FINAL

NOV 22 1985

SUMMARY
ROUTE CONCEPT REPORT
ROUTE 12
SON 0.00 to NAP 3.31

This report defines the concept for development of Route 12 in District 4 for a 20-year planning period. (1985-2005)

ROUTE CONCEPT

Segment A: Jct Rte 1 to Jct Rte 116 (SON 0.00 to 9.23)
Unconstructed

Segment B: Jct Rte 116 to Fulton Rd (SON 9.23 to R12.65)
Concept LOS: D-35 4-lane Divided

Segment C: Fulton Rd to Jct Rte 101 (SON R12.65 to T16.04)
Concept LOS: D-40 4-lane Expressway/Freeway

Segment D: Jct Rte 101 to west of Farmers Lane (SON T16.04 to 17.67)
Concept LOS: F-15 4-lane Freeway
West of Farmers Lane to Jct Rte 12/121 (SON 17.67 to 41.36)
Concept LOS: E-25 4-lane Conventional Highway

Break in Route, see Route Concept Report for Route 29 and Route 121

Segment E: Jct Rte 12/29 to Nap/Sol Co line (NAP 0.00 to 3.31)
Concept LOS: D-30 4-lane Divided

CONCEPT RATIONALE

Route 12 serves several small rural communities. This route is a major connector between Sebastopol, Santa Rosa and the city of Sonoma.

AREAS OF CONCERN

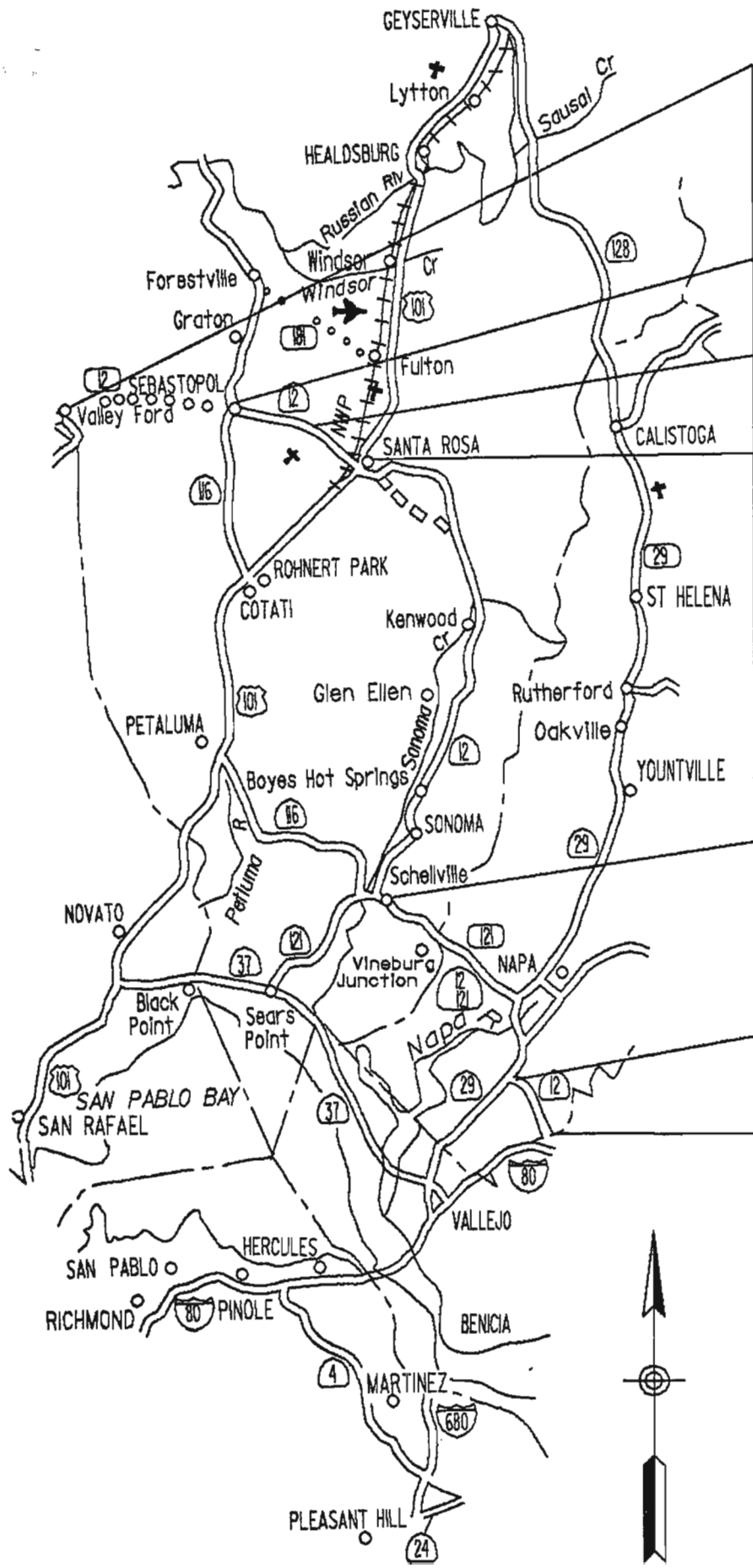
The employment rate in the areas surrounding the cities of Sonoma and Santa Rosa is expected to be one of the highest in the Bay Region, according to ABAG'S projections. The number of new jobs is expected to increase by 72% over a 20-year period. Route 12 will have the added pressures as future traffic demand between Santa Rosa and the Vallejo-Fairfield-Vacaville area increases.

IMPROVEMENTS (Post STIP)

Widen from 2 to 4 lanes from junction of Route 116 to the vicinity of Fulton Road (PM SON 9.23 to 12.65).

Widen from 2 to 4 lanes from the Santa Rosa Creek Bridge to the junction of Routes 12 and 121 (PM SON 21.45 to 41.36).

Widen from 2 to 4 lanes from the junction of Route 29 and Route 12 to the Napa/Solano County line (PM NAP 0.00 to 3.31).



SEGMENT	
A	SON 0.00 SON 9.23
B	SON R12.65
C	SON T16.04
D	SON 41.36
	BREAK IN ROUTE SEE ROUTE CONCEPT FOR ROUTE 29 AND ROUTE 121
E	NAP 0.00 NAP 3.31

LOCATION MAP

ROUTE 12

ROUTE CONCEPT REPORT

ROUTE 12

SON 0.00 to NAP 3.31

Prepared under the direction of:

11/14/85

CECIL L. SMITH, Chief Date
Transportation Planning
District 4

Recommended Approval:

11-19-85

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:

11/20/85

BURCH C. BACHTOLD Date
District Director of
Transportation

Approved:

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

Approved:

ALLAN HENDRIX, Chief Date
Division of Highways and
Programming

Approved:

VINCE PAUL, Chief 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.

ROUTE 12
ROUTE CONCEPT REPORT
SON 0.0/NAP 3.31

ROUTE DESCRIPTION

The constructed portion of Route 12 which is located in District 4 is approximately 35 miles long. The route lies in Sonoma and Napa Counties.

