SECTION 190
GRADE SEPARATION PROGRAM

CALIFORNIA PUBLIC UTILITIES COMMISSION
RAIL CROSSINGS AND ENGINEERING BRANCH

JULY 2022

Summary

The state's Section 190 Grade Separation Program is a state funding program to grade separate crossings between roadways and railroad tracks. The program typically provides approximately $15 million distributed among 3 or 4 projects each fiscal year.

Grade-separated crossings are where either the highway or the railroad track crosses over or under the other at different elevations, typically using a bridge structure. The elevation difference allows trains to travel through grade-separated crossings at the same time as highway users. At-grade highway-rail crossings, where the highway and railroad tracks are at the same elevation, pose significant public safety hazards to California's motorists and pedestrians. Grade-separated crossings can replace existing at-grade crossings thereby eliminating potential conflict between trains and highway users.

The California Public Utilities Commission (CPUC or Commission) has jurisdiction over the safety of highway-rail crossings in California. The Rail Crossings and Engineering Branch (RCEB) reviews projects for the safe design of crossings and recommends safety measures, such as automatic warning devices, to mitigate hazards for at-grade crossings users.

The optimal safety improvement for an at-grade highway-rail crossing is the complete separation of the railroad tracks from the roadway through construction of a grade-separation structure. Replacement of at-grade crossings with grade-separated crossings eliminates the fatalities and injuries that often result from collisions between train and highway users. It also eliminates blocking delays that cause traffic congestion, reduces the noise from train horns and automatic warning devices, and can improve emergency response times.

The Section 190 Grade Separation Program helps local agencies finance the high costs of grade separating highway-rail crossings, thereby improving public safety and convenience throughout California.

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1. Background

The Commission establishes and furnishes to the California Transportation Commission (CTC) and the California Department of Transportation (Caltrans) a funding priority list of grade separation projects for highway-rail crossings most urgently in need of separation, alteration or reconstruction. Section 190 of the California Streets and Highways Code (S&H Code) requires the State's annual budget to include $15 million for funding these projects. Section 2450 et seq. of the S&H Code sets out the procedure for administering these funds, and Section 2453 gives the CTC responsibility for allocating the funds to qualified projects.

S&H Code Section 2452 requires the Commission, by July 1 of each year, to establish the priority list for projects and furnish it to the CTC for use in the fiscal year beginning on that date. CPUC procedure is to promulgate the list for the first fiscal year by issuing an interim decision, and then to revise the list for the second year by deleting projects for which funds were actually allocated in the first. The Commission adopts the revised list by final decision in the second year of the proceeding, and begins the funding cycle again the following year by instituting a new proceeding.

In accordance with S&H Code Section 2452, the Commission is responsible for establishing criteria to be used in determining the priority of projects nominated for separation or alteration. The formula weighs vehicular and train volumes at crossings along with project costs, and considers a variety of special factors such as accident history, sightlines along the crossing approaches, the angle of the tracks to the roadway, traffic delays caused by trains traveling through the crossing and other relevant factors.

Interested local agencies are responsible for submitting nominations to the Commission with the required information. These agencies must be ready to share in the project's cost. The Commission requires applicants to attend the formal public hearings and provide testimony in support of their proposals.

2. Eligible Projects

The Commission will consider projects for the Section 190 Grade Separation Priority List that are nominated by a city, a county, a separation-of-grade district, or any public entity providing rail passenger transportation services.

Eligible projects include:

1. the construction of new grade separations to eliminate existing grade crossings; and
2. the alteration or reconstruction of existing separations.

Section 2450(a) of the S&H Code states, in part:

> *"Grade separation" means, … the theoretical structure necessary to separate the roadway from the railroad grade for the number lanes on the existing highway and for the full width of the railroad corridor, in accordance with the current design standards of the department.*

Although projects comprised of multiple grade separations are eligible, a project nomination shall not include multiple projects that are separate, distinct, and clearly severable. The combination of severable projects into a single nomination would preclude the Commission from effectively determining which projects are most urgently in need of separation, alteration, or reconstruction as required by S&H Code Section 2452. Furthermore, a single nomination cannot combine projects for both the elimination of existing and the elimination of proposed grade crossings.

Also, under S&H Code Section 2452, the Commission shall determine the basis of criteria to establish the priority list. Therefore, if a project qualifies as a multiple crossing or consolidation project, the overall priority is affected by a combined weighting of factors at each crossing. The factors include roadway traffic counts, number of accidents at the crossings, and crossing geometrics. Multiple crossing or consolidation projects may qualify for more than the usual $5 million maximum allocation.

