FINAL

JUN - 4 1985

SUMMARY
ROUTE CONCEPT REPORT
ROUTE 980
ALA 0.056 to 2.036

This report defines the development concept for Route 980 in District 4 for a 20-year planning period (1985-2005).

Route Concept

Segment A: ALA 0.056 to 2.036 D-40 6-Lane Freeway

Concept Rationale

Route 980 is mainly a commuter route that serves as a connector from Route 880 to Route 580 in Oakland. At this point, it connects with I-24 which proceeds easterly through Contra Costa County.

Areas of Concern

At the present time, there are both AM and PM congestion and accident related problems on Castro and Brush Streets. These two streets are temporarily being utilized at this time until the remainder of Route 980 can be completed. The estimated date of completion is April 1985.

Improvements

It is anticipated that both the congestion and accident problems will be alleviated by the completion, in April 1985, of the six-lane freeway facility currently under construction.

ROUTE CONCEPT REPORT

ROUTE 980

ALA 0.056 to ALA 2.036

Prepared under the direction of:

Cecil L. Smith 6/5/85

CECIL L. SMITH, Chief Date
Transportation Planning
District 4

Recommended Approval:

John Vostrez 6-11-85

JOHN VOSTREZ Date
Deputy District Director
Planning and Programming

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

Approved:

Burch Bachtold 6/13/85

BURCH C. BACHTOLD Date
District Director of
Transportation

Approved:

D. L. Wieman 5-16-86

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

Approved:

Allan H. Hendrix 3/5/86

ALLAN HENDRIX, Chief Date
Division of Highways and
Programming

Approved:

Vince Paul 4/22/86

VINCE PAUL, Chief Date
Division of Project
Development

I. Route Description

Route 980 is approximately 2 miles long and contained entirely within the County of Alameda.

The legislative description is as follows:

Route 980 is from Route 880/17 in Oakland to Route 580.

Route 980 is a part of the Interstate System. It is functionally classified as an urban principle arterial.

II. Purpose of Route

Route 980 is used primarily for commuter and commercial traffic.

III. Route Segment

A. Segment A (04-Ala-980 PM 0.06-2.04)

This segment runs from Route 880/17 to Route 580. It is located in an area where commuter traffic is very heavy.

(1) Existing Facilities

a. Highway Facilities

This segment is approximately 2.0 miles long, with 2-5 lanes in each direction. The shoulders are 0 to 11 ft. and the median varies from 54 to greater than 100 feet. The reason for the wide median is that BART rail lines travel in the middle of Route 980 in some areas. The terrain is flat with 0 to 3% grades.

At present, the freeway begins at 12th Street and proceeds east to the 580/24 interchange. From 12th Street to Route 880/17, the alignment follows Castro Street eastbound and Brush Street westbound. A six lane freeway is currently under construction between 12th Street and Route 880(17).

b. 1984 STIP Projects

FY 84/85 Ala 980
PM T0.1/.4 Highway Planting

c. Public Transit

There are presently four AC Transit Bus lines that operate along this route. One of the East Bay Express lines, and two of the AC Transit Bus lines operate during peak hours only.

d. Bicycle

Bicycle riding is prohibited on this route; however, West Steet, which parallels Route 980 is a suggested bicycle commute route. West Street is part of an extensive bike system in the East Bay.

e. Park and Ride

There are no park and ride lots located along Route 980.

f. Rail

There are presently three BART lines that run parallel to this segment; Concord/Daly City, Richmond/Fremont, and Richmond/Daly City.

(2) Current Operating Conditions

The 1982 AADT range from 24,000 east of the Route 17/980 junction to 42,000 west of the Route 580/980 junction. The AM peak hour traffic ranges from 1,300 to 1,700 eastbound and from 1,300 to 3,100 westbound. The V/C ratio is .87 and the Level of Service is "D-40".

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

There was a total of 221 accidents; 2 people were killed and 65 injured. 59.4% of the accidents occurred in the eastbound lanes. The majority of the accidents happened in the time periods of 2 PM to 5PM. Also most of the accidents occurred on the days of Monday through Friday. This indicates strong commuter usage. The accident rate on

this route (3.20 per MVM) well exceeds the expected rate for this type of facility (1.38 per MVM).

