SUMMARY

FINAL
MAY 01 1985

ROUTE CONCEPT REPORT
ROUTE 37
MRN 0.00 to SON R6.13

This report defines the concept for development of Route 37 in District 4 for a 20-year planning period (1985-2005).

Route Concept

Segment A:
MRN 0.00 to 11.20 - Route 1 to Route 101 - No Build

Segment B:
MRN R11.20 to 14.61 - Route 101 to MRN/SON Co. Line -
6-Lane Freeway C-45

Segment C:
SON 0.00 to R3.80 - MRN/SON Co. Line to Route 121
6-Lane Freeway D-40

SON 3.80 to R6.13 - Route 121 to SON/SOL Co. Line
4-Lane Freeway C-45

Concept Rationale

Route 37 is a commuter and recreational route. The signalized intersections at Lakeville Road and Route 121 reduce the capacity of Route 37, this could be eliminated by upgrading Route 37 to freeway status.

With the development of the Sonoma, Vallejo and Fairfield areas congestion on Route 37 will greatly increase.

Areas of Concern

The intersection of Lakeville Road and the intersection of Route 121 along the expressway portion of Route 37 need improvement. The improvement is necessary due to the increased demand in this corridor. The Novato Creek Bridge should be widened for safety purposes.

Improvements (Post 1984 STIP)

MRN 37 PM 11.20 to 14.62, widen from the present 4-lane expressway to a 6-lane freeway.

MRN 37 PM 11.96 Novato Creek Bridge, widen bridge to include shoulders.

SON 37 PM 0.0 to 3.80, widen fron the present 4-lane expressway to a 6-lane freeway

SON 37 PM 3.80 to R6.13, widen from the present 2-lane conventional to 4-lane freeway.

SON 37 PM 2.06 Lakeville Road, improve intersection, construct interchange.

SON 37 PM 3.81 Route 121, improve intersection, construct interchange.

ROUTE CONCEPT REPORT

ROUTE 37

MRN 0.00 to SON R6.13

Prepared under the direction of:

4/29/85

CECIL L. SMITH, Chief Date
Transportation Planning
District 4

Recommended Approval:

4-30-85

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:

4/30/85

BURCH C. BACHTOLD Date
District Director of
Transportation

Approved:

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

Approved:

10-29-85

ALLAN. H. HENDRIX Date
Division of Highways and
Programming

Approved:

10/7/85

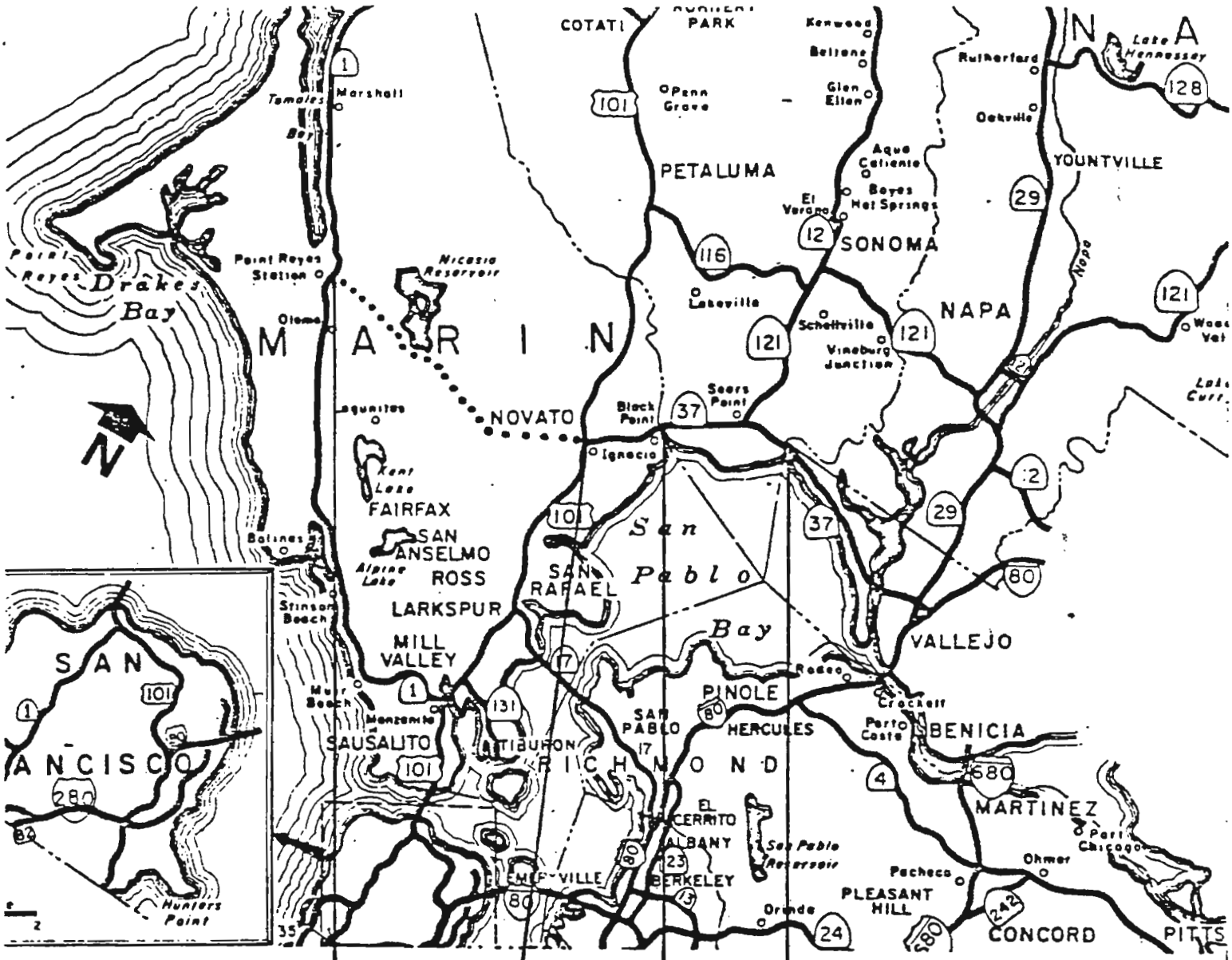
VINCE PAUL Date
Division of Project
Development

STATEMENT OF PLANNING INTENT

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

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

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



A	B	C
MRN 0.00	MRN 11.200	MRN 14.617	SON 0.00	SON R6.127

LOCATION MAP
ROUTE 37

Route Description

The portion of Route 37 that proceeds through District 4 is approximately 21 miles long and traverses two counties; Marin and Sonoma. It begins at Point Reyes Station in Marin County and ends at the Sonoma/Solano County line where it enters District 10. The constructed portions of Route 37 are an expressway (MRN PM 11.20-SON 3.31) and conventional highway (SON 3.81-6.12).

Future Considerations

The City of Vallejo is to be the new future home of Marine World/Africa USA. The park is presently located in Redwood City. Construction will begin in March of 1985 and the park is planned to open in April of 1986. This will increase demand on Route 37 on weekends and during the summer months.

Sonoma County has proposed a realignment of Route 116 onto Route 37 via Lakeville Road. The present Route 116 alignment east of Lakeville Road (Stage Gulch Road) would be relinquished to the County.

Purpose of Route

Route 37 serves as both a commuter and a recreational route.

I. Segment A (04-MRN-37, PM 0.00-11.20)

This segment at present is not constructed. It originates at Route 1 near Point Reyes Station. Point Reyes-Petaluma Road and Novato Boulevard are used as the most direct routes from Point Reyes Station to the constructed portion of Route 37. The existing road is geometrically inadequate due to short radius curves. This segment ends at Route 101 in the City of Novato. The constructed portion of Route 37 begins where South Novato Boulevard meets Route 101.

(1) Existing Facilities

A. Highway Facility

This segment is not maintained by the State. The present condition of Point Reyes-Petaluma Road and Novato Boulevard is a 2-4 lane road with little or no paved shoulders. The terrain along the unconstructed segment is flat to rolling.

(2) Route Concept

The Marin County General Plan calls for low growth and the residents in the area support the plan. These circumstances would not warrant any further consideration of constructing this portion of Route 37 at this time.