The legislative description is as follows:

a) Route 1 near Valley Ford to Route 121 near Sonoma via Santa Rosa.
b) Route 29 in the vicinity of Napa to Route 80 near Cordelia.
c) Route 80 near Fairfield to Route 99 near Lodi via Rio Vista.
d) Route 99 near Lodi to Route 88 near Lockford.
e) Route 88 near Clements to Route 49 near San Andreas.

The portions of Route 12 in District 4 that are part of the Freeway and Expressway system are as follows:

a) Route 1 near Valley Ford to Route 101 at Santa Rosa.
b) Route 101 near Santa Rosa to Melita Road near Santa Rosa.
c) Route 29 in the vicinity of Napa to Route 80 near Cordelia.

Route 12 is within the state scenic highway system from Route 101 near Santa Rosa to Route 121 near the city of Sonoma.

The unconstructed portion of Route 12 (PM SON 0.00 to 9.23) begins at Route 1 south of Valley Ford. The route then proceeds east along Valley Ford Freestone Road and Bodega Highway to Sebastopol where it intersects Route 116.

The constructed portion of Route 12 (PM SON 9.23 to NAP 3.31) begins at the junction with Route 116 in downtown Sebastopol. From there the route heads easterly towards Santa Rosa where it intersects Route 101. Route 12 proceeds through downtown Santa Rosa, arcs in a southerly direction through the communities of Kenwood, Glen Ellen, Boyes Hot Springs and continues to the city of Sonoma. From Sonoma, Route 12 continues to Schellville. A break in the Route occurs where Route 12 coincides with Routes 121 and 29. The final segment discussed within this report begins at the intersection of Routes 12 and 29 and ends at the Napa/Solano county line where the route inters District 10.

Route 12 is an FAP (Federal Aid Primary) route and is functionally classified as a minor arterial from Route 116 to Occidental Road, and a principal arterial from Occidental Road to Sonoma Creek; from Sonoma Creek to the Napa/Solono county line the route is classifed as a minor arterial.

Route 12 is not a SHELL route (Sub System of Highways for Extra Legal Loads).

PURPOSE OF ROUTE

The route serves rural communities, commuters, recreational users and to some extent, commercial traffic. As commercial development in Sonoma and Napa counties accelerates, commuter/commercial demand will increase.

ROUTE SEGMENTS

A. Segment A Junction Route 1 to Junction Route 116
(04-Son-12, PM 0.00 to 9.23)

This segment is presently not adopted and is unconstructed. The alignment begins near Valley Ford near Route 1 from there the route travels along Valley Ford Freestone Road and Bodega Highway to the junction of Routes 12/116, both of these are 2-lane county roads. These roads receive a significant amount of recreational travel.

The Route Concept for this segment is to leave the route in its presently unconstructed state. Future traffic demand does not warrant state control of this segment.

The county of Sonoma has suggested that the state assume control of this segment. Any further discussions in this area will have to result in a more comprehensive study.

B. Segment B Junction Route 116 to Fulton Road
(04-Son-12, PM 9.23 to R12.65)

This segment begins at the junction with Route 116 in the city of Sebastopol, the route travels easterly to Fulton Road where the segment terminates.

(1) Existing Facilities

(a) Highway Facility

Segment B is 3.4 miles long. The route proceeds through Sebastopol to the vicinity of Fulton Road (PM 9.23 to R12.65) and is a conventional highway. There is 1 lane in each direction with a 6-foot shoulder. The terrain and grade are flat. 2 lane

1984 STIP HE and HB 4 Projects:
There are no HB4 or HE (System Operation Improvements and New Facilities) projects programmed into the 1984 STIP.

(b) Public Transit
Transit service is provided by the Sonoma County Transit. Bus service on Route 12 is from the junction of Routes 12 and 116 to Fulton Road. A total of five buses run along this segment beginning at 7:30 A.M. and ending at 5:30 P.M.

(c) Bicycles

This segment of Route 12 serves as a popular commute and recreational route.

(d) Park and Ride

There are no park and ride lots located in this segment.

(e) Rail Service

There is an existing track known as the Petaluma and Santa Rosa Railroad, a subsidiary of the Southern Pacific Railroad Company. The line roughly parallels Route 12 from Santa Rosa to Sebastopol. The rail runs down Main Street in the city of Sebastopol and continues north to the town of Graton. The railroad plans to abandon the line. The city of Sebastopol hired the Maguire Group, a consulting firm, to study the feasibility of purchasing the line and determine possible uses for it. Though freight service has decreased significantly since 1980, there is still some need for freight service; the amount is not sufficient to support operation of the line for freight only.

The Maguire Group concluded that a commuter light rail system would not have enough demand to justify operation. The consultants felt that a tourist oriented historical railway would be feasible if properly marketed and with sufficient business orientation. This could be combined with freight service.

Another alternative would be to use portions of the line for bicyclists, pedestrians and equestrians. The consultants felt strongly that every effort be made to purchase the right-of-way, the reason being that once it is sold to private concerns, the property could only be recovered at great expense.

(2) Current Operating Conditions

The 1982 AADT ranges from 18,000 east of the junction of Route 116 to 20,000 west of Wright Road. The AM peak hour volume ranges from 800 to 900 in the westbound direction, and 1,100 to 1,300 in the eastbound direction. The AADT truck volume percentage ranges from 3 to 4%. The peak hour volume truck percentage is 3%. The V/C ratio is .76 with a level of service D-35.

Congestion has been experienced in the past on both Routes 12 and 116 through Sebastopol, to relieve this congestion a one way couplet system was implemented on Route 116. This one way couplet alleivates the queue that develops near the intersection of Routes 12 and 116, and the spill over that occurs onto Route 12.

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

The fatality rate is 0.011 acc/MVM; this is below the statewide average of 0.020 acc/MVM. The total accident rate is .78 acc/MVM; this is below the statewide average of 1.28 acc/MVM.

(4) Future Operating Conditions

The projected 1995 AADT ranges from 20,000 east of the junction of Route 116 to 24,000 vehicles west of Wright Road. The projected 2005 AADT ranges from 24,000 to 29,000 vehicles at the same locations. The A.M. peak hour volume in 1995 ranges from 900 to 1,100 in the westbound direction and 1,200 to 1,400 in the eastbound direction. In 2005 the A.M.peak hour volume ranges from 900 to 1,100 in the westbound direction and 1,600 to 1,900 in the eastbound direction.

The D/C ratio for 1995 is .87 with a level of service E-25, in 2005 the D/C ratio is 1.12 with an LOS of F-10. (D/C = Demand over Capacity ratio)

A one way couplet system has been proposed by the city of Sebastopol to alleviate the congestion that has occurred along Route 12 within the downtown area. A more in depth report is required to study this proposal in further detail. Additional discussion with the city of Sebastopol will also be required.

(5) Route Concept

The route concept for this segment is to widen from the current 2-lanes to a 4-lane divided facility from Sebastopol to the vicinity of Fulton Road. (PM 9.23 to 12.65)

(6) Route Improvement (Post 1984 STIP)

Widen to a 4-lane facility.
Sonoma county feels signals are needed at Llano Road and Route 12. Llano

C. Segment C Fulton Road to Junction Route 101
(04-Son-12, PM R12.65 to T16.04)

Segment C begins at Fulton Road and travels easterly toward Santa Rosa to the junction of Route 101.