3. Funding

Section 190 of the S&H Code requires the State's annual budget to include $15 million for funding qualified projects on the Section 190 Grade Separation Priority List as ranked by the Commission.

For a project that eliminates an existing crossing or alters or reconstructs an existing grade separation, an allocation of 80% of the estimated cost of the project is made. No allocation shall be made unless the railroad agrees to contribute 10% of the cost of the project.

Subsequent to the Commission's issuance of the Priority List, the California Department of Transportation (Caltrans) accepts separate applications for an allocation of funds on or before April 1 of each fiscal year.

Caltrans distributes the available funding according to a project's compliance with the program regulations, readiness and the priority ranking established annually by the CPUC. The project on the list with the highest priority, and which also meets the requirements detailed below, has first claim to the available funds to the extent of the yearly cap. Assembly Bill 1067, approved by the Governor on October 7, 2005, changed S&H Code 2454(g)(2) to make the project ranked number 1 on the priority list, eligible for an allocation of up to $15 million dollars. The next project in the ranking which meets the requirements receives the next allocation, and so on, until the fiscal year's funds are exhausted. Two different formulas are used to make these computations, one for existing at-grade crossings nominated for separation or elimination and another for existing separations nominated for alteration or reconstruction.

Major Requirements

Major requirements to secure an allocation from Caltrans include those listed below.

1. Application for funding must be sent to Caltrans by April 1;
2. Authority to construct the project must be obtained from the Commission. This is independent of an application to be considered for the Section 190 Grade Separation Program. Information regarding Formal Applications is available at: https://www.cpuc.ca.gov/crossings
3. Environmental review documents must be complete;
4. Construction, maintenance, railroad contribution, and any other necessary agreements with the railroads must be fully executed;
5. Final construction plans must be complete; and

6. The remainder of the project cost must be procured and a certified resolution attesting to this is to be included.

Funding Limits

Applicants should be aware of the following funding limits:

1. Allocations are made on the basis of estimated cost.
2. An allocation to a project may not exceed $5 million from any one fiscal year.
3. Caltrans may only allocate up to 80% of the estimated cost.
4. Cumulative allocations may not exceed $20 million to any one project.
5. Allocations are to be reduced or augmented after the project is completed to reflect the actual cost to construct the grade separation.
6. Parties anticipating the need for an allocation greater than $5 million shall be prepared to present evidence at the hearings to justify the additional award. See S&H Code 2454 (d) for more information.

The probability of projects being funded is dependent on a number of things. The first is the amount of available funding, which is $15 million each fiscal year and which does not increase from year to year. In accordance with S&H Code 2454(c)(1), funding for an individual project is limited to one-third of the total fund or $5 million per year (whichever is less). A project may qualify for up to 80% of the total project cost or a maximum of $20 million funded over a multiyear period, not to exceed five years, if it shows a saving to the state as indicated in S&H Code 2454(d)(1). An agency which has received an allocation greater than $5 million shall not be eligible for an allocation for another project for a period of 10 years from the date of approval of that project.

The list is dynamic, responding to local demographic changes. Projects may change in ranking from one year to the next, as new nominations may show a greater public need for grade separation or improvement. The system is not one where the first on the list is necessarily the first to be funded. See the table of past allocations for examples.

Although the priority list ranking is an important factor in determining whether a project can be funded, securement of an allocation requires a number of other requirements to be met (as listed above). In recent years, these additional requirements have not been met by the vast majority of projects on the priority list, thereby allowing projects with a lower priority ranking to be

funded. If there is a possibility that a grade separation project may be able to meet the requirements outlined above within two years of its nomination, RCEB strongly recommends that the local agency apply for funding through the Section 190 Grade Separation Program.

Bond Funds

Additional funds were made available as a result of the passage of Proposition 1B in 2006, which created the Highway-Railroad Crossing Safety Account (HRCSA) that funded $150 million for improving highway-rail crossings by constructing grade separations, allocated using the priority list created under this process. The language in part states:

> *HRCSA funds will be allocated by the California Transportation Commission (CTC), upon appropriation by the Legislature, pursuant to the process established in Chapter 10 (commencing with Section 2450) of Division 3 of the Streets and Highways Code, except that a dollar for dollar match of non-state funds shall be provided for each project, and the limitation on maximum project cost in subdivision (g) of Section 2454 of the Streets and Highways Code shall not be applicable to projects funded with these funds.*

The HRCSA allocation guidelines were developed by the CTC in cooperation with the Commission and allocations were made in 2008. An additional $100 million was allocated by the CTC in consultation with the Commission and High Speed Rail Authority, not utilizing the priority list created in this process.

