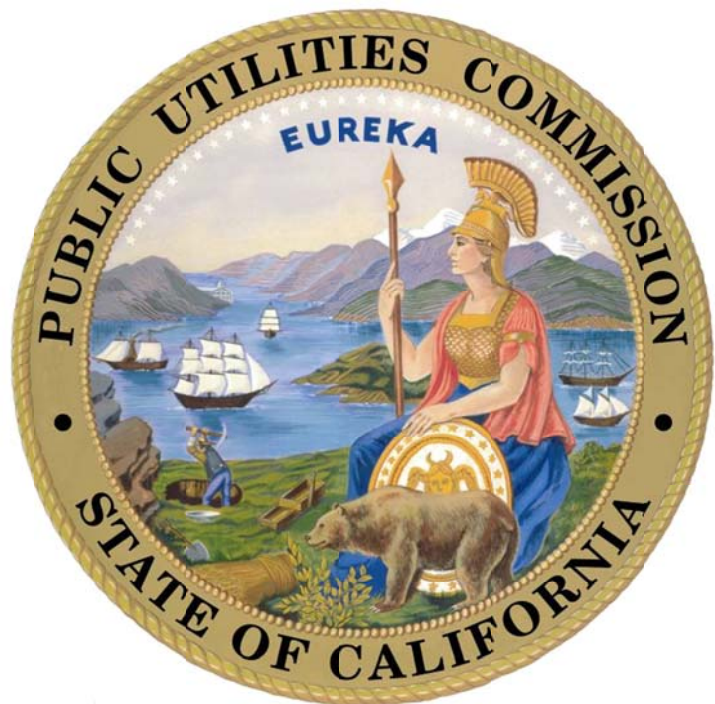


2012-2017
RAIL CROSSING SAFETY ACTION PLAN
Submitted on behalf of the
STATE OF CALIFORNIA
By the
CALIFORNIA PUBLIC UTILITIES COMMISSION

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RAIL CROSSING SAFETY ACTION PLAN STATE OF CALIFORNIA

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**RAIL CROSSING SAFETY ACTION PLAN
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1. EXECUTIVE SUMMARY

Section 202 of the Rail Safety Improvement Act of 2008, which was signed into law on October 16, 2008, requires the Secretary of Transportation to identify the ten States with the most grade crossing collisions in the prior three years, and to require those States to develop action plans to identify specific solutions for improving safety at crossings. California was identified as one of those ten states. Due to its jurisdiction over railroad and rail transit crossings within California, the California Public Utilities Commission took the lead in developing this action plan.

The plan outlines the current state of rail crossing safety in California and the Federal, State and local agency roles and responsibilities relative to improving safety. The plan also outlines a strong relationship with Operation Lifesaver Inc., to further the rail crossing safety message.

The action Plan outlines the significant investments made by the State of California to construct grade separation structures to eliminate existing crossings and to improve existing at-grade crossings to eliminate hazards. The plan makes it clear that California is already investigating crossing accidents in detail and addressing its multiple collision locations, as required by the Rail Safety Improvement Act of 2008.

The Action Plan identifies a number of existing and new strategies to be undertaken to further improve crossing safety in California.

The Action Plan will serve to guide the California Public Utilities Commission and its partner agencies in the coming years in order to further reduce injuries and fatalities at railroad and rail transit crossings in California. The State will continue to work closely with its Federal and local agency partners to implement the identified strategies and will continue on an ongoing basis to review and update the plan as the strategies are evaluated and effectiveness determined.

2. INTRODUCTION

On June 28, 2010, the Federal Railroad Administration (FRA) issued its final rule, effective August 27, 2010, requiring the ten states with the highest number of highway-rail crossing accidents, on average, over the past three years to develop rail crossing safety action plans. (Relevant portions of the final rule and adopted regulation are found in Appendix B.) The rule was intended to comply with section 202 of the Rail Safety Improvement Act of 2008 (RSIA), Public Law 110-432, Division A, which was signed into law on October 16, 2008. Section 202 requires the Secretary (delegated to the Federal Railroad Administrator by 49 CFR 1.49) to identify the ten States, and to require those States to develop their action plans, within a reasonable period of time, as determined by the Secretary. Section 202 further provides that these plans must identify specific solutions for improving safety at crossings, including highway-rail grade crossing closures or grade separations, and must focus on crossings that have experienced multiple accidents or are at high risk for such accidents.

From the database FRA maintains of reported railroad accidents, FRA identified the ten States with the most reported highway-rail grade crossing collisions at public and private grade crossings during 2006, 2007, and 2008, to be, as follows: Alabama, California, Florida, Georgia, Illinois, Indiana, Iowa, Louisiana, Ohio, and Texas. The methodology used to identify the ten States did not account for the rate or frequency of highway-rail grade crossings and motor vehicle traffic, because the statute, in RSIA section 202(a), expressly directed FRA to identify the ten States that have had the most highway-rail grade crossing collisions, on average, over the past three years.

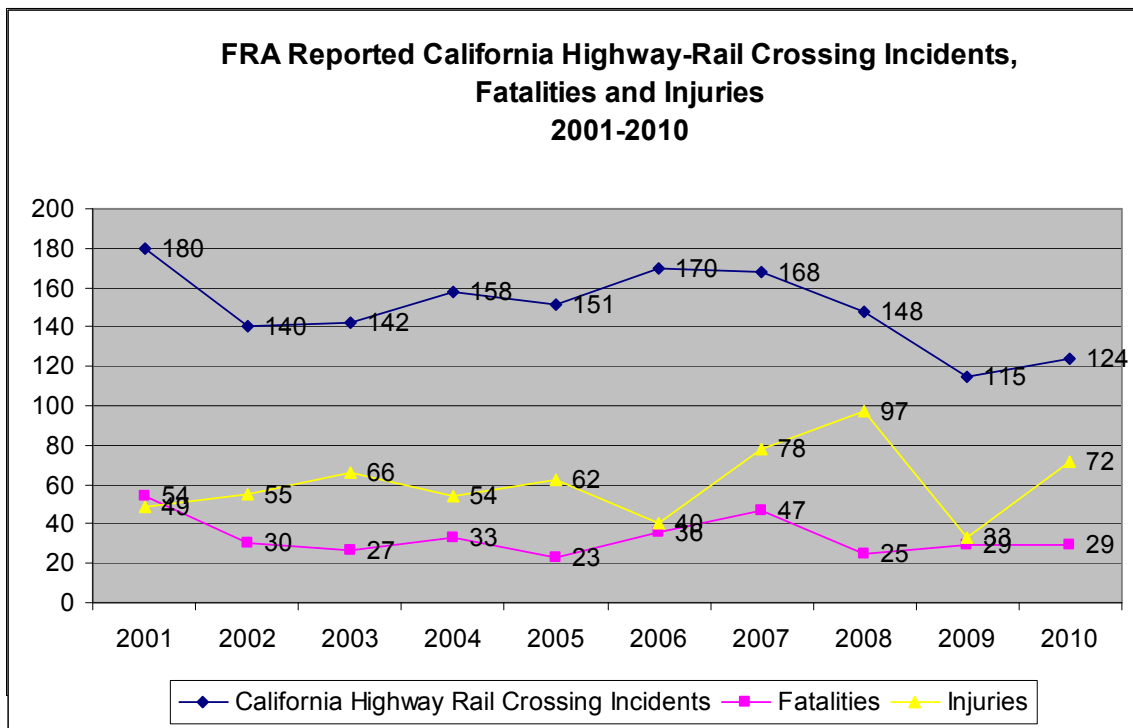
On August 4, 2010, the FRA Administrator notified the two primary state agencies in California dealing with rail transportation issues, Caltrans and the CPUC, that it had identified California as one of the ten states that were required to submit the grade crossing safety action plan under the law and under the newly adopted 49 CFR 234.11 - State highway-rail grade crossing action plans. (See Appendix C) Caltrans and the CPUC mutually agreed that the CPUC should take primary responsibility for the creation of the plan due to its jurisdiction over rail crossings and rail safety in California.

This action plan outlines current and proposed activities that are being implemented or which are being pursued that will improve crossing safety throughout the state or at specific crossings.

3. BACKGROUND

The U.S. railroad and rail transportation systems are a vital component of the nation's transportation infrastructure, carrying millions of passengers and millions of tons of freight, including hazardous materials, daily. That system consists of heavy rail (freight, passenger, and commuter rail) and light rail transit systems. In California, nearly all of these rail systems have street level at-grade crossings with roadways and pedestrian pathways.

Over the 3 year period FRA considered in identifying the 10 States requiring action plans, nationwide, there were 2,772 highway-rail crossing accidents in 2007, 2,409 in 2008, and 1,896 in 2009 resulting in a total of 873 fatalities, according to the FRA. In California during those years there were 168, 148 and 115 highway-rail crossing accidents, respectively, resulting in a total of 101 fatalities. While these figures represent a general continuing decline, they remain unacceptably high. Ten year crossing (excluding transit crossings) accident data is below.



California Rail Network

The California freight rail network is dominated by two Class One railroads, the Union Pacific Railroad Company and the BNSF Railway Company. There are also 28 short line railroads, operating over shorter territories. Combined they have over 10,000 miles of track. In addition there are four commuter railroads

that operate passenger trains, primarily on shared track with freight operations, as well as a number of small passenger excursion operations. Amtrak trains operate intercity service over a number of these lines and Amtrak of California operates three of the 5 busiest Amtrak routes in the nation along these lines. In total, California railroads have approximately 10,000 miles of track that contain over 12,000 public and private highway-rail and pathway-rail crossings. Additionally there are approximately 1,000 additional rail transit crossings operated by seven rail transit agencies.

Appendix D contains a listing of California railroads and their crossing numbers.

Rail Crossing Safety Oversight in California

Citizens and visitors of California who travel using roadways or rail transit, or live or work near heavy rail corridors or rail transit systems all depend upon the Commission's rail safety programs to protect their safety and preserve their quality of life. With increasing urbanization and rapid economic growth forcing greater use of railroad and rail transit corridors, increased movement of hazardous materials, and greater security concerns, prompt and effective oversight and enforcement is required to prevent more frequent and serious accidents.

The Federal Railroad Administration (FRA) provides for states to enforce federal railroad safety regulations within their borders, to compliment the FRA inspection forces. The Federal Transit Administration (FTA) requires that safety and security oversight of rail transit be the responsibility of state-designated agencies. However, jurisdiction over the location and treatments at highway-rail and pedestrian crossings is under state law. The State of California designated the California Public Utilities Commission (CPUC), as the agency to house these safety programs. The CPUC has assigned its Safety and Enforcement Division (SED) to manage these programs.

California Public Utilities Commission

The California Public Utilities Commission is a constitutionally created agency with broad regulatory powers. Its five Commissioners are appointed by the Governor and approved by the State Senate. In addition to housing the state's rail safety programs, the agency regulates public utilities for rates and safety and also regulates transportation of household goods and for-hire passenger carriers. The Commission's SED directs all of the safety programs under the CPUC's jurisdiction.

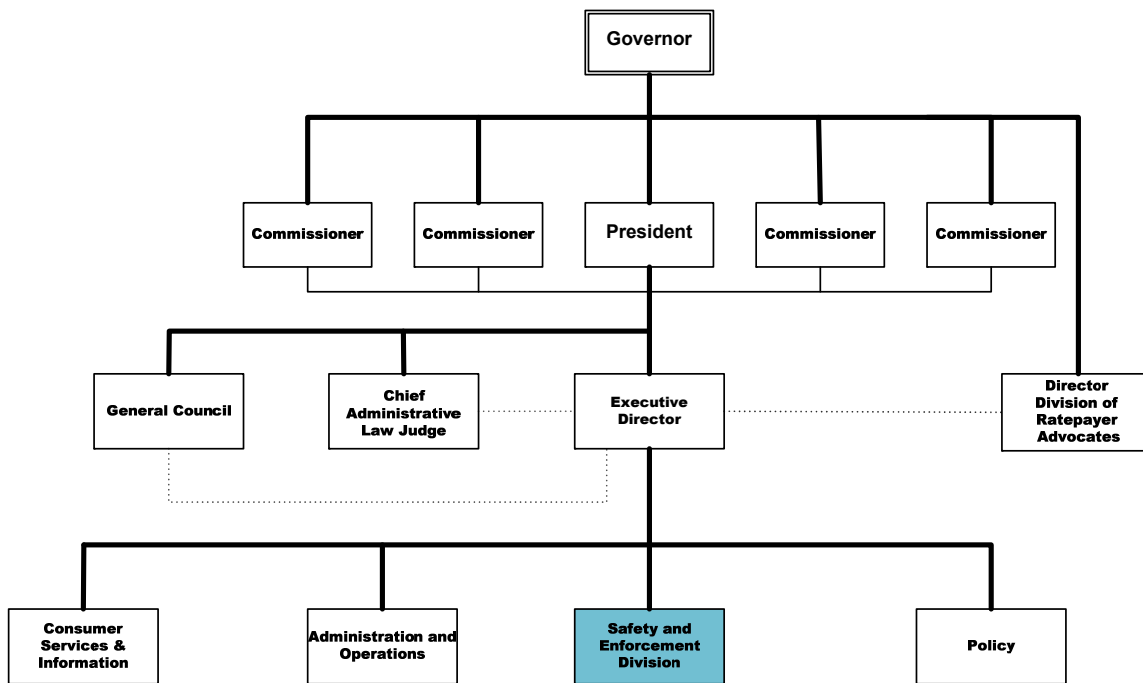


Figure 1 - Organizational Structure Diagram

Federal mandates, State regulation and Commission General Orders drive the scope of primary authority and workload within the responsibility of the CPUC rail safety programs. The CPUC rail safety programs consist of 2 branches: (a) Railroad Operations Safety Branch (ROSB) and (b) Rail Transit and Crossings Branch (RTCB). Within RTCB there are 2 sections: (a) Rail Transit Safety Section (RTSS) and (b) Rail Crossings Engineering Section (RCES).

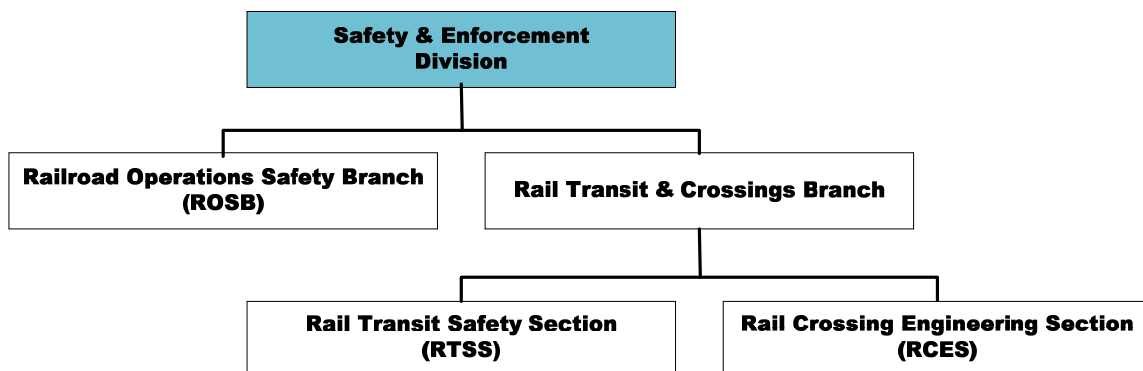


Figure 2 - SED Organizational Structure Diagram

California has the largest program of any state participating in the FRA State Participation Program in SED’s Rail Operations Safety Branch. It has federally certified inspectors that enforce federal regulations along with some state specific regulations that are not federally preempted. The commission currently has

safety oversight responsibility for 30 Railroad corporations, and approximately 10,000 miles of track.

SED's Rail Transit Safety Section is charged to manage the rail transit State Safety Oversight Program. CPUC has regulatory authority over all fixed rail guideway systems in California. These systems are collectively referred to as Rail Transit Agencies (RTAs). The CPUC's regulatory authority is exercised in conjunction with both the FTA and the RTAs in order to assure and enhance public safety. The CPUC program is the largest in the nation, with oversight responsibility for more RTAs than any other state.

In addition to safety oversight of railroad and rail transit agencies, the Commission has safety oversight responsibility for approximately 13,000 public and private railroad and light rail transit crossings, of which approximately 10,000 are at-grade. The Commission's Rail Crossings Engineering Section (RCES) has primary responsibility for implementation of its rail crossing safety program.

The Commission's ROSB, RTSS, RCES, and the FRA and FTA cooperate on various levels to manage rail safety in California and enforce safety regulations, investigate incidents and otherwise conduct oversight under the jurisdictions granted by federal and state laws. ROSB and RCES share safety data and information extensively with FRA in conducting their oversight activities of heavy rail systems.

The RCES of the CPUC carries out the Commission's program administering its exclusive jurisdiction over the safety of crossing of highways and railroad tracks, which includes the power to determine their design, location, and terms of installation, operation, maintenance, use, and warning devices (California Public Utilities Code 1201 – 1202). This includes the following responsibilities:

- Review and process applications for Commission authority to construct new, or to alter existing rail crossings;
- Investigate train-involved collisions at railroad crossings;
- Perform safety inspections of crossings;
- Review and respond to public complaints (e.g., rough or unsafe crossings, noise issues);
- Prepare recommendations to enhance safety at specific crossings;
- Develop Commission policies to enhance safety of all crossings in the State;

- Perform field reviews of crossings to update crossing inventory database;
- Administer and maintain of the Commission's crossing Accidents database;
- Review, analyze and provide written comment on environmental documents required to be submitted under state law, for impacts on the safety of rail corridors or crossings in or near the project area;
- Administer the CPUC portion of the Federal Section 130 program;
- Administer the CPUC portion of the state's Section 190 grade separation program;
- Administer the state's Automatic Grade Crossing Warning Device Maintenance Fund program (that reimburses local City and County portion of crossing maintenance costs);
- Conduct railroad quiet zone evaluations and receive, analyze and respond to Notices of Quiet Zone Intent and Establishment under FRA regulations;
- Participate in state and national committees that examine and recommend rule and standards changes to improve crossing safety;
- Monitor, analyze and comment upon Federal rulemakings and initiatives, proposed state laws, new standards and regulations under consideration;
- Monitor and review existing state laws and Commission General Orders to identify opportunities for improvement and update;
- Develop and publish policy and guidance documents on crossing issues to promote effective safety strategies and consistent application of crossing treatments;
- Promote and provide training to railroad and local roadway agency personnel regarding highway-rail and pathway-rail crossing safety; and
- Analyze new crossing safety technology.

RCES currently has a total of 19 employee positions throughout California, located in three regional areas: San Francisco, Sacramento and Los Angeles.

California Department of Transportation

The California Department of Transportation (Caltrans) and the California Transportation Commission (CTC) are responsible for development, construction and maintenance of the primary state transportation network in California. They receive, allocate and distribute nearly all state and federal funds relating to all facets of the highway system in California. As such Caltrans and the CTC are primary funding sources for implementing grade separations and crossing

improvement projects in California. In addition, Caltrans improves existing crossings and grade separates a significant number of existing crossings in implementation of transportation projects in furtherance of its primary mission to develop and maintain California roadways and the inter-city passenger rail service for which it is responsible.

Relative specifically to crossing safety, Caltrans, through its Division of Rail, administers the Caltrans portion of the Federal Section 130 Program and State Section 190 Grade Separation Program. Both of these crossing improvement programs are jointly administered by Caltrans and the CPUC. Because Caltrans receives the state and federal funding for these and other programs, they perform the contracting and implementation elements of these programs, while the CPUC conducts the data analysis and development of prioritization lists of projects meeting the requirements for the programs.

Relative to the State's rail infrastructure, Caltrans Division of Rail, operates Amtrak of California. They work with the class I railroads, whose system they operate over, to implement improvements adding track and other infrastructure to provide additional service or improve existing service. As these infrastructure projects are implemented, highway-rail crossings are frequently grade separated or improved and redesigned to enhance safety and mobility.

