Decision 83 08 036

JUN 1 1983

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation for the purpose of establishing a list for the fiscal year 1983-84 of existing and proposed crossings at grade of city streets, county roads or state highways most urgently in need of separation, or projects effecting the elimination of grade crossings by removal or relocation of streets or railroad tracks. or existing separations in need of alteration or reconstruction as contemplated by Section 2452 of the Streets and Highways Code.

OII 82-10-03 (Filed October 20, 1982)

(See Appendix A for appearances.)

OBINION

This is an investigation required by Streets and Highways (S&H) Code § 2452 to establish a Railroad-Highway Grade Separation Priority List (priority list) for the fiscal year 1983-84. Copies of the Commission's order instituting investigation (OII) were served upon each city, county, and city and county in which there is a railroad crossing, each railroad corporation involved, the California Department of Transportation (Caltrans), the California Cities, the County Supervisors Association, and other persons who might have an interest in the proceeding. The OII invited qualified agencies and railroad corporations desiring to have a particular crossing or separation considered for inclusion on the 1983-84 priority list to

submit their nominations to the Commission on or before December 20, 1982. In response to the OII, 35 agencies nominated 85 projects for inclusion on the list. Public hearings were held on the matter in San Francisco and Los Angeles and the investigation was submitted April 27, 1983 upon the receipt of late-filed Exhibit 4. Background

S&E Code § 2452 requires that by July 1 of each year the Commission establish a priority list, determined on the basis of criteria established by the Commission, for the succeeding fiscal year of existing and proposed crossings at grade of city streets, county roads, or state highways, which are not freeways, as defined in S&H Code § 257, most urgently in need of separation. It includes projects effecting the elimination of grade crossings by removal or relocation of streets or railroad tracks and existing separations in need of alteration or reconstruction. Once the priority list has been established by the Commission it is furnished to Caltrans and the California Transportation Commission. Those latter two agencies. under the provisions of S&H Code §§ 190 and 2453, allocate at least \$15 million during the year the priority list is effective to the projects in accordance with their priority on the list. The basis of allocation is contained in S&H Code §§ 2540-2461. For projects which eliminate an existing crossing or alter or reconstruct an existing grade separation, an allocation of 80% of the estimated cost of the project is provided for, with the local agency and railroad each contributing 10%. For projects which eliminate a proposed grade crossing, an allocation of 50% is provided for, with the remaining 50% being contributed by the local agency. The allocation is limited to that necessary to make the separation operable and the initial

allocation of funds is not to exceed the applicant's project cost estimate used by the Commission in establishing the annual priority list. With regard to projects having the same priority index number, consideration is first given to projects which separate or eliminate existing grade crossings, then to projects which alter or reconstruct grade separations, and, finally, to projects to construct new grade separations. Within each of these categories, first consideration is given to the lowest cost project in order that the maximum number of projects may be accomplished with the available funds. S&H Code § 2454(g) reads as follows:

"(g) Notwithstanding the provisions of Subdivisions (a) to (f), inclusive, the total of such allocations for a single project shall not exceed five million dollars (\$5,000,000) without specific legislative authorization, except that the amount for a single project may be increased to either (1) an amount that includes the federal construction cost index increase each year since 1976, or (2) an amount which does not exceed one—third of the total funds appropriated for grade separation projects for the year of allocation, whichever amount is less, as determined each year by the Public Utilities Commission."

The amount referred to in (1) of the preceding quoted paragraph is \$7,970,000.

Following issuance of the priority list by the Commission, applications to Caltrans for an allocation must be made no later than April 1 of each fiscal year or the next business day if April 1 is not a business day. The requirements for filing an application for an allocation of grade separation funds are set forth in Title 21 (Public Works), Chapter 2, Subchapter 13 (Grade Separation Projects) of the California Administrative Code.

Information Required to be Submitted with Nomination

The OII required each nomination to be accompanied by the following verified data about the project:

- 1. A statement indicating the need for the project.
- 2. A statement indicating that the nominating agency can or cannot complete the pre-allocation requirements, as set forth in S&H Code § 2456, prior to April 2, 1984.
- 3. A location map of the project, on paper 8% by 11" in size (scale 1" = 500' approximately) showing existing streets, highways, and railroads. The proposed alignment of the grade separation shall also be shown.
- 4. Two photographs (minimum size, 3;" x 5") of the crossing, one from each direction of approach.
- 5. A statement indicating the type of project.
- 6. For existing or proposed crossings nominated for separation or elimination, a completed Nomination Form GSN-1 (Revised 9-82).
- 7. For proposed crossing projects, a discussion of the physical practicability and feasibility of constructing an at-grade crossing in the general area of the proposed separation. No discussion of economic feasibility was required, only a description of the physical features in the surrounding terrain which would allow the construction of an at-grade crossing. If sufficient evidence is not presented that construction of an at-grade crossing is practical and feasible, the project will be excluded from the list.
- 8. For existing grade separations nominated for alteration or reconstruction, a completed Nomination Form GSN-2 (Revised

9-82) and a description of the existing and proposed separation structures, including acute structural deficiencies, shall be included with the nomination.

Prepared testimony which fully supports the nomination.

Nomination Forms GSN-1 and GSN-2 were furnished each agency and railroad, along with the OII. These forms require the submission of detailed data about the project as called for on the forms so that the project can be more fully evaluated in accordance with the criteria established by the Commission. The forms also call for an estimate of the total cost of the project broken down as to the costs of right-of-way, preliminary engineering, construction engineering, bridge construction, railroad work, highway approaches and connections, utility relocation, contingencies, and removal of existing crossing.