(1) Existing Facilities

(a) Highway Facility

This segment is 3.4 miles long. Route 12 is a expressway from Fulton Road to Stony Point Road (PM 9.23 to R12.65) with one lane in each direction and a 6-foot shoulder. The remaining portion of this segment is a freeway with shoulders varing from 6 to 8 feet and a 46-foot median and two lanes in each direction. The terrain and grade are flat. 2 lane flat

1984 STIP HE and HB 4 Projects

There are no HB4 or HE (System Operating Improvements and New Facilities) projects programmed into the 1984 STIP.

(b) Public Transit

There is no transit service provided within this segment.

(c) Bicycle

This segment of Route 12 serves as a popular commuter and recreational route.

(d) Park and Ride

There are no park and ride facilities located in this segment.

(e) Rail Service

A freight line operated by the Northwestern Pacific Railroad is located parallel to the route along the entire segment.

(2) Current Operating Conditions

The 1982 AADT ranges from 26,000 west of Stoney Point Road to 41,000 west of the junction of Route 12 and 101. The AM peak hour volume ranges from 1,600 to 2,000 in the eastbound direction, and 1,200 to 1,700 in the westbound direction. The AADT truck volume percentage is 3%, the peak hour volume percentage ranges from 2 to 3%. The V/C ratio is .53 with a LOS of C-45.

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

The fatality rate is 0.013 acc/MVM; this is below the statewide average of 0.031 acc/MVM. The total accident rate is 1.22 acc/MVM; this is below the statewide average of 1.41 acc/MVM.

(4) Future Operating Conditions

The projected 1995 AADT ranges from 31,000 west of Stoney Point Road to 49,000 west of the junction of Route 12 and 101. The projected 2005 AADT ranges from 36,000 to 58,000 at the same locations. The 1995 peak hour volumes range from 2,300 to 2,400 in the westbound direction and 1,800 to 2,000 in the eastbound direction. The 2005 peak hour volumes are projected to range from 2,800 to 3,100 in the eastboud direction and 2,100 to 2,400 in the westbound direction.
The D/C ratio for 1995 is .78 with a LOS of C-35; for the year 2005 the D/C ratio is .95 with a LOS of E-25.

(5) Route Concept

The route concept for this segment is to maintain the current 4-lane expressway and freeway.

(6) Route Improvements (Post STIP)

There are no improvements planned for this segment within the route concept process.
The county of Sonoma has suggested that an interchange is needed at both Fulton Road and Stony Point Road, also improve the 12/101 I/C.

D. Segment D Junction Route 101 to Junction 12/121
(04-SON-12 P.M. R16.04 to 41.36)

This segment begins at the junction of Route 101 and ends at the junction of Route 12 and Route 121.

The segment primarily serves the rural population between Santa Rosa and Sonoma, and is also designated as the Valley of the Moon Scenic Route.

(1) Existing Facilities

(a) Highway Facility

Segment D is approximately 25 miles long. The 1984 STIP has a .6 mile long gap closure programmed that would eliminate the problem of utilizing the present one way city streets through downtown Santa Rosa. Construction is expected to commence fiscal year 1987-88. When the freeway to freeway gap closure is completed, a freeway section will run from Route 101 to west of Farmers Lane (PM 16.04 to 17.67). The remainder of the segment is an conventional highway.

From the junction of Route 101 to the Santa Rosa Creek bridge #20-28 (PM 16.04 to 21.45) there are 2 lanes in each direction, with 2 to 8 foot shoulders and a 12-to 46-foot median. From the Santa Rosa Creek bridge to the junction of Route 12/121 (PM 21.45 to 41.36) there is 1 lane in each direction with 4 to 8-foot shoulders. The terrain is flat to rolling with grades ranging from 0-6%.

An unconstructed and not adopted section of Route 12 begins near Farmers Lane and travels west to the vicinity of Adobe Canyon Road. This section passes directly through Annadel State Park. At one time suggestions were made to construct this alignment to bypass the city of Santa Rosa.

1984 STIP HE and HB 4 Projects:
FY 86/87
P.M. 29.1 to 29.7 Vicinity of Calabazas Creek and Nuns Canyon Rd.
Widen Approaches and Vertical Alignment

FY 87/88
P.M. R16.5 to R17.1 W/South East street to E/Brookwood Ave.
4-lane highway to 4-lane freeway gap closure

(b) Public Transit

This segment of Route 12 is serviced by route 30 of the Sonoma County Public Transit System. The service extends from the vicinity of the Santa Rosa Junior College to "The Plaza" in downtown Sonoma. Transit service starts at 6:20 A.M. in the eastbound direction with approximately 10-minute headways. The transit service begins at 7:10 A.M. and ends at 7:15 P.M. in the westbound direction. There is also weekend service available starting at 9:30 A.M. with approximately 15 minute headways.

(c) Bicycles

The existing route is popular for commuters and recreational cyclists. There is a definite need to maintain the access of this route to bicyclists during and after any major improvements.

(d) Park and Ride

There are no park and ride facilities located in this segment.

(e) Rail Service

There is a 150 space park and ride lot located in the Veterans Memorial Auditorium in Santa Rosa.

(2) Current Operating Conditions

The 1982 AADT ranges from 8,000 east of Arnold Road to 41,000 east of the Route 101 I/C. The A.M. peak hour volume ranges from 500 to 2,600 in the southeasterly direction and 400 to 1,800 in the northwesterly direction. The truck percentage ranges from 2% to 5% southeast and 2% to 4% northwest during the A.M. peak hour. The V/C ratio for the entire segment is .63 with a level of service C-40.

Since Route 12 in Segment D traverses both the cities of Santa Rosa and Sonoma, traffic data will be analyzed for these two cities.

The breakdown of the traffic data for Santa Rosa was taken from Stony Point Road to Calistoga Road (PM R14.45 to 20.10). The 1982 AADT within these two limits range from 41,000 east of the Route 101 I/C to 27,000 west of Calistoga Road. The AM peak hour volumes range from 700 to 2,000 in the southeasterly direction and 1,000 to 1,900 in the northwesterly direction. The V/C ratio within the city of Santa Rosa is .52 with an LOS of B-50.

The 1982 AADT from Verano Avenue to Napa Road (PM 35.95 to 38.69) within the vicinity of the city of Sonoma ranges from 12,000 west of MacAuthur Street to 19,000 east of Petaluma Avenue. The AM peak hour traffic volumes range from 500 to 1,000 in the southeasterly direction and 400 to 800 in the northwesterly direction. The V/C ratio within the city of Sonoma is .61 with an LOS of C-45.

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

During this period there were a total of 1,504 accidents with a total of 13 fatalities and 744 injuries. The fatality rate is 0.041 acc/MVM and the total accident rate is 7.34 acc/MVM. These rates exceed the statewide average of 0.034 acc/MVM and 2.71 acc/MVM respectively.