(4) Future Operating Conditions

The 1995 and (2005) projected AADT ranges from 31,000 (35,000) east of the Route 17/980 junction to 53,000 (62,000) west of the Route 580/980 junction. The AM peak hour traffic ranges from 1,600 (1,800) to 2,000 (2,300) eastbound and from 1,600 (1,800) to 3,900 (4,500) westbound. The D/C ratio for 1995 is .72 with a Level of Service "C-50", 2005 D/C ratio is .83 with a LOS of "D-40".

(5) Route Concept

The route concept is a six-lane freeway along the entire route.

(6) Improvements

The route concept will be achieved with the completion of the current construction project in April 1985. This project provides for a six-lane freeway from the 580/24 interchange to Route 880/17 in Oakland.

LOCATION MAP
ROUTE 980

ALA 0.06 ALA 2.04	A	

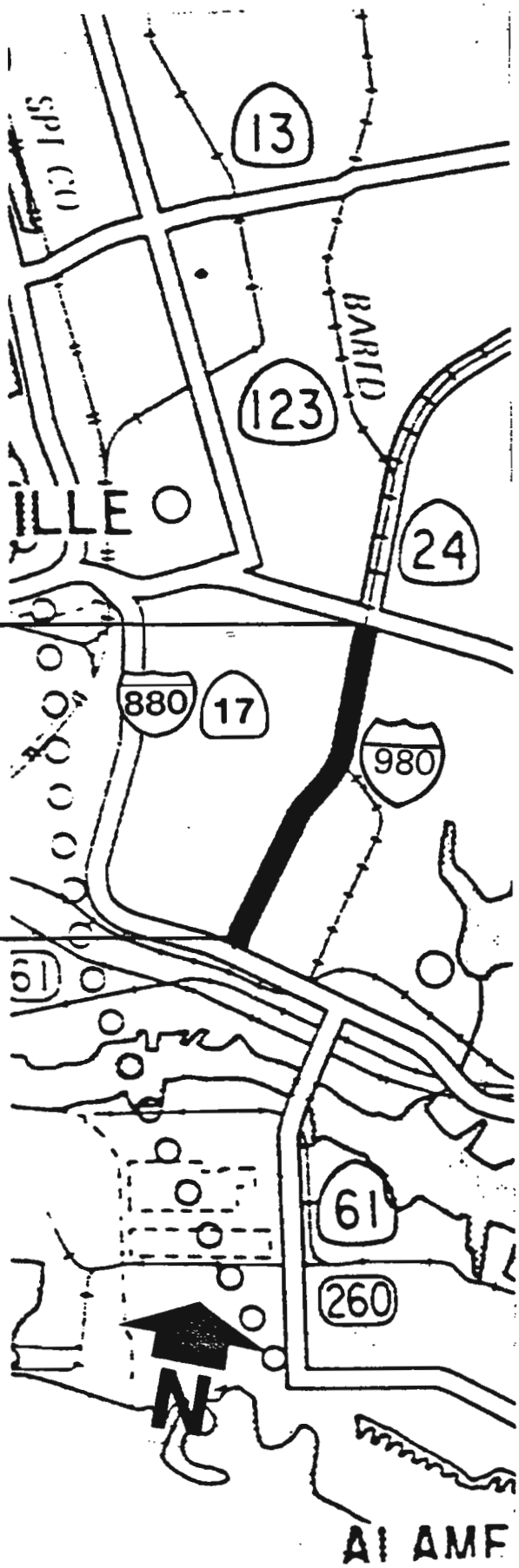

EXHIBIT A

SEGMENT	NO. OF LANES PROPOSED			LEVEL OF SERVICE PROPOSED			TERRAIN	GRADES	ACTUAL	
	PRESENT	1995	2005	PRESENT	1995	2005			Accidents Per MVM	Fatalities Per MVM
ALA 0.06 A ALA 2.04	4-9	6	6	D-40	C-50	D-40	Flat	0-3%	3.20	.029

EXHIBIT B

SEGMENT	AADT. (.000)			P.H.V. (00)			AVE. HWY SPEED	OPERATING SPEED	V/C			YEAR CAPACITY WILL BE REACHED
	1982	1995	2005	1982	1995	2005			1982	1995	2005	
ALA 0.06 A ALA 2.04	24-42	31-53	35-62	13-31	16-39	18-45	65	51	.87	.72	.83	---

ROUTE 980 ACCIDENT REPORT BETWEEN 1/81 to 12/83

Location P.M.	Segment	Total	No of Accidents Fatal	Inj.	F+I	Persons Killed	Persons Injured	Accident Rate * Fatal	F+I	Total	Statewide Rate Fatal	F+I	Total
Ala 0.056 to 2.036	A	221	2	46	48	2	65	.029	.69	3.20	.013	.53	1.38

