

**RAILROAD-HIGHWAY GRADE CROSSING PROGRAM
SECTION 130 FUNDING PROGRAM**

**CPUC GUIDELINES FOR THE FEDERAL AID
AT-GRADE HIGHWAY-RAIL CROSSING PROGRAM**

**CALIFORNIA PUBLIC UTILITIES COMMISSION
SAFETY AND ENFORCEMENT DIVISION
RAIL CROSSINGS AND ENGINEERING BRANCH**

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Introduction

As provided by Title 23, United States Code, Section 130 (23 U.S.C. 130), the Railroad-Highway Grade Crossing Program (RHGCP), also known as the Section 130 Program, provides federal funds for the elimination of hazards at existing at-grade highway-rail crossings (crossings). The program is funded at a 90% Federal contribution and 10% local matching contribution. Caltrans will continue to provide 100% funding for RHGCP projects. Caltrans implements the Federal 90/10 requirement by funding 90% of the project with Federal funds and the 10% local match requirement will be funded through Caltrans funds. The purpose of the RHGCP is to reduce the number, severity and potential of hazards to motorists, bicyclists, and pedestrians at crossings. The RHGCP is a cooperative effort between the Federal Highway Administration (FHWA), California Department of Transportation (Caltrans), California Public Utilities Commission (Commission), railroad companies and local agencies.

Process Overview

Commission staff (staff) select crossings for inclusion in the state wide funding list based on their potential hazard. Staff initially identifies potential hazardous crossings by utilizing available data. Crossing items that Commission staff evaluates include but are not limited to:

- Accident history and trends,
- Vehicle and train volumes,
- Pedestrian issues,
- Geometry.

Staff further reviews each crossing they identify with potential hazards. The reviews determine which crossings staff will consider for RHGCP funds. During the review, staff reviews such factors as the federal program requirements, eligibility criteria, and if there are improvements which can be implemented to reduce hazards that are covered by the RHGCP.

Staff and representatives from the railroad company(s), local agency(s), and Caltrans will conduct an in-depth field diagnostic review for each crossing staff considers might receive RHGCP funds. Staff develops a priority ranking for these crossings based on a number of factors, including but not limited to: the potential reduction in accidents, pedestrian, bus and hazardous material vehicle usage, and an accident prediction formula.

Staff will create a final priority list based on the highest ranking crossings. Staff annually provides the updated priority list of projects to Caltrans. Caltrans is responsible for securing and oversight of the funding as well as developing contracts. (See the Caltrans Section 130 Program Guidelines at <http://www.dot.ca.gov/dgmt/resec130.html> for details.)

Once Caltrans establishes a contract for a project the applicable railroad or local agency must file a Commission General Order (GO) 88-B (Rules for Altering Public Highway-Rail Crossings) (see <http://www.cpuc.ca.gov/Crossings> for details) request with the Commission.



Staff must approve the GO 88-B request before construction on the project may commence. Thirty days after the completion of the project, the railroad company or local agency must submit a standard Commission Form G (Report of Changes at Highway Grade Crossing and Separations) to the Commission's Rail Crossings and Engineering Branch with a copy to Caltrans. The railroad and/or local agency may also submit the Form G electronically to the Commission staff at rceb@cpuc.ca.gov.

Commission Staff Typical Annual Process Timeline

Month	Process
September	Identify Candidate Locations
October - December	Evaluate Candidate Locations
January	Prioritize Nominations and Identify Field Diagnostic Locations
January - April	Conduct Field Diagnostic Reviews
April - July	Develop Projects for each Location to be funded
August	Finalize and Submit Priority List and Projects to Caltrans

Crossing Selection

Not all crossings are eligible for financing with RHGCP funds. Crossings must be an at-grade highway-rail or pedestrian crossings with a public roadway. Crossings which are not eligible include:

- Crossings used only by light rail transit vehicles,
- Private crossings,
- Grade separated crossings.

The funding will also not be used to fund improvements for the sole purpose of qualifying a local agency to apply for a "Quiet Zone" with the United States Secretary of Transportation pursuant to Title 49 Code of Federal Regulation Section 222 (49 C.F.R 222), or for demonstration or pilot projects.