In addition to these core programs, Caltrans also administers the State of California 2006 infrastructure bond funds. On November 7, 2006 California voters approved the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 (2006 Bond Act). That Act approved \$19.925 Billion of state general obligation bonds for specified purposes, including improvements or grade-separations of highway-rail crossings. A \$250 million subaccount was specifically set aside to grade separate railroad crossings, with a number of sub accounts being eligible to also fund crossing grade separations or at-grade crossing improvements where they were involved in infrastructure projects that were the focus of that sub account.

High Speed Rail

The California High Speed Rail Authority (CHSRA) is currently charged with developing a high speed rail system in California. Although the project and its alignment remain controversial, it continues to progress and the first segment environmental document has been certified. A number of routes are under consideration for the various segments, but most parallel existing rail corridors

so that if and when the project proceeds, hundreds of existing highway-rail crossings within the existing freight rail corridor are likely to be closed or grade separated as part of the project. The CPUC's RCES has been working closely with the CHSRA and its consultants to address the safety of any at-grade crossings that would remain along the parallel freight corridors, as part of the project.

Crossing Closure and Improvement Efforts and Initiatives

The CPUC has adopted the policy of the Federal Railroad Administration to reduce the number of at-grade highway-rail crossings in California, and has included this policy statement in Section 2 of its General Order 75-D – Standards for Warning Devices for At-grade Highway-Rail Crossings, which states:

2. POLICY ON REDUCING NUMBER OF AT-GRADE CROSSINGS

As part of its mission to reduce hazards associated with at-grade crossings, and in support of the national goal of the Federal Railroad Administration (FRA), the Commission's policy is to reduce the number of at-grade crossings on freight or passenger railroad mainlines in California.

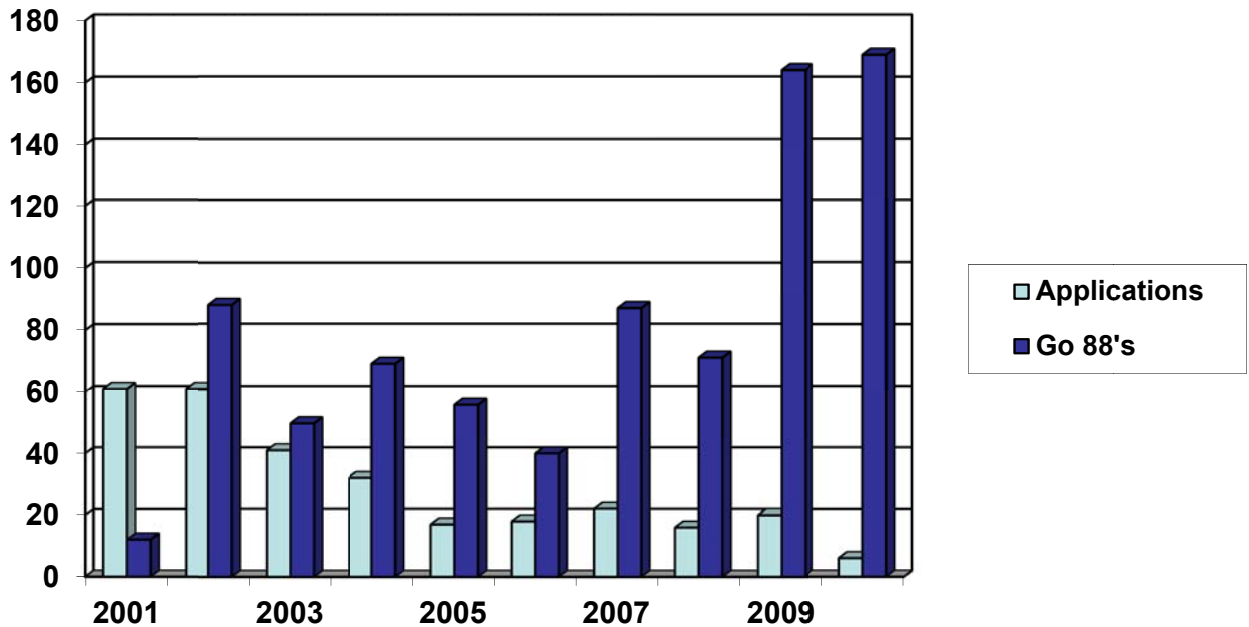
Thus, at-grade crossings on mainline track are rarely approved by the CPUC, and when they are approved, the criteria has been set very high. The CPUC requires among other things a demonstration of a compelling public need, that a grade separation at the location is impracticable, and a convincing showing that the proposed design eliminates all potential safety hazards. Crossings that have been authorized at-grade are typically on industrial spurs and other non-mainline tracks, with low train counts and speeds and/or lightly used roadways.

While very few new crossings have been authorized in California in the past 5 years, hundreds have or are in the process of being upgraded. Commission authority to modify crossings has increased significantly in the past several years. In calendar year 2010, the CPUC authorized 165 crossing improvement projects. These have typically been the urban and suburban crossings where the crossings and roadways are experiencing congested conditions, improving their efficiency and more safely accommodating the expected motor vehicle and pedestrian traffic.

CPUC Staff endeavor to identify crossings that are good candidates for closure during any crossing projects it evaluates, including quiet zone projects, new grade separations, transit extensions and other projects.

Crossing Applications and Modification Requests (GO88)

2001-2010



Pedestrian Safety and California Commuter Railroads

California commuter railroads have been leading the state and the nation in the adoption and implementation of automatic pedestrian crossing gates and other pedestrian crossing treatments. Both the Caltrain system in the San Francisco Bay area and the Metrolink system in Southern California have adopted crossing standards that include automatic pedestrian crossing gates (including addition of off quadrant pedestrian devices), emergency exit swing gates, fencing and pipe rail channelization, detectable warning tactile strips, and pavement markings and signage. The adopted standards are already implemented at many of the crossings on those systems and those commuter systems have made commitments to continue their implementation as projects are identified and funding is acquired. These standards include implementation of four quadrant gates for many of the crossings.

A significant project of note is the Orange County Transportation Authority (OCTA) crossing improvement project. In 2005, OCTA's Board of Directors approved a \$70-million program to enhance rail safety throughout the county. The project is a county-wide project that uses local transportation sales tax revenues to fund 88% of the improvements, with the local Cities paying 12%.

The project has been completed and has implemented the Metrolink grade crossing standards at all 50 Orange County crossings in the Metrolink system. The improvement project implements the pedestrian treatments as well as 4 quadrant gates, medians, traffic signal improvements, and street and sidewalk improvements. The results are vastly improved crossings with state of the art equipment for vehicles and pedestrians. The final configurations will improve overall safety and will also allow the Cities to pursue quiet zones.

Grade Separations and the 2006 State Transportation Bonds

The State of California has a funding program that helps local agencies with funding of grade separation projects. The program is known as the Section 190 Grade Separation Program. It allocates \$15 million of dedicated annual state funding to assist local agencies in developing projects to grade separate crossings to accomplish local safety and transportation goals. The process a formal CPUC proceeding where local agencies nominate projects to receive funding and the CPUC RCES staff evaluates a nominated project against a formula developed for that purpose. Once the projects are ranked in priority order, local agencies may request the funds as their projects are made ready to go. While the program has limited funding, it provides a resource for local agencies to complete their funding pieces to implement their projects.

In 2006 California voters approved infrastructure bonds that have led to many grade separation and other crossing improvement projects. This demonstrates a significant statewide investment and commitment to eliminating at-grade crossings for both safety and mobility purposes.

One of the specific Bond fund sub accounts was the Highway-Rail Grade Crossing Safety Account, a \$250 million account specifically to fund grade separation projects. \$150 million of projects were identified through use of the state Section 190 Grade Separation priority list created through a formulaic evaluation process that is undertaken at the CPUC. The remaining \$150 million was identified in consultation between the CPUC, Caltrans and the California High Speed Rail Authority. These bond funds were allocated to the projects as shown in Appendix F.

Additionally, funds from other bond sub accounts were also allocated to crossing grade separation projects. The Trade Corridors Improvement Fund was allocated to improve the flow of goods along all transportation modes from the California ports that ship and receive so much of the nation's trade. That subaccount has included many grade separation projects and at a minimum accounts for an additional \$658 million investment in grade separation projects.

Thus, the 2006 California infrastructure bonds has resulted in nearly \$1 billion investment in grade separation projects by the State of California over the past several years, with most of the projects under or nearing construction. That figure does not include the local funds contributed to those projects. These investment levels demonstrate a serious commitment to crossing grade separations in California.

Crossing Closures

As noted above, the Commission, acting through its jurisdictional authority, has adopted a policy in its General Order 75-D to reduce the number of at-grade crossings in California on passenger and mainline track. The Commission takes that policy very seriously and has set very high criteria to justify a new at-grade crossing on such track. That policy is furthered by a proactive rail crossings safety staff in the Commission's RCES that promote grade separation and crossing closure as a matter of routine, while working with railroad and local roadway authority personnel to implement their projects, seeking to always improve overall crossing safety.

However, any roadway authority or railroad may propose to construct an at-grade crossing over staff's objections by filing a formal application with the Commission. Under the quasi-judicial process and administrative law procedures in effect, the Staff may then file a protest to the application, stating the reasons why the Commission should not grant approval. Staff then becomes a party to the case and seeks through the process to prevent authorization of the crossing as proposed, or seeks to have the Commission order changes to the crossing proposal to address the identified safety issues.

Additionally, the Commission staff may identify a safety issue with a particular crossing or series of crossings, and if they are unable to get the responsible roadway authority and/or railroad to address the deficiency, can request the Commission open a formal investigation proceeding to bring the parties together to evaluate staff's allegations and assertions regarding the safety of the crossing. The formal investigation may result in testimony and hearings to develop a record upon which the Commission can render a final decision ordering improvements, grade-separation or closure.

Recent formal crossing Applications and formal Investigations relating to crossings include CPUC Staff's attempts to close a crossing in Los Angeles along the Metrolink passenger corridor with poor geometry, sightlines and adjacent to a bulk propane storage facility, as well as staff's protest of the City of Davis

application to build a pedestrian crossing across the tracks at the Davis Amtrak station on the busy Capitol Corridor line between Sacramento and the Bay Area.

Also demonstrating the CPUC's commitment to eliminate redundant or unnecessary crossings is the firm stance to eliminate and reduce crossings along the North Coast Rail Authority and Sonoma-Marín Rail Transit (SMART) system rail line being brought back into service after having been shut down in the late 1990's by an FRA Emergency Order (EO-21). The line has been rehabbed and brought back into service, initially providing for modest freight service of about two to three trains per week. The line will ultimately host freight trains as well as commuter rail trains under temporal separation. The CPUC Staff has sought closure and consolidation of existing public and private crossings along the line to minimize crossings along the new passenger route.

In addition to the Commission's crossing closure and consolidation efforts, both of the Class 1 railroads in California have proactive crossing closure programs, which CPUC staff has been supporting. The crossing closures are a mix of public crossings and private crossings. Each has made a concerted effort to identify private crossings where no valid crossing agreement exists, and to require users to produce an agreement or other proof that they have the rights to legitimately cross the tracks at that location. If no valid agreement for the crossing exists, there is a presumption that it is not legitimately authorized and closure is sought unless it's the only access point to the property.

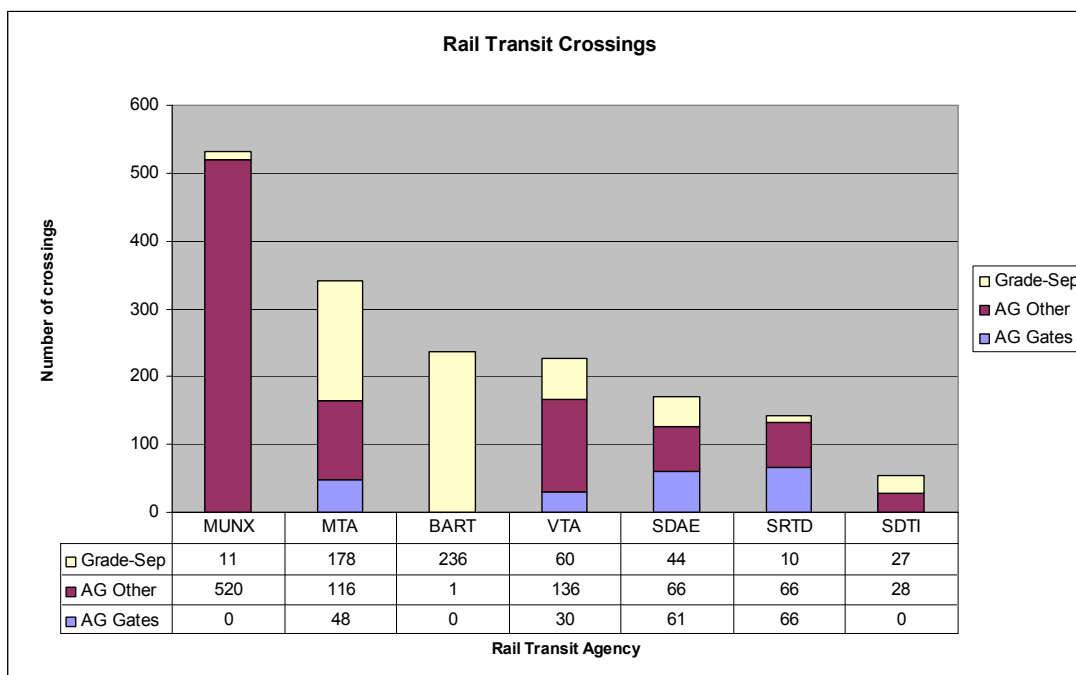
While this Action Plan sets no specific goals for crossing closures because it is unrealistic to do so, the continuous and ongoing efforts of the CPUC staff urging closure of existing redundant or unnecessary crossings will continue.

Rail Transit Crossings

The Commission has jurisdiction over a further approximate 1100 at-grade rail transit crossings. These crossings are in a variety of configurations including traditional at-grade crossings of exclusive rail transit right-of-ways with local streets, and median and street-running lines, where crossings are at street intersections where traffic is controlled by traditional traffic signals. These crossings are largely in the more congested urban and suburban areas, and experience heavy vehicular and pedestrian traffic. Transit crossing data is found below.

Transit System Crossing Counts

CPUC Code	FRA Code	At-Grade w/Gates	At-Grade Other	Grade-Sep	At-Grade Total	Total Crossings
BART	----	0	1	236	1	237
MTA	LACZ	48	116	178	164	342
MUNX	MUNX	0	520	11	520	531
SDAE	SDAE	61	66	44	127	171
SDTI	SDTI	0	28	27	28	55
SRTD	SCRT	66	66	10	132	142
VTA	VTAZ	30	136	60	166	226



4. ACTION PLAN STRATEGIES

The strategies to be pursued to improve rail crossing safety in California under this action plan include a number of new initiatives and projects coupled with more traditional approaches to hazardous crossing identification, evaluation and improvement project development. As is often the case, addressing individual crossings and developing projects to improve them can be largely a function of whether there is any funding available to improve them.

Specific strategies to be undertaken by the CPUC, as the State agency responsible for crossing safety oversight, identified herein include:

1. Development and implementation of a comprehensive rail programs database, including a rail crossing inventory system, for the Commission's rail safety programs that will allow enhanced integration and analysis of all available crossing data sources;
2. Identifying funding to undertake a state-wide comprehensive crossing inventory project to populate the new CPUC database solution with complete and accurate data on every California crossing, including sightline analysis of existing passive crossings for STOP/YEILD sign placement;
3. Refining and enhancement of objective data-driven risk-analytic processes for evaluation of crossings for Section 130 and other funding;
4. Continuation and further development of CPUC program and resources for evaluating environmental documents for actual or potential safety impacts to rail crossings and rail corridors, for the purpose of identifying those impacts and requiring mitigations of project proponents or their local agency sponsors to address them;
5. Undertake a comprehensive review of all crossings with traffic signal preemption installed to identify deficiencies in device warning time or traffic signal configuration (reference FRA Safety Advisory 2010-02);
6. Continue commitment to education and to the California Operation Lifesaver and the national Operation Lifesaver organizations to promote rail crossing safety and trespass prevention and continue to participate in activities that promote rail crossing safety;
7. Broaden communication and interaction between other involved state and federal agencies to identify funding opportunities, safety initiatives to pursue, and laws and regulations that should be modified or updated to improve rail crossing safety;

8. Develop and publish an annual rail accident report;
9. Review and update Commission General Orders relating to rail crossing safety;
10. Continue to provide and sponsor training opportunities for California roadway authority and railroad personnel to improve knowledge and skills in crossing design and traffic signal preemption fields.

1. Development of Comprehensive Rail Safety & Security Information Management System (RSSIMS)

The Commission has sought and acquired funding to undertake a project that will provide the Commission's rail safety programs a comprehensive rail programs database information management system. The system will provide a comprehensive data management system across all of the Commission's rail programs that will allow greater integration and data analysis to identify trends that should be examined more thoroughly or otherwise addressed through regulatory means.

The CPUC sought and was granted four Risk Assessment positions for its rail safety programs. One engineer was specifically acquired for each of the three rail programs, Rail Operations Safety, Rail Transit Safety and Rail Crossings Safety, plus one additional non-engineer position. These positions have been filled and those individuals are working on improving CPUC data and learning the intricacies of the three safety programs. The individuals will be responsible for developing risk assessment methodologies to complement the existing safety oversight programs, so that safety efforts can be focused on the areas of highest risk and/or consequence.

Existing Rail Data Systems

The existing rail safety information systems across all Branches of the Commission's SED are inadequate, disjointed, and inhibit the Commission's ability to investigate, manage and report on rail crossing and rail safety issues. This impairs the ability of the CPUC to meet all of its federal and state legislative mandates. Due to the limitations of these systems, CPUC staff resorts to making decisions based on multiple, independent MS Access databases, Word files, Excel spreadsheets, and physical documents and reports. Combine this inefficient use of inspector and staff time with increasing requirements in the area of rail safety, and numerous projects under way due to the 2006 Bond Act, the federal American Recovery and Reinvestment Act, and high speed rail, and it became clear that the data and information systems currently in use could no longer sustain the programs.

The data and information system opportunities that exist and the solution identified will enable CPUC to satisfy its critical business needs through the implementation of an integrated, fully functional information management system and revised business processes that reduce costs through new efficiencies, and most importantly, meet all of its statutory mandates to create a much safer railroad system.

To carry out the Commission's rail safety mission, CPUC's SED must manage large inventories of inspection, accident, infrastructure, complaint, formal proceeding, and historical data. These data sets are maintained in various unlinked electronic databases, and various other unlinked electronic and non-electronic media.

The principal databases, all in Microsoft (MS) Access, are:

- Crossing Inventory Database (RRX-CA). Holds all CPUC data on existing and closed rail crossings in the state. CPUC staff validate and update crossing data in this database, and use the information to identify unsafe crossings and trends in crossing safety.
- Rail Accidents Database (RR-ACC). Stores all information about railroad, rail transit, and rail crossing rail accidents collected by CPUC units.
- Rail Transit and Crossings Branch Case Tracking Database (RTCB Filings). Contains information about cases, including formal applications, informal complaints, time extension requests, General Order filings and waivers, and other special projects.
- Railroad Safety Inspection Report (RSIR). Database used to record CPUC General Order defects and violations (of state requirements) found by Railroad Operations Safety Branch inspectors during inspections, and to report them to the railroads. Each inspector has his or her own copy of RSIR on their laptop computer, and there are no centralized files that can be accessed by personnel.
- California Environmental Quality Act (CEQA). Records data about CPUC staff responses to CEQA notices and documents with actual or potential impacts to crossing safety, including: notice or document title, State identification number, brief project description, county, and date a CPUC comment letter was sent. Copies of comment letters are kept in separate MS Word or pdf files.