(4) Future Operating Conditions

The projected AADT in 1995 ranges from 9,000 south of Watmaugh Road to 50,000 vehicles east of Farmers Lane. The projected 2005 AADT range is from 12,000 to 61,000 vehicles at the same locations as the 1995 AADT figures. The 1995 A.M. peak hour ranges from 800 to 3,000 in the southeasterly direction and 600 to 2,300 in the northwesterly direction. The A.M. peak hour volume in 2005 ranges from 1,100 to 4,100 in the southeasterly direction and 600 to 2,400 in the northwesterly direction. The D/C ratio for 1995 is .74 with a level of service C-40, the 2005 D/C ratio is .92 with an LOS of E-25.

In the area surrounding the city of Santa Rosa the projected 1995 AADT ranges from 31,000 east of the Route 101 I/C to 50,000 west of Brush Creek Road. The 1995 AM peak hour volume ranges from 1,800 to 2,600 in the southeasterly direction and 1,400 to 2,300 in the northwesterly direction. The D/C ratio for this segment is .82 with an LOS of D-35.

The projected 2005 AADT ranges from 37,000 east of Stony Point Road to 61,000 west of Brush Creek Road. The 2005 peak hour volume ranges from 2,500 to 4,100 in the southeasterly direction and 1,400 to 2,400 in the northwesterly direction. The D/C ratio is 1.03 with an LOS of F-15.

In the area surrounding the city of Sonoma the 1995 AADT ranges from 17,000 south of MacAuthur Street to 32,000 south of Petaluma Avenue. The 1995 peak hour volume ranges from 900 to 1,900 in the southeasterly direction and 700 to 1,400 in the northwesterly direction. The D/C ratio for 1995 in this segment is .93 with an LOS of E-25. The 2005 AADT ranges from 22,000 south of MacAuthur Street to 42,000 south of Petaluma Avenue. The 2005 peak hour volume ranges from 1,400 to 2,800 in the southeasterly direction and 800 to 1,600 in the northwesterly direction. The D/C ratio is 1.15 with an LOS of F-10.

(5) Route Concept

The route concept is to maintain the current 4-lane freeway and conventional highway from Route 101 to the Santa Rosa Creek bridge (Bridge #20-28). (PM T16.04 to 21.45)

Widen the present 2-lane conventional highway to a 4-lane conventional highway from the Santa Rosa Creek bridge to the junction of Route 12/121. (PM 21.45 to 41.36)

Route 12 proceeds through both Boyes Hot Springs and the city of Sonoma. Commercial development abuts the route in both locations; it is possible that problems might arise with any lane additions. County and local transportation policies may preclude any improvements.

(6) Route Improvements (Post 1984 STIP)

The route improvement is to widen from a 2-lane conventional facility to a 4-lane conventional facility. (PM 21.45 to 41.36) Sonoma county has requested that an alternate route bypassing the city of Sonoma be investigated in the future.

BREAK IN ROUTE: PLEASE CONSULT THE ROUTE CONCEPT REPORT FOR ROUTE 29 AND ROUTE 121

E. Segment E Junction Route 12/29 to the Napa/Solano county line (04-NAP-12, 0.00 to 3.31)

Segment E begins at the Intersection of Route 29 and Route 12 /Airport Blvd, from there the route continues to the Napa/Solano County line. The route is also known as Jameson Canyon Road.

(1) Existing Facilities

(a) Highway Facility

This segment is approximately 3 miles long. There is 1 lane in each direction with 8-foot shoulders. The terrain is flat with grades from 0 to 3%.

1984 STIP HE and HB 4 Projects:
FY 85/86
P.M. 0.2 to 3.3 Construct passing lanes

(b) Public Transit

There is no public transit service located along this segment.

(c) Bicycle

A number of long distance bicyclists use Route 12 as a means of getting from the Bay Area to the Central Valley.

(d) Park and Ride

There are no park and ride lots located along this segment.

(e) Rail Service

There is no rail service located along this segment.

(2) Current Operating Conditions

The 1982 AADT ranges from 8,000 at the Route 29 intersection to 11,000 vehicles east of Kelly Road. The A.M. peak hour volume ranges from 200 to 600 vehicles in the eastbound direction and 200 to 600 in the westbound direction. The V/C ratio is .80 with a level of service D-30.

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

During this period there were 43 accidents with a total of 45 injuries and 3 fatalities. The fatality rate is 0.025 acc/MVM and the total accident rate is 2.67 acc/MVM. The statewide average fatality rate is 0.068 acc/MVM and the average total accident rate is 2.36 acc/MVM for this type of facility.

(4) Future Operating Conditions

The projected 1995 AADT ranges from 13,000 east of the Route 29 intersection to 19,200 vehicles east of Kelly Road. The 2005 projected AADT ranges from 15,000 to 24,300 vehicles at the same locations as the 1995 AADT figures. The A.M. peak hour volume in 1995 ranges from 1,300 to 1,400 vehicles eastbound and 900 vehicles westbound. The peak hour volume in 2005 ranges from 900 to 1,000 vehicles eastbound and 1,000 to 1,100 in the westbound direction. The D/C ratio in 1995 is .90 with a level of service E-25 and the D/C ratio for 2005 is 1.00 with an LOS of F-15.