(3) Route Improvements

The route is to be left in its presently unconstructed condition.

II. Segment B (04-MRN-37, PM 11.20 to 14.617)

Segment B extends from Route 101 to the Marin/Sonoma County line. This segment serves as a route along the North Bay connecting the Cities of Novato and Vallejo and surrounding communities. Also this route serves as the only major direct east-west route for those coming from Sonoma and Napa.

(1) Existing Facilities

A. Highway Facilities

The segment is 3.4 miles long. There are 2 lanes in each direction. The shoulders are 0 to 8 feet wide and there is a 34 to 46 foot median. The terrain is flat. This segment is an expressway.

1984 STIP Projects

There are no improvements programmed into the 1984 STIP.

B. Public Transit

Four private subscription buses run from the City of Napa and four operate out of Sonoma, with destinations in the East Bay and San Francisco.

C. Bicycles

The route is very popular with long distance riders and day trippers. The route is the major access route for those travelling to Sonoma and Napa Valleys.

D. Park and Ride

There are no park and ride lots available at this time. The construction of a park and ride lot is planned for FY 85/86 at Atherton Avenue.

E. Rail

Northwest Pacific R.R. operates a freight line parallel to Route 37 in this segment.

(2) Current Operating Conditions

The 1982 AADT volume between the junction of 101 and the Marin/Sonoma County line range from 16,000 at Petaluma River and Atherton Avenue to 15,000 at the junction of Route 101. Eastbound AM peak hour volumes range from 500 to 400, AM westbound peak hour volumes are 1,800. The V/C ratio is .55 with a Level of Service "B-50."

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

There were a total of 34 accidents with 21 injuries and 1 fatality. The accidents are spread out through the entire week. Times of day with the largest percentage of accidents are around 12:00 noon and 7 and 8 p.m. The total accident rate on this segment is .54 acc/MVM. The statewide accident rate average is 1.47 acc/MVM for this type of facility.

(4) Future Operating Conditions

The projected AADT for the year 1995 ranges from 24,000 at Petaluma Creek and Atherton Avenue to 25,000 east of the junction of Route 101, for 2005; the ADDT is 27,000 to 32,000 at the same locations. The 1995 westbound AM peak hour volume ranges from 3,100 to 3,200; eastbound AM peak hour volume 1995 is 500. The 2005 westbound peak hour volume ranges from 4,000 to 4,200, eastbound ranges are 500 to 600. The D/C ratio for 1995 is .96 with a Level of Service "E-15"; 2005 D/C ratio is 1.23 and a LOS of "F-10".

(5) Route Concept

The Route Concept is to widen from the present 4-lane expressway to a 6-lane freeway.

(6) Route Improvements

Widen from the present 4-lane expressway to a 6-lane freeway. 4E to 6F.

Widen Novato Creek Bridge (PM 11.96) to include shoulders.

III. Segment C (04-Son-37, PM 0.0-6.12)

Segment C extends from the Marin/Sonoma County line to the Sonoma/Solano County line. This segment extends to the District 4/District 10 boundary.

(1) Existing Facilities

A. Highway Facilities

The segment is 6.13 miles long. It has 1 to 2 lanes in each direction with 0 to 8 foot shoulders and 0 to 48 foot median. The terrain and grade are rolling. The route is an expressway from P.M. 0.0 to 3.31. Post Mile 3.81 to 6.12, is conventional.

1984 STIP Projects

FY 86/87
PM 2.1/4.0 A.C. Overlay

B. Public Transit

Presently, there is no public transit that operates in this corridor. However, there are a total of 8 subscription buses that use Route 37. Four buses come out of Napa and four buses from the City of Sonoma, with destinations in the East Bay or San Francisco.

C. Bicycle

Same as Segment B.

D. Park and Ride

No park and ride lots are presently located along the Route 37 corridor. There are no plans to build any park and ride lots for the next 5 years. Presently, commuters park near the Route 121 intersection.

E. Rail

Northwest Pacific Railroad operates a freight line that paralles Route 37 for approximately 3.5 miles, then proceeds north along Route 121.