When funds become available from bond sales, qualifying projects on the list will receive their allocations. For more information regarding updated HRSCA information including the guidelines and the programming request form, check the CTC website at:

https://catc.ca.gov/programs/hrcsa

4. Formulas

In accordance with S&H Code § 2452, the Commission is responsible for establishing criteria to be used in determining the priority of projects nominated for separation or alteration. The Commission does so using formulas initially developed by the Commission in 1975, but modified since that time. There are two formulas used to rank projects: one for crossings nominated for separation or elimination and the other for existing grade separations in need of alteration or reconstruction.

Formula For Crossing Nominated For Separation Or Elimination

$$P = \frac{V * (T + 0.1 * LRT) * (AH + 1)}{C} + SCF$$

Formula For Existing Separations Nominated For Alteration Or Reconstruction

$$P = \frac{V * (T + 0.1 * LRT)}{C} + SF$$

Note: P – Priority Index Number, V – Average Daily Vehicle Traffic, T – Average Daily Freight/Commuter Train Traffic, LRT – Average Daily Light Rail Train Traffic, C – Project Cost Share to be Allocated from Grade Separation Fund, AH – Accident History (number of accidents at crossing), SCF – Special Conditions Factor, SF – Separation Factor

Please see the current Order Instituting Investigation for more details on current Commission adopted formulas.

5. Current Priority List

The Commission proceeding to establish the Section 190 Grade Separation Priority List is a two year process, generating a priority list for two separate fiscal years. Nomination forms are issued and accepted during the first year of the proceeding and projects are evaluated, ranked, and the priority list issued. For the second year of the proceeding, projects receiving an allocation during the first year are removed from the list, and the list is reissued.

On June 24, 20221, the Commission adopted Decision 21-06-028, for the Section 190 Grade Separation Priority List for fiscal year 2021-2022, as required by S&H Code Section 2452. On June 23, 2022, the Commission issued Decision 22-06-030 to establish the new Priority List for FY 2022-2023.

Decisions are published on the Commission's website:

http://docs.cpuc.ca.gov/DecisionsSearchForm.aspx

6. Next Call for Projects

The Commission is required to rank the nominated projects and adopt a Section 190 Grade Separation Priority List by July 1 of each year. The call for projects occurs every two years. Therefore, the nominated projects stand for two years, with those projects receiving an allocation during the first year being removed from the second year's list. The priority list is sent to the CTC and Caltrans. The CTC is responsible for allocating (distributing) the funds to qualified projects, a responsibility it has delegated to Caltrans (S&H Code § 2453). Caltrans then uses the priority list to allocate the funds to projects meeting the further allocation requirements.

The next call for projects will be issued in the Commission's Order Instituting Investigation in July of 2023, with nominations for the program due October 2023.

The proceeding for the nomination of projects (I.21-06-018), is online at the following site:

CPUC Proceeding Information At the "Proceeding Number Search" type in "I2106018" click SEARCH, click the link to proceeding I2106018 select the "Documents" tab, then click on COMMISSION INVESTIGATION to download

the Order Instituting Investigation and the Appendices which include the application forms and instructions.

7. Commission and Caltrans Contacts

California Public Utilities Commission

Zaida Amaya
Rail Safety Division
Rail Crossings and Engineering Branch
180 Promenade Circle, Suite 115
Sacramento, CA 95834
(916) 928-4702

Caltrans

Carlos Ruiz, Chief
Caltrans
Section 190 Grade Separation Program
Division of Rail and Mass Transportation
1120 N Street, MS 74
Sacramento, CA 95814
carlos_ruiz@dot.ca.gov

8. Past Allocations

Section 190 Grade Separation Program allocations for the Fiscal Years 2006-07 through 2020-2021 are listed below.