Establishment of Tentative Priority List

After the nominations were received, the Railroad Operations and Safety Branch (the staff) of the Commission's Transportation Division applied the following criteria to the data furnished with each nomination:

$$P = \frac{V \times T}{C \times F} + SCF$$

Where:

P = Priority Index Number

V = Average 24-Hour Vehicular Volume C = Total Cost of Separation Project (In Thousands of Dollars)

T = Average 24-Hour Train Volume

F = Cost Inflation Factor (Use F = 13 for 1983-84 F.Y. Priority List)

SCF = Special Conditions Factor

For Existing or Proposed Crossings Nominated For Separation or Elimination

SCF = G1 + G2 + G3 + G4 + G5 + G6 + G7

Where:		Points Possible
G1 :	Vehicular Speed Limit	0- 5
Ģ2 :	Railroad Prevailing Maximum	V - <i>y</i>
	Speed	0- 5
G3 :	= Crossing Geometrics	Õ~ Ś
G4 :	Crossing Blocking Delay	0-10
G5 :	Alternate Route Availability	0- 5
G-6 :	Accident History	ŏ - 2ŏ
G7 :	Irreducibles	0-20
	Total Possible	0-70

For Existing Separations Nominated for Alteration or Reconstruction

SCF = S1 + S2 + S3 + S4 + S5 + S6

Where:	Points Possible
S1 = Width Clearance	0-10
S2 = Height Clearance	0-10
S3 = Speed Reduction or Slow	4 / 5
Order	0~ 5
S4 = Load Limit	0 - 5 0 - 5
S5 = Accidents at or Near	•
Structure	0-10
S6 = Probability of Failure a	and
Irreducibles	0-10
Total Possible	
roter Lossiple	0-50

Points in each category are assigned according to the following schedule:

Grade Crossings

G1 = Vehicular Speed Limit

MPH	Points
0-30	0
31~35	1
36-40	2
41-45	3
46–50	4
51-55	5

G2 = Railroad Maximum Speed

<u>MPH</u>	Points
0-25	0
26-35	1
36-45	2
46-55	3
56-65	4
66+	5

G3 = Crossing Geometrics

O-5 points based on relative severity of physical conditions

G4 = Crossing Blocking Delay, Total Minutes per Day

Minutes	Points
0–20	0
21-40	Ĩ
41-60	2
61-80	3
81 <i>–</i> 100	4
101-120	5 6
121-140	6
141-160	7
161-180	8
181-200	
200+	10

G5 = Alternate Route Availability

Distance (Feet)	Points
0-1,000	0
1,001-2,000	1
2,001-3,000	2
3,001-4,000	3
4,001-5,000	4
5,001+	5

G6 = Accident History (10 years)

Each reportable train-involved accident

Points = (1 + 2 x No. killed + No. injured) x PF*

*PF = Protection Factor for:

Std. #9 = 1.0

Std. #8 = 0.4

Std. #3 = 0.2Std. #1 = 0.1

- Note 1. No more than three points shall be allowed for each accident prior to modification by the protection factor.
- Each accident shall be rated separately and modified by a factor appropriate to the protection in existence at the time of the accident.

G7 = Irreducibles

0-20 points based on:

- (a) Secondary accidents (b) Emergency vehicle usage (c) Accident potential (d) Passenger Trains

Number of Trains Per Day	Points
1–2	1
3 to 5	2
6 to 20	3
21 to 49	4
50+	5

Existing Separations

S1 = Width Clearance

Width (Feet)	<u>Points</u>
$16^{\circ} + 12(N)$	0
12' but less than 16' + 12(N)	2
8' but less than $12' + 12(N)$	4
O' but less than 8' $+ 12(N)$	6
11(N) but less than 12(N)	8
Less than 11(N)	10

N = Number of Traffic Lanes

S2 = Separation Height Clearance

Underpass

Height (Feet)	Points
15' and above	0
14' but less than 15'	4
13' but less than 14'	8
Less than 13'	10

Overpass

Height (Feet)	Points O
22½' and above	
20' but less than 22'	4
18' but less than 20'	8
Less than 18'	10

S3 = Speed Reduction or Slow Order

	Points
None	0
Moderate	2
Severe	5

S4 = Load Limit

	Points
None	
Moderate	2
Severe	5

S5 = Accidents at or Near Structure (10 Years)

Number	Points
0-10	0
11-20	1
21-30	2
31-40	3
41 – 50 51 – 60	4
61-70	5 6
71-80	7
81-90	8
91–100	9
101+	10

S6 = Irreducibles

0-10 points based on:

- (a) Probability of Failure (b) Accident Potential
- (c) Delay Effects

The proposed criteria are similar to those used in the 1982-83 fiscal year proceeding.

Projects involving the closure of multiple crossings were evaluated in the same manner as single crossing projects with two major exceptions involving the Accident History and Crossing Blocking Delay Factors. For a multiple crossing project, the Accident History points for each crossing were added and that cumulative total reflected in Table 2A (Appendix C) for G6 - Accident History.

Crossing Blocking Delay was considered on an individual project basis. For single street crossings of two railroads, the delays at each crossing were simply added; at multiple street crossings of a single railroad, the delay points awarded depended on the street configuration. For the vast majority of these projects, delay points were awarded based on a weighted average taking into account the delay and the number of vehicles at each crossing in the project.

The staff's Exhibit 2 lists the nominated projects, the tentative point values assigned each project, and the tentative initial recommended priority list.