(2) Current Operating Conditions

The 1982 AADT ranges from 22,000 east of Lakeville Road to 14,000 east of Junction 121. Eastbound AM peak hour volumes range from 600 to 300; westbound AM peak hour volumes are 2,400 to 1,500. Currently, the truck AADT ranges from 15,000 to 4,000. The V/C ratio is .90 with a Level of Service "E-20".

A large queue occurs at the intersection of Lakeville Road due to the large amount of traffic travelling along Lakeville Road and heading east on Route 37. The same problem occurs at the intersection of Route 121. Construction of an interchange would reduce the congestion occurring at both of these intersections.

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

There were a total of 67 accidents with 77 injuries and 4 fatalities. The highest percentage of the accidents occurred between the hours of 2 p.m. and 6 p.m. The accidents are fairly spread out during the week. The accident rate on this segment is .56 acc/MVM. The accidents per MVM is below 1.28 ACC/MVM which is the statewide average for this type of facility.

(4) Future Operating Conditions

The projected AADT for 1995 (2005) ranges from 32,000 (38,000) at Lakeville Road to 23,000 (26,000) at Junction 121 north. The eastbound AM peak hour volumes for 1995 are 500 to 400, westbound AM peak hour volumes are 4,100 to 3,100. The 2005 peak hour volumes for eastbound AM traffic range from 700 to 400, westbound AM volumes are 5,300 to 3,600. The 1995 D/C ratio is 1.52 and a LOS "F-15", 2005 D/C ratio is 1.77 and LOS of "F-10".

(5) Route Concept

The Route Concept for this segment is to widen from the present 4-lane expressway to a 6-lane freeway from the Marin/Sonoma County Line Route 101 to Route 121. Also,

widen the present 2-lane Conventional Highway to a 4-lane Freeway from Route 121 to the Sonoma/Solano County line.

(6) Route Improvements

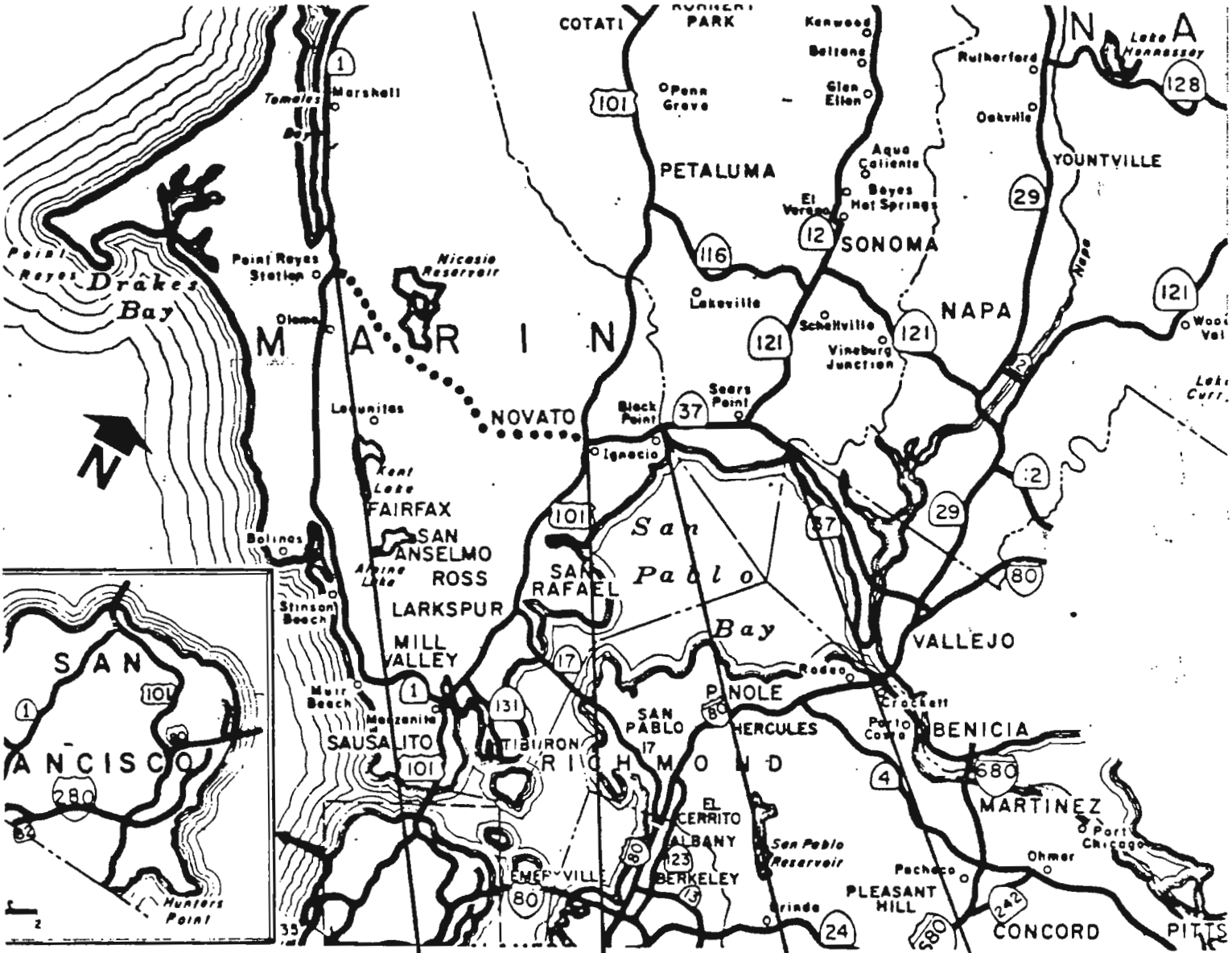
Widen from a 4-lane Expressway to a 6-lane Freeway. (PM 0.00 to 3.80)