SED's current rail safety databases have a variety of problems which impede staff capabilities to manage and analyze data, lower the ability of management to efficiently allocate inspector and other staff resources, and increase the Commission's operating costs. Implementing a new database that integrates the existing databases and adds new capabilities will reduce these problems, and improve SED's ability to identify and target areas of unsafe practices by railroad and rail transit operators, to detect trends in crossing and other accidents, and to accurately maintain its rail crossing inventory. In addition, the new database

will assist the State in meeting new federal requirements for database accuracy set in the RSIA.

CPUC Information Management Project

The Commission has selected and approved management and implementation contractors for its new rail data management system, the Rail Safety and Security Information Management System (RSSIMS). Delivery of the RSSIMS system for testing and training and implementation occurred in April of 2013.

General objectives of the RSSIMS project are listed below:

Improve Rail Safety and Security. RSSIMS will enable identification of trends in accidents and inspection data, and to allow staff and the Commission to respond proactively.

Create an Automated Environment that Enhances Service and Efficiency.

RSSIMS will give CPUC a tool for centralizing information and analyzing oversight activities. Specific objectives include:

- Provide a data repository that consolidates data from CPUC rail units to reduce redundant data entry and storage.
- Provide a consolidated data repository that supports analysis of hazards and trends across the disciplines of railroad, rail transit, and crossing safety.
- Eliminate the need to compare and reconcile data across multiple databases.
- Develop query and reporting capabilities which can provide a complete history of crossings within an area, including location information, changes, accident information, and references in CPUC proceedings.
- Enhanced data, such as crossing geometry parameters.
- Structured data that allows queries by multiple methods.
- Provide a system that at a minimum allows for 150 concurrent users.
- Provide a system that allows offline data entry and synchronization for field work.
- Provide a system that meets state and federal information security requirements including Security Sensitive Information and Personal Identifying Information.
- Provide a system which meets high availability best practices.
- Provide an automated storage mechanism for data presently stored in various forms such as paper or on the CPUC network as flat files. This includes but is not limited to activity reports, focused inspection reports, internal safety audits of rail transit agencies, periodic inspection reports, near-miss data, and triennial audits of rail transit agencies.

- Provide mechanisms that prompt for the timely accomplishment of time-sensitive activities.
- Coordinate inspections to meet legal mandates, while maximizing efficient use of resources.
- Record complaints and complaint resolution information in a system that enhances analysis, process review, improvement, and standardization using keywords and other mechanisms.
- Make complaint information easily accessible.
- Create a knowledge base for regulatory interpretive precedents, e.g., settlement agreements, Memorandum of Understandings, Commission Resolutions and Decisions.
- Create links from grade crossing diagnostic data together to other data within the system or other systems to improve end-user capabilities.
- Permit the analysis and display of trends geographically, using the CPUC geographic information (GIS) system.
- Integrate rail transit only (i.e., no United States Department of Transportation (DOT) identification) highway-rail crossing inventory with railroad highway-rail crossing inventory, to include integration with the CPUC GIS system.

Manage Increasing Workload. Presently, CPUC's rail units are struggling to meet the demands of the overall rail program, and must develop more efficient means to accommodate the increasing demands on the programs. Areas where increased efficiency will be critical are:

- Tracking proposed and approved crossing projects
- Evaluating and incorporating railroad updates to the Federal Railroad Administration's (FRA) National Crossing Inventory and state inventory repositories.
- Tracking functional and/or maintenance problems at highway-rail crossings.
- Data collected and represented such that it will allow safety issues to be studied and valid conclusions drawn.
- Tracking compliance of railroad and rail transit operators with safety requirements and Commission orders.
- Tracking safety violations for the three rail safety programs.

Implementation of the project, along with potential future incorporation of Caltrans geographic information system data on rail lines will significantly improve the capabilities of the CPUC and the State to proactively identify and take actions to mitigate crossing and trespass hazards.

2. Improve State Crossing Inventory Data

The CPUC is the state agency responsible for the State rail crossing inventory data. Because of the existing database inadequacies and the failure of roadway authorities and railroads to notify the CPUC on all changes at rail crossings as they are implemented, the current state of the California highway-rail crossing inventory is less than adequate. The data on specific crossings is spotty, and although the CPUC has made significant strides in improving the data in recent years, there is a significant need to conduct a comprehensive inventory project in California. As such, the CPUC is making efforts to identify and acquire the significant funding that such a project would require.

The number of crossings in California is approximately 13,000 public and private rail and rail transit crossings. Under CPUC processes and FRA requirements, whenever changes occur at crossings the party responsible for those changes is responsible to see that those changes are communicated to the FRA and the CPUC for updating of the national and state inventories. As FRA knows, quite often those changes occur, but the inventory data updates are either not fully completed or not communicate to the FRA and/or State as required. This has led to degradation of the data over time, and lead to some of the requirements found in RSIA requirements pertaining to crossing inventory updates and data integrity.

Since the passing of the RSIA the CPUC staff has been working with the railroads in the state to update the CPUC crossing inventory and reconcile the FRA, state and railroad data so that the data is consistent between them. However, due to the number of crossings, resources available to reconcile data, varying accuracy and format of railroad inventory data, and the dozens of data elements for each crossing, progress has been slow. Additionally, due to limited budgets and resources, local roadway authorities are often unable to provide accurate vehicular traffic counts for the crossings, a critical data point for evaluating risk at the crossing. Although basic information on the crossing, such as CPUC and DOT numbers, warning device level and roadway name, can be reconciled relatively easily, getting complete and updated data for each data element has been more problematic, and has not yet been achieved. We have been unable to make serious progress in such efforts and recognize that only a comprehensive project to field visit every crossing will result in the necessary data integrity going forward.

In order to attain accuracy in the CPUC inventory data and fully reconcile that data with railroads and the FRA, an inventory project will be pursued. This will allow the new crossing inventory module of the CPUC data system, RSSIMS, to be populated with accurate information that, with the new system capabilities, will be able to be accurately maintained over time.

We are currently seeking to receive 2% of the annual Federal Section 130 funds California receives for the purpose of data acquisition and analysis as allowed and provided for by Federal Law. Federal Section 130 funds are received from FHWA by Caltrans, who along with the CPUC jointly administer the Federal Section 130 program. Section 130 is funding to eliminate hazards at highway-rail crossings based on an analysis of crossing data that identifies the most hazardous crossings. The CPUC maintains the crossing inventory data and conducts the analysis to identify the locations that are further reviewed to develop projects that mitigate the identified hazards, thereby improving public safety and reducing the potential for crossing incidents. Once a project is identified, reviewed and developed, Caltrans contracts with the local roadway authority and/or railroad to construct/implement the project to improve the crossing.

Federal law authorizing the Federal Section 130 program allows up to 2% of these funds for data acquisition and analysis. CPUC is seeking these funds over a multi-year period (2% per year, current and prior year unspent funds) to be used to contract for a crossing inventory project.

Federal law in 23 USC Section 130 paragraph (k) specifically authorizes states to utilize 2% of the allocated Section 130 funds to acquire and conduct data analysis in support of Section 130 activities, and in their guidance on the Section 130 program the Federal Highway Administration (FHWA) encourages states to do so and to utilize data collected to update the FRA inventory data:

(k) Expenditure of Funds.— Not more than 2 percent of funds apportioned to a State to carry out this section may be used by the State for compilation and analysis of data in support of activities carried out under subsection (g).

And

From the Guidance on 23 U.S.C. § 130 Annual Reporting Requirements for Railway-Highway Crossings published by FHWA

THE USE OF SECTION 130 FUNDS FOR DATA COMPILATION AND ANALYSIS

As mentioned earlier. The new 23 U.S.C. § 130(k) allows the States to use not more than 2 percent of funds apportioned to a State to carry out section 130 for related data compilation and analysis. States should compile and analyze data that will allow informed decisions to prioritize railway-highway crossing improvements (e.g., crash data., traffic volume and mix, roadway inventory, etc.). States are strongly encouraged to evaluate their database .systems to ensure that the data obtained is analyzed in a comprehensive and efficient manner. FHWA also

encourages States to consider utilizing this data to update the Federal Railroad Administration (FRA) Grade Crossing Inventory.

California is experiencing increases in the number of light rail transit systems, volume of heavy rail passenger and freight rail service in California, recent changes in federal rules regarding the establishment of Quiet Zones, and the significant construction and development in the vicinity of rail corridors and crossings. These factors have significantly increased the safety oversight responsibilities of the Commission as it pertains to rail crossings and overall rail safety.

The citizens of California would greatly benefit from a comprehensive crossing inventory data project undertaken with the 2% of Section 130 and other available funding sources. The project would improve the data currently analyzed to identify hazardous crossings and assure that accurate data feeds into the various analyses that are conducted by CPUC staff toward that end. This is a high priority need for the CPUC, especially in light of our RSSIMS project, because it will allow the new inventory database module to be populated with updated accurate information and data that can be soundly relied upon and more accurately maintained. The proposed project would directly resolve the identified problem and the data integrity issues the State is currently facing.

The project was approved and CPUC is currently working with Caltrans to identify the scope of the project given the funds allocated, and is identifying the process to transfer the funds to proceed with the project.

2. Section 130 Program and Multiple Accident Crossings

The Federal Section 130 program is critical to California and the CPUC to address the hazardous crossings identified through the program. The Section 130 Program was established under United States Code Title 23 Section 130. Its purpose is to reduce the number and severity of highway-rail collisions by eliminating hazards to vehicles, bicyclists, and pedestrians at existing railroad crossings. This is accomplished by funding highway safety improvements at railroad crossings using Federal funds appropriated by the US Congress and allocated to the States by the FHWA. In California, the Department of Transportation (Caltrans) receives and expends the funds due to requirements of the law and its established relationship with FHWA in receiving Federal transportation funds. The CPUC identifies and develops the projects with the involved parties in recognition of its authority over railroad crossings in California. Thus, the CPUC and Caltrans jointly administer the program to fulfill its goals.

The Section 130 program is largely responsible for allowing the state to address its hazardous crossings. Accidents and both train and vehicular traffic are the main factors driving the Section 130 analysis and hazardous crossing identification under the program. Thus, its continued funding by the US Congress is strongly supported by the state and local agencies in California. As shown in Appendix E, the multiple accident crossings have been addressed using this resource, and California has been dealing with its multiple accident crossings utilizing this resource for many years. As shown in the Appendix, nearly all of the multiple accident crossings are being upgraded or are part of grade separation projects.

Section 130 Process

The CPUC conducts the data analysis of all public crossings in the state and identifies hazardous crossings and determines project selection for the Section 130 program through a rigorous data driven process. As part of this and its other routine duties, the CPUC has developed, updates, and maintains the California crossing inventory database that contains information about all public crossings in the State. Data that cannot be obtained by reviewing the site conditions, such as vehicular and rail traffic volumes, is obtained through direct contact with the railroad and local roadway agency. Utilizing this data, a number of factors are used in determining eligibility for funding and respective ranking, including the use of a hazard index formula and other site-specific factors as required by statute. The hazard index formula used is as described in section III, part B, of the FHWA *Railroad Highway Grade Crossing Handbook—Revised Second Edition*. In addition, the State's experience from post-collision investigations is used to identify common hazards specific to an area, type of crossing, or corridor of crossings. Other factors feeding into the analysis is any available near miss data, sightline obstructions, use by school busses and hazmat vehicles, and a number of other factors.

The CPUC determines the modifications required at each crossing in consultation with the Diagnostic Team. The Diagnostic Team is comprised of experts from CPUC, railroad and roadway agencies, and possibly Caltrans and FRA representatives. Modifications to improve safety include the installation or upgrade of active grade crossing equipment, such as flashers, gates, cantilevers, upgrades from incandescent lights to light-emitting diodes, traffic signal interconnections, and constant time warning detection, as well as crossing approach improvements, such as medians, traffic signals, pre-signals, train-activated blank-out signs, curbing, guardrails, illumination, and road closures.

This process is undertaken annually to incorporate all available data, to create a prioritized list of projects for the next funding cycle. Once the process is complete

the list is transmitted to Caltrans. Caltrans uses the project recommendations and cost estimates to submit the eligible crossings to the regional transportation planning agencies, metropolitan transportation commissions, or local transportation commissions. Caltrans provides the programming documentation, estimates, environmental assessments, and right-of-way certifications to the FHWA, which upon approval of the material submitted, obligates the funds. Caltrans then negotiates and executes contracts with railroads and local agencies to construct the projects.

Since the inception of the Section 130 program, the number of collisions and resultant fatalities and injuries has declined even though the number of crossings has remained relatively stable in recent years. In addition, when viewed in light of the increase in train and vehicular traffic volumes, the ratio of collisions to volume continues to decline. It is difficult to demonstrate quantitatively whether the reductions are due specifically to the Section 130 program versus other improvements that have been incorporated into the rail and highway systems over the past several decades, as well as the small sample size of projects and collision data. Collisions at crossings are usually infrequent and a longer evaluation period and larger number of projects are needed before conclusive evaluation with reasonable level of statistical confidence can be made. However, the Section 130 program provides the only dedicated funding source to improve at-grade crossings identified by the data analysis as hazardous. Numerous crossings throughout California have been, and are currently being improved through the program.

There are also many benefits of the program that are also not directly quantifiable. When a crossing is improved all necessary and required improvements are made, not just the improvements related to mitigating the known collision history. For example, though a crossing may not have had any pedestrian incidents, the pedestrian pathways are reviewed and often are improved as part of the project, providing a defined path of travel with additional pedestrian warning that was not there before. Similarly, all crossings where no medians are present pose a risk of gate drive-around. Each location is individually analyzed and median treatments may be installed, reducing the future risk of a collision. These types of improvements are known to prevent collisions from occurring in the future even though they may not have yet had such incidents at each specific location.

Looking Forward

The CPUC continues to refine its data analysis for this program. As additional data becomes available or is identified as a need, that data is reviewed for ease of collection, accuracy and applicability in the Section 130 analyses. Near miss data is a good example.

Federal fiscal year 2010-2011 was the last year for which funding was guaranteed for this program. Congress has not yet passed a new transportation act, and there has been a significant amount of discussion as to what the result will be. In an era of cutting deficits and reduced Federal spending, this program may be at risk. We recommend continued funding by Congress of this important program. Currently the funding continues under the Continuing Resolution process.

3. Rail Corridor CEQA Review Program

The State of California has a statutory requirement that development and planning of future development is subject to public review under the California Environmental Quality Act (CEQA). Notices and distribution to interested parties primarily comes through the State Clearinghouse, which receives and distributes notices of environmental document availability. The CPUC and other state agencies with permitting and regulatory responsibilities receive such notices and have varying levels of responsibility to review and analyze the proposed development or development planning document. The goal is to provide meaningful comments back to project proponents and the “lead” agency approving or proposing the project, identifying actual or potential impacts and adequacy of impact mitigation.

The CPUC takes these responsibilities very seriously and has become keenly aware that it is a far more effective strategy to invest the resources in the endeavor to identify impacts to rail crossings and corridors during development, than to identify them during inspections or accident investigations. As such, the CPUC’s RCES has environmental staff specifically dedicated to receive and review development documents to identify impacts to rail crossings and rail corridors. The environmental staff works closely with the CPUC’s RCES engineers to provide detailed comments on the potential impacts and suggested mitigations. The primary objectives of the program are to identify actual or potential impacts, to respond to the project proponents in writing identifying those impacts and potential mitigations and to work with the parties to implement crossing improvements to address the safety or capacity impacts that are identified.

The CPUC CEQA review program has had more resources and structure developed over approximately the past 5 years, and the results have been promising. Although many project CEQA documents have clearly given little consideration to rail crossings and corridors in their development, CPUC Staff notes that there has been significant progress in the level of analysis of rail

crossings and corridors in such documents. The program has been effective and has resulted in significant additional attention being given to rail corridors and crossings by developers, environmental planners and traffic study consultants.

On average, over the past two calendar years, the CPUC staff has reviewed approximately 300 projects per month and issued detailed comment letters in response to CEQA notices on approximately 15 % of those.

This education and interaction regarding crossing and rail safety matters with the planning departments, their contractors/consultants and the approving agencies is paying wider benefits. Agencies that formerly gave little consideration to crossings and rail corridors are now requiring such analysis routinely in order to advance the project environmental document. Additionally, consultants and contractors working in California to develop environmental documents and traffic studies for them are far more likely to include a proper analysis of capacity and traffic queuing analysis that demonstrate the presence or lack of impacts at the crossings.

Additionally, the CPUC CEQA program takes a broad view and also identifies and recommends mitigation of actual or potential trespass situations that can result from development around the rails. Although there is no specific requirement to fence rail corridors, such a feature is generally not a significant economic impact to a specific project, while playing a large role in improved safety by providing separation between the tracks and development. Thus, while not originally considered, fencing is often added to mitigate the potential impacts identified by CPUC Staff. Such reviews and analysis also can identify locations where a new (grade-separated) pedestrian crossing may be necessary and appropriate.

The outcomes of the program are encouraging. There are numerous examples where CPUC identification of impacts, and subsequent exchanges with project proponents has resulted in the project providing mitigations in the form of crossing improvement projects, fencing along the rail corridor, roadway network changes, traffic signal projects, and fair-share contributions to local mitigation funds held and accumulated for future improvements. This provides both near and long term benefits for California citizens by both improving the safety of specific crossings as development occurs, and in the long-term by preventing approval of projects that result in impacts that then would later be required to be address by local governments with very limited resources.

The CPUC has also been involved with reviewing and proposing changes to the California Natural Resources Department CEQA regulations, guidelines and environmental checklists, to specifically identify in their guidelines and checklists the need to analyze rail crossings and corridors that may be impacted

by a project in the project environmental documents. Although this has not yet occurred, we will persist in proposing and supporting it.

Additionally, the CPUC's RCES has been using informally adopted internal significance thresholds, which will require more rigorous evaluation and analysis developing specific "significance thresholds" that could be widely distributed to the planning community so that it would be clear when impacts would result in the need for mitigation.

Thus, the CPUC CEQA review program continues to function and be refined to improve its effectiveness. Going forward, the CPUC CEQA review program, with the additional voices of Caltrans and the affected railroads joining in calls for impact mitigation, will be a continuing valuable component of rail crossing safety in California.

4. Crossings Interconnected with Traffic Signal Preemption

Crossings have been interconnected to nearby traffic signals for over 30 years. The practice is becoming more and more prevalent and necessary as rural and suburban areas become more urbanized and more intersections near crossings are signalized. Preemption can take two forms, simultaneous preemption (where traffic signals receive their preemption call at the same time the crossing warning devices activate), and advanced preemption (where the interconnection circuitry transmits the preemption call before the warning devices activate.) Advance preemption is often necessary to give traffic signal systems additional time over the standard 25-30 seconds of warning time for crossing devices, in order to end prior signal phases, clear pedestrian cross walks and provide the necessary track clearance green phase to clear the crossing area before the arrival of the train.

Preemption gained national attention due to the October 25, 1995 crossing incident where a school bus was struck by a train resulting in 7 fatalities and 21 injuries in Fox River Grove Illinois. The National Transportation Safety Board (NTSB) determined that the incident was primarily related to failure of the system to clear the crossing in advance of the arrival of the train.

Because of the lengthy time preemption has been in use and no requirements for periodic reviews of the phase timing, the likelihood that the signal phasing and durations are no longer adequately clearing traffic from the crossing generally increases over time. This is due to increasing congestion and the level of service of the nearby intersections, the longer traffic queues, and no requirement for periodic inspections of the system settings. Moreover, it has become clear that local roadway traffic engineers or signal maintainers can inadvertently make adjustments to signal controllers that could have a major impact to the railroad

preemption timing and phasing which may result in an inability to clear the track area as intended. This results in motorist confusion, vehicles unable to clear the tracks due to other vehicles not cleared from the routes leading away from the crossing, vehicles taking evasive maneuvers to exit the crossing area, and vehicles potentially trapped on the tracks, which may result in collisions. We have identified such scenarios as having occurred which have led to crossing collisions.