Establishment of Final Priority List

During the course of the hearing witnesses for several of the projects were permitted to amend the factual data contained in their nominations while other witnesses gave a fuller explanation of their previously submitted information. This additional information resulted in their projects' points being revised. These projects were:

Agency	Crossing Name	Affected Category
Alameda County	Liv-ALT CNSL	Vehicle Volume Blocking Delay
Anaheim	Lincoln Avenue	Vehicle Volume Project Cost
Bakersfield	Union-24th	Train Volume
Caltrans	237-Santa CLA	Train Speed
Colton	Fogg Street	Irreducibles
Corona	Lincoln Avenue	Type of Project Crossing Name Milepost Vehicle Volume Project Cost Vehicle Speed Train Speed Crossing Geometrics Alternate Route
El Monte	Peck Road	Train Speed Alternate Route
El Monte	Peck-Ramona	Train Speed Alternate Route
Fremont	Newark Boulevard	Train Volume Blocking Delay
Fremont	Paseo Padre	Train Volume
Fresno County	Chestnut A-1	Accident History
Hayward	Harder Road W. Winton Avenue Tennyson Road	Train Speed Train Speed Train Speed
Indio	Monroe Street	Train Speed
Irvine	Yale Avenue	Project Cost
Livermore	N. Mines ALT 1 N. Mines ALT 2	Train Speed Train Speed
Los Angeles	Nordhoff Street	Train Volume Irreducibles
Los Angeles County	Telegraph Road Slauson Avenue Florence Avenue (BBH-488.43) El Segundo Blvd.	Train Volume Train Volume Alternate Route Alternate Route

Ontario	Haven Avenue	Project Cost
Pittsburg	Harbor St. (B-49.3) Harbor St. (2-1155.4)	Speed Reduction Vehicle Volume Project Cost Speed Reduction
San Jose	Branham Lane	Vehicle Volume Train Volume Blocking Delay Alternate Route
San Mateo	AL	Train Volume Train Volume Train Volume Train Volume Train Volume
Santa Ana	Grand Avenue Fourth Avenue	Project Cost Project Cost
So. San Francisco	Oyster Pt. Blvd.	Train Volume Blocking Delay
Torrance	Torrance RLC	Vehicle Volume Train Speed
Yolo County	Harbor Blvd.	Train Volume Accident History Blocking Delay

The OII also required that agencies anticipating the need for an allocation above \$5 million should be prepared to present evidence at the hearing to justify the additional award. Such evidence was received concerning the following projects:

Projects in Excess of \$5 Million

A. Projects Resulting in Multiple Crossing Closures or Alterations

Alameda County	Livermore-Altamont Consolidation
Bakersfield	Union-24th Street
Caltrans	St. Route 180-Fresno County
Caltrans	St. Route 162-Butte County
El Monte	Peck-Ramona (El Monte Lowering Project)
Irvine	Irvine Lowering
Los Angeles County	Slauson Avenue
Los Angeles County	Grand Avenue
Los Angeles County	Bandini Boulevard

Pittsburg San Gabriel San Gabriel Santa Ana

Railroad Avenue
San Gabriel Lowering
Ramona-Mission
Fourth Street

B. Projects Achieving Major Changes/ Improvements in Traffic Safety and Circulation by Completion or Realignment of Major Arterials or Realignment of Complex Adjacent Street Intersections

> Anaheim Caltrans Caltrans Caltrans El Monte Hayward Indio Los Angeles County Los Angeles County Los Angeles County Riverside (City) San Mateo (City) Santa Ana Santa Ana So. San Francisco Stockton

Lincoln Avenue St. Route 41-Fresno County St. Route 70-Yuba County St. Route 237-Santa Clara County Peck Road A Street Monroe Street Florence Avenue (Crossing No. BBH-488.43) Florence Avenue (Crossing No. BG-488.3) El Segundo Boulevard Arlington Aveunue Laurie Meadows Drive Grand Avenue 17th Street Oyster Point Boulevard Hammer Lane

The City of Simi Valley nominated its Tapo Canyon Road project for inclusion on the priority list. This project called for construction of a highway overpass across the Coast Line railroad tracks of Southern Pacific Transportation Company (SP) at Milepost 436.8. The project was given a priority number of 66 on the staff's tentative priority list. The project is intended to eliminate a proposed grade crossing at that site. At the hearing the question was raised whether it was practicable and feasible to construct the proposed grade crossing which the nominated project was intended to

replace. It was brought out that before the City of Simi Valley was incorporated, the County of Ventura filed Application 49093 with the Commission for authority to build a crossing at grade at Milepost 436.8, the site of the proposed grade crossing which the Tapo Canyon Road project is intended to replace. Decision 73589 in the case found, among other things, as follows:

"14. The proposed crossing would be extremely hazardous due to the fact that it would have an 11 percent grade of approach from Los Angeles Street to the Railroad's track. The crossing would be hazardous due to the short distance, approximately 75 feet between the main line and Los Angeles Street. The crossing would be hazardous due to the possibility of two-train-type accidents at the crossing. Public health and safety require that the application be denied."

The application was denied. Such a determination about the proposed crossing is conclusive of the fact that the proposed crossing is not feasible. For this reason the Tapo Canyon Road project does not qualify for the priority list.

The County of Riverside failed to appear at the hearing and support or stand cross-examination on its Limonite Avenue project. The last paragraph of the OII warned that failure of the nominator to appear at the hearing would constitute grounds for exclusion of the nominator's project from the 1983-84 priority list. For this reason the Limonite Avenue project will be excluded from that list.

Shortly before the close of the hearing the staff made a motion that it be allowed to file late-filed Exhibit 4, a revision of its Exhibit 2, taking into consideration the evidence adduced at the hearing. The motion was granted and late-filed Exhibit 4 was filed April 27, 1983. However, late-filed Exhibit 4 contained an error.

While Corona's Lincoln Avenue project was listed on page 2 of the exhibit as a project entitled to revised points because of changes in factual data submitted at the hearing not all points to which it was entitled were assigned to it. Appendixes B, C, D, and E are extracts of late-filed Exhibit 4 corrected to reflect the change in the number of points to which the Corona nomination is entitled and pertain as follows:

Appendix B An alphabetical list of eligible projects nominated for inclusion on the 1983-84 priority list. Included, in addition to information identifying each project, are the vehicular and train volume, project cost, and the $\frac{V \times T}{C \times F}$ calculation associated with each nominated project.