Widen from a 2-lane Conventional Highway to a 4-lane Freeway. (PM 3.80 to R6.13)

Construct interchanges at Lakeville Road and Route 121.

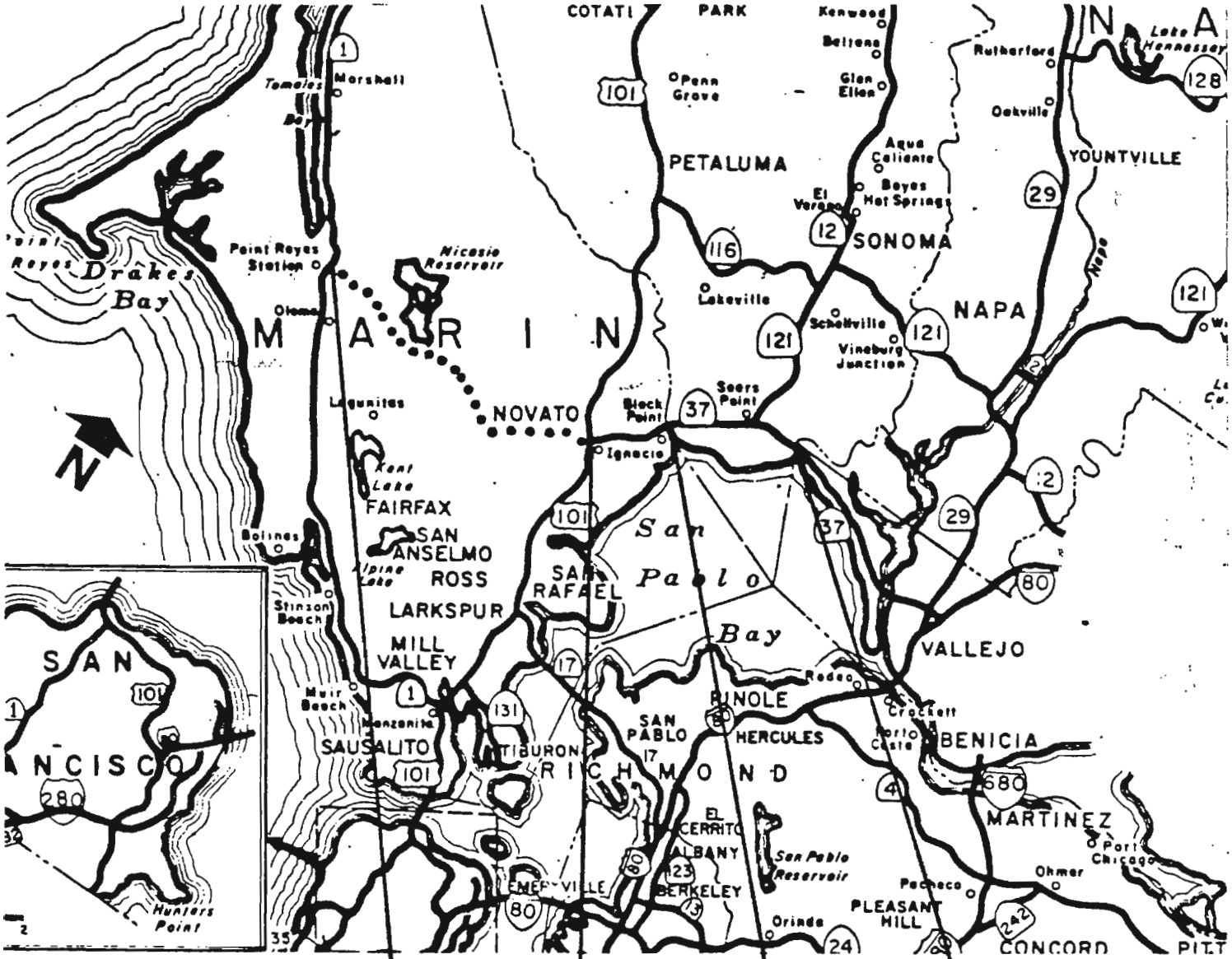
It will be difficult to obtain the necessary approvals to widen Route 37 east of Route 121, because of the environmental concerns due to the marsh land that abuts Route 37.