The CPUC RCES staff has become increasingly concerned regarding the state and adequacy of preempted crossings in California due to several recent accidents and near miss incidents, and is developing a project to evaluate and document preemption information in more detail. Such a project would provide that the CPUC Staff work closely with the affected railroads and local roadway authorities to acquire updated information to assure our records have each preempted crossing identified. The project would then assure accurate complete data sets on each (signal timing and phase diagrams, signal controller info, and railroad track circuitry), conduct field observation for functional adequacy and data collection, analysis of each location in the context of the data collected and field observations, and development of a findings report with recommendations, if any, for each location. There are approximately 700 such locations in the state.

Although the CPUC's RCES staff evaluate preemption timing when new crossings are equipped with it (at the time the preemption interconnect is requested to be authorized by CPUC for the crossing), the real problem is when the crossing has existed for a period of time and numerous inspections of the equipment and adjustments to the signal to address general traffic flow and intersection level of service issues have been made, often by personnel that do not have a full understanding of railroad preemption issues. Any such adjustments that do not consider their affect on the signal system during preemption could compromise the system and its ability to clear the tracks in advance of the train's arrival.

While the local roadway authorities have responsibility for the traffic signals under their control, the CPUC finds the levels of expertise widely variable between jurisdictions. Many experienced traffic engineers lack any appreciable knowledge on preemption due to its infrequent use by most local traffic agencies. Since local agencies are often not equipped with the expertise to properly evaluate crossing preemption phasing and timing, the CPUC is the appropriate agency to develop a project to bring the railroad and local agency together to conduct the study and work with parties to resolve identified deficiencies to further public safety.

Additionally, CPUC Staff has recently become aware of a project by both of the Class 1 railroads operating in California (UPRR and BNSF), conducting similar preemption reviews at some locations. Initial discussions suggest a joint effort

would yield the most beneficial project for all parties and result in the greatest benefit for the safety of California citizens. CPUC Staff has participated in those reviews and is working to prioritize findings to address identified issues.

Although the issue is of concern to CPUC staff, we are currently unable to devote the necessary resources to conduct a full review of each of the 700 locations in the near term while still meeting other statutory mandates. We believe that approximately 20% of the preempted crossings will not require a full field evaluation due to their recent vintage or full reviews that have occurred in the recent past. That results in approximately 560 crossings needing the full evaluation. Thus, a multi-year project over the five 5-year period of the Action Plan, results in a more manageable project. The project will benefit both the local roadway agency and railroad by eliminating potential deficiencies in preemption timing, thereby reducing the likelihood of crossing collisions and liability exposure. The project benefits the State and its citizens by reducing or eliminating collisions which may otherwise occur, improving public safety.

FRA clearly shares concern with CPUC on this matter, as evidenced by it issuing FRA Safety Advisory 2010-02, in October of 2010, calling for periodic joint inspections of preempted crossings, which are not required by current regulation.

5. California Operation Lifesaver Education and Enforcement

Operation Lifesaver Inc. (OLI) is a non-profit organization dedicated to promoting rail safety education in an effort at reducing and eliminating accidents and incidents at highway railroad grade crossings and railroad right of ways. CPUC staff, along with railroad employees and other knowledgeable railroad safety professionals, contribute significantly to the educational efforts in this regard, resulting in more knowledgeable California motorists and citizens. CPUC commitment to the program is demonstrated by the significant numbers of staff that have become qualified OLI presenters and the efforts by those staff members to arrange and make the presentations, and the agency making staff time available for these efforts.

The CPUC Staff, in coordination with railroad personnel and the California Operation Lifesaver State Coordinators, identify areas of greatest need based on accidents and other data (for example, near-miss data shared by railroads). OLI then targets civic groups, schools, bus and truck drivers, and law enforcement officers in those areas for the OLI presentations. This outreach also assists in development of the Officer-on-the-Train programs, which coordinate rail crossing law enforcement sweeps along target rail corridors, often involving

multiple law enforcement agencies. The sweeps issue citations or warnings to motorists and pedestrians, and also target trespassing along the railroad right-of-way. CPUC Staff participates in and promotes these efforts.

To track their participation in the OLI outreach effort, CPUC Staff submit information to OLI, reporting information such as the date, time, location, organization contact information, number of people attending, and the type of group receiving the message. CPUC staff also has qualified presenters that can do the presentation in Spanish.

As examples:

- CPUC staff has made an intensive effort to increase railroad crossing and trespass safety in the areas of Sonoma and Marin counties, as the rail system of the North Coast Rail Authority is brought back into service after a 10 year period of inactivity. These rail corridors have just this summer (2011) been brought back into service after having been shut down by FRA due to poor condition. With voter approval of funding for the Sonoma-Marin Area Rail Transit system, which is ultimately planned for commuter service along the coast paralleling the busy highway US-101 corridor, initial track rehabilitation has occurred that has allowed freight service to be reinitiated. Intensive OLI efforts were determined to be necessary due to the long period of inactivity and the absence of train traffic, with the CPUC staff conducting most of the presentations and outreach. Presentations were made to schools, local government and elected officials, professional drivers and other groups.
- CPUC staff, along with other OLI qualified railroad personnel, citizens and public officials have formed the Fresno Rail Safety Coalition, after several pedestrian crossing fatalities involving children and teens attempting to beat the train across a crossing occurred. Coalition members have teamed up with school district and city officials to target OLI presentations and public service announcements toward the students and teachers at schools in the area.
- Several Commission staff were recently recipients of the California Operation Lifesaver "Mighty Mouse" awards, for dedication and coming out to make presentation and staff the OLI booth at events on short notice or when cancellations occurred.
- CPUC Staff has been staffing the OLI booth at numerous events on evenings and weekends.
- The CPUC has posted the OLI public service TV spots and OLI links on its Rail Crossings pages on its official web site.

6. Annual Report of California Rail Accidents

The Commission formerly compiled and published an annual report of railroad accidents in California, however that last such report generated was for calendar year 1999. The CPUC stopped generating the report due to the loss of personnel and staffing shortages. There is renewed interest in compiling and publishing the report, and there have been numerous requests for such a report over the intervening years since its production stopped.

The reports contain a complete review of all rail and rail transit accidents in the state, and a rigorous data analysis and breakdown of those accidents. The report summarizes individual significant incidents that occurred that year and findings that arose from the investigations. The report shows data tables, charts and graphical depiction of trends and data that relate to the various types of rail and rail transit accidents, including crossing accidents.

The annual accident report will be posted on the commission's web site and made widely available for use throughout California and the rail industry. The report will allow conclusions to be drawn and assist in the development of priorities to address accident trends.

7. State, Federal and Local Agency Coordination

The CPUC RCES and ROSB staff have developed beneficial relationships with other state and federal agencies involved in rail crossing safety to take advantage of our mutual skill sets and synergies on initiatives or programs relating to the CPUC's rail safety programs. These relationships provide an advantage to California citizens by creating and fostering a cohesive safety culture as it relates to crossings and rail corridor safety. These relationships will continue to be valuable for crossing safety overall and therefore will be maintained and strengthened.

Federal Railroad Administration

The CPUC and operating railroads in California work closely with the Federal railroad administration to further railroad and rail crossing safety. CPUC staff participates in FRA training and work closely with them on major accidents or joint inspections. CPUC RCES Staff work on crossing safety complaints and quiet zone issues with FRA Grade Crossing Specialists. Our mutual

responsibility to maintain the accuracy of FRA inventory data, is an important aspect of that relationship. We analyze and provide comments on proposed rules and FRA forms and documents, respond to Notices of Proposed Rulemakings and reports/studies.

Federal Highway Administration

The CPUC has developed a strong relationship with the Federal Highway Administration (FHWA) through both our joint administration (with Caltrans) of the Section 130 program, as well as participation in the National Committee on Uniform Traffic Control Devices (NCUTCD) highway-rail committee. One of the CPUC Staff members is a voting member of the NCUTCD, which is responsible for development of the national version of Manual on Uniform Traffic Control Devices. We participate by attending the meetings and analyzing proposed changes, offering comment, identifying unintended consequences, proposing further changes, participating in committee exchanges on technical matters and ultimately voting on proposed changes. The participation is mutually beneficial to both FHWA and the State of California.

Department of Homeland Security/Transportation Security Administration

The CPUC receives and distributes internally to its safety program management team daily security and threat assessments. These updates help identify actual or potential risks due to individuals or groups that may be intent on terrorist acts or societal disruptions relating to political views, or individuals intent on harm to themselves or others. CPUC takes these threats seriously and responds accordingly.

Surface Transportation Board

The CPUC staff monitors the Surface Transportation Board (STB) filings that are made by railroads operating in California. CPUC and local roadway agencies have found that such abandonment orders typically simply allow operations over the line to cease with setting any requirements for the removal of the tracks in the roadways, or the removal of the warning devices. This leads to situations where HazMat vehicles and busses continue to deal with required stops at railroad tracks that are no longer connected to the general railroad system and could not be traversed by trains. Additionally, over time the rail and crossing surface deteriorates and the rail can become loose and experience movement when crossed. This creates unnecessary hazards for the motoring public,

particularly on higher speed roadways, for motorcycles and other vehicles, and is a significant crossing safety issue for local agencies. Although crossing collisions with on-track equipment are not possible, abandoned crossings can still present risks to the public.

To address this ongoing concern, CPUC Staff files comments in such abandonment proceedings requesting abandonments authorized by STB in California include an Order to remove the crossings from the roadways within 24 months of abandonment, and restore the roadway to current roadway authority standards. This has been a partially successful strategy, however we continue to urge the STB to include this as a standing requirement in all abandonment orders.

California Highway Patrol and local law enforcement

CPUC staff that investigate crossing accidents have developed good working relationships with law enforcement, including local law enforcement and the California Highway Patrol (CHP). These agencies are often familiar with CPUC staff through their accident investigations and follow up inquiries. They are further exposed to crossing and rail safety as an integral component of the “Officer on the Train” events where enforcement sweeps are organized with railroads and one or more law enforcement agencies. These events get wide media coverage and generally involve local public employees and elected officials.

CHP is also closely involved with the exempt crossing issue, and applicability to school busses in California. CHP district school bus coordinators provide training and safety education to school districts and drivers, and CPUC staff have had a number of exchanges regarding the California Vehicle Code requirements at crossings in the context of the newer crossing configurations. These exchanges lead to a clearer understanding of the requirements and potential flaws in the requirements or enforcement policies implemented by the various state agencies.

California Department of Motor Vehicles

The California Department of Motor Vehicles (DMV) publishes a driver training handbook which was revised in 2009. As part of that revision, the CPUC RCES reviewed the handbook and made specific recommendations to DMV for updating text and diagrams relating to rail and rail transit crossings. The DMV revision more accurately depicts crossings in the handbook and uses consistent nomenclature in the text. The DMV handbook is improved and more accurately

informs motorists and future drivers about proper behavior and response to an approaching train.

California Emergency Management Agency

The CPUC has an established relationship with the California Emergency Management Agency (CalEMA) and receives notification on railroad accidents through that system. CalEMA is aware of the CPUC's jurisdiction over railroads and rail crossings and notifies CPUC based on reports from various entities, including the railroads, of all accidents related to railroads. This has provided an effective accident notification process outside the FRA regulations, for state environmental and emergency response purposes. All railroad accidents, including crossing accidents, are reported to CalEMA and distributed to various federal, state and local agencies.

Local Roadway Agencies

While overall crossing safety jurisdiction resides with the CPUC, local roadway agencies (and Caltrans on state routes) are primarily responsible for the crossings on their roadway systems. It is their responsibility to monitor their crossings and take actions to improve or grade-separate them as conditions warrant it. The CPUC and its rail crossings staff provide oversight and assist roadway authorities in identifying problems and working with them to develop mitigations to those problems. The crossing evaluations, recommendation letters issued, environmental document comment letters, Section 130 projects, crossing safety training and other interaction between the CPUC and local agencies is intended to provide a relationship and process that assures public safety is addressed as conditions change.

8. Review and Update of Commission General Orders and Laws Relating to Railroad Crossings

Applicable laws and regulations pertaining to railroad crossings will be examined and reviewed with railroads and other state and local agencies to improve and clarify requirements. The reviews will identify outdated requirements, clarify language and intent, and identify regulatory gaps and deficiencies in current laws and regulations. The CPUC will then work with the relevant parties to develop proposals for rulemakings or statutory changes.

Commission General Orders

The Commission has a number of General Orders (GOs) that pertain to railroad crossings and their configuration, operation and maintenance. These General Orders are developed and updated through a formal rulemaking process at the CPUC. The relevant CPUC GOs are:

General Order 26-D	Railroad Clearances
General Order 72-B	Construction and Maintenance of Crossing Surfaces
General Order 75-D	Standards for Warning Devices at Crossings
General Order 88-B	Rules for Altering Public Highway-Rail Crossings
General Order 145	Exempt Crossings

These GOs will be reviewed for needed updates and a rulemaking process undertaken, as necessary and appropriate. Currently CPUC RCES Staff believe that GO 72-B regarding crossing surfaces is a good candidate for review and update. The GO was last update in 1991, and should be updated to reflect newer crossing surfaces currently in use, to more clearly delineate maintenance responsibilities, and to examine the current crossing surface flangeway specifications in the GO.

In addition, GO 75-D will be examined to review the need to require signal cabinet placards identifying preemption interconnects for signals interconnected to warning device systems, and the advisability of establishing standards for automatic pedestrian gates and manual pedestrian swing gates. Such updates will bring the GOs up to date and reflect industry advances as well as state and federal regulatory updates of recent years.

Also needing update is GO 145 relating to exempt crossings. The GO has not been updated for many years and the requirements to establish a crossing as exempt (from the stopping requirements) and remove the exempt status are difficult to understand and meet.

California Statutes

There are a number of California laws and code sections that pertain to crossings that should be reviewed and updated to assure the requirements are still relevant and purposeful. These code sections are found primarily in the California Public Utilities Code, Streets and Highways Code and Vehicle Code, however other codes with laws relating to rail crossings are found in the California Government Code, Penal Code, Civil Code and others.

The current laws largely reflect the legislative intent, however many have not been looked at closely in decades and may no longer be serving their original purpose, may no longer be relevant or necessary, or may need to be modified to allow for new technology, new/revised industry standards or statutory gaps that should be addressed.

For example, exempt crossings and the laws and regulations pertaining to them are an area that should be closely reviewed with the other involved agencies, including the California Highway Patrol.

9. Provide, Sponsor and Promote Crossing Training and Education

Commission Sponsored Training

The Commission's RCES has provided a number of training programs throughout California for local roadway agency and railroad personnel in cooperation with railroads, other state and local agencies, and independent contractors. The CPUC has sponsored traffic signal preemption seminars, California Manual on Uniform Traffic Control Devices (CA MUTCD) training and "Crossings 101" training throughout the state.

Additionally, to provide ongoing availability of the training, the training presentations are posted and available for download on the CPUC web site at this link: <http://www.cpuc.ca.gov/PUC/transportation/crossings/training.htm>

While this effort is valued by the local roadway agency and railroad participants, due to very limited resources, such training has not been offered in the past several years. Efforts will be made to reinstate these training seminars to hold them on an annual basis.

CPUC Pedestrian Guidance Document

The Commission's RCES has developed and published on the CPUC web site a guidance document regarding pedestrian-rail crossings and their various treatments and configurations in use throughout the state. In addition, the guidance document addresses the Americans with Disabilities Act requirements for pedestrian paths of travel and placement of detectable warning tactile strips. The document was developed and published on the CPUC web site to address the lack of any specific requirements for pedestrian crossings and the acknowledgement that California was leading the way in innovative and effective strategies for pedestrian safety at railroad and light rail transit crossings. The CPUC has received inquiries from all over the US and some other countries relative to the document and pedestrian crossings in California.

The pedestrian guidance document was finalized over four years ago and the document should be updated. The US Access Board has recently updated its standards. Additionally, there numerous inquiries to the CPUC regarding trails and pedestrian pathways along rail corridors, and therefore a chapter or section on pedestrian and bike trails along rail corridors and tracks in the revised document is planned. The chapter in this guidance document will address desired trail attributes, including setbacks from the tracks, fencing and channelization, maintaining sightlines and treatments at crossing locations.

The CPUC pedestrian guidance document [was](#) posted on the CPUC web site, but is currently undergoing revision to adopt the updates in ADA requirements and guidance by the US Access Board. It will be re-posted when it is updated.

Rail Corridor Safety Conferences

The CPUC and Caltrans Division of Rail are primary resources and participants in the planning committee for the annual western region rail corridor safety conference along with FRA, University of California Berkeley. The RCES and Division of Rail managers are typically committee members for the planning and development of the conference. RCES and Caltrans management and staff are frequently presenters and panel members during the Conference. Staff members for both agencies typically attend and participate in giving and receiving the training at these conferences. The conferences provide a meaningful opportunity for state agency staff to meet and confer with railroad and local roadway agency personnel regarding crossing safety issues. The conferences are widely attended by railroad personnel and by local roadway agency staff and other interested parties. The 2012 conference planning was under way until just recently when one of the primary sponsors, the University of California Berkeley Institute of Transportation Studies announced that it had lost its funding source and could no longer take the lead in putting together the conference and arranging for the location and facilities. The CPUC will continue with its commitment to participate and promote this conference as we seek alternatives to the role UC Berkeley performed in developing the conference.

5. SUMMARY AND CONCLUSIONS

California has been and will continue devote significant effort and resources to further improve crossing safety for its citizens. The numerous Federal, State and local crossing safety programs and initiatives continue to prove beneficial towards those goals. Crossing improvement projects and grade separations implemented by local agencies and the State continue to improve crossings and overall crossing safety.

The California commitment to crossing safety is clearly demonstrated by the nearly one billion dollar investment by the State over the past several years for grade separation projects. Along with local and other matching funds, the amount is over two billion dollars in grade separation investment. These projects will eliminate many of the more urban and congested crossings with relative higher risk and will continue to reduce crossing collisions over time.

The efforts of the CPUC, Caltrans, and the local roadway agencies to identify hazardous crossings through the Section 130 Program, particularly multiple accident locations, and to improve them, is also clearly demonstrated by the information herein and the data provided, which shows that California is addressing its multiple accident locations. These efforts will continue and such safety funding will continue to be directed to those identified multiple collision locations.

Additionally, the safety jurisdiction exercised by the CPUC and the crossing safety programs carried out by its Rail Crossings Engineering Section also demonstrate a significant and ongoing commitment to crossing safety in California. The CPUC's development and funding of the RSSIMS data management system, promotion of Operation Lifesaver and crossing safety, provision of training and education on crossing safety and design, the development and publication of guidance documents for pedestrian safety at crossings, along with our web site resources and our coordination with other Federal and State agencies to address crossing safety matters allows California to fall far below its second place position (based on only the number of crossing collisions) when accident rates are considered (about 15th).

This Action Plan identifies continuing and ongoing efforts that are constantly being reviewed for improvement, as well as new efforts to identify problem areas and solutions to address them. The CPUC, as the primary agency with jurisdiction over crossing safety in California, will lead and coordinate such efforts in the State, however all of the identified agencies have an impactful role relative to crossing safety and must be vigilant.

