

ORIGINAL

Decision No. 87496 Jun 21, 1977

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation for the purpose of establishing a list for the fiscal year 1977-78 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.

Case No. 10214
(Filed November 30, 1976)

(Appearances are listed in Appendix A.)

O P I N I O N

By its order dated November 30, 1976, the Commission instituted an investigation for the purpose of establishing the 1977-78 Railroad-Highway Grade Separation Priority List as required by Section 2452 of the Streets and Highways Code, which requires that by July 1 of each year the California Public Utilities Commission shall establish a priority list of those railroad grade separation projects, including the elimination of existing or proposed grade crossings, the elimination of grade crossings by removal or relocation of streets or railroad tracks, and the alteration or reconstruction of existing grade separations most

urgently in need of separation or alteration. The list, based on criteria established by the Commission, contains projects on city streets, county roads, and state highways which are not freeways as defined in Section 257 of the Streets and Highways Code. The list is furnished to the Department of Transportation (Caltrans) and the California Highway Commission and those agencies, pursuant to the provisions of Sections 190 and 2453 of the Streets and Highways Code, allocate \$15,000,000 annually, plus amounts carried over, to those nominations in accordance with their priority on the list.

Funding for projects included on each annual priority list is provided through Section 190, and the basis for allocation is contained in Sections 2450-2461 of the Streets and Highways Code. On projects which eliminate an existing crossing, or alter or reconstruct an existing grade separation, an allocation of 80 percent of the estimated cost of the project is made, with the local agency and railroad each contributing 10 percent. On other projects an allocation of 50 percent of the estimated cost of the project is made for a proposed crossing with the remaining 50 percent contributed by the local agency.

Following issuance by the Commission of an Annual Grade Separation Priority List, applications to the Department of Transportation for an allocation must be made no later than the first business day after April 1 of each fiscal year. 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.

The allocation by the Highway Commission is limited to that necessary to make the separation operable and the initial allocation of funds by the Highway Commission is not to exceed the applicant's project cost estimate utilized by the Public Utilities Commission in establishing the annual separation priority list.

By Decision No. 85991 dated June 22, 1976 in Case No. 10019, the Commission established the twentieth priority list of 80 projects for the 1976-77 fiscal year, which will expire on June 30, 1977. A new priority list for the 1977-78 fiscal year is now required.

Public hearings were held in San Francisco and Los Angeles before Examiner Daly, and the matter was submitted on March 31, 1977 upon the receipt of late-filed Exhibit 27 and concurrent opening and closing briefs, the latter having been filed on April 20, 1977.

Copies of the Order Instituting Investigation were served upon each city, county, and city and county in which there is a railroad crossing, each railroad corporation involved, Caltrans, the California Highway Commission, the League of California Cities, the County Supervisors Association, and other persons who might have an interest in the proceeding.

In response to the Order Instituting Investigation, various public bodies desiring to nominate crossings or separations on the 1977-78 priority list filed with the Commission the following information:

- A. For Existing or Proposed Crossings at Grade Nominated for Elimination by Proposed Separation and Grade Crossings Nominated for Elimination by Removal or Relocation of Streets or Railroad Tracks
1. Identification of crossing, including name of street or road, name of railroad, and crossing number.
 2. Twenty-four hour vehicular traffic count, or for proposed crossings, estimated ADT for 1976.
 3. Number of train movements for one typical day segregated by type, i.e., passenger, through freight, or switching.
 4. Vehicular speed limit and the maximum prevailing train speed.
 5. Quantitative statement as to vehicular delay at crossing, in minutes per day.
 6. Distance on each side of the crossing to the nearest alternate routes, in feet.
 7. A 10-year accident history of the number of vehicle-object and vehicle-vehicle accidents directly attributable to the presence of the grade crossing.
 8. Width of the crossing in feet and in number of lanes.
 9. Preliminary cost estimate for project with costs separated into right-of-way, engineering, and construction.
 10. Statement as to need for the proposed improvement and agencies' willingness to pursue the project.