District's 4's Route Concept is consistent with District 10's.



SEGMENT		A (MRN 0.00 – MRN 11.200)	B (MRN 11.200 – MRN 14.817)	C (MRN 14.817 – MRN 0.00)
A.A.D.T. (.000)	1982	UNCONSTRUCTED	15-16	14-22
	1995		24-25	23-32
	2005		27-32	26-38
P.H.V. (00)	1982		18	19
	1995		32	33
	2005		43	45
AVE. HWY SPEED			60	65
OPERATING SPEED			55	40
V/C	1982		.55	.90
	1995		.96	1.52
	2005		1.23	1.77
YEAR CAPACITY WILL BE REACHED			1997	1986

EXHIBIT A



SEGMENT		MRN 0.00 A MRN 11.200	B MRN 14.817	C SON R6.127
NO. OF LANES PROPOSED	PRESENT	UNCONSTRUCTED	4	2-4
	1995		4	4
	2005		4	4
LEVEL OF SERVICE PROPOSED	PRESENT		B-50	E-20
	1995		E-15	F-15
	2005		F-10	F-10
TERRAIN			FLAT	Rolling
GRADES			0-3%	3-6%
ACTUAL	Accidents Per MVM		.54	.56
	Fatalities Per MVM		.016	.034

EXHIBIT B

ROUTE 37 ACCIDENT REPORT BETWEEN 1/81 to 12/83

Location P.M.	Segment	No of Accidents Total	Fatal	Inj.	F+I	Persons Killed	Persons Injured	Accident Rate * Fatal	F+I	Total	Statewide Rate * Fatal	F+I	Total
Mrn 0.00 to 11.20	A	Un-constructed. Not yet maintained by the State.											
Mrn 11.20 to 14.617	B	34	1	21	22	1	33	.016	.35	.54	.022	.61	1.47
Son 0.00 to 6.126	C	67	4	39	43	4	77	.034	.36	.56	.044	.60	1.28

* Rates are per million (Million Vehicle Mile)

Statewide averages for this type of facility.