APPENDIX A

ABBREVIATION and ACRONYM LIST

Abbreviation / Acronym	Description
CalEMA	California Emergency Management Agency
CA MUTCD	California Manual on Uniform Traffic Control Devices
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHSRA	California High Speed Rail Authority
CHP	California Highway Patrol
CPUC or Commission	California Public Utilities Commission
CTC	California Transportation Commission
DMV	California Department of Motor Vehicles
DOR	Caltrans Division of Rail
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
GIS	Geographic Information System
GO	General Order
NCUTCD	National Committee on Uniform Traffic Control Devices
NTSB	National Transportation Safety Board
OCTA	Orange County Transportation Authority
OLI	Operation Lifesaver Inc.
RCES	Rail Crossings Engineering Section
ROSB	Rail Operations Safety Branch
RR-ACC	Rail Accidents Database
RRX-CA	Rail Crossings Inventory database
RSIA	Rail Safety Improvement Act of 2008
RSIR	Rail Safety Inspection Report Database
RSSIMS	Rail Safety & Security Information Management System
RTCB	Rail Transit and Crossing Branch
RTCB Filings	RTCB Case Tracking Database
RTSS	Rail Transit Safety Section
SED	Safety and Enforcement Division
STB	Surface Transportation Board

APPENDIX B

Excerpt From FRA Final Rule issued June 22, 2010, published in the June 28, 2010
(Volume 75, Number 123) Federal Register, that amends Part 234 of chapter II,
subtitle B of title 49, Code of Federal Regulations

PART 234--GRADE CROSSING SIGNAL SYSTEM SAFETY AND STATE ACTION PLANS

1. The authority citation for part 234 is revised to read as follows:

Authority: 49 U.S.C. 20103, 20107; 28 U.S.C. 2461, note; Pub.
L. 110-432, Div. A, Sec. 202; and 49 CFR 1.49.

2. The heading for part 234 is revised to read as set forth above.

3. Section 234.1 is revised to read as follows:

Sec. 234.1 Scope.

This part imposes minimum maintenance, inspection, and testing standards for highway-rail grade crossing warning systems. This part also prescribes standards for the reporting of failures of such systems and prescribes minimum actions railroads must take when such warning systems malfunction. This part also requires particular identified States to develop State highway-rail grade crossing action plans. This part does not restrict a railroad or a State from adopting and enforcing additional or more stringent requirements not inconsistent with this part.

4. Section 234.3 is revised to read as follows:

Sec. 234.3 Application.

With the exception of Sec. 234.11, this part applies to all railroads except:

(a) A railroad that exclusively operates freight trains only on track which is not part of the general railroad system of transportation;

(b) Rapid transit operations within an urban area that are not connected to the general railroad system of transportation; and

(c) A railroad that operates passenger trains only on track inside an installation that is insular; i.e., its operations are limited to a separate enclave in such a way that there is no reasonable expectation that the safety of the public--except a business guest, a licensee of the railroad or an affiliated entity, or a trespasser--would be affected by the operation. An operation will not be considered insular if one or more of the following exists on its line:

(1) A public highway-rail crossing that is in use;

(2) An at-grade rail crossing that is in use;

(3) A bridge over a public road or waters used for commercial navigation; or

(4) A common corridor with a railroad, i.e., its operations are within 30 feet of those of any railroad.

APPENDIX B (cont.)

Sec. 234.4 [Removed]

5. Section 234.4 is removed.

6. Section 234.6 is revised to read as follows:

Sec. 234.6 Penalties.

(a) Civil penalty. Any person (an entity of any type covered under 1 U.S.C. 1, including but not limited to the following: A railroad; a manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track, or facilities; any independent contractor providing goods or services to a railroad; and any employee of such owner, manufacturer, lessor, lessee, or independent contractor) who violates any requirement of this part, except for any violation of Sec. 234.11 of this part, or causes the violation of any such requirement is subject to a civil penalty of at least \$650, but not more than \$25,000 per violation, except that: Penalties may be assessed against individuals only for willful violations, and where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$100,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. Appendix A to this part contains a schedule of civil penalty amounts used in connection with this rule. The railroad is not responsible for compliance with respect to any condition inconsistent with the technical standards set forth in this part where such variance arises as a result of actions beyond the control of the railroad and the railroad could not have prevented the variance through the exercise of due diligence. The foregoing sentence does not excuse any instance of noncompliance resulting from the actions of the railroad's employees, agents, or contractors.

(b) Criminal penalty. Whoever knowingly and willfully makes, causes to be made, or participates in the making of a false entry in reports required to be filed by this part, or files a false report or other document required to be filed by this part, except for any document filed pursuant to Sec. 234.11 of this part, is subject to a \$5,000 fine and 2 years imprisonment as prescribed by 49 U.S.C. 522(a) and 21311(a).

Subpart B--Reports and Plans

7. The heading to subpart B is revised to read as set forth above.

8. Section 234.11 is added to subpart B to read as follows:

Sec. 234.11 State highway-rail grade crossing action plans.

(a) Purpose. The purpose of this section is to reduce collisions at highway-rail grade crossings in the ten States that have had the most highway-rail grade crossing collisions, on average, during the calendar years 2006, 2007, and 2008. This section does not restrict any other State, or other entity, from adopting a highway-rail grade crossing action plan. This section also does not restrict any of the States

APPENDIX B (cont.)

required to develop action plans under this section from adopting a highway-rail grade crossing action plan with additional or more stringent requirements not inconsistent with this section.

(b) Application. This section applies to the ten States that have had the most highway-rail grade crossing collisions, on average, during the calendar years 2006, 2007, and 2008.

(c) Action plans. (1) The ten identified States shall each develop a State highway-rail grade crossing action plan and submit such a plan to FRA for review and approval not later than August 27, 2011.

(2) A State highway-rail grade crossing action plan shall:

(i) Identify specific solutions for improving safety at crossings, including highway-rail grade crossing closures or grade separations;

(ii) Focus on crossings that have experienced multiple accidents or are at high risk for such accidents; and

(iii) Cover a five-year time period.

(d) Review and approval. (1) State highway-rail grade crossing action plans required under paragraph (c) of this section shall be submitted for FRA review and approval using at least one of the following methods: Mail to the Associate Administrator for Railroad Safety/Chief Safety Officer, U.S. Department of Transportation, Federal Railroad Administration, 1200 New Jersey Ave., SE., Washington, DC 20590; or e-mail to rrs.correspondence@fra.dot.gov.

(2) FRA will review and approve or disapprove a State highway-rail grade crossing action plan submitted pursuant to paragraph (d) of this section within 60 days of receipt.

(3) If the proposed State highway-rail grade crossing action plan is disapproved, FRA will notify the affected State as to the specific areas in which the proposed plan is deficient. A State shall correct all deficiencies within 30 days following receipt of written notice from FRA.

(4) FRA may condition the awarding of any grants under 49 U.S.C. 20158, 20167, or 22501 to an identified State on the development of an FRA approved State highway-rail grade crossing action plan.

APPENDIX C FRA Letter



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

AUG 4 2010

AUG 12 2010

Mr. Randell H. Iwasaki
Director
Caltrans
1120 N Street
Sacramento, CA 94273

EXECUTIVE DIRECTOR'S OFFICE

Dear Mr. Iwasaki:

On October 16, 2008, the Rail Safety Improvement Act of 2008 (RSIA) was signed into law (Public Law No. 110-432, Division A). Section 202 of the RSIA requires the Secretary of Transportation (delegated to the Federal Railroad Administrator) to identify the 10 States that have had the most highway-rail grade crossing collisions, on average, over the past 3 years, and to require those States to develop State highway-rail grade crossing action plans. Section 202 further provides that these plans must identify specific solutions for improving safety at crossings, including crossing closures or grade separations, and must focus on crossings that have experienced multiple accidents or are at high risk for such accidents. The Federal Railroad Administration (FRA) has identified the State of California as one of the 10 States that has had the most highway-rail grade crossing collisions over the past 3 years, and, as such, is required to develop an action plan.

FRA issued a State Highway-Rail Grade Crossing Action Plans final rule on June 28, 2010. The final rule addresses the development, review, and approval of these highway-rail grade crossing action plans. The rule becomes effective on August 27, 2010. A copy of the rule is enclosed. Title 49 Code of Federal Regulations (CFR) Section 234.11 articulates the State action plan requirements. In short, identified States must provide to FRA, no later than August 27, 2011, a State highway-rail grade crossing action plan that (1) identifies specific solutions for improving crossing safety, including highway-rail grade crossing closures or grade separations; (2) focuses on crossings that have had multiple accidents or are at high risk for such accidents; and (3) cover a 5-year period. The regulation also provides for a 60-day time period for FRA to review and approve or disapprove the plans. FRA will notify a State of a disapproved plan, and the State must correct all such deficiencies within 30 days following receipt of written notice. In addition, FRA may condition the awarding of certain grants, articulated in 49 CFR § 234.11(d)(4), on the development of a State's action plan.

APPENDIX C (cont.)

FRA Letter

2

FRA is very pleased to note that the States that are required to develop the action plans have made large strides in reducing the number of grade crossing collisions. There has been a 21.8-percent reduction in the number of collisions in these States from 2006–2008. Many lives have been saved during this time period, and the efforts of your State have helped. Thank you for the part that California has played in reducing the number of crossing collisions.

FRA stands ready to provide assistance in developing an action plan that will further improve safety at highway-rail grade crossings within your State. Please feel free to contact Mr. Charles Hagood, FRA's Regional Manager for Highway-Rail Crossing Safety and Trespass Prevention Programs, who will be glad to work with you in the development of your plans. Assistance is also available from the Highway-Rail Crossing Safety and Trespass Prevention Division in Washington, DC. If you have any questions, please contact Mr. Ron Ries by telephone at (202) 493-6285 or by email at Ronald.Ries@dot.gov.

Thank you again for your State's efforts to improve highway-rail grade crossing safety. FRA looks forward to working with you in the development of an action plan that will help to prevent injuries and loss of life to the people in California.

Sincerely,



Jo Strang
Associate Administrator for Railroad Safety/ Chief Safety Officer

Enclosure

cc: Mr. Bill Bronte, Chief, Division of Rail, Caltrans
Mr. Paul Clanon, Executive Director, California Public Utilities Commission

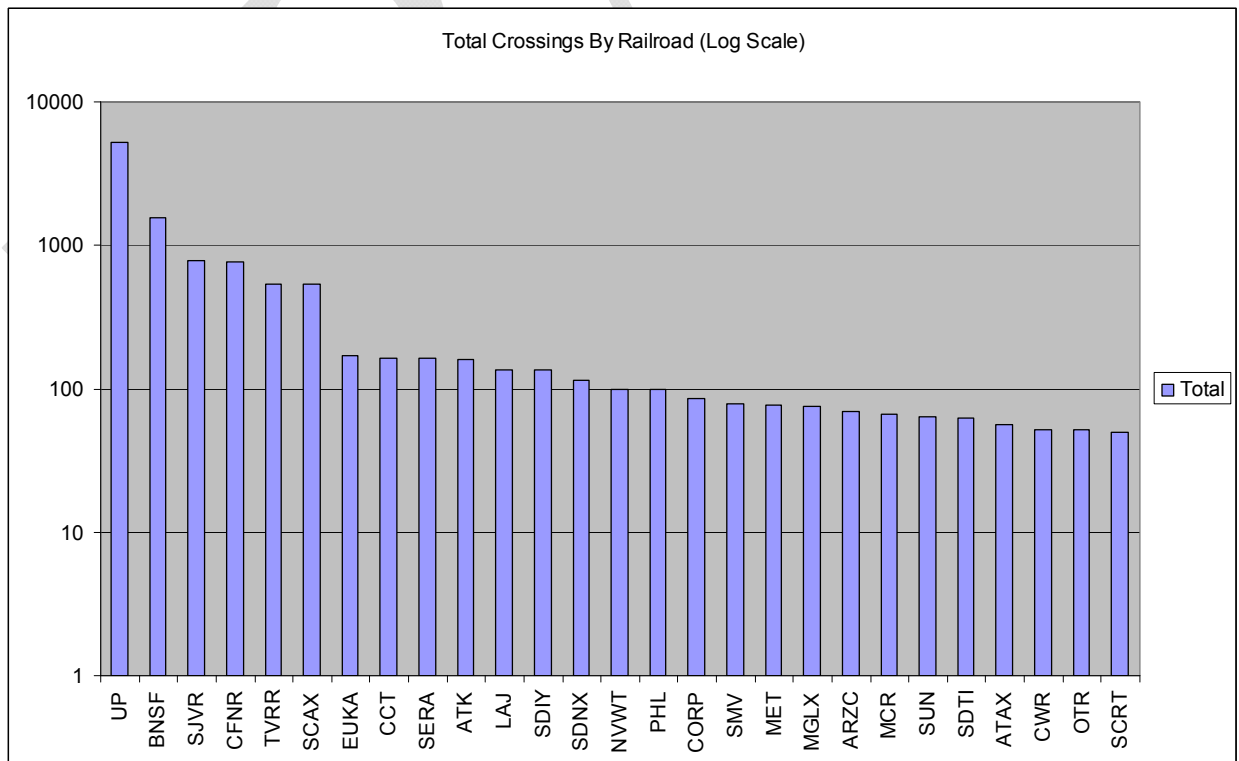
APPENDIX D

California Railroad Listing and Data

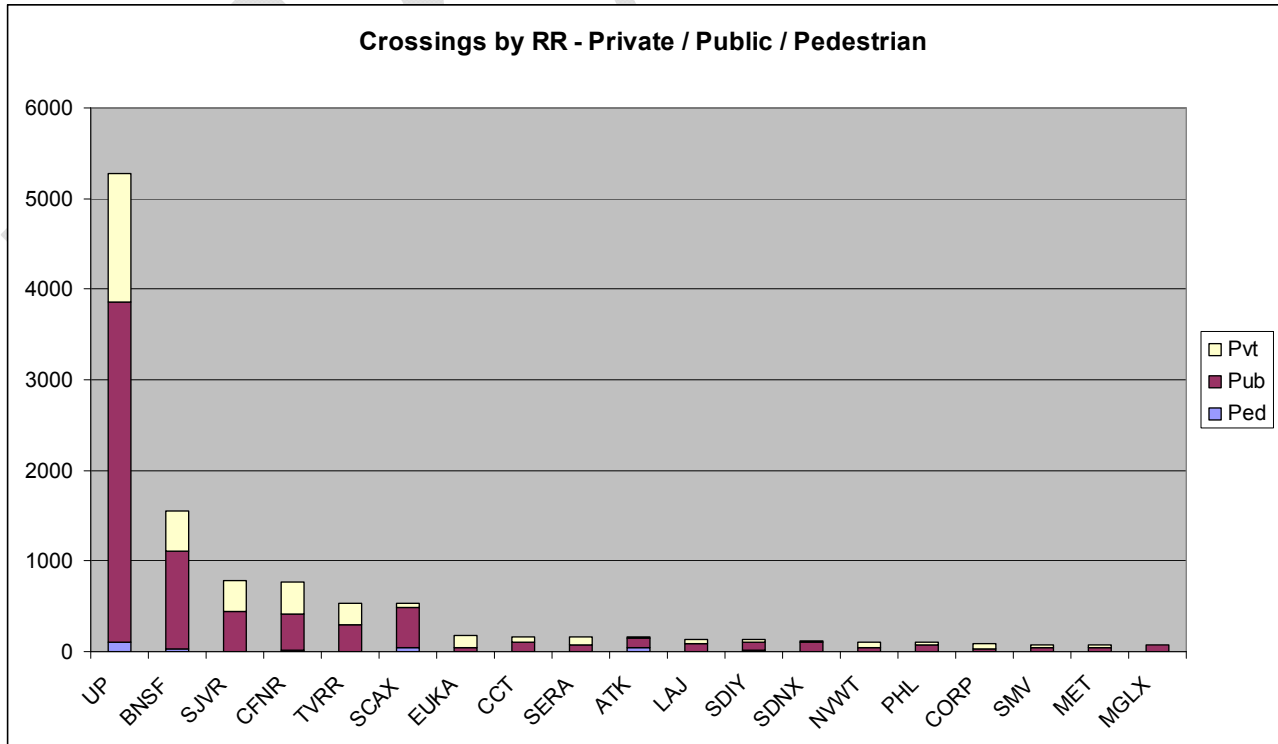
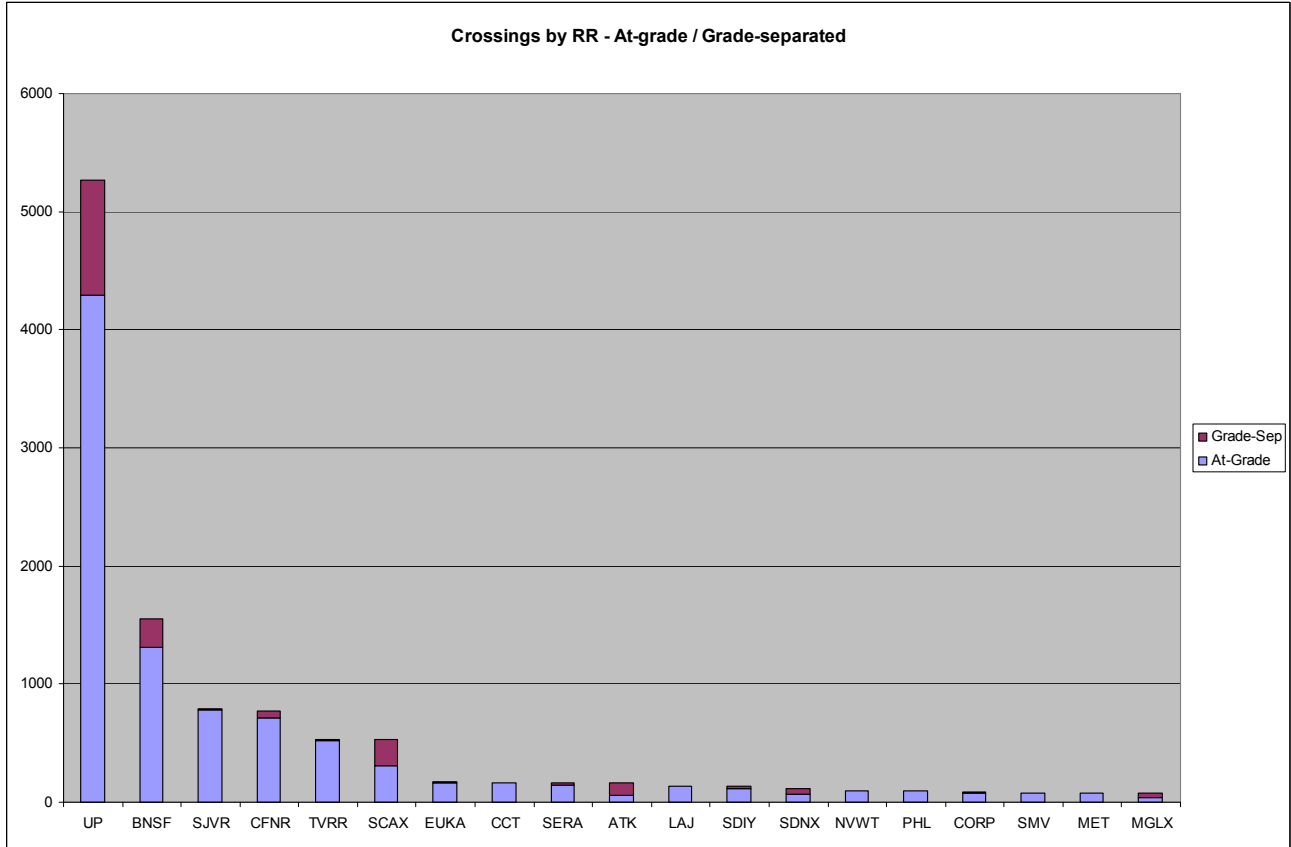
Railroad	At-Grade	Grade-Sep		Ped	Pub	Pvt		Total
UP	4294	975		105	3752	1412		5269
BNSF	1310	243		26	1077	450		1553
SJVR	779	11		2	444	344		790
CFNR	714	59		8	403	362		773
TVRR	525	10		4	296	235		535
SCAX	311	223		49	445	40		534
EUKA	162	10		1	48	123		172
CCT	163	2		1	99	65		165
SERA	145	17		3	72	87		162
ATK	62	99		38	113	10		161
LAJ	133	3		3	82	51		136
SDIY	117	19		10	91	35		136
SDNX	71	43		4	99	11		114
NVWT	99	0		0	46	53		99
PHL	93	6		0	81	18		99
CORP	77	8		0	34	51		85
SMV	77	1		0	41	37		78
MET	77	0		3	45	29		77
MGLX	43	33		5	71	0		76
ARZC	66	4		0	29	41		70
MCR	64	2		0	35	31		66
SUN	62	2		0	13	51		64
SDTI	54	8		2	60	0		62
ATAX	7	49		1	52	3		56
CWR	52	0		1	11	40		52
OTR	49	3		0	43	9		52
SCRT	50	0		1	49	0		50
GWR	48	0		0	6	42		48
ABL	44	0		1	31	12		44
VCY	40	2		3	31	8		42
STE	40	0		0	33	7		40
SHLV	36	1		1	18	18		37
QRR	31	0		0	4	27		31
SCBG	26	4		1	19	10		30
NCRR	17	12		0	29	0		29
YSLR	28	1		0	11	18		29
XSBA	24	2		0	18	8		26
VTAZ	24	0		7	16	1		24
RPRC	23	0		0	22	1		23
USNZ	21	0		0	0	21		21
MTDB	20	0		0	20	0		20
WCRC	16	0		0	8	8		16
DOD	14	0		0	0	14		14
YW	14	0		0	10	4		14
AL	13	0		0	4	9		13