11. Any proposed crossing nominated for separation should be subtyped either:
 - a. A grade crossing is practical and feasible.
 - b. A grade crossing is not practical and feasible.
12. For grade crossing(s) nominated for elimination by removal or relocation of streets or tracks, the estimated cost of eliminating crossing(s) if grade separation facilities on the existing alignment of the street and railroad tracks were constructed.

B. For Grade Separations Proposed for Alteration

1. Identification of crossing, including name of street or road, name of railroad, and crossing number.
2. Twenty-four hour vehicle traffic count.
3. Number of train movements for one typical day segregated by type, i.e., passenger, through freight, or switching.
4. Description of existing and proposed separation structure with principal dimensions.
5. Type of alteration proposed.
6. Preliminary cost estimate of project with costs separated into right-of-way, engineering, and construction.
7. A list and relative description of any of the following, if applicable:
 - a. Substandard highway width or height clearances.
 - b. Highway speed reduction due to alignment.
 - c. Railroad slow order due to structure.
 - d. Highway load limit due to structure.

8. A 10-year history of the number of vehicle accidents attributable to the structure.
9. A detailed statement describing acute structural deficiencies, if any, and the probability of structural failure.
10. Statement as to need for the proposed improvement and agencies' willingness to pursue the project.

Upon receipt of the requested information, the staff applied a formula adopted in determining the 1976-77 Grade Separation Priority List, subject to certain reevaluations of the criteria, and introduced the results thereof in Exhibit 2.

For the purposes of determining the 1977-78 Grade Separation Priority List, the staff proposes the following criteria which are similar to that found in the 1976-77 proceeding:

$$P = \frac{V \times T}{C \times 24} + SCF$$

Where:

- P = Priority Index Number
- V = Average 24-Hour Vehicular Volume
- C = Total Costs of Separation Project
(In Thousands of Dollars)
- T = Average 24-Hour Train Volume
- 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
G2 = Railroad Prevailing Maximum Speed	0- 5
G3 = Crossing Geometrics	0- 5
G4 = Crossing Blocking Delay	0-10
G5 = Alternate Route Availability	0- 5
G6 = Accident History	0-20
G7 = Irreducibles	<u>0-15</u>
Total Possible	0-65

For Separations Nominated for Alteration
or Reconstruction

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

Where:

	<u>Points Possible</u>
S1 = Width Clearance	0-10
S2 = Height Clearance	0-10
S3 = Speed Reduction or Slow Order	0- 5
S4 = Load Limit	0- 5
S5 = Accidents at or Near Structure	0-10
S6 = Probability of Failure and Irreducibles	<u>0-10</u>
Total Possible	0-50

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

Grade Crossings

G1 = Vehicular Speed Limit

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

G3 = Crossing Geometrics

0-5 points based on relative severity of physical conditions.

G4 = Crossing Blocking Delay, Total Minutes per Day

<u>Minutes</u>	<u>Points</u>
0-20	0
21-40	1
41-60	2
61-80	3
81-100	4
101-120	5
121-140	6
141-160	7
161-180	8
181-200	9
201 +	10

G5 = Alternate Route Availability

<u>Distance-feet</u>	<u>Points</u>
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 vehicle-train accident

$$\text{Points} = (1 + 2 \times \text{No. killed} + \text{No. injured}) \times \text{PF}^*$$

* PF = Protection Factor for:

- Std. #9 = 1.0
- Std. #8 = 0.4
- Std. #3 = 0.2
- Std. #1 = 0.1

Note 1. No more than 3 points shall be allowed for each accident prior to modification by the protection factor.

Note 2. 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

- (a) Secondary accidents.
- (b) Emergency vehicle usage.
- (c) Accident potential.