(5) Route Concept

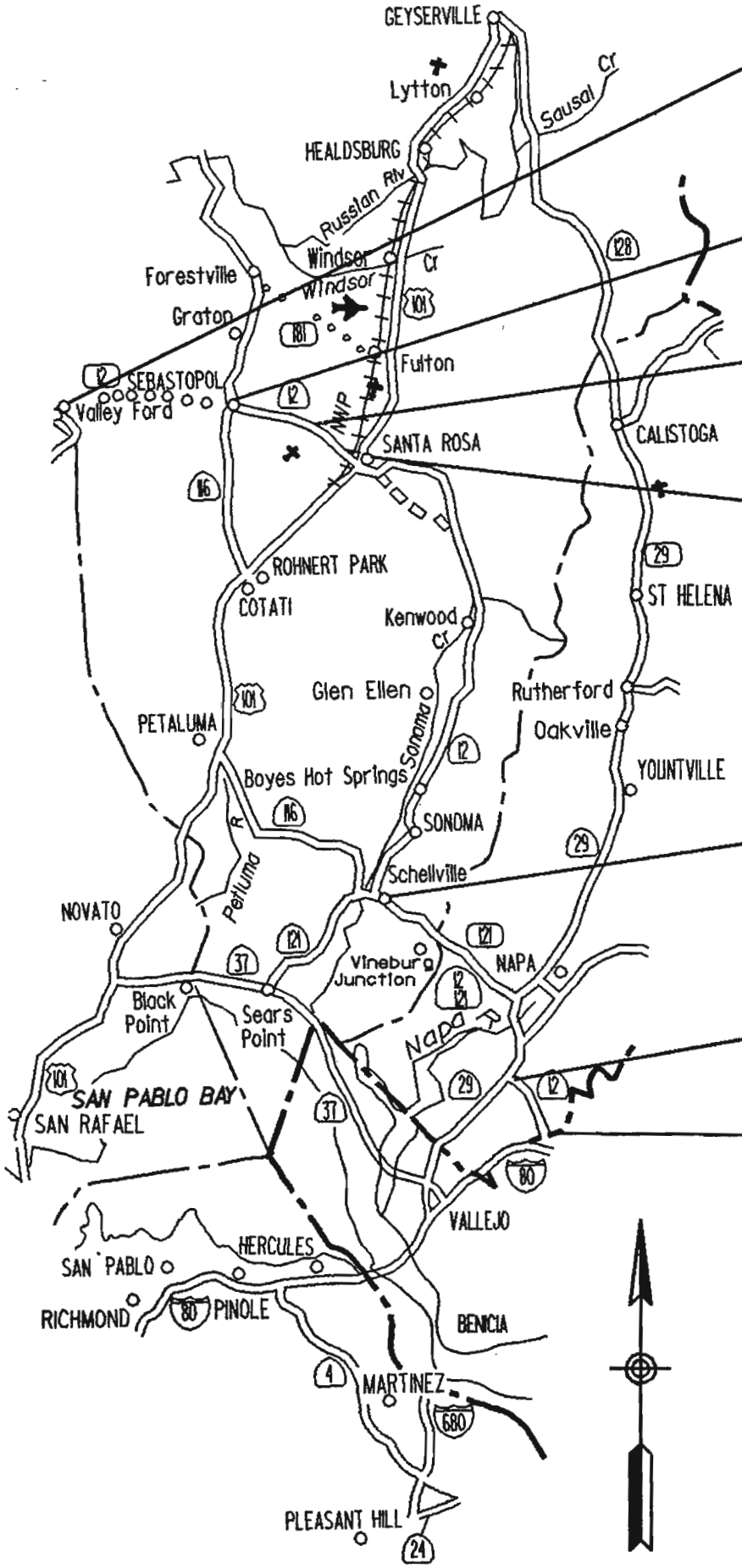
The route concept is to construct a 4-lane divided facility along the entire segment. This route concept conforms with District 10.

A 1,245 acre Business/Industrial park is proposed for the area east of the Napa County Airport along Route 29. This development will have a definite impact on this segment of Route 12. The specific plan calls for development of the park between 1985 and 2015. The planning area employment is estimated at 6,000 jobs by the year 2000 and 13,000 jobs by the year 2015.

Other factors affecting Route 12 are the relocation of Marineland Africa USA to the city of Vallejo; also commercial and residential development in the Fairfield-Vacaville area. Both of these developments could have a large impact on this segment of the route.

(6) Route Improvements (Post 1984 STIP)

Construct a 4-lane divided facility.



SEGMENT		NO. OF LANES PROPOSED PRESENT	1995	2005	LEVEL OF SERVICE PROPOSED PRESENT	1995	2005	TERRAIN	GRADES	ACTUAL ACCIDENTS PER MVM	FATALITIES PER MVM
A	SON 0.00 – SON 9.23	UNCONSTRUCTED									
B	SON 9.23 – SON R12.65	2	2	2	D-35	E-26	F-10	FLAT	0-3%	1.22	0.013
C	SON R12.65 – SON T16.04	4	4	4	C-45	C-35	E-25	FLAT	0-3%	.78	0.011
D	SON T16.04 – SON 41.36	2-4	2-4	4	C-45	C-40	E-25	FLAT TO ROLLING	0-6%	7.34	0.041
		BREAK IN ROUTE SEE ROUTE CONCEPT FOR ROUTE 29 AND ROUTE 121									
E	NAP 0.00 – NAP 3.31	2	2	2	D-30	E-25	F-15	FLAT	0-3%	2.67	0.025

EXHIBIT A

EXPLANATION TO EXHIBIT A

LEVEL OF SERVICE

The 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. The level of service indicated in Exhibit A represents the level of service during the AM peak hour.

TERRAIN

Terrain describes the adjacent topography as to its effect on construction cost. (F-Flat, R-Rolling, M-Mountainous) Flat reflects minor grading; rolling reflects moderate grading; mountainous reflects heavy grading as economic considerations. (Note that terrain is a measure of construction cost while grade is a measure of operating cost as used in this report.)

GRADES

Grade line, a generalization of the grades along the center line of the highway. Four types of codes are used. They are:

F - Flat grade, 0-3 percent upgrades and downgrades.

R - Rolling, 3-6 percent upgrades and downgrades and sustained grades less than 1/4 mile.

M - Moderate, grades greater than 6 percent for one-half or less of the segment length and sustained grades 1/4 to 3/4 mile in length.

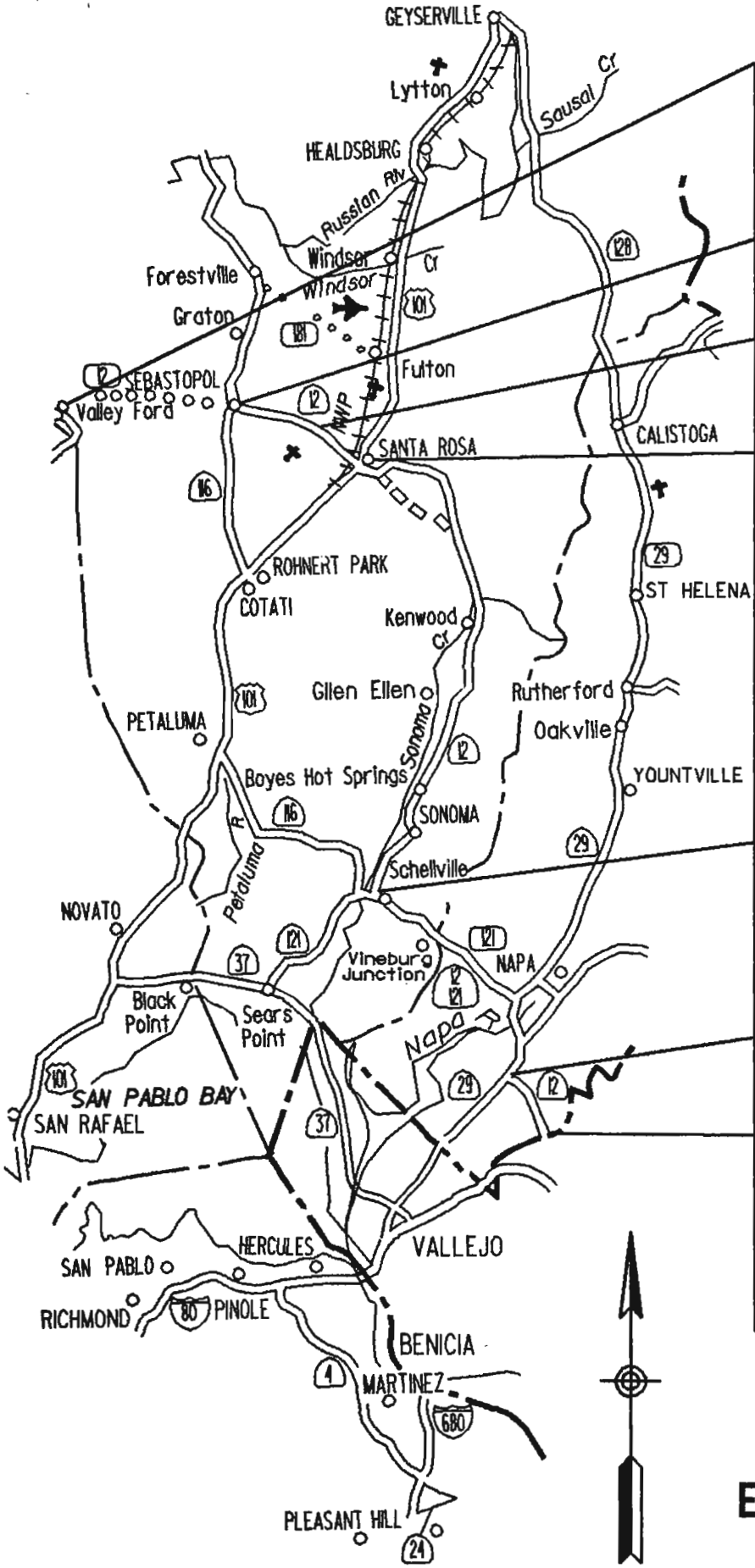
S- Steep, grades greater than 6 percent for more than one-half the segment length and sustained grades greater than 3/4 mile in length.

