	34	3	0.60	C	3	64	33	50	4	0.66	C	4	81	38	70	4	0.92	E	5	14	5
F	CC	R0.00	CONTRA COSTA CO. LINE																							
	CC	R0.01	ALCOSTA BLVD.	63	22	27	3	0.47	B	3	69	35	53	4	0.70	C	4	87	40	75	4	0.99	E	5	13	5
G	CC	R4.18	CROW CANYON ROAD	79	30	36	3	0.63	C	3	86	40	60	4	0.79	D	4	108	46	86	4	1.13	F	6	9	5
	CC	R6.76	SYCAMORE VALLEY	87	38	37	3	0.67	C	3	92	43	64	4	0.84	D	4	116	49	91	4	1.20	F	6	7	4
	CC	R7.55	DIABLO ROAD	88	38	37	4	0.50	B	4	98	46	69	4	0.91	E	5	123	53	98	4	1.29	F	6	7	4
	CC	R8.18	EL CERRO BLVD.	92	38	37	3	0.67	C	3	101	47	70	4	0.92	E	5	127	54	100	4	1.32	F	6	7	4
H	CC	R8.75	EL PINTADO ROAD I/C	93	37	36	3	0.65	C	3	102	48	72	4	0.95	E	5	129	55	102	4	1.34	F	6	7	4
	CC	R10.37	STONE VALLEY ROAD I/C	98	43	34	3	0.75	D	3	111	63	77	4	1.01	F	5	141	63	117	4	1.54	F	7	7	4