* per million vehicle mile

TRAVEL DEMAND PROJECTIONS METHODOLOGY (ABSTRACT)

1995 & 2005 Demand Person Trips Projections
34 X 34 ABAG/MTC Region Superdistricts Matrix
Computer-Assisted Four-Step Conventional Gravity Model.
(Housing & Employment based on ABAG's "Projections 83")
December 1983

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

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

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

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

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

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

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

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

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

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

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

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

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

I-980 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	Ala	T0.06	2.04	1.98	24-108	4C, 5F	0-11	54-100

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

Assigned Level of Service	Facility Type	Minimum Operating Speed
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.

TRAFFIC PROJECTION

1983/4 ROUTE CONCEPT STUDY
ROUTE 980 SHEET 1 OF 1

SEGMENT	CO	ROUTE 9 POST MILE	DESCRIPTION	TRUCK % AADT	TRUCK % PK HR	1982 AADT	1982 NB AM AH	1982 NB PK BK	1982 NB NO L	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM AH	1995 PK BK	1995 NO L	1995 V/C	1995 LOS	1995 LN	2005 AADT	2005 AM AH	2005 PK BK	2005 NO L	2005 V/C	2005 LOS	2005 LN
	Ala	T0.06	JCT ROUTE 17																							
		0.3		2	1	24	13	13	2	0.87	D	2	31	16	16	2	1.97	F	3	35	18	18	2	1.20	F	3
		T0.51	14TH STREET																							
A		0.6		2	1	40	17	25	2	0.64	C	2	48	20	30	2	0.83	D	2	56	23	35	2	0.97	E	3
		T0.7±	17TH/18TH STREET																							
		0.8		2	1	42	13	31	2	0.86	D	2	53	17	39	2	1.08	F	3	62	19	45	2	1.25	F	3
		T0.91	JCT ROUTE 580																							
		=2.04																								

Route I-980

COMPARISON OF FUTURE LOS WITH ROUTE CONCEPT

SEGMENT	NO. LANES/LOS			ROUTE CONCEPT		NEEDS	
	1982	1995	2005	Proposed Lanes	LOS	Lanes	Target LOS
A) ALA-0.06-2.04	4/ D-40	6/ C-50	6/ D-40	6	D-40	6	D-40

STRUCTURES ROUTE 980

SEGMENT	BRIDGE NUMBER	NAME OF DESCRIPTION	COUNTY	POST MILE	CITY	LENGTH (PROT)	WIDTH	SIDEWALKS OR CURBS LT	SIDEWALKS OR CURBS RT
		04-ALA-980							
		JCT RTE 17							
	33 481	11TH STREET OC	ALA	T 006	OAK	276	66	10.0	0.6
	33 480	12TH STREET OC	ALA	T 034	OAK	314	54	0.6	10.0
	33 479S	12 ST RAMP SEP	ALA	T 042	OAK	230	32	0.6	0.6
	33 479S	12 ST RAMP SEP	ALA	T 042	OAK	230	32	0.6	0.6
	33 478	14TH STREET OC	ALA	T 050	OAK	430	64	6.0	6.0
	33 477K	17 ST RAMP SEP	ALA	T 059	OAK	475	32	0.6	0.6
	33 477K	17 ST RAMP SEP	ALA	T 059	OAK	475	32	0.6	0.6
	33 505W	16TH ST PMP	ALA	T 063	OAK				
	33 476	17TH STREET OC	ALA	T 067	OAK	252	54	0.6	10.0
A	33 460	18TH STREET OC	ALA	T 072	OAK	238	54		
		TO80 IS 099	ALA	T 080	OAK				
	33 440	SAN PABLO A UC	ALA	111	OAK	960	166		
	33 421R	27TH STREET UC	ALA	133	OAK	1031	79		
	33 4211	27TH STREET UC	ALA	140	OAK	659	79		
	33 349L	29TH STREET UC	ALA	164	OAK	122	163		
	33 349R	29TH STREET UC	ALA	164	OAK	122	169		
	33 134J	30TH STREET UC	ALA	168	OAK	122	32		
	33 134T	30TH STREET UC	ALA	168	OAK	122	32		
	33 350G	30TH STREET UC	ALA	168	OAK	122	48		
	33 350L	30TH STREET UC	ALA	168	OAK	122	55		
	33 350R	30TH STREET UC	ALA	168	OAK	122	55		
	33 357	34TH STREET OC	ALA	195	OAK	245	40	5.0	5.0
	33 304G	EAST CONN VIAD	ALA	198	OAK	2721	32		
	33 304G	EAST CONN VIAD	ALA	198	OAK	2721	32		
	33 303H	SOUTH CONN VIA	ALA	200	OAK	3311	32		
	33 305F	W CONNECTOR VI	ALA	201	OAK	5131	32		
	33 298	OAKLAND SEP	ALA	202	OAK	288	124		
		JCT 580 & 24AH	ALA	204	OAK				