ACCIDENTS PER MVM

The number of accidents per million vehicle miles driven along the segment

FATALITIES PER MVM

The number of fatalities per million vehicle miles driven along the segment



SEGMENT														
A	SON 0.00 – SON 9.23	UNCONSTRUCTED												
B	SON 9.23 – SON R12.65	18-20	20-24	24-29	8-13	9-14	9-19	55	38	.76	.87	1.12	1997	
C	SON R12.65 – SON T16.04	26-41	31-49	36-58	12-19	14-20	14-31	50	36	.53	.78	.95	— —	
D	SON T16.04 – SON 41.36	8-41	13-50	15-61	4-26	6-29	6-41	55	33	.63	.74	.92	— — —	
		BREAK IN ROUTE SEE ROUTE CONCEPT FOR ROUTE 29 AND ROUTE 121												
E	NAP 0.00 – NAP 3.31	9-8	13-19	15-24	8-11	9	10	50	32	.80	.90	1.00	2005	
		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		

EXHIBIT B

EXPLANATION TO EXHIBIT B

AADT

Annual Average Daily Total (In Thousands) in both directions.

P.H.V.

Peak Hour Vehicles (In Hundreds). Number of vehicles in one direction during the A.M. Peak Hour.

AVE HWY SPEED

The Average Highway Speed is the weighted average of the design speeds within a highway section. (Design speed is a speed selected to establish specific minimum geometric design elements for a particular section of highway.) On non-engineered roads the average highway speed has been estimated.

OPERATING SPEED

A computed value based on the V/C ratio and the average highway speed. Basically, it represents the present operating speed during the present design hour volume of traffic on existing highway geometric. For segments of highway controlled by traffic signals, an "S" replaces the operating speed and generally represents speeds of 15 to 30 MPH.

V/C

Ratio of Volume to Capacity. Volume represents the number of vehicles per hour that want to travel the highway as represented by the present design hour volume. Capacity represents the maximum number of vehicles per hour the highway can carry as indicated in the Highway Capacity Manual.

D/C

Ratio of Demand to Capacity. Demand represents the projected number of vehicles per peak hour that will want to travel the highway. Capacity represents the maximum number of vehicles per hour the highway can carry.
(Projected Peak Hour Demand/Design Capacity.)

ACCIDENT RATE - ROUTE 12
1-81 TO 12-83

SEG	LOCATION PM	NO. OF ACCIDENTS T	FAT	INJ	PERS. KILLED	PERS INJURED	ACCIDENT RATE* FAT	F&I	T	STATEWIDE AVE.*^ FAT	F&I	T
A	0.00-9.23	UNCONSTRUCTED			XX	XX	XX	XX	XX	XX	XX	XX
B	9.23-12.65	150	3	78	3	98	0.013	0.48	1.2	0.031	0.60	1.41
C	12.65-16.0	250	1	53	1	76	0.011	0.32	.78	0.020	0.43	1.28
D	16.04-41.4	1,504	12	394	13	744	0.041	1.68	7.34	0.034	1.08	2.71
E	0.00-3.31	43	2	35	3	45	0.025	2.04	2.67	0.025	1.19	2.36

*Rates are per million vehicle mile (MVM)
^Statewide average for the type of facility in comparable range

TRAFFIC PROJECTION

1983/4 ROUTE CONCEPT STUDY
ROUTE 12 SHEET 1 of 3

SEGMENT	CO	POST MILE	DESCRIPTION	TRUCK % AADT	TRUCK % PK HR	1982 AADT	1982 AM AH	1982 PK BK	1982 NO L	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM AH	1995 PK BK	1995 NO L	1995 D/C	1995 LOS	1995 LN	2005 AADT	2005 AM AH	2005 PK BK	2005 NO L	2005 D/C	2005 LOS	2005 LN
	SON		JUNCTION RTE 1																							
													4	2	2					5	3	2				
A	SON		BOGEDA ROAD																							
													4	2	2					5	3	2				
	SON		BOHEMIAN HWY																							
													7	5	4					9	6	4				
	SON		FERGUSON ROAD																							
													10	6	5					12	9	5				
	SON	9.23	JCT RTE 116 MAIN STREET																							
B				4	3	18	11	8	1	0.73	C	2	20	12	9	1	0.80	D	2	24	16	9	1	1.07	F	3
	SON	9.54	SEBASTOPOL CL.																							
				3	3	20	13	9	1	0.87	D	2	24	14	11	1	0.93	E	2	29	19	11	1	1.27	F	3
	SON	R12.94	WRIGHT ROAD																							
				3	3	26	16	12	2	0.44	B	2	31	14	11	2	0.47	B	2	36	19	11	2	1.27	F	3
	SON	R14.45	STONEY POINT RD.																							
				3	2	31	19	13	2	0.53	C	2	38	23	19	2	0.77	C	2	46	28	22	2	0.93	E	3
	SON	R14.88	BEGIN FWY																							
				3	2	31	19	12	2	0.53	C	2	38	23	18	2	0.77	C	2	46	28	21	2	0.93	E	3
	SON	R15.30	DUTTON AVENUE																							
				3	2	41	20	17	2	0.56	C	2	49	24	20	2	0.80	C	2	58	31	24	2	1.03	F	3
	SON	R16.04	JCT RTE 101 SEBASTOPOL AVE.																							
				3	3	41	17	18	2	0.50	B	2	48	29	22	2	0.81	D	2	58	39	23	2	1.08	F	3
	SON	R16.48	END FREEWAY																							
				2	2	32	13	19	2	0.53	C	2	43	26	19	2	0.72	C	2	53	34	20	2	0.94	E	3
	SON	T17.61	FARMERS LANE WEST																							
D				2	2	28	10	14	2	0.47	B	2	39	24	17	2	0.80	D	2	48	31	18	2	1.03	F	3
	SON	T18.54 17.70	FARMERS LANE EAST																							