Funding Yr.	Project Name	Proceeding	Priority Ranking/ List Year	RR	Lead Agency		State Share
2006-07	**2006-07 Allocation**						
	Washington/Paseo Pdre	I.05-07-016	39	UP/VTA	City of Fremont		$ 5,000,000
	Passons Blvd.	I.05-07-016	5	BNSF	City of Pico Rivera		$ 5,000,000
	Valley Blvd.	I.05-07-016	40	UPRR	City of Los Angeles		$ 719,764
	University Parkway	I.05-07-016	11	BNSF	San Bernardino Associated Goverments		$ 4,280,236
2007-08	**2007-08 Allocation**					$ 15,000,000	$ 15,000,000
	Washington/Paseo Pdre	I.03-07-009	39	UP/VTA	City of Fremont		$ 5,000,000
	West Santa Ana Branch	I.97-07-014	3	UP	Union Pacific RR		$ 5,000,000
	University Parkway	I.05-07-016	11	BNSF	San Bernardino Associated Goverments		$ 719,764
	Valley View Ave.	I.07-07-006	3	BNSF	City of Santa Fe Springs		$ 4,280,236
2008-09	**2008-09 Allocation**					$ 15,000,000	
	West Santa Ana Branch	I.97-07-014	3	UP	Union Pacific RR		$ 2,899,120
	7th Standard Rd	I.07-07-006	89	BNSF	Kern County @BSF		$ 1,240,000
	Valley View Ave.	I.07-07-006	3	BNSF	City of Santa Fe Springs		$ 719,764
	Columbia Ave.	I.07-07-006	39	BNSF	San Bernardino Associated Goverments		$ 5,000,000
	Magnolia Ave.	I.07-07-006	57	UP	City of Riverside		$ 5,000,000
	Auto Center Dr.	I.07-07-006	49	BNSF	City of Corona		$ 141,116
2009-10	**2009-10 Allocation**					$ 15,000,000	
	San Bruno/Scott	I.07-07-006	7	PCJPB	City of San Bruno		$ 5,000,000
	Milliken Ave.	I.07-07-006	12	UP	City of Ontario		$ 5,000,000
	Iowa Ave.	I.07-07-006	37	BNSF	City of Riverside		$ 5,000,000
2010-11	**2010-11 Allocation**					$ 15,000,000	
	San Bruno/Scott	I.07-07-006	7	PCJPB	City of San Bruno		$ 5,000,000
	Auto Center	I.07-07-006	49	BNSF	City of Corona		$ 4,858,884
	Streeter Ave	I.09-07-028	62	UP	City of Riverside		$ 141,116
	Hunts Lane	I.09-07-028	40	UP	City of San Bernardino		$ 5,000,000
2011-12	**2011-12 Allocation**					$ 15,000,000	
	Streeter Ave	I.09-07-028	62	UP	City of Riverside		$ 4,858,884
	Riverside Ave	I.09-07-028	26	UP	City of Riverside		$ 5,000,000
	Bardsley	I.09-07-028	61	UP	City of Tulare		$ 141,116
	Nogales	I.09-07-028	5	UP	ACE		$ 5,000,000
2012-13	**2012-13 Allocation**					$ 15,000,000	
	Bardsley	I.09-07-028	61	UP	City of Tulare		$ 4,858,884
	Palm Avenue	I.11-07-022	29	BNSF	San Bernardino Associated Goverments		$ 5,000,000
	Hageman Ave	I.11-07-022	40	BNSF	County of Kern		$ 3,100,000
	Avenue 52	I.11-07-022	32/FY 2013-14	UPRR	City of Coachella		$ 2,041,116
2013-14	**2013-14 Allocation**					$ 15,000,000	
	Avenue 52	I.11-07-022	32/FY 2013-14	UPRR	City of Coachella		$ 2,958,884
	Grant Line Road	I.11-07-022	35/FY 2013-14	UPRR	City of Elk Grove		$ 5,000,000
	Laurel Street	I.11-07-022	48/FY 2013-14	BNSF	San Bernardino Associated Goverments		$ 5,000,000
	Lenwood Road	I.11-07-022	60/FY 2013-14	BNSF&UPRR	San Bernardino Associated Goverments		$ 2,041,116