EXPLANATIONS TO: Existing Facilities (Bridges) Tables

1. Bridge number: Suffix, when used, is coded as follows:

J = Outer Outer Left
K = Left Outer Highway Structure
L = Left Structure or Left Inner Structure
C = Center Structure
R = Right Structure or Right Inner structure
S = Right Outer Highway Structure
T = Outer Outer Right
Y = Structure or Grade Xing on State-owned and Maintained connections not on main Hwy (may be closed)
W = Drainage Pumping Plant
M = Buried Hazard or Miscellaneous Structure
Z = Access to Private Property or Closed w/no access
E = Connector Structure
F = Connector Structure
G = Connector Structure
H = Connector Structure

2. Name or description - may contain miscellaneous information. Additional miscellaneous information may be found on the same line under the heading "Structure Type of PUC number or Pump Data".)

3. State Highway Route

4. Post Mile (To 1/100 Mile)
Prefixes of R, M, and N Refer to realigned routes. C refers to commercial routing. L refers to section paralleling another route (non-add).

5. City (Caltrans "ALPHA" code)

6. Structure type or PUC number or pump data

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

CODING 1ST 2 COLUMNS OF ALL 3 TYPES

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

CG - Concrete Girder
CP - Concrete Pipe
CU - Concrete Arch Culvert
PG - Precast Concrete Girders

QB - Cast in place prestressed box Girder
QG - Cast in place prestressed Girder (Not Box)
QS - Cast in place prestressed slab
QX - Precast prestressed box girder
QI - Precast prestressed "I" girder
QJ - Precast prestressed Double "T" Girder
QK - Precast prestressed "T" Girder

6. Structure type or PUC Number or Pump Data (cont'd) Third column is coded, where it applies, as follows:

A = Welded
B = Welded Continuous
T = Through
L = Through Continuous
D = Deck
H = Deck Continuous
P = Pony
O = Open Spandrel
F = Earth Fill
B = Box (Box Girder)
C = Continuous
E = Continuous with Std. Cantilevered Ends (No Abuts.)
W = Sidewalk
K = Pier or Tower Span

I - Continuous Over Inclined Bents
Q - Prestressed (Use other coding if possible)
S - Stayed
R - Orthotropic

B. Drainage Pumps - Spacings are 2-columns, 3-columns and I-column

The first two columns will show the number of pumps (pit pumps not included) and the type of pit.

Code for Type of Pit: W - Wet Pit
U - Dry Pit
G - Gravity
S - Submerged

Second three columns will show information on auxiliary power supply, if such power is available. The following will be shown:

A. Number of Pumps that operate from auxiliary power supply
B. Type of motor for auxiliary power supply

Code for Type of Motor: G - Gasoline Motor
D - Diesel Motor
N - Natural Gas

C. The Type of Drive from the Auxiliary Power Supply to the Pumps
Code for type of Drive: M - Mechanical (Direct)
V - Electrical (Generator)

Third single column will show the type of control device for the pumps.
Code for control device: E - Electrode
F - Floats
P - Pressure
C - Combination

PUC Number (For Railroad Grade Crossings)

D. Wid. or Ext. Type: Latest widening or extension. See code explanation in (6).

7. Total bridge length (ft) or grade crossing protection. Main Type of signal only coded as follows:

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

8. Bridge Width (Feet)

CB - Concrete Box Girder
CC - Concrete Box Culvert
CG - Concrete Girder
CP - Concrete Pipe
CU - Concrete Arch Culvert
PG - Precast Concrete Girder

QT - Precast prestressed inverted "T" Girder SA - Steel Arch
QU - Precast prestressed inverted "U" Girder
QW - Precast prestressed inverted "W" Girder
QA - Precast prestressed slab

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

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.