Appendix C A list of point values awarded in each Special Conditions Factor category to existing or proposed crossings nominated for separation or elimination.

Appendix D A list of point values awarded in each Special Conditions Factor category to existing grade separations nominated for alteration or reconstruction.

Appendix E A ranking of projects nominated for inclusion on the 1983-84 priority list by their Priority Index Number.

The legend for use in interpreting some of the figures, numbers, and abbreviations used in Appendixes B, C, D, and E is as follows:

RR

- 1 Southern Pacific Transportation Company
- 2 The Atchison, Topeka and Santa Fe Railway Company 3 Union Pacific Railroad Company
- 4 Western Pacific Railroad Company
- 36 McCloud River Railroad

 \mathbf{BR}

Railroad Branch

MILEPOST

Identifying railroad milepost

SUF

Suffix applied to separations nominated for alteration or reconstruction and to spur crossings.

- A Highway Overpass
- B Highway Underpass
- C Spur Crossing

PROP

* - Proposed Crossing

TYPE PROJ

Type of Project

- 1. Existing grade crossing nominated for separation.
- 2A. Proposed crossing nominated for separation Grade Crossing practical and feasible.
 - 3. Grade crossing nominated for elimination by removal or relocation of street or tracks.
 - 4. Grade separation nominated for alteration or reconstruction.

Findings of Fact

- 1. The criteria set forth in Appendixes B, C, and D, attached, are reasonable and should be used to establish the 1983-84 priority list.
- 2. The proposed grade crossing which the Tapo Canyon Road project is intended to replace is not feasible.
- 3. The County of Riverside failed to appear and support or stand cross-examination on its Limonite Road project.
- 4. Those projects described under the heading "Projects in Excess of \$5 Million" qualify for initial allocations in excess of \$5 million as provided by S&H Code § 2452(g).

- 5. With regard to projects having the same priority index number, consideration should first be given to projects which separate or eliminate existing grade crossings, then to projects which alter or reconstruct existing grade separations. Within each of these categories, first consideration should be given to the lowest cost project so that the maximum number of projects may be accomplished with the available funds.
- 6. As the statute requires issuance of our order by July 1, the effective date of this order should be the date of signing. Conclusions of Law
- 1. The Tapo Canyon Road project should not be included on the 1983-84 priority list.
- 2. The Limonite Road project should not be included on the 1983-84 priority list.
- 3. The list set out in Appendix E should be established as the 1983-84 priority list.

ORDER

IT IS ORDERED that:

- 1. The list of projects appearing in Appendix E is established as required by California Street and Highways Code § 2452 as the 1983-84 list, in order of priority, of projects which the Commission determines to be most urgently in need of separation or alteration.
- 2. With regard to projects having the same priority index number, consideration shall first be given to projects which separate or eliminate existing grade crossings, then to projects which alter or reconstruct existing grade separations, and finally to projects to construct new grade separations. Within each of these categories, first consideration shall be given to the lowest cost project so that the maximum number of projects may be accomplished with the available funds.

3. The Executive Director shall furnish a certified copy of this opinion and order to the California Department of Transportation and California Transportation Commission.

LEGNARD M. GRIMES, JR.
Prosident
VICTOR CALVO
FRISCILLA C. GREW
DONALD VIAL
Commissioners

I CERCITY THAT THIS DECISION WAS APPROVED BY THE ABOVE COMMISSIONERS TODAY.

Coeph E. Boucvitz, Executive Dir

APPENDIX A

LIST OF APPEARANCES

Respondents: Pat Kiyoshi Adachi for the County of Sacramento;
Elliott B. Andersen, for the City of San Jose; Robert M.
Barton, for the County of Alameda, the City of Livermore, and the City of Bakersfield; Tom Blalock, Mark Kenning, and Allen Sprague, Attorney at Law, for the City of Fremont; Ed Hardin, for the City of Hayward; Ron Lefler, for the City of Fittsburg; Richard Luebers, for the City of Pittsburg and the City of San Mateo; Ron Miller, for the City of Stockton; Lloyd Roberts, for the County of Yolo; Ron Tribbett, for the City of Dixon; William J. Wagner, for the City of South San Francisco; James Whitaker, for the City of Bakersfield; Robert G. Bezzant, for the City of San Mateo; Marvin Johnson, for the City of Fresno; Norman G. Preston, for the County of Fresno; Wayne Peterson, for the City of San Luis Obispo; James Ross, for the City of Irvine; H. Richard Neill, for the City of Colton; David E. Hedlund, for the City of Paramount and the City of Santa Ana; Richard P. Perkins, for the City of Torrance; Harold Vellins, for the City of Dos Angeles; Greg M. Baguio, for the City of Buena Park; Larry S. Tanaka, for the County of Santa Barbara; William D. Gardner, for the City of Riverside; Leon A. Lies, for the City of Corona; Eldon K. Lee, for the City of Indio; J. D. Burk, for Urban Development; Kenneth C. Johnson, for the City of Simi Valley; Lawrence C. Bevington, for the City of El Monte; Robert Schoenborn, for the City of Fontana; Rov A. Maddock, for the City of Ontario; Paul Singer, Attorney at Law, for the City of San Gabriel; Gary F. Dysart, for the City of Camarillo; and Robert Hodson, for the City of Fullerton.

Interested Parties: <u>Eugene C. Bonnstetter</u>, Attorney at Law, for the State of California, Department of Transportation, and <u>Harold S. Lentz</u>, Attorney at Law, for Southern Pacific Transportation Company and affiliated companies.