TRAFFIC PROJECTION

1983/4 ROUTE CONCEPT STUDY
ROUTE 12 SHEET 2 of 3

SEGMENT	CO	POST MILE	DESCRIPTION	TRUCK % AADT	TRUCK % PK HR	1982 AADT	1982 AM PK HR	1982 AM PK BK	1982 NO L	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM PK HR	1995 AM PK BK	1995 NO L	1995 D/C	1995 LOS	1995 LN	2005 AADT	2005 AM PK HR	2005 AM PK BK	2005 NO L	2005 D/C	2005 LOS	2005 LN
	SON	18.35	BRUSH CREEK RD.	2	2	32	12	16	2	0.53	C	2	50	30	23	2	1.00	E	3	61	41	24	2	1.37	F	3
	SON	19.44	MIDDLE RINCON RD.	2	2	29	8	14	2	0.47	B	2	46	28	21	2	0.93	E	3	56	37	22	2	1.23	F	3
	SON	20.10	CALISTOGA ROAD	2	2	27	7	10	2	0.33	A	2	38	22	17	2	0.73	C	2	46	30	18	2	1.00	F	3
	SON	21.23	LOS ALAMOS ROAD	2	2	21	2	8	2	0.27	A	2	24	14	11	2	0.47	B	2	29	19	11	2	0.63	C	2
	SON	26.11	ADOBE CANYON RD	2	2	14	5	6	1	0.33	A	1	15	10	7	1	0.67	C	1	19	13	8	1	0.87	D	1
	SON	27.03	WARM SPRINGS RD	5	4	10	4	4	1	0.27	B	1	14	9	7	1	0.60	C	2	17	12	7	1	0.80	D	2
	SON	30.07	TRINITY ROAD	5	4	9	4	4	1	0.27	B	1	13	8	6	1	0.53	C	2	15	11	6	1	0.73	D	2
	SON	30.65	ARNOLD DRIVE	5	4	9	5	4	1	0.33	B	1	13	8	6	1	0.53	C	2	15	11	6	1	0.73	D	2
D	SON	32.86	MADRONE ROAD	5	4	8	4	3	1	0.27	B	1	13	8	6	1	0.53	C	2	15	11	6	1	0.73	D	2
	SON	33.40	CAVEDALE ROAD	5	4	9	5	4	1	0.33	B	1	15	9	7	1	0.60	C	2	19	12	7	1	0.80	D	2
	SON	34.25	AQUA CALIENTE RD	5	4	10	5	4	1	0.33	B	1	15	10	7	1	0.67	C	2	19	13	8	1	0.87	E	2
	SON	35.11	BOYES BLVD.	5	4	14	7	6	1	0.47	B	1	20	12	9	1	0.80	D	1	24	16	9	1	1.07	F	2
	SON	35.95	VERONO AVENUE	5	4	17	9	7	1	0.60	C	1	26	15	12	1	1.00	E	2	34	23	13	1	1.53	F	2
	SON	36.55	PETALUMA AVENUE	5	4	16	5	7	1	0.47	B	1	24	15	11	1	1.00	E	2	32	21	13	1	1.40	F	2
	SON	37.00	FIFTH ST. WEST	5	4	19	10	8	1	0.67	C	1	32	19	14	1	1.27	F	2	42	28	16	1	1.87	F	2
	SON	37.51	FIRST ST. WEST	2	2	16	8	7	1	0.53	C	1	27	16	12	1	1.07	F	2	36	24	14	1	1.60	F	2

TRAFFIC PROJECTION

1983/4 ROUTE CONCEPT STUDY
ROUTE 12 SHEET 3 of 3

SEGMENT	CO	POST MILE	DESCRIPTION	TRUCK % AADT	TRUCK % PK HR	1982 AADT	1982 AM AH	1982 PK BK	1982 NO L	1982 V/C	1982 LOS	1982 LN	1995 AADT	1995 AM AH	1995 PK BK	1995 NO L	1995 D/C	1995 LOS	1995 LN	2005 AADT	2005 AM AH	2005 PK BK	2005 NO L	2005 D/C	2005 LOS	2005 LN
				2	2	13	6		1	0.40	B	1	24	15	11	1	1.00	E	2	32	21	13	1	1.40	F	2
	SON	37.69	PATTEN STREET																							
				2	2	12	5	5	1	0.33	A	1	21	13	10	1	0.87	D	1	28	19	11	1	1.27	F	2
	SON	38.06	MAC ARTHUR ST.																							
				2	2	12	5	4	1	0.33	A	1	17	9	7	1	0.60	C	1	22	14	8	1	0.93	E	2
D	SON	38.69	NAPA ROAD																							
				2	2	7	3	3	1	0.20	A	1	11	6	5	1	0.40	B	1	14	9	5	1	0.60	C	2
	SON	39.41	WATMAUGH ROAD																							
				6	4	4	2	2	1	0.20	A	1	9	5	4	1	0.33	B	1	12	8	4	1	0.53	C	2
	SON	41.36	JCT RTE 121 SOUTH																							
			BREAK IN ROUTE																							
	NAP	0.00	JCT RTE 29																							
				9	4	8	7	4	1	0.58	B	1	13	9	7	1	0.75	C	2	15	9	10	1	0.83	D	2
E	NAP	0.24	KELLY ROAD																							
				8	4	11	9	6	1	0.66	C	1	14	10	7	1	0.83	D	2	17	11	13	1	1.08	F	3
	NAP	3.31	COUNTY LINE																							

EXPLANATION TO TRAFFIC VOLUME TABLES

COLUMN	DESCRIPTION
SEG	Route Segment
CO	County Abbreviations
POST MILE	Post Mile in County
AADT	Annual Average Daily Traffic (Thousands)
AM-PK	Morning Peak Hour Traffic
AH	Volume - Ahead Direction (Hundreds)
BK	Volume - Back Direction (Hundreds)
NO L	Number of Lanes (Existing) - One Direction
V/C	Volume/Capacity: Ratio of Peak Hour Volume to Maximum Number of Vehicles per Hour for Peak Direction During Peak Hour (Peak Hour Volume/Capacity)
D/C	Demand/Capacity: Ratio of Volume of Projected Demand to Maximum Number of Vehicles per Hour (Projected Peak Hour Demand/Design Capacity)
LOS	Level of Service According to Functional Classification of the Route Relative to the Terrain and Facility
LN	Number of Lanes Needed to Meet the Conceptual LOS
CAP	Capacity of Facility (Capacity per Lane)

Facility	Vehicles per Hour per Lane Expected Pk Hr Capacity
Freeway	2000
Expressway or Divided/ One-Way Arterial	1500
Other Type of Arterial	1350
Rural Road	1200
City Street or Mountainous Road	800

% TRUCK AADT	Truck Percent of the Average Annual Daily Traffic Count
% TRUCK PK HR	Truck Percent at Peak Hour

Route 12

COMPARISON OF FUTURE LOS WITH ROUTE CONCEPT

SEGMENT	NO. LANES/LOS			ROUTE CONCEPT		NEEDS	
	1982	1995	2005	Proposed Lanes	LOS	Lanes	Target LOS
A SON 0.00 to 9.23	UNCONSTRUCTED						
B SON 9.23 to R12.65	2/D-35	2/E-25	2/F-10	4 Div.	C-45	6	B-45
C SON R12.65 to T16.04	4/C-45	4/C-40	4/E-25	4 E-F	D-40	2-6	D-35
D SON T16.04 to 17.67	4/C-40	4/D-35	4/F-15	4 F	E-15	6	D-35
SON 17.67 to 41.36	2-4/C-45	2-4/C-40	2-4/E-25	4 C	E-25	4-6	B-45
E NAP 0.00 to 3.31	2/D-30	2/E-25	2/F-15	4Div.	D-30	4-6	B-45

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.