Separations

S1 = Width Clearance		S2 = Separation Height Clearance	
<u>Width (ft.)</u>	<u>Points</u>	<u>Underpass (ft.)</u>	<u>Points</u>
9' + 12(N)	0	15' +	0
6' but less than 9' + 12(N)	2	14' but less than 15'	4
3' but less than 6' + 12(N)	4	13' but less than 14'	8
0, but less than 3' + 12(N)	6	Less than 13' <u>Overpass (ft.)</u> 22-1/2' +	10
11(N) but less than 12(N)	8	20' but not less than 22-1/2'	4
Less than 11(N)	10	18' but not less than 20'	8
		Less than 18'	10

N = Number of Traffic Lines

S3 = Speed Reduction or Slow Order

None	0
Moderate	2
Severe	5

S4 = Load Limit

None	0
Moderate	2
Severe	5

S5 = Accidents at or Near Structure (10 years)

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

S6 = Irreducibles

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

The staff evaluated projects involving the closure of multiple crossings in the same manner as single crossings 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 the cumulative total reflected in Table 2A 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.

Representatives of nominating agencies appeared in support of their respective projects and in many instances provided information either revising or updating the information originally filed with the nomination.

Following the hearing the staff prepared and submitted late-filed Exhibit 27. Based upon the testimony and evidence presented during the course of hearing, as well as additional correspondence and late-filed exhibits, changes were made in the number of points originally awarded to projects, as set forth in Exhibit 2, as the result of changes in factual data and further explanation of data that was first submitted with the nominations. Changes were also made where local agencies did not provide sufficient evidence or foundation for the information contained in their original nominations, and in such instances the particular factor or condition in question was dropped from consideration.

Projects with points revised because of changes in factual data or because of further explanation of previously submitted information are as follows:

<u>Agency</u>	<u>Crossing Name</u>	<u>Affected Category</u>
Anaheim	Lincoln Avenue - SPT	Train Count Blocking Delay
Anaheim	Lincoln Avenue - AT&SF	Train Count
Bakersfield	Truxtun Avenue	Train Count
Burlingame	Broadway	Project Cost Blocking Delay Alt Route
Caltrans	South 47th Street	Project Cost
Caltrans	17 Richmond	Project Cost
Chico	Dayton Road	Train Count
Contra Costa Co.	Somersville Road	Train Count
Contra Costa Co.	Waterfront Road	Train Speed Train Count
Dunsmuir	Scherrer - BTFY	Project Cost Blocking Delay
Fairfield	Main - Rio Vista	Irreducibles Blocking Delay
Fremont		Irreducibles
Irvine		Train Count Blocking Delay

<u>Agency</u>	<u>Crossing Name</u>	<u>Affected Category</u>
Los Angeles Co.	Greenwood - Mtb	Train Count
Los Angeles Co.	Florence - SFSpr	Train Count
Los Angeles Co.	Eastern - Comm	Train Count
Los Angeles Co.	Alondra Bd - La Mr	Train Count
Los Angeles	Winnetka Avenue	Project Cost
Newark	Newark Blvd	Vehicle Count
Norwalk	Imperial Hwy	Vehicle Count
Oakland	Adeline Street	Train Count
Oceanside	Wisconsin Lwr	Blocking Delay
Oceanside	Downtown Lwr	Project Deleted
Oceanside	Oceanside Lwr	Train Count
Ontario	Euclid Avenue	Train Count
Ontario	Grove Avenue	Geometrics
Orange Co.	Crown Valley	Irreducibles
Santa Fe Springs	Tlgh - Sta Fe	Vehicle Count
Santa Fe Springs	Carmenita Road	Accident History
San Bernardino Co.	Cherry Avenue	Irreducibles
San Gabriel	San Gabriel Lwr	Train Count
San Luis Obispo	South Street	Train Count
San Luis Obispo	Orcutt Road	Train Count
San Mateo	Laurie Meadow	Blocking Delay
Stockton	Miner Avenue	Train Count
		Blocking Delay
		Train Speed
		Vehicle Count