TRAFFIC PROJECTION

SEGMENT	CO	ROUTE 37 POST MILE	DESCRIPTION	TRUCK % AADT	TRUCK % PK HR	1982 AADT	1982 EB AM AH	1982 WB PK BK	1982 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
	MRN	---	JCT. ROUTE 1																							
	MRN	---	PETALUMA ROAD																							
A	MRN	---	NOVATO BOULEVARD STAFFORD LAKE																							
													UNCONSTRUCTED													
	MRN	---	SAN MARIN ROAD																							
	MRN	---	SO. NOVATO BLVD.																							
	MRN	---	JUNCTION ROUTE 101																							
	MRN	R11.20	JUNCTION ROUTE 101	6	3	15	4	18	2	0.50	B	2	75	5	32	2	0.80	D	2	32	6	42	2	1.17	F	3
B	MRN	13.77	ATHERTON AVENUE	4	2	16	4	18	2	0.50	B	2	24	5	31	2	0.29	D	2	31	5	40	3	1.38	F	3
	MRN	14.47	PETALUMA CREEK	4	2	16	5	18	2	0.60	C	3	24	5	32	2	1.07	F	5	31	6	42	2	1.37	F	7
	MRN	14.62	COUNTY LINE	4	2	15	5	18	2	0.60	C	3	24	5	32	2	1.07	F	5	27	5	37	2	1.23	F	6
	SON	2.06	LAKEVILLE ROAD	9	4	22	6	24	2	0.80	D	4	32	5	41	2	1.37	F	6	38	7	53	2	1.77	F	8
C	SON	3.81	JUNCTION 121 NORTH	15	6	14	3	15	1	1.0	E	3	23	4	32	1	2.13	F	5	26	4	36	1	2.40	F	6
	SON	R6.13	COUNTY LINE																							

EXPLANATION TO TRAFFIC VOLUME TABLES

COLUMN	DESCRIPTION
SEGMENT	Description of the Route Segment
CO	County Abbreviations
MILE POST	Mile Post in County
AADT	Annual Average Daily Traffic Count
AM PK	Morning Peak Hour Traffic
AH	Volumes Ahead Direction
BK	Volumes Back Direction
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/Urban
	Number of Lanes Needed to Meet LOS "B" One Direction/Rural
% Truck AADT	Truck % of Average Annual Daily Traffic Count
% Truck PK HR	Truck % at Peak Hour

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 raodway varies inversely as some function of the traffic volume.

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 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.

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.

EXISTING FACILITIES (BRIDGES)
ROUTE 37

ROUTE SEGMENT	BRIDGE NUMBER	NAME OF DESCRIPTION	RTE	POST MILE	CITY	STRUCTURE TYPE OR PUC NUMBER OR PUMP DATA	WID	LENGTH (PROT)	WIDTH
A	Not maintained by the State								
	27 81H	IGNACIO SEP OH	37	R 1120	NVTO	CBC		1059	28
	27 81F	IGNACIO OH	37	R 1123	NVTO	CBC		662	22
	27 11L	NOVATO CREEK	37	1196	NVTO	QA		720	28
B	27 11R	NOVATO CREEK	37	1196	NVTO	QA		720	28
	27 12	SIMONDS SLOUGH	37	1304	NVTO	CC		22	
	27 79L	ATHERTON AV UC	37	1377		CBC		178	37
	27 79R	ATHERTON AV UC	37	1377		CBC		178	37
	27 13	PETALUMA RIVER	37	1447		SGAQK QKK		2183	62
		MARIN CO LINE	37	000					
	20 133	RED POKER CTLP	37	290		CC	CC	19	
	20 239	WATERTANK CTLP	37	321		CS	CS	12	
	20 240	JUNCTION CTLP	37	374		CC		12	
C		JCT RTE 121	37	381					
	20 109	SEARS PNT GR X	37	400		05H 003340		2k	
	20 90	TOLAY CREEK	37	404		QX		61	40

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 ma 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

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

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 suc 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

C. 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)

Route 31

COMPARISON OF FUTURE LOS WITH ROUTE CONCEPT

SEGMENT	NO. LANES/LOS			ROUTE CONCEPT		NEEDS	
	1982	1995	2005	Proposed Lanes	LOS	Lanes	Target LOS
A.	REMAIN UNCONSTRUCTED						
B	4/B-50	4/E-15	4/F-10	6F	C-45	6	D-35
C							
0.00-3.80	4/C-45	4/E-20	4/F-10	6F	D-40	6-8	B-50
3.80-6.13	2/E-20	2/F-15	2/F-10	4F	C-45	6	B-50