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

EXISTING FACILITIES (BRIDGES)

ROUTE 12

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	DISTRICT	RTE	POST MILE	CITY	STRUCTURE TYPE OR PUC NUMBER OR PUMP DATA / WID	LENGTH (PROT)	WIDTH
		4-SON-12							
		JCT RTE 116		12	923	SEB			
	20 57	SEBASTOPOL SPU	4	12	945	SEB	67 001695C	2X	
	20 35	LAGUNA D SROSA		12	963		CGC CGC	220	26
	20 36	PURPLE DRAW		12	984		CAF CS	24	36
	20 175	WRIGHT RD DRN	4	12	R 1266		CC	11	
	20 231	WRIGHT RD DRN		12	R 1274		CC	11	
	20 203L	DUTTON AVE UC		12	R 1530		CBC	148	37
	20 203R	DUTTON AVE UC	4	12	R 1530		CBC	148	37
	20 204L	S SANTA RSA OH		12	R 1556	SRO	QI PG	219	41
	20 204R	S SANTA RSA OH		12	R 1556	SRO	QICPG CG	232	41
B	20 205G	OLIVE ST UC	4	12	R 1570	SRO	CBC	154	22
	20 205L	OLIVE ST UC		12	R 1570	SRO	CBC	147	37
	20 205R	OLIVE ST UC		12	R 1570	SRO	CBC	147	37
	20 206L	SE CONN UC	4	12	R 1590	SRO	CGC	114	41
	20 206R	SE CONN UC		12	R 1590	SRO	CGC	144	37
	20 207G	NE CONN OC		12	R 1599	SRO	CBC	825	22
	20 207G	NE CONN OC	4	12	R 1599	SRO	CBC	825	22
	20 208L	RTE 12/101 SEP		12	R 1601	SRO	QIC	311	49
	20 208L	RTE 12/101 SEP		12	R 1601	SRO	QIC	311	49
	20 208R	RTE 12/101 SEP	4	12	R 1601	SRO	QIC	311	49
	20 208R	RTE 12/101 SEP		12	R 1601	SRO	QIC	311	49

ROUTE 12 (Cont'd)

ROUTE SEGMENT	BRIDGE NUMBER	NAME OR DESCRIPTION	DISTRICT	RTE	POST MILE	CITY	STRUCTURE TYPE OR PUC NUMBER OR PUMP DATA	WID	LENGTH (PROT)	WIDTH
		JCT RTE 101		12	R 1604	SRO				
	20 209L	SANTA ROSA A U	4	12	R 1626	SRO	CBC		156	41
	20 209R	SANTA ROSA A U		12	R 1626	SRO	CBC		156	41
	20 217L	BRIGHAM AVE UC		12	R 1710	SRO	QB		116	56
	20 217R	BRIGHAM AVE UC	4	12	R 1710	SRO	QB		116	53
	20 236	MATANZAS CREEK		12	T 1777	SRO	CG		39	64
	20 237	SPRING CREEK		12	T 1795	SRO	CC		20	57
	20 238	SANTA ROSA CR	4	12	T 1851	SRO	CGC	CGC	131	60
		T1854 IS 1770		12	T 1854		EQUATION			
D	20 29	BRUSH CREEK		12	1837	SRO	CGC		96	74
	20 28	SANTA ROSA CR	4	12	2145		CG		68	82
	20 140	JACK CREEK		12	2456		CAF	MP	14	
	20 27	SONOMA CREEK		12	2582		CG	CS	64	38
	20 26	CALABASAS CR	4	12	2941		CG		102	24
	20 139	MOON CREEK		12	3017		CC		12	35
	20 25	STUART CREEK		12	3080		CG		32	24
	20 30	HOOKER CREEK	4	12	3331		MA	CAF	24	35
	20 24	AGUA CALNTE CR		12	3575		CG	CG	32	40
	20 138	ROSTER CREEK		12	3884		CC		12	31
	20 137	FRYER CREEK	4	12	3897		CC		13	31
	20 136	MONOVAIL CREEK		12	3961		CC		12	
		4-NAP-12								
E		JCT RTE 29 AHD	4	12	000		E ON 12			
		SOLANO CO LINE		12	331					

EXPLANATION TO EXISTING FACILITIES (BRIDGES) TABLE

ROUTE SEGMENT:

Segment of route in which bridge is located.

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 Highway (May be Closed)
W - Drainage Pumping Station
M - Buried Hazard or Miscellaneous Structure
Z - Access to Private Property or Closed with no access
E - Connector Structure
F - Connector Structure
G - Connector Structure
H - Connector Structure

NAME OR DESCRIPTION:

May contain miscellaneous information. Additional miscellaneous information may be found on the same line under the heading "Structure Type or PUC number or Pump Data".

ROUTE:

State highway route.

POST MILE:

Prefixes of R, M, and N refer to realigned routes. The prefix C refers to commercial routing. The prefix L refers to section paralleling another route (Non-Add). Post miles are to 1/100 mile.

COUNTY:

County in which bridge is located (Caltrans "Alpha" Code).

CITY:

City in which bridge is located (Caltrans "Alpha" Code).

EXPLANATION TO EXISTING FACILITIES (BRIDGES) TABLE

STRUCTURE TYPE OR PUC NUMBER:

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

Coding 1st two columns of all three 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
CB - Concrete Box Girder
CC - Concrete Box Culvert
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 in 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
QT - Precast Prestressed Inverted "T" Girder
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 - Masonry 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

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

PUC Number (For Railroad Grade Crossing).

EXPLANATION TO EXISTING FACILITIES (BRIDGES) TABLE

WID. OR EXT. TYPE:

Latest widening or extension.
See code explanation under STRUCTURE TYPE OR PUC NUMBER.

LENGTH (PROT):

Total bridge length (Feet) 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 Light Signals with Rotating Stop Banner
O - Standard Overhead Sign
T - Traffic Signals Synchronized
W - Standard Wigwag
WM - Magnetic Wigwag Flagmen or Other Type of Wigwag with Flashing Light Aspect
X - Standard Crossbuck
XR - Reflectorized Crossbuck

WIDTH:

Bridge width (in feet).