Funding Yr.	Project Name	Proceeding	Priority Ranking/ List Year	RR	Lead Agency		State Share
2014-15	**2014-15 Allocation**					$ 15,000,000	
	Lenwood Road	I.11-07-022	60/FY 2013-14	BNSF&UPRR	San Bernardino Associated Goverments		$ 2,958,884
	Magnolia Ave.	I.13-06-014	2	BNSF	County of Riverside		$ 5,000,000
	San Mateo Bridges Replacement (Poplar Ave., Santa Inez Ave., Monte Diablo Ave. & Tilton Ave.)	I.13-06-014	22	PCJX	PCJX		$ 5,000,000
	Harney Lane	I.13-06-014	19	UPRR	City of Lodi		$ 2,000,000
	S. Milliken	I.13-06-014	35	UPRR	City of Ontario		$ 41,116
2015-16	**2015-16 Allocation**					$ 15,000,000	
	S. Milliken	I.13-06-014	35	UPRR	City of Ontario		$ 4,958,884
	Vineyard	I.13-06-014	47	UPRR	City of Ontario		$ 5,000,000
	Monte Vista Ave	I.13-06-014	12	UPRR	City of Montclair		$ 5,000,000
	25th Avenue	I.15-06-008	8/FY 2016-17	PCJX	City of San Mateo		$ 41,116
2016-17	**2016-17 Allocation**					$ 15,000,000	
	25th Avenue	I.15-06-008	8/FY 2016-17	PCJX	City of San Mateo		$ 4,958,884
	Fairway Drive	I.17-06-025	5/FY2018-19	UP	ACE		$ 5,000,000
	Durfee Ave	I.17-06-025	9/FY2018-19	SCRRA&UP	ACE		$ 5,000,000
	Fullerton Road	I.17-06-025	16/2018-19	SCRRA&UP	ACE		$ 41,116
2017-18	**2017-18 Allocation**					$ 15,000,000	
	25th Avenue	I.15-06-008	8/FY 2016-17	PCJX	City of San Mateo		$ 5,000,000
	Rosecrans Marquardt	I.17-06-025	3/FY2018-19	BNSF	City of Santa Fe Springs		$ 5,000,000
	Fullerton Road	I.17-06-025	16/FY2018-19	SCRRA&UP	ACE		$ 4,958,884
	McKinley Street	I.19-06-013	2/FY 2020-21	BNSF, SCRRA& Amtrak	City of Corona		$ 41,116
2018-19	**2018-19 Allocation**					$ 15,000,000	
	Rosecrans Marquardt	I.17-06-025	3/FY2018-19	BNSF	City of Santa Fe Springs		$ 5,000,000
	McKinley Street	I.19-06-013	2/FY 2020-21	BNSF, SCRRA& Amtrak	City of Corona		$ 4,958,884
	Montebello Boulevard	I.19-06-013	17/FY 2020-21	UP	ACE		$ 5,000,000
	Turnbull Canyon Road	I.19-06-013	18/FY 2020-21	SCRRA&UP	ACE - City of Industry		$ 41,116
2019-20	**2019-20 Allocation**					$ 15,000,000	
	Rosecrans Marquardt	I.17-06-025	3/FY2018-19	BNSF	City of Santa Fe Springs		$ 5,000,000
	Montebello Boulevard	I.19-06-013	17/FY 2020-21	UP	ACE		$ 5,000,000
	Turnbull Canyon Road	I.19-06-013	18/FY 2020-21	SCRRA&UP	ACE - City of Industry		$ 4,958,884
	North First Avenue	I.19-06-013	26/FY 2020-21	BNSF& Amtrak	City of Barstow		$ 41,116
2020-21	**2020-21 Allocation**					$ 15,000,000	
	Montebello Boulevard	I.19-06-013	17/FY 2020-21	UP	ACE		$ 5,000,000
	North First Avenue	I.19-06-013	26/FY 2020-21	BNSF& Amtrak	City of Barstow		$ 4,958,884
2021-22	**2021-22 Allocation**					$ 15,000,000	
				NONE			

9. Decision Tools for Grade Separations

The topic of when to construct a grade separation is complex. The Commission does not have strict criteria that would require an existing at-grade highway-rail crossing to be grade-separated. However, resources are available which clearly specify when a grade separation should be considered, and when it may be well justified.

The Federal Highway Administration's Technical Working Group published a document in November 2002 entitled "Guidance on Traffic Control Devices at Highway-Rail Grade Crossings." This document is available online at:

https://safety.fhwa.dot.gov/

See the section titled "TRAFFIC SEPARATION STUDY APPROACH TO CROSSING CONSOLIDATION," in which the document discusses particular criteria that should be considered when assessing the need for grade separation.

When considering the need for grade separation of highway-rail crossings, it may be appropriate to use the Federal Railroad Administration's web-based tool "GradeDec.net". The software application can be used to evaluate the benefits and costs of rail investment projects, specifically those involving highway-rail grade crossing improvements (including grade separation, closure, or warning device upgrades), within a risk analysis framework. GradeDec.net is particularly well-suited for analysis of rail corridors.

10. Relevant Streets & Highways Code

Funding for projects included on each annual priority list is provided by S&H Code Section 190, and the basis for allocation and state requirements are contained in S&H Code Sections 2450-2461 available on-line at:

https://leginfo.legislature.ca.gov

Select the Code as "SHC" (for "Streets and Highway Code"). Select Code Section as "2450". Then click on the "Go" button.