APPENDIX D California Railroad Listing and Data

Railroad	At-Grade	Grade-Sep		Ped	Pub	Pvt		Total
NICX	9	4		0	6	7		13
PCJX	13	0		1	12	0		13
TRC	13	0		0	3	10		13
WFS	9	0		0	8	1		9
MNRR	8	0		0	7	1		8
NWP	8	0		1	6	1		8
AMC	6	1		0	7	0		7
WPSX	7	0		1	3	3		7
SAV	6	0		0	6	0		6
SFBR	4	0		0	2	2		4
CROP	3	0		0	0	3		3
HI	3	0		0	3	0		3
PRT	3	0		0	3	0		3
OERY	2	0		0	1	1		2
SFBY	2	0		0	0	2		2
SYPD	2	0		0	2	0		2
FMWX	1	0		0	1	0		1
HBL	1	0		0	1	0		1
IAIS	1	0		0	1	0		1
	At-Grade	Grade-Sep		Ped	Pub	Pvt		Total
TOTAL	10236	1857		283	7983	3827		12093



APPENDIX D California Railroad Listing and Data



APPENDIX E

Status of California Crossings With more than 2 Accidents (2006-2011)

CPUC #	US DOT #	Accident count	Street	City	County	Railroad(s)	status	Comments
001D-10.40	749712Y	5	HIGH ST	OAKLAND	ALAMEDA	UPRR	Open	SECTION 130 PROJECT IS BEING DEVELOPED TO IMPROVE THIS CROSSING.
003-22.40	811479J	5	NOGALES ST	INDUSTRY	LOS ANGELES	UPRR	Open	GRADE SEPARATION APPROVED AND PENDING CONSTRUCTION
001D-11.70	749720R	4	66TH AV	OAKLAND	ALAMEDA	UPRR	Open	MEDIAN DELINEATORS INSTALLED in 2010. 12/16/09-Preemption joint inspection with City, UP, and CPUC. Interconnected with San Leandro Blvd. Rec preemption upgrades.
001D-9.80	749707C	4	FRUITVALE AV	OAKLAND	ALAMEDA	UPRR	Open	A SECTION 130 PROJECT IS BEING DEVELOPED TO IMPROVE THIS CROSSING
002-897.30	028380R	4	KRATZMEYER ROAD	BAKERSFIELD	KERN	BNSF	Open	UPGRADED CROSSING TO GATES IN 2007.
001B-498.20	746905M	3	PUENTE AV	INDUSTRY	LOS ANGELES	UPRR	Open	CPUC will continue to monitor this crossing. Incidents were vehicle stalling on tracks, gate (and median) drive around, and a pedestrian wearing headphones that ignored active warning devices.
002B-8.10	026476Y	3	CHICAGO AV	RIVERSIDE	RIVERSIDE	BNSF	Open	This crossing has experienced only one accident that could be addressed by engineering fixes, as one was a suicide attempt and one was an alcohol impaired driver. CPUC will monitor crossing.
001E-406.25	745855H	3	RICE AV	OXNARD	VENTURA	UPRR	Open	1/12/10 -Attended a field diagnostic with the City of Oxnard's consultant and UPRR to review proposed crossing modifications as part of the Camino Del Sol project
001BG-485.96-C	747585T	3	ALAMEDA & 37TH ST	VERNON	LOS ANGELES	UPRR	Open	A SECTION 130 PROJECT IS BEING DEVELOPED TO IMPROVE THIS CROSSING

APPENDIX E (cont)

Status of California Crossings With more than 2 Accidents (2006-2011)

CPUC #	US DOT #	Accident count	Street	City	County	Railroad	status	Comments
105E-31.00	754998E	3	CHURCHILL AV	PALO ALTO	SANTA CLARA	JPB	Open	CALTRAIN PROJECT AUTHORIZED IN FEB 2011 TO UPGRADE CROSSING
001A-79.20	751224V	3	CO RD 32A/105	UNINCORP	YOLO	UPRR	Open	A SECTION 130 PROJECT IS BEING IMPLEMENTED TO IMPROVE THIS CROSSING
002-1002.50	028583V	3	FRUIT AV	FRESNO	FRESNO	BNSF	Open	A SECTION 130 PROJECT IS BEING IMPLEMENTED TO IMPROVE THIS CROSSING
001D-17.50	749745L	3	HESPERIAN BL	SAN LEANDRO	ALAMEDA	UPRR	Open	A SECTION 130 PROJECT IS BEING IMPLEMENTED TO IMPROVE THIS CROSSING
002B-38.40	026560G	3	IMPERIAL HWY (SR 90)	UNINCORP	ORANGE	BNSF	Open	CROSSING GRADE SEPARATED IN 2009
004-90.40	833930J	3	INDUSTRIAL DR	UNINCORP	SAN JOAQUIN	UPRR	Open	A SECTION 130 PROJECT IS BEING IMPLEMENTED TO IMPROVE THIS CROSSING
002-266.60	026863R	3	LAUREL ST	SAN DIEGO	SAN DIEGO	BNSF	Open	CITY CROSSING IMPROVEMENT PROJECT APPROVED in 2010 CURRENTLY UNDER WAY
002-153.40	027650J	3	LOS NIETOS RD	SANTA FE SPRINGS	LOS ANGELES	BNSF	Open	CROSSING IMPROVEMENT PROJECT APPROVED in 2010 CURRENTLY UNDER WAY
002-908.00	028395F	3	MERCED AVENUE	UNINCORP	KERN	BNSF	Open	SECTION 130 PROJECT UPGRADED CROSSING IN 2009
001B-525.40	746964P	3	MILLIKEN AV	ONTARIO	SAN BERNARDIN O	UPRR	Open	GRADE SEPARATION PROJECT CURRENTLY UNDER CONSTRUCTION
001BEL-43.34	752887F	3	POWER INN RD	SACRAMENTO	SACRAMENTO	UPRR	Open	SECTION 130 PROJECT UPGRADED CROSSING IN 2010
105E-11.60-D	922713E	3	SAN BRUNO STATION PED XING NORTH	SAN BRUNO	SAN MATEO	JPB	Open	GRADE SEPARATION PROJECT CURRENTLY UNDER CONSTRUCTION

APPENDIX E (cont)

Status of California Crossings With more than 2 Accidents (2006-2011)

CPUC #	US DOT #	Accident count	Street	City	County	Railroad(s)	status	Comments
002-899.50	028381X	3	SEVENTH / 7TH STANDARD ROAD	UNINCORP	KERN	BNSF	Open	STATE SECTION 190 PROGRAM - GRADE SEPARATION CURRENTLY UNDER CONSTRUCTION
002B-8.80	026478M	3	SPRUCE ST	RIVERSIDE	RIVERSIDE	BNSF	Open	A SECTION 130 PROJECT IS BEING DEVELOPED TO IMPROVE THIS CROSSING
101SG-15.12 / 001B-497.10	746903Y	3	TEMPLE AVE	INDUSTRY	LOS ANGELES	SCAX/ UPRR	Open	IDENTIFIED FOR SECTION 130 REVIEW IN NEXT CYCLE
002-158.40	027657G	3	VALLEY VIEW AV	SANTA FE SPRINGS	LOS ANGELES	BNSF	Open	GRADE SEPARATION CONSTRUCTION TO BEGIN FALL 2011
001BBH-486.42 / 084L-4.20	747836K	3	VERNON AV	LOS ANGELES	LOS ANGELES	UPRR / MTA	Open	Shared corridor with UPRR and Metro Light Rail. All have been pedestrian accidents. Experimental LOOK BOTH WAYS sign placed at station in 2009.
105E-33.00	755010S	3	W MEADOW DR	PALO ALTO	SANTA CLARA	JPB	Open	CALTRAIN PROJECT AUTHORIZED FEB 2011 TO ADD AUTOMATIC PEDESTRIAN GATES, AND OTHER IMPROVEMENTS
105E-24.80	754935A	3	WHIPPLE AV	REDWOOD CITY	SAN MATEO	JPB	Open	CALTRAIN PROJECT COMPLETED JAN 2010 TO ADD MEDIAN, AUTOMATIC PEDESTRIAN GATES, AND OTHER IMPROVEMENTS
001BBM-499.92-C	747912B	3	WILMINGTON AV	CARSON	LOS ANGELES	UPRR	Open	IMPROVEMENT PROJECT UNDER DEVELOPMENT WITH UPRR AND CITY
106E-99.60 / 106-226.80	026816H	3	WISCONSIN ST	OCEANSIDE	SAN DIEGO	NCTD	Open	Crossing has 4 tracks, but was upgraded to latest standards in 2007. All three accidents resulted from intentional acts of peds or motorists.

APPENDIX F

Caltrans Summary of 2006 State Infrastructure Bonds – Highway-Rail Grade Crossing Safety Account

California Department of Transportation
 Proposition 1B
 Highway Railroad Crossing Safety Account (HRCSA)

FY 2010-11 Fourth Quarter Report
 April 1 – June 30, 2011
 Attachment

ID	DST	CNTY	Applicant	Project Name	Total Project	HRCSA Prgmd	Beg Const	End Const	HRCSA Expnd	Const Cmpl	Scope	Budget	Schedule
PART 1													
8	6	KER	County of Kern	BNSF Grade Sept 7 th Standard Rd/Santa Fe Wy	28,853	9,926	Sep-09	Jul-11	\$ 3,218	73%	●	●	▲
44	4	SM	PCJPB	San Mateo Bridges Grade Separation (GS)	13,440	1,445		Sep-11	\$ 10	45%	●	●	●
11	7	LA	City of Los Angeles	Riverside Drive GS Replacement	57,965	5,000		Jun-14	0	0	●	●	▲
39	4	SF	PCJPB	Jerrold Ave & Quint St Bridges GS	19,630	4,674	Jun-10	Sep-11	\$ 386	50%	●	●	●
18	10	MER	City of Merced	G Street Undercrossing	18,000	9,000	Mar-10	Dec-11	\$ 3,171	41%	●	●	●
9	6	KER	County of Kern	Hageman Rd/BNSF Railroad	35,300	17,650		Jul-12	\$ 1,572	17%	●	●	●
45	4	SM	PCJPB	San Bruno GS	147,000	26,727	Jul-10	Oct-12	\$ 3,590	30%	●	●	●
43	10	SJ	City of Stockton	Lower Sacramento	34,000	10,000		Nov-12	0	3%	●	●	●
Total Part 1					354,188	84,422							
PART 2													
33	11	SD	City of San Diego	Park Blvd. at Harbor Dr./Pedestrian Bridge	27,000	6,000		Jan-10	\$ 6,000	100%	●	●	●
29	3	SAC	City of Sacramento	6 th St Overcrossing - Bridge	11,974	5,987		Oct-12	\$ 598	73%	●	●	●
48	6	TUL	City of Tulare	Cartmill Avenue GS	26,808	11,293		May-12	\$ 1,099	16.2%	●	●	●
46	6	TUL	County of Tulare	Betty Drive GS	28,075	12,175		Sep-11	*	25%	●	●	●
40	10	SJ	Port of Stockton	Port of Stockton Expressway	11,500	4,400		Jun-12	*	2%	●	●	●
41	10	SJ	City of Stockton	Eight Mile Road/UPRR (East) GS	31,000	8,500		Nov-12	*	33%	●	●	●
42	10	SJ	City of Stockton	Eight Mile Road/UPRR (West) GS	25,000	8,500		Nov-12	*	37%	●	●	●
20	12	ORA	OCTA	Sand Canyon GS	54,604	8,000		Jan-14	0	4%	▲	▲	●
Total Part 2					215,961	64,855							

**Invoices received and paid July, 2011*

2010 HRCSA (numbers in thousands)

DST	CNTY	Applicant	Project Name	Total Project	HRCSA Prgmd	Beg Const	End Const	HRCSA Expnd	Const Cmpl	Scope	Budget	Schedule
PART 1												
6	TUL	City of Tulare	Bardsley Avenue Grade Separation	16,935	7,156	4/12	8/12			●	●	●
7	LA	ACE	Nogales Street Grade Separation	89,049	25,600	2/12	4/16			●	●	●
4	ALA	City of Fremont	Warren Avenue Grade Separation	57,168	9,600	11/11	11/14			●	●	●
7	LA	City of Los Angeles	North Spring Street Grade Separation	48,766	5,001	6/12	12/14			●	●	●
Total Recommended for Programming				211,918	47,357							
PART 2												
3	SAC	City of Sacramento	6 th Street Overcrossing	16,102	7,865	2/12	2/13			●	●	●
4	ALA	City of Fremont	Kato Road Grade Separation	52,265	10,000	8/11	2/13			●	●	▲
7	LA	SCRRA	Broadway-Brazil Street Grade Crossing	8,900	4,000	7/11	8/12			●	●	▲
12	ORA	OCTA	Dana Point & San Clemente Crossings	4,200	2,100		9/11			●	●	●
12	ORA	OCTA	San Clemente Beach Trail Crossings	4,500	2,250	11/11	6/12			●	●	●
12	ORA	OCTA	North Beach Crossing	1,200	600	11/11	6/12			●	●	●
Total Recommended for Programming				87,167	26,805							

- Project is on-time, on-budget, and/or within scope
- Allocation request is late or construction start date has been delayed
- ▲ Schedule, scope or cost is changing, pending review and acceptance

□ Project has been delivered and is awaiting allocation

2008 HRCSA *(numbers in thousands)*

APPENDIX F

Caltrans Summary of 2006 State Infrastructure Bonds – Trade Corridor Improvement Fund

California Department of Transportation

TCIF Project Schedule Report
3rd Quarter FY 2010-11

Trade Corridors Improvement Fund Delivery Report Schedule and Cost

Phase Complete
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 No Known Scope, Budget, or Schedule Impact
 Black/Italics Changes or Accomplishments During Quarter
 Behind Schedule
 Delivered but Not Allocated
 Known Scope, Budget, or Schedule Impact (Amendment Needed)
 Awarded
 Potential Schedule Impact

PROJECT NUMBER	DISTRICT	COUNTY	NOMINATED BY	ROUTE	PROJECT DESCRIPTION	END ENVIRONMENTAL	END DESIGN	END RIGHT OF WAY	BEG CONSTRUCTION	CURRENT PHASE % COMPLETE	TOTAL PROJECT COST (\$1,000)	TCIF COST (\$1,000)	ENVIRONMENTAL COST (\$1,000)	DESIGN COST (\$1,000)	RIGHT OF WAY COST (\$1,000)	CONSTRUCTION COST (\$1,000)	SCOPE	BUDGET	SCHEDULE	COMMENTS - CTC ACTIONS DURING QUARTER
18	7	LA	Southern California Regional Rail Authority		New Siding on the Antelope Valley Line (MP44 to MP61) For Freight Trains			N/A	08/27/10	Env. 100% Des. 100% RW N/A Const. 10%	\$14,700	\$7,200	\$0	\$1,500	\$0	\$13,200	✓	✓	✓	Program Amendment: TCIF-A-100-10, 01/09/11, \$7200,000
19	7	LA	Port of Los Angeles	47/130	I-130 Fwy Access Ramp Improvement SR 47/1-130 NB Connector Widening	08/09/09	03/01/11	N/A	09/01/11	Env. 100% Des. 75% RW N/A	\$50,719	\$14,700	\$859	\$4,198	\$0	\$45,692	✓	✗	✗	
20	7	LA	Port of Los Angeles	130	C Street Access Ramps Improvements	08/09/09	03/01/11	N/A	03/01/12	Env. 95% Des. 65%	\$29,281	\$8,300	\$660	\$2,530	\$0	\$26,071	✓	✗	✗	
21	7	LA	City of Commerce		Washington Boulevard Widening & Reconstruction Project		10/01/11	10/01/11	12/01/11	Env. 100% Des. 10% RW 0%	\$32,000	\$5,800	\$39	\$2,044	\$3,678	\$26,239	✓	✓	✓	
22	7	LA	Port of Los Angeles		South Wilmington Grade Separation		07/01/10	N/A	01/01/11	Env. 100% Des. 80% RW N/A	\$73,000	\$17,000	\$0	\$4,294	\$0	\$63,816	✓	✓	✗	
23	7	LA	Port of Long Beach	730	Gerald Desmond Bridge Replacement			12/01/11	01/01/12	Env. 100% Des. 100% RW 0%	\$950,940	\$299,795	\$9,782	\$28,880	\$100,589	\$811,589	✓	✓	✓	
24	7	LA	Port of Long Beach		Ports Rail System - Tier 1 (Pier F Support Yard)		09/01/10	N/A	10/01/10	Env. 100% Des. 98%	\$22,685	\$8,765	\$1,020	\$7,620	\$0	\$20,196	✓	✓	✗	Program Amendment: TCIF-A-101-10, 01/27/11, reduce TCIF by \$1,200,000 from \$10,000,000 to \$8,760,000
25	7	LA	Port of Long Beach		Ports Rail System - Tier 1 (Track Realignment at Ocean Boulevard)		09/01/10	N/A	10/01/10	Env. 100% Des. 98%	\$65,940	\$27,000	\$1,020	\$8,230	\$0	\$56,570	✓	✓	✗	
31	7	LA	Alameda Corridor Transportation Authority		Ports Rail System - Tier 1 (New Central Rail Bridge / Triple Track South of Thimard)	12/01/10	01/01/13	01/01/13	06/01/13	Env. 0% Des. 0%	\$155,600	\$38,330	\$9,500	\$13,500	\$38,900	\$113,700	✗	✓	✗	
32	7	LA	Port of Los Angeles		Ports Rail System - Tier 1 (West Basin Road Rail Access Improvements)		09/01/09	N/A	04/01/10	Env. 100% Des. 90% RW 90%	\$125,340	\$51,230	\$0	\$5,141	\$0	\$70,193	✓	✓	✗	
34	12	ORA	Orange County Transportation Authority	91	State Route 91 Connect Aux. Lanes through Interchange on Westbound SR91 Between State Route 57 & I-5		08/01/12	07/01/12	12/01/12	Env. 100% Des. 30%	\$73,400	\$34,930	\$3,500	\$5,387	\$5,113	\$59,400	✓	✓	✓	
35	12	ORA	Orange County Transportation Authority		State College Boulevard Grade Separation	07/01/10	03/01/13	08/01/12	04/01/13	Env. 95% Des. 95% RW 0%	\$62,083	\$30,731	\$5,315	\$5,315	\$14,889	\$36,564	✓	✓	✗	
36	12	ORA	Orange County Transportation Authority		Picnic Avenue Undercrossing				04/01/11	Env. 100% Des. 100% RW 100% Const. 0%	\$78,227	\$14,934	\$21	\$2,922	\$15,369	\$59,915	✓	✓	✓	Program Amendment: TCIF-A-100-10, 01/09/11, \$14,934,000
37	12	ORA	Orange County Transportation Authority		Orangehope Avenue Grade Separation	06/01/13	10/01/12	07/01/13		Env. 100% Des. 75% RW 35%	\$83,957	\$41,666	\$4,537	\$5,241	\$21,749	\$52,410	✓	✓	✓	