Review Process

Staff will review each identified candidate crossing to determine if it is eligible to receive RHGCP funds. Staff considers the crossing's current conditions, including factors such as the train and vehicle counts, geometrics, accident history, and existing warning devices. Staff will nominate the crossing if they determine that there are hazards present at the crossing that may be eliminated through the use of RHGCP funds. Staff ranks the nominated crossings based on their hazard potential. Staff selects the highest ranked crossings for field diagnostic reviews based on the funding levels that staff anticipates will be available.

The Field Diagnostic Team consists of staff and representatives from the railroad company(s), local agency(s), and Caltrans. This review consists of a detailed analysis of the crossing. During the field diagnostic review, the Field Diagnostic Team evaluates appropriate hazard elimination recommendations and determines whether the development of a project is feasible.

Once the field diagnostic reviews are completed, Staff will prioritize the crossings the Diagnostic Teams reviewed based on a number of factors including:

- The potential reduction in accidents and injuries,
- A Cost-Benefit analysis,
- The US Department of Transportation (U.S. DOT) Accident Prediction Formula,
- The field Diagnostic Team on-site review,
- The potential danger posed by regular use of the crossing by pedestrians, bicyclists, school buses, transit buses, and hazmat vehicles,
- Other State-specific factors.

After staff prioritizes the crossings staff will select the highest ranking crossings based on the funding that staff anticipates will be available. Staff then develops each individual project package for Caltrans consisting of:

- Scope of Work
- Conceptual Plan Drawing
- Project Development Report
- Project Timeline
- Cost Estimate

Staff sends the individual project packages and the final Priority List to Caltrans in August of each year.



Safety Improvements

Types of Eligible Improvements

Crossing Elimination

Closure:

Closure is a condition that occurs when an entity removes vehicular traffic from conflict with railroad traffic by closing the road. This includes: removal of warning devices, surfacing and approaches, and construction of barriers and/or fencing, signage, and other measures as deemed necessary during the field diagnostic review. The RHGCP will also match a railroad incentive payment for a closure of up to \$7,500 to a local agency.

Abandonment:

Abandonment is a condition that occurs when a railroad removes all train operations from conflict with vehicular traffic through either the cessation of all railroad operations or the removal of tracks from a crossing. Funding is not available for removal of previously abandoned railroad tracks. If, however, a railroad company chooses to abandon the crossing rather than improve it, the cost for track removal and other costs associated with returning the roadway to a safe usable condition may be allowed at the discretion and agreement of Caltrans and the Commission.

Railroad Improvements

1. **Warning Devices:** The RHGCP will fund the upgrade of warning devices listed in Commission GO 75-D (Regulations Governing Standards for Warning Devices for At-Grade Highway-Rail Crossings in the State of California) (See http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/60157.htm for details). For example, the existing warning devices may consist of Commission Standard 8 (flashing light signals). An upgrade would be to replace those warning devices to Commission Standard 9 (flashing light signals with automatic gates), or Commission Standard 9-A (a Standard No. 9 warning device with additional flashing lights on a cantilevered mast arm). All new warning devices shall use 12 inch Light Emitting Diode (LED) arrays for the flashing light signals with 24 inch hoods.
2. **LED:** The operating railroad shall install LEDs with all new warning devices. LEDs may be recommended where warning devices do not need to be replaced, only the flashing light signals upgraded to LEDs.
3. **Track Circuitry/Interconnection:** Track train detection circuitry may be recommended where appropriate, or modification necessary to implement necessary preemption timing.