Commission Staff: William L. Oliver-

(END OF APPENDIX A)

Alphabetical List of Elimine Projects Reminated for Inclusion on the 1983-84 Priority List, Including Yehicular and Train Yoluwe, Project Cost and the Y x T Calculation Associated with Each Reminated Project

APPENDIX B

COLTON FO			CALIRANS 51	CALTRANS	CALTRANS 21	CALTRANS	CALTRANS	CALTRANS	CALTRANS	CALTRANS	CALTRANS	CHERANS	CALIBANS	CALTRANS	CALTRANS	CALTRANS	CALTRANS 5	CALTRANS 2	SUINA PARK	extrsficto H	BARERSFIELD U	MINERA	ALANGOA COUNTY	ASCHCY	
	F066 S1	LAS POSAS RO	SS-SAN BRDO	166-STA BARBA	237-SANTA CLA	89-SHASTA	89-SHASTA	131-SHASTA	YBRA-OL	31106-201	1) -FRE SHO	100-F PE SNO	SE-HONSEREY	19-PLUMAS	9-PLUMAS	301583AT&-61	SB-SAN BROO	VOJNY 1V- 05.2	DALE STREET	H STREET	N142-401H	LINCOLN AV	TSA-YLL CAST	CROSSING NAME	
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Alphabetical List of Taible Projects Nowinsted for Ibelusion on the 1989-84 Priority List, Including Yehicular and Train Yolume, Project Cost and the Y x T Calculation Associated with Each Nowinsted Project C x F

APPENDIX B

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FRENONS	PASEO PADRE	-	_	27.5		•	24	13000	~	1809000	15
FRENONT	REWARK OL	-	~	24.5				13000	~	2932000	10
TRESTO	AV AVHS	~		1004.2			-	26000	24	610000	•
FRESHO	AV GETTINS	~		1005.0				5114	~	1310000	~
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FRESHO COUNTY	CLOW SE NA	***	•	213.3			-	10327	=	3075000	•
FULLERION	GILBERT ST	~		162.4			-	25100	:	\$853000	15
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TABLE 1

Alphabetical List Eligible Projects Nominated for Inclusion on the 1983-84 Priority List, Including Vehicular and Train Volume, Project Cost and the Y n T Calculation Associated with Each Nominated Project C n F

APPENDIX B

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TABLE 1
ALPHAGETICAL LIST OF PROJECTS
BY MONJHATING AGENCY

Alphabetical List of Elite Projects Mominated for Includion on the 1983-84 Priority List, Including Vehicular and Train Volume, Project Cost and the Y x T Calculation Associated with Each Mominated Project C x F

APPENDIX B

OF RUNDARITH ANDRES											
A 3 & 3 & 3 & 4	CROSSING	20 20	(F XF	POST	\$UF	7207	1496	JUN 10A H3A	TRAIN	PROJECT COST	C × × 7
SAM MATEO	POPLAR AV	_	~	11.2	•		•	9100	S S	1350000	10
SANTA AND	first st	~		175.6	œ		-	76130	2	5060000	Ξ
SANTA ANA	AT CATES	~		176.2			-	27600	24	0100000	~
SANTA ANA	171H SIREET	~		174.7			-	35500	~	21574000	.
SANTA ANA	FOURIN SI	~		175.4			-	10000	30	72 00000	
SANTA BAPBARA COUNTY	HOLLISTER AV	_	~	345.7	•		•	12300	=	3630000	•
SOUTH SAN FRANCISCO	OYSTER PI BL	-	~	:			-	15115	5	11450000	•
STOCKTON	HAMPER LN	•		****			-	32904	3	7235000	5
TORRANCE	TORRANCE PLC	-		\$00.73				57713		1000000	•
TORRANCE	76 OHE 130	~	×	19.5		•	21	25000	5	3600000	
TOLO COUNTY	HARBOR BL	-	>	86.4			-	8118	2	2595000	~

(END OF APPENDIX B)

APPENDIX C Page 1

List of Point Values Avarded in Each Special Conditions Factor Category to Existing or Proposed Crossings Nominated for Separation or Elimination

TABLE 2A SPECIAL CONDITIONS FACTOR FOR GRADE CROSSINGS MONINATED FOR SEPARATION OR ELIMINATION

MULINATED FOR SEPARATION	ON EFTICIALISON						VEH SPD	TFAIN	ATHE	B1 W W F	43.4	***		
ASENCY	CROSSING Name	FR	BR	MILE	suf	PROP	11M11 61	SPEED	65 OH	DELAY 64	ALT ATE 65	ACC H151 66	188 67	SCF
ALAMEDA COUNTY	LIV-ALT CHIL	1	0	46.0			3	3	5	0	5		15	39
ANAHEIN	LINCOLN AY	2		167.7			0	5	2	3	0	0	15	55
BAREASFIELD	HTPS-HOINU	1	8	312.3			1	3	•	•	2	•	11	31
BAKERSFIELD	H STREET	2		447.5			0	0	2	•	0	•	10	25
BUERA PARK	DALE STREET	2		161.3			2	5	2	0	3	0	10	55
CALTRANS	58-5AN BROO	2		753.2			5	4	3	1	5	0	•	26
CALIFARS	19-RIVERSIDE	1	8	562.4			0	3	2	•	1	2	•	21
CALTRANS	48-MONTEREY	ì	ŧ	117.29			1	0	5	5	1	2	•	20
CALTRANS	180-FPESHO	2		997.0			0	0	\$	5	ı	2	10	20
CALTRANS	NI-FRESHO	1		205.9			o	0	3	•	0	3		10
CALTRANS	231-SANIA CLA	ì	Ł	39.0			5	5	2	1	•	4	11	31
CALTRANS	166-STA BARBA	1	£	276.8			0	3	2	10	•	2	•	30
CALTRANS	SO-SAN BROO	5		780.3			5	•	3	3	5	1		27
CAMARILLO	LAS POSAS RD	1	E	117.0			0	4	3	0	5	0	•	20
CORONA	FINCOLN AV	5	8	25.1		•	5	5	0	2	5	0	•	26
DIXON	W A ST EWR	1		67.4			0	5	2	3	5	1	12	28
EL MONTE .	PECK RD	1	8	495.3			1	•	1	2	i	14	14	37
EL MORTE	PECK-RAHONA	1	8	495.0			2	•	3	2	1	20	16	48
FORTARA	SIERRA AV	5		44,7			0	3	5	1	1	5	7	19
FREMONT	PASEO PADRE	1	Ł	27.5		•	3	3	0	2	2	0	7	17
FREMONT	HEWARK BL	1	Ł	20.5			3	3	3	2	5	0	10	26
FRESHO	SHAW AY	5		1004.2			•	5	•	2	5	6	19	40
FRESHO	BULLAPD AY	5		1005.0			1	5	2	•	5	7	•	32
FRESHO COUNTY	CHESTNUT A-1	1	8	210.3			2	4	•	2	•	10	•	35