APPENDIX F

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California Department of Transportation

TCIF Project Schedule Report
3rd Quarter FY 2010-11

Trade Corridors Improvement Fund Delivery Report Schedule and Cost

- | | | | |
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PROJECT NUMBER	DISTRICT	COUNTY	NOMINATED BY	ROUTE	PROJECT DESCRIPTION	END ENVIRONMENTAL	END DESIGN	END RIGHT OF WAY	BEGIN CONSTRUCTION	CURRENT PHASE % COMPLETE	TOTAL PROJECT COST (\$1,000)	TCIF COST (\$1,000)	ENVIRONMENTAL COST (\$1,000)	DESIGN COST (\$1,000)	RIGHT OF WAY COST (\$1,000)	CONSTRUCTION COST (\$1,000)	SCOPE	BUDGET	SCHEDULE	COMMENTS - CTC ACTIONS DURING QUARTER
38	12	ORA	Orange County Transportation Authority		Kramer Boulevard Undercrossing			03/01/11	05/01/11	Env. 100% Des. 100% RW 95% Const. 0%	\$70,432	\$22,642	\$631	\$5,043	\$9,382	\$55,376	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Surplus: TCP-4-100-01, 01/29/11, \$22,642,000.
39	12	ORA	Orange County Transportation Authority		Raymond Avenue Grade Separation	10/01/10	03/01/13	10/01/12	04/01/13	Env. 40% Des. 65% RW 0% Const. 0%	\$63,739	\$12,757	\$3,337	\$3,337	\$25,025	\$32,040	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
40	12	ORA	Orange County Transportation Authority		Lakeview Avenue Overcrossing		06/01/11	12/01/10	07/01/11	Env. 100% Des. 70% RW 30%	\$58,525	\$28,685	\$2,494	\$2,868	\$21,478	\$28,685	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
41	12	ORA	Orange County Transportation Authority		Tustin Avenue / Rose Drive Overcrossing		06/01/13	10/01/12	07/01/13	Env. 100% Des. 75% RW 35%	\$63,087	\$31,387	\$2,894	\$3,328	\$23,893	\$32,972	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
42	8	RIV	City of Riverside		Columbia Avenue Grade Separation	Construction Completed 4th Quarter FY 2009-10					\$34,050	\$6,000	\$143	\$1,657	\$6,800	\$25,450				Construction completed 4th Quarter FY 2009-10.
43	8	RIV	City of Corona		Auto Center Drive Grade Separation		10/24/10	04/30/11	11/01/11	Env. 100% Des. 98% RW 90%	\$32,675	\$16,000	\$630	\$1,370	\$2,720	\$27,955	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
44	8	RIV	City of Riverside		Magnolia Avenue Grade Separation - UPRR			06/01/09	02/01/10	Env. 100% Des. 100% RW 98% Const. 55%	\$2,960	\$20,000	\$160	\$2,500	\$23,500	\$26,800	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
45	8	RIV	City of Riverside		Iowa Avenue Grade Separation		03/01/10	03/01/10	07/01/10	Env. 100% Des. 64% RW 40%	\$32,000	\$13,000	\$500	\$1,500	\$5,500	\$24,500	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
46	8	RIV	City of Banning		Project No. 2006-05, Sunset Avenue Grade Separation		07/01/11	07/01/11	01/15/12	Env. 100% Des. 0%	\$36,500	\$10,000	\$400	\$4,100	\$1,100	\$30,900	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
47	8	RIV	City of Riverside		Streeter Avenue Grade Separation		10/01/11	10/01/11	01/01/12	Env. 100% Des. 95% RW 30%	\$6,800	\$15,500	\$1,500	\$1,000	\$4,300	\$20,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
48	8	RIV	Riverside County		Avenue 56 Grade Separation on Yuma Subdivision of UPR Mainline	12/31/10	06/29/12	03/30/12	12/28/12	Env. 81% Des. 0% RW 0%	\$60,000	\$10,000	\$800	\$2,800	\$8,500	\$47,900	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
50	8	RIV	Riverside County		Grade Separation at Clay Street Railroad Grade Crossing		06/30/11	09/30/11	03/30/12	Env. 100% Des. 0% RW 0%	\$37,350	\$12,500	\$1,125	\$4,325	\$2,000	\$29,900	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
51	8	RIV	City of Riverside		Riverside Avenue Grade Separation		03/01/11	05/01/11	12/01/11	Env. 100% Des. 39% RW 2%	\$30,300	\$8,500	\$500	\$2,000	\$12,800	\$15,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
52	8	RIV	City of Riverside		3rd Street Grade Separation	09/01/09	01/01/12	01/01/12	04/01/12	Env. 49% Des. 0% RW 0%	\$40,161	\$17,500	\$661	\$1,500	\$10,000	\$28,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
53	8	RIV	Riverside County		Grade Separation at Magnolia Avenue Railroad Grade Crossing - BNSF	09/30/10	12/30/11	03/29/13	09/30/13	Env. 70% Des. 0% RW 0%	\$81,750	\$13,700	\$1,780	\$4,220	\$3,880	\$71,870	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
54	8	RIV	City of Riverside	215	March Inland Cargo Port Airport - I-215 Van Buren Boulevard - Ground Access Improvements		08/26/11	08/11/11	01/02/12	Env. 100% Des. 95% RW 85%	\$97,550	\$10,000	\$3,550	\$5,500	\$7,000	\$81,500	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

APPENDIX F

Caltrans Summary of 2006 State Infrastructure Bonds – Trade Corridor Improvement Fund

California Department of Transportation

TCIF Project Schedule Report
3rd Quarter FY 2010-11

Trade Corridors Improvement Fund Delivery Report Schedule and Cost

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PROJECT NUMBER	DISTRICT	COUNTY	FINANCED BY	ROUTE	PROJECT DESCRIPTION	END ENVIRONMENTAL	END DESIGN	END RIGHT OF WAY	BEGIN CONSTRUCTION	CURRENT PHASE (% COMPLETE)	TOTAL PROJECT COST (\$1,000)	TCIF COST (\$1,000)	ENVIRONMENTAL COST (\$1,000)	DESIGN COST (\$1,000)	RIGHT OF WAY COST (\$1,000)	CONSTRUCTION COST (\$1,000)	SCOPE	BUDGET	SCHEDULE	COMMENTS - CTC ACTIONS DURING QUARTER
56	8	SBD	San Bernardino Associated Governments	10	I-10 Corridor Logistics Access Project (Interchange Reconstruction at Cherry Avenue)		12/31/10	04/01/11	08/01/11	Env. 100% Des. 95% RW 95%	\$77,806	\$30,773	\$935	\$5,822	\$9,503	\$61,546	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
57	8	SBD	San Bernardino Associated Governments	10	I-10 Corridor Logistics Access Project (Interchange Reconstruction at Citrus Avenue)		04/30/11		08/01/11	Env. 100% Des. 95% RW 100%	\$57,530	\$23,600	\$1,138	\$3,995	\$5,257	\$47,200	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Amendment: TCIF-A-101A-12, 01/09/11, update final plan and delivery schedule.</i>
58	8	SBD	San Bernardino Associated Governments	10	I-10 Corridor Logistics Access Project (Interchange Reconstruction at Riverside Avenue)				01/01/10	Env. 100% Des. 100% RW 100% Const. 40%	\$29,741	\$9,837	\$0	\$1,895	\$2,470	\$25,386	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
59	8	SBD	San Bernardino Associated Governments		ACE Glen Helen Parkway Railroad Grade Separation		01/31/12	01/31/12	04/01/12	Env. 100% Des. 95% RW 25%	\$29,568	\$7,172	\$0	\$2,650	\$5,700	\$21,218	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Amendment: TCIF-A-101A-12, 01/09/11, make scheduling project out and fund plan.</i>
61	8	SBD	San Bernardino Associated Governments		ACE South Milliken Avenue Grade Separation at IUP Los Angeles		02/01/12	01/31/13	04/01/13	Env. 100% Des. 35% RW 0%	\$79,224	\$14,521	\$750	\$4,195	\$7,309	\$66,970	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
63	8	SBD	San Bernardino Associated Governments		Palm Avenue Grade Separation	12/30/09	06/30/12	06/30/12	07/01/12	Env. 95% Des. 35% RW 0%	\$35,176	\$9,390	\$750	\$2,000	\$1,126	\$31,300	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
64	8	SBD	San Bernardino Associated Governments		Lenwood Road Grade Separation	10/01/10	01/01/12	12/01/11	04/01/12	Env. 69% Des. 49% RW 32%	\$25,075	\$6,694	\$0	\$2,760	\$743	\$21,572	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
65	8	SBD	San Bernardino Associated Governments		Wineyard Avenue Grade Separation		12/31/11	06/30/12	12/01/12	Env. 100% Des. 35% RW 0%	\$44,517	\$6,884	\$750	\$2,000	\$8,402	\$33,365	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
66	7	VBN	City of Oxnard	101	US 101 Rice Avenue Interchange				03/01/09	Env. 100% Des. 100% RW 100% Const. 60%	\$86,899	\$30,448	\$1,228	\$3,251	\$21,522	\$60,898	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
67	11	SD	San Diego Association of Governments	905	State Route 905				07/13/09	Env. 100% Des. 100% RW 100% Const. 45%	\$104,700	\$91,605	\$0	\$500	\$0	\$104,200	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
68	11	SD	San Diego Association of Governments	11	SR 11/Otay Mesa East Port of Entry	12/30/10	12/31/12	12/31/12	04/01/13	Env. 65%	\$713,720	\$75,000	\$12,300	\$42,690	\$80,380	\$578,150	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
69	11	SD	Port of San Diego	5/15	Bay Marina Drive Grade Separated Improvements		12/29/11	11/29/11	06/14/12	Env. 100% Des. 50%	\$2,380	\$930	\$80	\$130	\$350	\$1,820	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
70	11	SD	Port of San Diego	5	10th Avenue Grade Separated Improvements	04/19/11	05/23/13	05/23/13	11/07/13	Env. 90%	\$67,200	\$30,910	\$2,150	\$3,760	\$8,990	\$52,300	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
71	11	SD	Port of San Diego	5	32nd Street at Harbor Drive Grade Separated Improvements	12/29/11	05/23/13	05/23/13	11/70/13	Env. 25%	\$118,460	\$50,665	\$4,400	\$7,750	\$13,110	\$93,200	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
72	11	SD	Port of San Diego	15	Civic Center Drive at Harbor and I-15		12/29/11	12/29/11	06/14/12	Env. 100% Des. 50%	\$3,260	\$1,150	\$100	\$180	\$680	\$2,300	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
73	11	SD	Port of San Diego		National City Marine Terminal Improvement (Wharf Extension)	02/28/10	02/28/10	02/28/10	05/30/11	Env. 25% Des. 3%	\$34,300	\$15,000	\$1,050	\$3,250	\$0	\$30,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

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California Department of Transportation

TCIF Project Schedule Report
3rd Quarter FY 2010-11

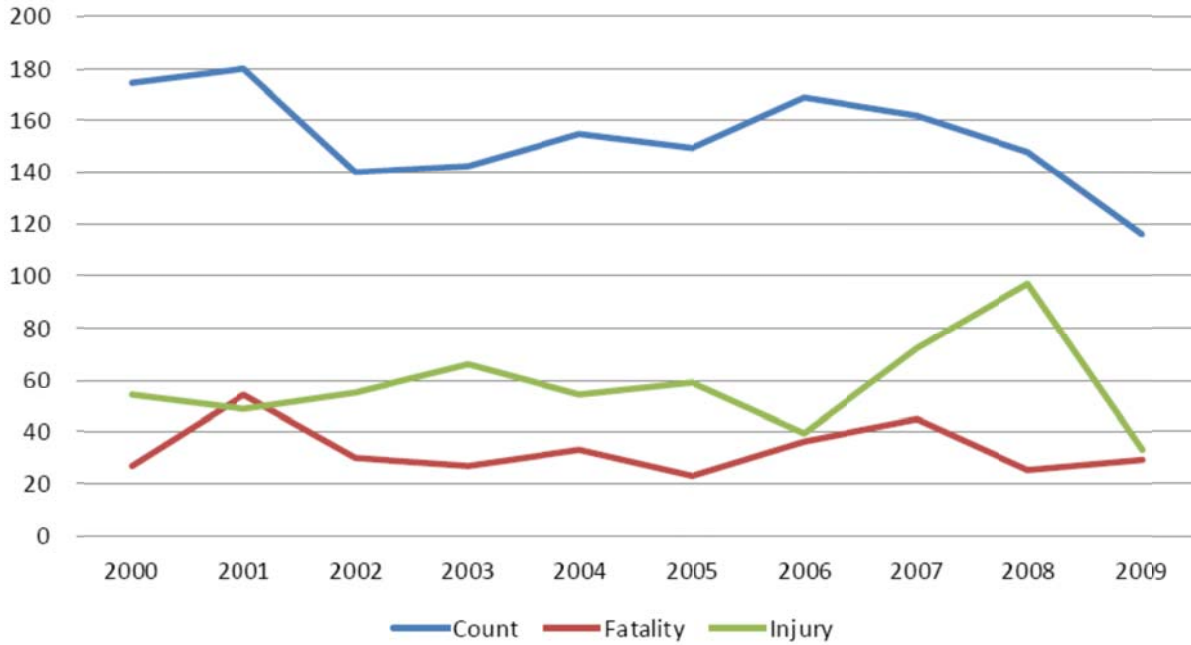
Trade Corridors Improvement Fund Delivery Report Schedule and Cost

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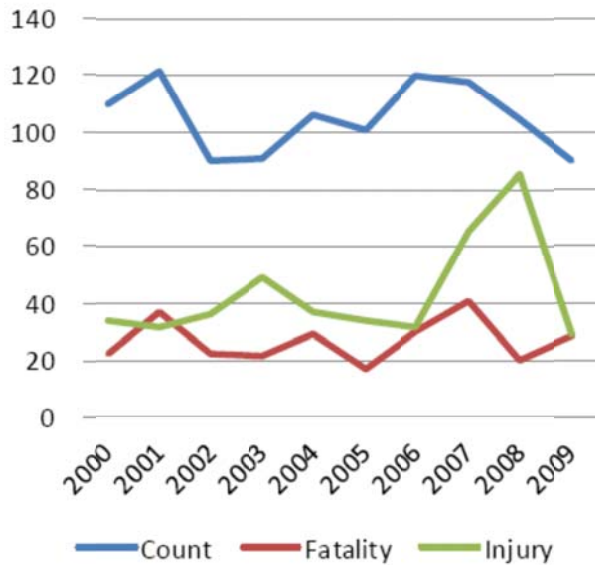
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74	11	SD	San Diego Association of Governments		Southline Rail Improvements - Yard Expansion	01/01/11	07/01/12	07/01/12	01/04/13	Env. 99% Des. 32% RW 0%	\$40,460	\$25,900	\$540	\$1,810	\$12,210	\$25,900	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
75	11	SD	San Diego Association of Governments		Southline Rail Improvements - Mainline Improvements			N/A	04/02/12	Env. 100% Des. 39% RW N/A Cont. 0%	\$307,030	\$98,060	\$220	\$8,750	\$0	\$98,060	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>See also: TCFP-A-101-102, 01/09/11, \$10,500,000</i>		
76	11	SD	San Diego Association of Governments		LOSAN N Rail Corridor at Sorrento		03/01/11	N/A	09/01/11	Env. 100% Des. 95%	\$23,700	\$10,800	\$1,600	\$500	\$600	\$21,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>See also: TCFP-A-101-102, 01/09/11, \$15,500,000</i>		
77	11	IMP	Imperial Valley Association of Governments	78/111	Brawley Bypass State Route 78/111				09/30/10	Env. 100% Des. 100% RW 100% Cont. 5%	\$78,473	\$49,549	\$1,200	\$6,500	\$18,569	\$52,198	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
78	5	MON	Monterey County	101	San Juan Road Interchange		08/12/12	04/01/12	01/11/13	Env. 100% Des. 10%	\$90,600	\$28,325	\$4,700	\$5,000	\$28,900	\$52,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
81	10	SJ	Northern California Trade Corridors Coalition		Sperry Road Extension			07/01/10	09/01/11	Env. 100% Des. 100% RW 70% Cont. 0%	\$63,000	\$30,000	\$1,000	\$5,000	\$7,000	\$50,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>See also: TCFP-A-101-101, 01/09/11, \$30,000,000</i>		
82	4	CC	Northern California Trade Corridors Coalition		Martina Bay Parkway Grade Separation		02/01/11	02/01/11	06/07/11	Env. 100% Des. 99% RW 99%	\$37,950	\$18,975	\$500	\$2,750	\$100	\$36,600	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>See also: TCFP-A-101-101, 01/09/11, update schedule and fund flow.</i>		
83	8	SBD	Caltrans / BNSF / UP		Colton Crossing Project	11/09/10	06/30/11	06/30/11	09/30/11	Env. 99% Des. 85% RW 85%	\$201,994	\$91,305	\$3,689	\$11,600	\$26,700	\$160,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
84	8	SBD	San Bernardino Associated Governments		Laurel Street/BNSF Grade Separation	06/08/11	07/16/12	07/16/12	12/19/12	Env. 80%	\$53,995	\$11,917	\$1,449	\$3,379	\$7,800	\$40,367	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>See also: TCFP-A-101-101, 01/09/11.</i>		
85	8	RJV	Riverside County		Avenue 52 Grade Separation	Awaiting Baseline Agreement					\$22,200	\$10,000	Awaiting Baseline Agreement					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>See also: TCFP-A-101-101, 01/09/11, programmatic project with \$10,000,000 TCFP from Billed Proj #6</i>	
											\$7,827,610	\$2,335,072										

APPENDIX G
California Crossing Accident Data (2000-2009)

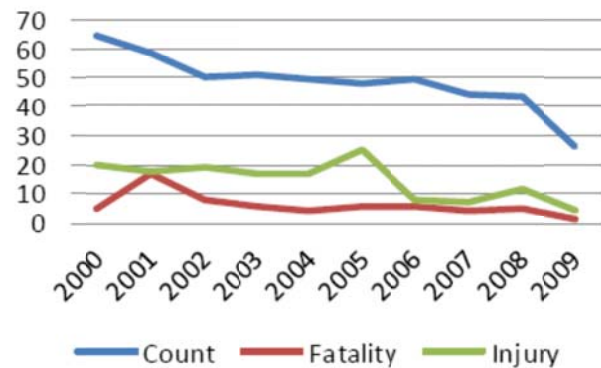
FRA Railroad Crossing Incidents (F57)
in California