Road Improvements

1. **Active Warning:** A train activated warning device placed at the crossing other than the standard railroad warning devices. Examples of such devices are train activated symbolic “NO RIGHT TURN” or “NO LEFT TURN” message signs, or “SECOND TRAIN COMING” signs.
2. **Active Advanced Warning:** A train activated warning device placed in advance of the crossing. It may consist of a flashing yellow light on the passive advanced warning sign, or an active sign such as “PREPARE TO STOP”. The specific type of active advance warning device will be determined at the field diagnostic meeting.
3. **Illumination:** Illumination (street lighting) provides additional visibility at night for motorists of the crossing.
4. **Interconnection:** The electrical connection between the railroad active warning system and the highway traffic signal controller assembly for the purpose of preemption (the transfer of normal operation of highway traffic signals to a special control mode).
5. **Median:** Medians deny the highway user the option of circumventing the conventional approach lane by switching into the opposing traffic lane in order to circumvent the gates. The type, width and length of the median vary depending on the specific site conditions and are determined at the field diagnostic meeting. Median landscaping is not funded.
6. **Road Geometry Improvements:** Paving and reconstructing of the road to improve approach grades, or bring up to current standards.
7. **Signage and Striping:** Signage and striping necessary to meet required Standard and provide for site specific geometric conditions.
8. **Traffic Control Signals:** Traffic control signals are often used on intersecting roads adjacent to crossings. Recommendations include alterations to existing traffic control signals (such as additional/updated signal heads, phases, or controllers), installation of pre-signals, queue cutter signals, and new traffic signals where warranted.
9. **Utility relocation:** Typically this is adjusting or relocating overhead wires to provide for clearance to the railroad or traffic devices.



Pedestrian Crossing Improvements

There are a number of treatments for eliminating potential hazards at crossings that are used by pedestrians and bicycles. The Diagnostic Team will determine the appropriate treatments for each situation. These treatments include but are not limited to:

- Sidewalk, curb and gutter
- Detectable Warning Tiles / Tactile Strips
- Pedestrian Flashers
- Pedestrian Gates
- Swing Gates
- Channelization
- Fencing
- Signage / Striping
- Crossing Surface extension and Gap fillers

Miscellaneous Items

Staff will consider the following items on a case-by-case basis.

- Three or four quadrant gate systems
- Pull-out lanes
- Guard rails
- Passive warning signage
- Removal of obstructions in the sight triangle
- Intelligent transportation systems
- Other CAMUTCD compliant items not mentioned in this guideline

Incidental Items

Staff considers as incidental the necessary repair or relocation of sidewalks, curbs and gutters, road or crossing surfaces, and/or utilities as a result of the project construction, which the Diagnostic Team did not specifically recommend, but are part of implementing the overall project. Similarly supportive work, such as bores and fill, necessary to implement an item are included.



Items Not Funded:

There RHGCP will not fund the following items:

Purchasing of right of way/easements,

- Significant geometric changes such as the relocation or realignment of roads or railroad tracks,
- Grade separation structures,
- Station crossings,
- Widening of a roadway for capacity improvements,
- Environmental documentation (such as EIRs, or traffic circulation study). RHGCP projects are typically categorically exempt.
- Pre-design studies (such as traffic signal warrant studies, or pedestrian volume studies),
- Pilot projects,
- Any costs incurred prior to the execution of the service contract with Caltrans cannot be reimbursed.

There may be other modifications to a crossing that a local agency wishes to implement in conjunction with an RHGCP project at their own expense. Such staged construction work should be coordinated between the railroad and the local agency. RHGCP will not fund these modifications.

Under Commission GO 72-B (Rules Governing The Construction And Maintenance of Crossings at Grade of Railroads with Public Streets, Roads and Highways in the State of California) (see http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/59565.htm for details) the railroad is responsible for maintaining the crossing surfacing within two feet of the tracks, and beyond that the local agency is responsible to maintain the road surface. If a rough crossing surface is the primary issue, contact the assigned Staff area engineer to evaluate and assist in the resolution of the issue.

Project Construction

Staff will submit the Priority List it establishes to Caltrans. Caltrans will proceed to program the projects, complete the environmental reviews and obligate the funding. For more details on this process please refer to the Caltrans Guidelines at:
<http://www.dot.ca.gov/drmt/resec130.html>.

Once the contracts have been issued to the railroad company and/or local agency, final design and construction work proceeds. Prior to beginning construction, the local agency (or railroad if no local agency work is involved) must file a GO 88-B request with the Commission, and receive approval for the crossing modifications.



The RHGCP process is separate from the GO 88-B process. Nomination and funding of a RHGCP project does not imply, nor grant Commission approval for the modification of the crossing(s). There are only a few instances in which a GO 88-B would not need to be filed, please refer to the GO 88-B specifications at <http://www.cpuc.ca.gov/crossings> for details.

All GO 88-B authorizations and service contracts require the railroad and/or local agency to file Form G with Staff and Caltrans to acknowledge completion of the project.



CPUC and Caltrans Contacts

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