List of Point lives Avarded in Each
Special Conditions Factor Category to Existing or
Proposed Crossings Nominated for Separation or Elimination

APPENDIX C
Page 2

PARAMOUNT ALONDRA BL	ONTARIO HAVEN AV	LOS ANGELES COUNTY BANCINI BL	LOS ANGELES COUNTY DEL AND BL	LOS ANGELES COUNTY DOUGLAS ST	LOS ANGELES COUNTY EL SEGUNDO	LOS ANGELES COUNTY FLORENCE AV	LOS ANGELES COUNTY FLORENCE J	LOS ANGELES COUNTY GRAND AV	LOS ANGELES COUNTY SLAUSON AY	LOS ANGELES NORTHOFF ST	LIVERMORE H MINES ALT	LIVERHORE N MINTS ALT	IRVING IRVING LUR	THE PALE AV	INTERESTANCE SALES	INDIO HONROE ST	HAYKARD IENNYSON RD	HAYLARO U U U U U U U U U U U U U U U U U U U	HATUARD A STREET	HAYUARO HARDER BD	FULLERION 61LBERT SI	ENESHO COUNTY THE CLOSES AV	FRESHO COUNTY CHESINUT	AGENCY CROSSING NAME	TABLE 2A SPECIAL CONDITIONS FACTOR FOR GRADE CROSSINGS NOMINATED FOR SEPARATION OR ELIMINATION
				_	2	~	¥		•	¥	7	7 ~	~		YAY		ð	¥			-		>		\$9MI\$
•	-	•••	-	~	_	_	-	-	-	-	-	-	~	~	~	-	-	-	•	-	~	_	-	70 70	•
>	•	•	H 8	I	H 88	8	H	(30	8	m	0	٥				•	•	_		•		9	•	9	
12.3	524.42	3.4	197.59	15.1	192.6	100.3	181.13	500.5	187.3	110.55	10.6	10.6	100.5	181.3	186.4	609.7	23.0	20.2	20.2	21.6	162.4	213.3	210.3	POST	
																								SUF	
	•			•				•		•	•	•		•	•									PR 0 P	
-			•	~	_	_	-		-		-	-	J	•	•	~	-	-	0	-	~	•	~	19 11411 414 240	
0	J	0	0	0	0	0	0	•	0	•	~	~	•	G	"		~	•	•	~	۰	•	-	SPECO	
~	0	ب	_	5	~	•	~	0	•	0	0	•	•	0	•	-	~	~	.	•		w	•	£3 4033	,
•			0	-	0	-	•	~	•	-	~	~	~	-	-	~	_	~	0	_	~	~	~	AV130	7
~	"	_	y	~	-	~	~	~	~	_	•	•	•	u	~	٠,		ر.	_	w		~	_	SEC	:
5	•	~	-	•	0	~	•	•	"	0	0	•	~	•	•	u u	•	0	~	_	_	•	~	49 15 IN	,
12	•	•	•	υs	•	7	•	.	-	•	•	•	13	~	•	=	•	•	~	•	12	•	•	5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
31	22	21		10	10	Ŧ	24	;	29	=	=	=	39	=	~	35	~0	~	~	-	<u></u>	~	~	307 1014E	

List of Point Values Avaided in Each
Special Conditions Factor Category to Existing or
Proposed Crossings Mominated for Separation or Elimination

APPENDIX C
Page 3

TABLE 24
SPECIAL CONDITIONS FACTOR FOR GRADE CROSSINGS
NOMINATED FOR SCPARATION OR ELIMINATION

NOMENATED FOR SCPARATION OR ELIMINATION	CININATION CAMPOC CHOSSING	•					: ;			7	•			
MONEYCE	CROSSING NAME	20	9	POST	Suf	79 97	FINIT TIMIT	\$9££0	19 1039	061 74 AT 130	RTE	1STR	ST ST	SCF
PAR MOUNT	COMPTON BL		>	=-				•	~	•	~	us.	=	25
72775BURG	RAILROAD AV	-	•	**.*			0	-	•	5	~	~	17	2
RIVERSIDE	ARLINGION AV	~	•	12.4			_	~			~		•	2
SACRAMENTO COUNTY	U STREET	_	-	102.5						10	•		•	. 31
SAN GABRIEL	SAM GABL LUR	-	•	190.2			-		ų,	~	~	~	=	29
SAN GARRICE	RAHOMA-MSM		•	190.3			o	(m)	•	~	æ	~	0	=
SAN JOSE	BRANHAM LANE	-	~	57.1			-	~	•		~	~	10	24
SAN LUIS OBISPO	08 011 80	-	~	253.3			~	0	w	•	ب	0	5	~
SM MATEO	LAURIE MEADON	-	m	21.1		•	-		ø.		*	٥	13	11
SANTA ANA	AN GHYES	~		176.2			~	~		•	0	~	3	~
SANTA ANA	JTIM STREET	~		174.7			•	•		•	~	~	3	=
Santa ana	FOURTH ST	~		175.4			0	~	44	*	0	ų,	=	30
SOUTH SAN FRANCISCO	OYSTER PT BL	-	~	•;			-	•	~	y	•		=	37
STOCKTON	HANNER CM	•		91.5			-		-	~	y,	~	~	27
HORRENCH	TORRANCE RLC	-	986	500.73			•	0	••	-	w	-	•	7
TORRESCE	DEC THO OF	~	x	19.5		•	•	0	0	*	ø.	•	\$	17
TOLO COUNTY	HARBOR BL	-	-	26.4			-	•	•	~	"	•	12	=

(END OF APPENDIX C)

TABLE 20 SPECIAL COMDITIONS FACTOR FOR SEPARATIONS

MONIMATED FOR ALTERATION OF RECONSTRUCTION	RECOMSTRUCTION									;	•		
A SE NC Y	CROSSING	20 20	.	POSI	\$uf	₽ ₩ 0 ₹	CLCAR	CLCAR CLCAR	REOUC	LINII LINII	STRUC	¥ Z	1011/L
CALIRANS	234-ALAHEOA	•	c n	;	•		•	-	~	0	•	•	;
CALIRANS	99-PLUMAS	•	*	21.5			•	•	~	•	•	•	=
CALIFANS	49-PLUMAS	•		337.4	•		•	•	~	•	0	•	=
CALTRANS	11106-291	•		201.0	•		•	•	0	0	-	•	7
CALTRANS	10-YUBA	-	•	111.7	~		•	,	0	0	~	•	2 0
CALIBARS	151-5HASTA	_	^	266.2	•		•	•	~	0	0	~	2
CALINANS	07-SH15TA	26	•	50.0	•		~	•	~	•	0	.	5
CALTRANS	89-SHASTA	?	•	32.1	œ		•	•	~	•	0	~	=
COLTON	1065 31	~	•	:	•		10	10		•	w	5	31
LOS AMERICS COUNTY	TELEGRAPH RO	~		1.1.1	•		•		•	•	•	•	22
P1115 0URG	HARBOR ST	_	•	19.3	•		-	•	~	0	-	•	23
P11150URG	HARBOR ST	~		1155.4	•		•	•	~	•	-	•	27
SAN MATEO	HONIE DIABLO	-	-	17.	•		•	10	•	•	0	•	23
SAN MATEO	AT NOLTEL	_	~	17.5	•		-	0	٠,	0	~	5	<u>.</u>
SAN NATEO	SANTA INEZ AV	-	•	17.3	(39		•	10	•	•	•	•	~
SAN NATEO	POPLAR AV	-	~	17.2	•		•	•	0	•	-	•	23
SANTA ANA	FIRST ST	~		175.6	(30		-	0	•	0	-	J	5
SANTA BARBARA COUNTY	HOLLISIER AV	-	-	365.7	•		~	•	.	0	0	•	30

# P P P P P			4	or tell pro-	, ,	(11,11)			•	•
SALANTA TACK MARCH							el H		PR 10R 11V	
A SE INC Y	CROSSING NAME	10 10	## ##	POST	\$e#	PR0P	C	SCF	KNOKK	# 384A # A A A A A A A A A A A A A A A A A A
34146	BANE PARRENT	~		116.4		•	2	12	\$	-
EL HOMIE	PRCK-PAHORA	-	œ	195.0			•	:	\$ *	~
014410	HAMEN AV	-	•	524.42		•	29	22	51	
* PESED	AN ANHS	~		1001.2			•	10	:	•
FULLERION	GILBERT ST	~		162.4			15	=	:	ų,
40分级的发行	INTHE LAB	~		100.5			=	35	**	•
EL MONIE	PECK BO	-	•	115.3			•	37	35	~
P111500R6	RAILROAD AY	-	•	***			15	20	:	-
SOUTH SAN FRANCISCO	OYSIER PT BL	**	~	;			•	37	5	•
P11151U16	HARBOR ST	~		1155.4	co		Ŧ	27	3	10
ALANEON COUNTY	TIN-111 CHST		0	0.48			••	39	~	=
INDIO	HONROE ST	-	•	609.7			~	35	*	=
AOLO CONSA	HARBOR BL	-	•	**			~	33	0	=
LOS ARCELES COUNTY	TELEGRAPH RO	~		140.0	•		=	27	6	7
COLTON	F066 51	~	•	:	a		~	38	*0	15
	AVE VA	~		181.3		•	2	19	ő	-
FPC SHO	ANTING AR	~		1005.4			~	32	39	17
CALERANS	166-STA BARBA	-	~	276.8			•	30	30	~
FRESHO COUNTY	CHESINUT A-1	-	(3P	210.3			40	35	38	;
PARAMOUNT	ALONDNA BL	•	-	12.3			~	31	30	20
Bikersfield	HINS-HOIMS	-	(37	312.3			•	<u> </u>	37	. 21
CONDEP	LINCOLN AY	~	(20	25.1		•	=	26	¥2	*
SAN HATEO	ROOTH STANTS	-	~	21.1		•	•	<u>.</u>	37	23
FREMONS	HEMARK BL	-	~	28.5			~	26	36	24
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1983-1984 Railroad-Highway Grade Separation Priority List by Friority Index Number

APPENDIX E Page 2

CHETANS	CALIFARS	P + P P + P - P	SAN LUIS OBISPO	LOS ANSELES COUNTY	FRENDUS	STOCKTON	MONTO	FRESHO COUNTY	FORTINA	SAN MATEO	CALTRANS	CALIFANS	SANTA ANA	FRESNO COUNTY	CALTRANS	CHIRARS	SANTA BARBARA COUNTY	SARER BRA	SIN MATCO	SANTA ANA	SACRAMENIO COUNTY	BARCASFIELO	SAN GABRICL	P96464	PRIORITY INCENTIONS
	THE WALK OF ST	100-FPL SKO	ORCUIT RD	SLAUSOM AY	PASEO PADRE	HARRED CH	W A ST LWR	CHESINUI A	SIEPRA AV	POPLAR AV	151-SH451A	237-SJHIA CLA	FOURTH ST	AF STADIS	58-SAN ERDO	SE-SAM REDO	HOLLISIER AV	TH SIRCE	AT HOLVE	SPARO AV	U STREET	H STREET	SAN CABL LYR	CROSS ING	
,	-	~	-	-	-		-	-	~	-	-	-	~	-	~	~	-	~	~	~	-	~	-	10 10	
0	,		~	9.8	~		>	•		~	•	_		•			~		m		*		*	77 77	
1 4 4	23.0	997.0	253.3	187.3	27.5	90.5	67.4	210.3	88.7	17.2	266.2	39.0	175.4	213.3	780.3	753.2	365.7	171.7	17.5	176.2	102.5	117.5	190.2	POSI	
					•					•	•						7		a					SUF PROP	
•		10	•	~		ب ى	•	44	:	5	70	. ~	•		•	~	•	w	•	~	•	70	~	O : 4	t •
60	3	2 0	26	29	17	~	28	29	19	23	23	=	30	29	27	26	90	=	31	28	=	35	~	ser	
~	1	30	00	3.2	32	32	32	. 32	32	4	9.0	33	9	33	3.3	3	34	31	35	35	,	35	4	MUNCH WASHING	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
•	3	\$.	5	=	5	~	=	5	39	3.	37	36	35	ű	33	32	3	10	29	28	22	~	*	PRIORITY	

E 3 Priority Dist by Priority CCIS HOMINATED BY Priority

Grade Separation y Index Number APPENDIX E
Page 3

			-	Priority List by Priority	st by	Priority	Index N	umber	Page 3	01X E
PRIORITY INDEX NUMBER							≪ ₩		7010111	
. AGENCY	CROSSING	70 70	9	POST	Suf	7707	* ; ;	SCF	ではのに対	ALTESTA ALTESTA
CALTRANS	101581A14-4£	_	•	562.1			***	21	~	:
SAN JOSE	BRAHHAH LAM	_	~	57.3			~	26	~	50
HATTARD	HAROER RO	_	•	21.6			5	17	27	2
BUENA PARK	DALE STREET	~		161.3			5	2	27	\$2
RIVERSIDE	ARLINGION AV	~	•	12.1			•	2	27	53
LOS ANGELES COUNTY	FLORENCE AY	-	CP CP	188.13			w	~	27	*
CALTRANS	AGUA-OL	-	•	111.7	œ		~	20	27	55
HAYWAND	AT HOIMER R	-	_	20.2			•	20	*	\$6
CALTRANS	4 34 31 HOH-49	-	~	119.29			•	20	24	57
CALTRANS	162-BUTTE	•		201.0	•		•	17	24	\$
SAN GABRICE	RANONA-TSN	_	•	190.3			•	=	25	\$\$
ANDERMA	LINCOLN AV	~		167.7			.	22	25	å
ALUNOS SELECTED SOL	TO INIONE		>	3.4				21	25	2
P11158UR6	HARBOR ST		•	19.3	•		~	23	25	~
SIN RATEO	HONTE DIABLO	_	~	17.4	•		-	23	24	2
LOS AMBELLES COUNTY	AV CHVES	_	•	504.5		•	v	5	~	;
TORR MICE	TORRANCE RLC	-	9 8 8	500.73			•	5	23	5
CALTRANS	238-ALANEDA	•	6 7		•		•	7	23	:
SAN MATEO	SHIR THES AR	-	~	17.3	•		-	22	23	67
HAVURAD	A STREET	•		20.2			₩	20	22	:
CAL TRANS	NI-FRESHO	-	•	205.9				=	22	, \$
TORRANCE	DEL AND BL	~	×	19.5		•	ų.	17	22	70
LOS ANGELES	HORDHOFF ST	-	•	110.55		•	Ç.	17	22	73
SARTA ARA	FIRST ST	~		175.6	•		=	5	21	*

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1983-1984 Railroad-Highway Grade Separation Priority List by Priority Index Number

APPENDIX E Page 4

TABLE 3
PROJECTS NOMINATED BY
PRIORITY INDEX NUMBER

BEENCA SAIDMINA INDEX MOMBEN	CROSSING NAME	RR	bR	HILE	SUF	PROP	Y X 1	SCF	PRIGRITY INDEX NUMBER	PRIORITY NUMBER
LIVERHORE	N MINES ALT 2	1	0	40.6		•	•	17	51	73
CAMARILLO	LAS POSAS RO	1	E	419.0			0	50	20	7.9
LOS ANGELES COUNTY	FLORENCE AV	1	96	488.3			•	14	50	75
LIVERNORE	N HINES ALT 1	ì	D	48.6		•	3	17	20	76
CALTRANS	89-SHASTA	26	P	32.1	9		0	17	19	77
CALTRANS	49-PLUNAS	•		337.4	•		ł	10	19	76
CALTRANS	89-PLUHAS	•	ĸ	21.5	8		0	18	10	79
LOS ANGELES COUNTY	DEL AND BL	1	88H	497.59			1	16	17	80
CALTRANS	89-SHASTA	26	8	50.0	8		1	13	19	•1
LOS AMBELES COUNTY	DOUGLAS ST	2	H	15.1		•	•	10	14	95
LOS ANGELES COUNTY	EL SEGUNDO BL	1	88H	492.6			1	10	11	●3

(END OF APPENDIX E)