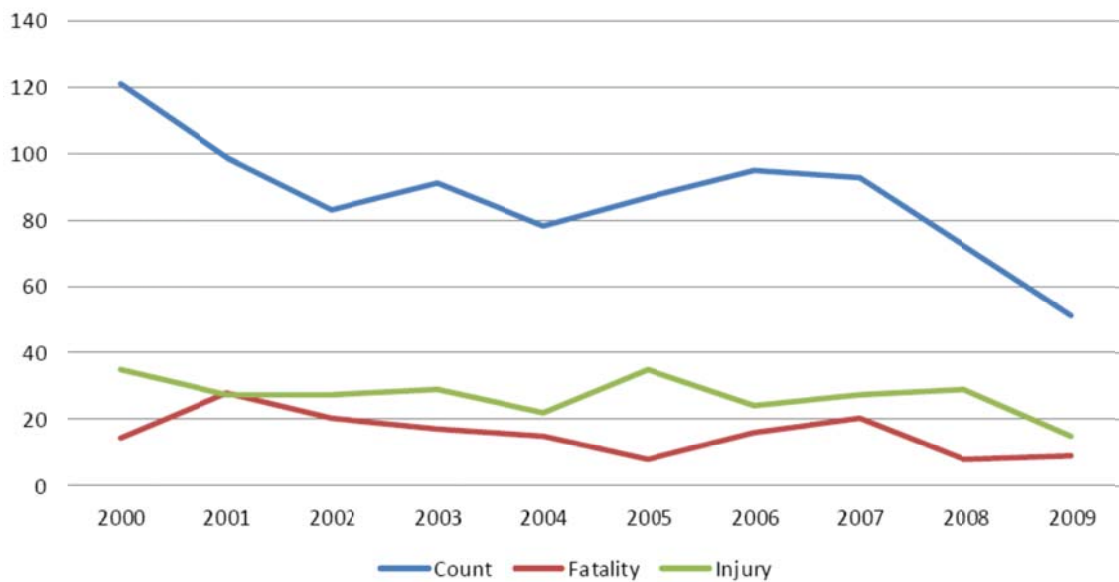
FRA Railroad Crossing Incidents (F57) Gated Crossings



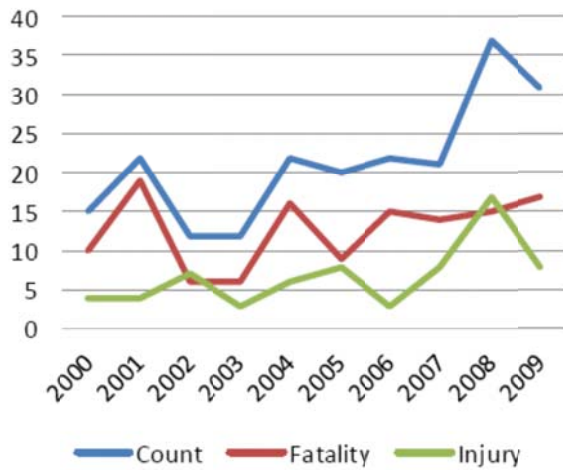
FRA Railroad Crossing Incidents (F57) Non-Gated Crossings



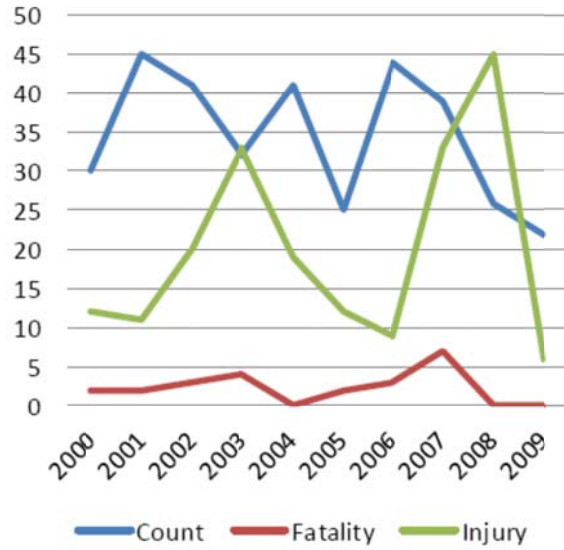
FRA Railroad Crossing Incidents (F57) Auto



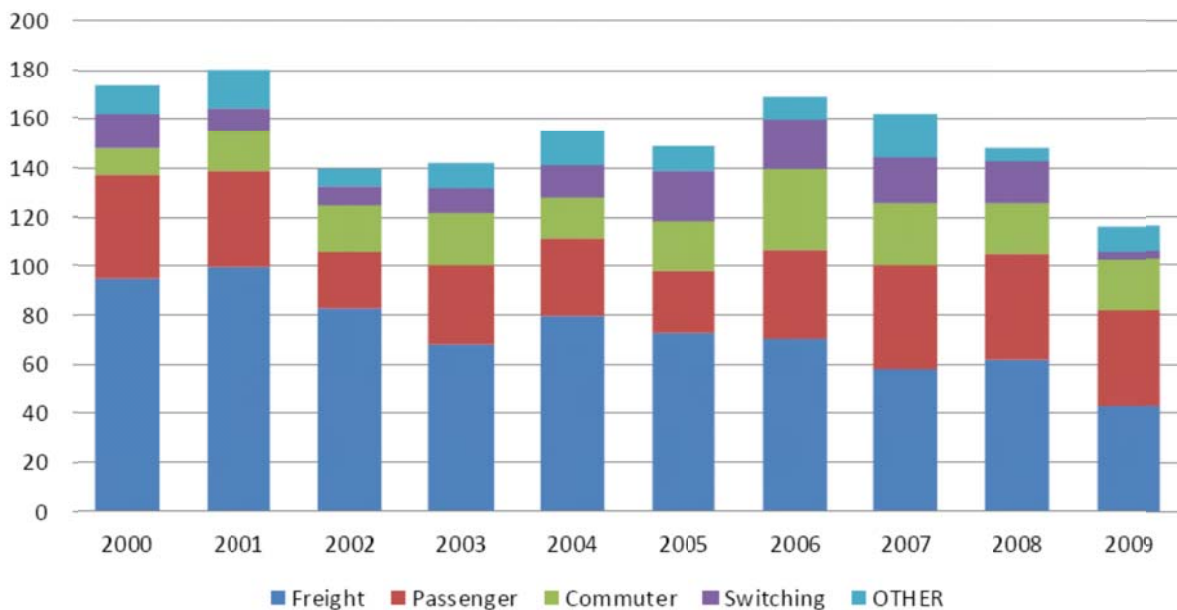
FRA Railroad Crossing Incidents (F57) *Pedestrian*



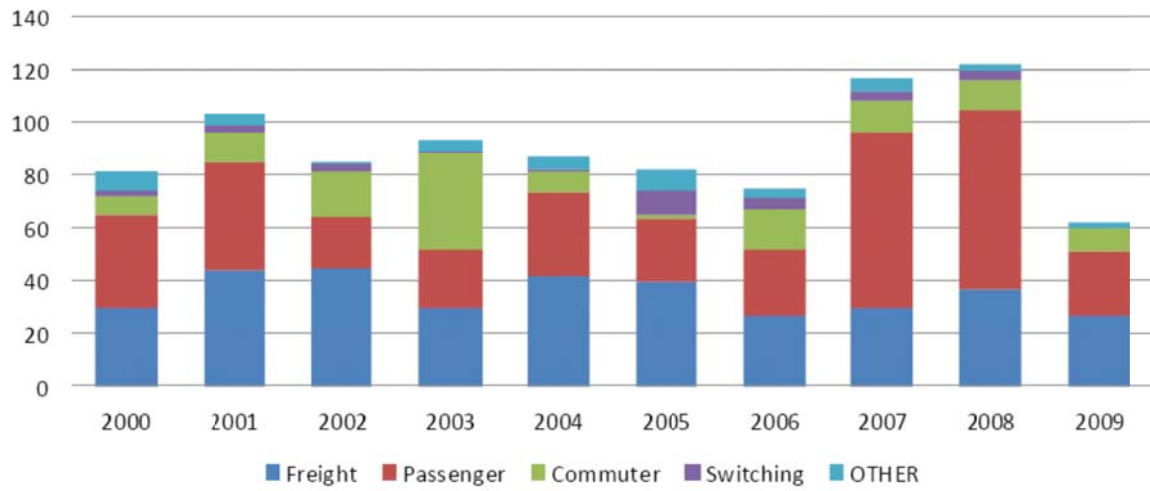
FRA Railroad Crossing Incidents (F57) *Truck*



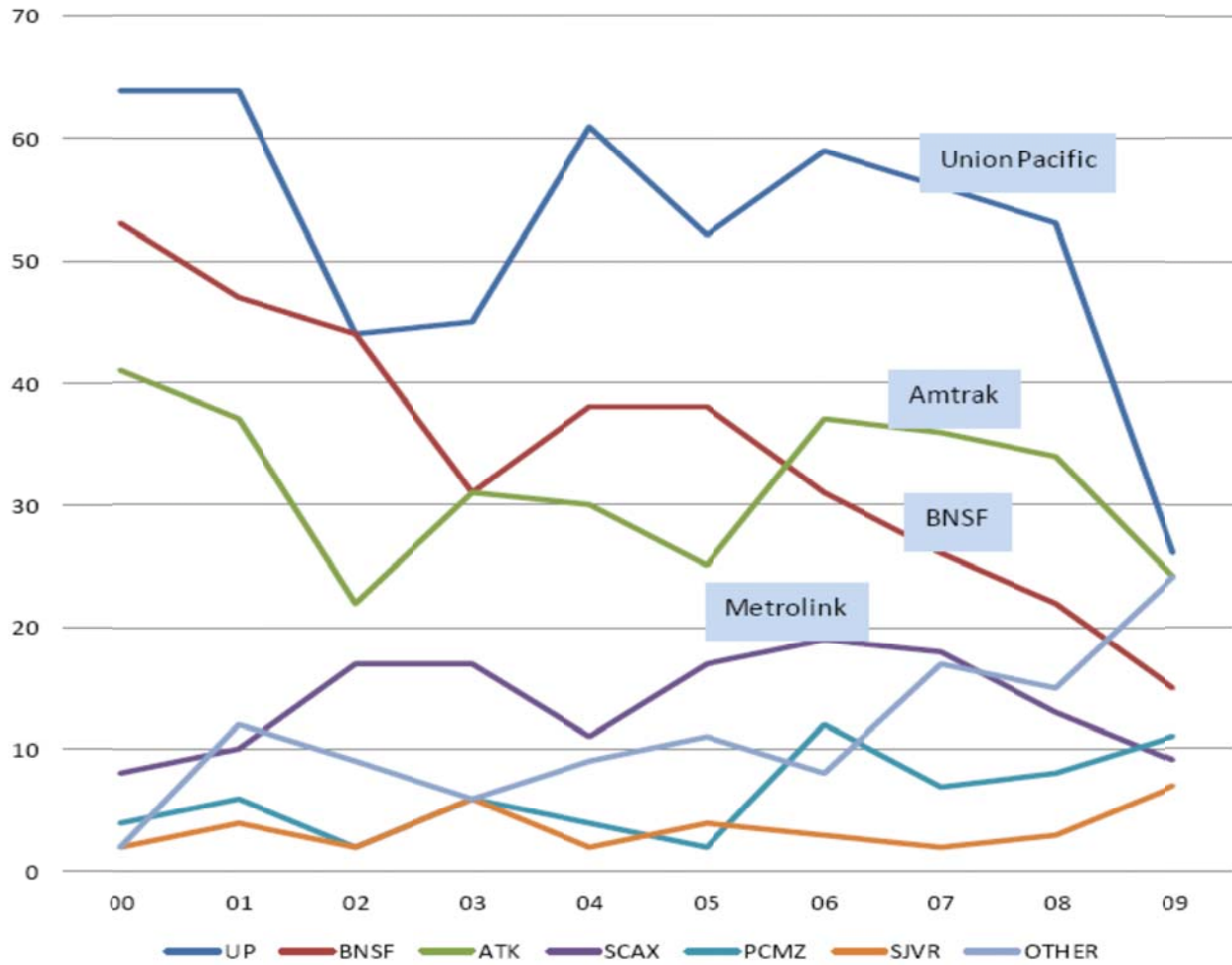
FRA Railroad Crossing Incidents (F57) *Number of Incidents in California BY Type of Railroad Equipment Involved*



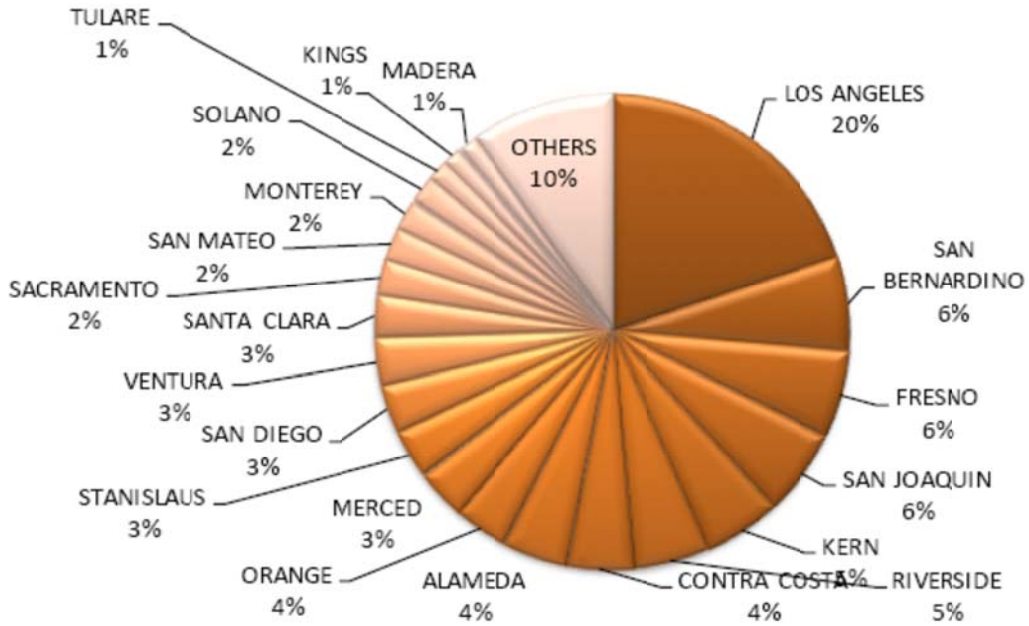
FRA Railroad Crossing Incidents (F57)
Casualties = Fatality + Injury
BY Type of Railroad Equipment Involved

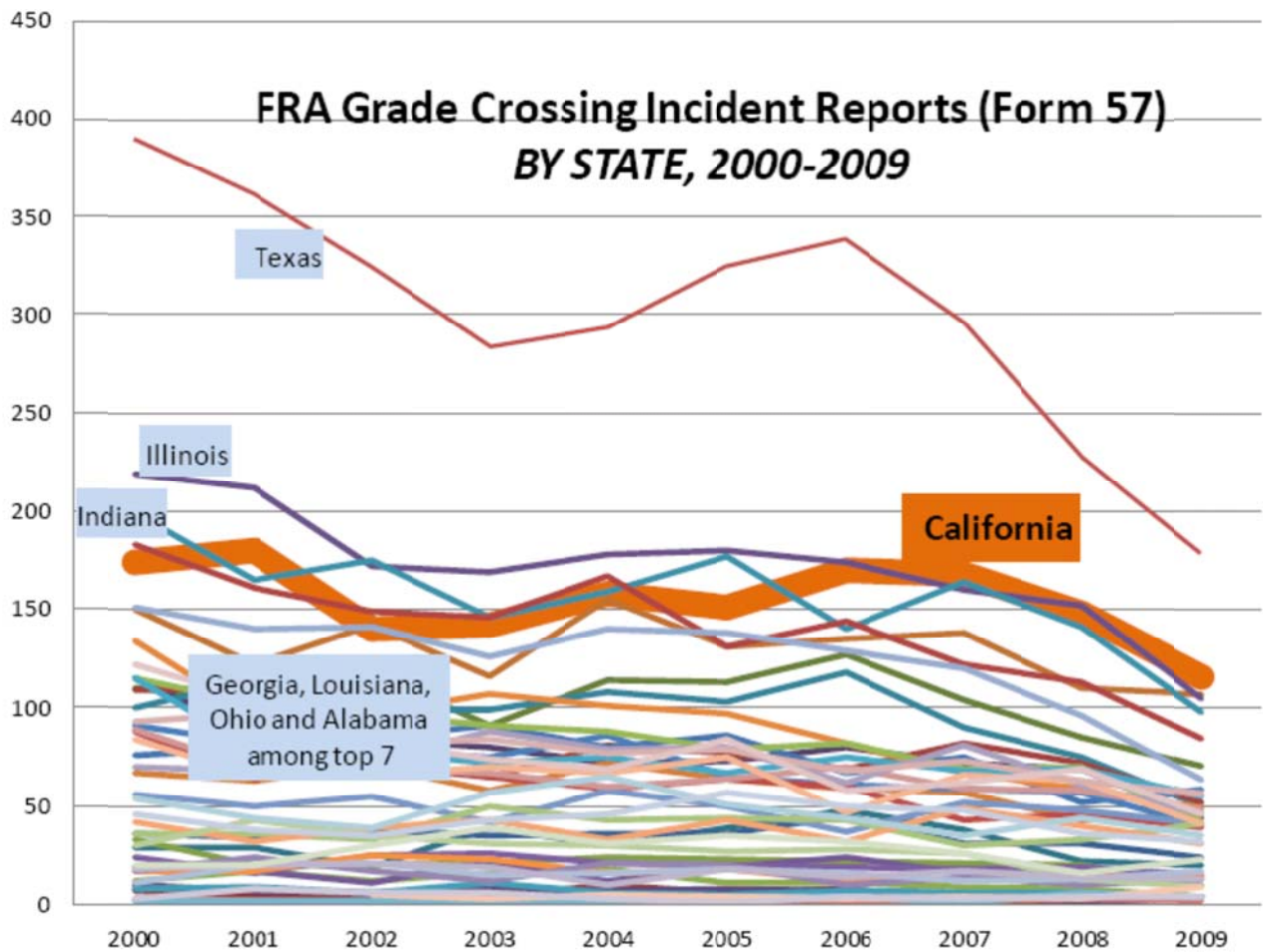


FRA Railroad Crossing Incidents (F57)
Number of Incidents in California
BY RAILROAD

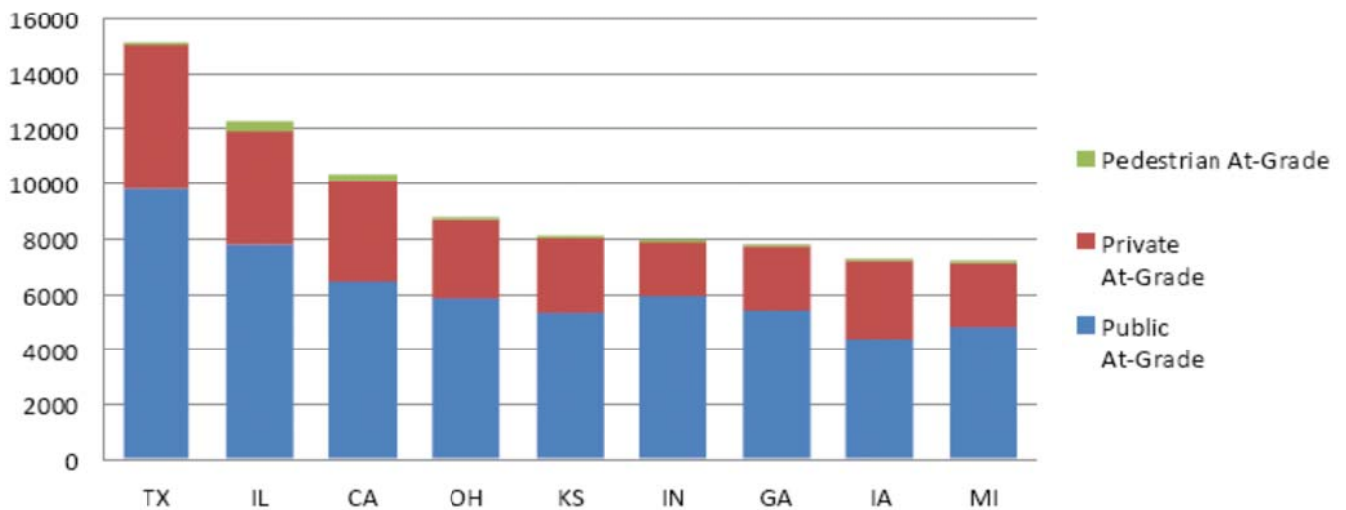


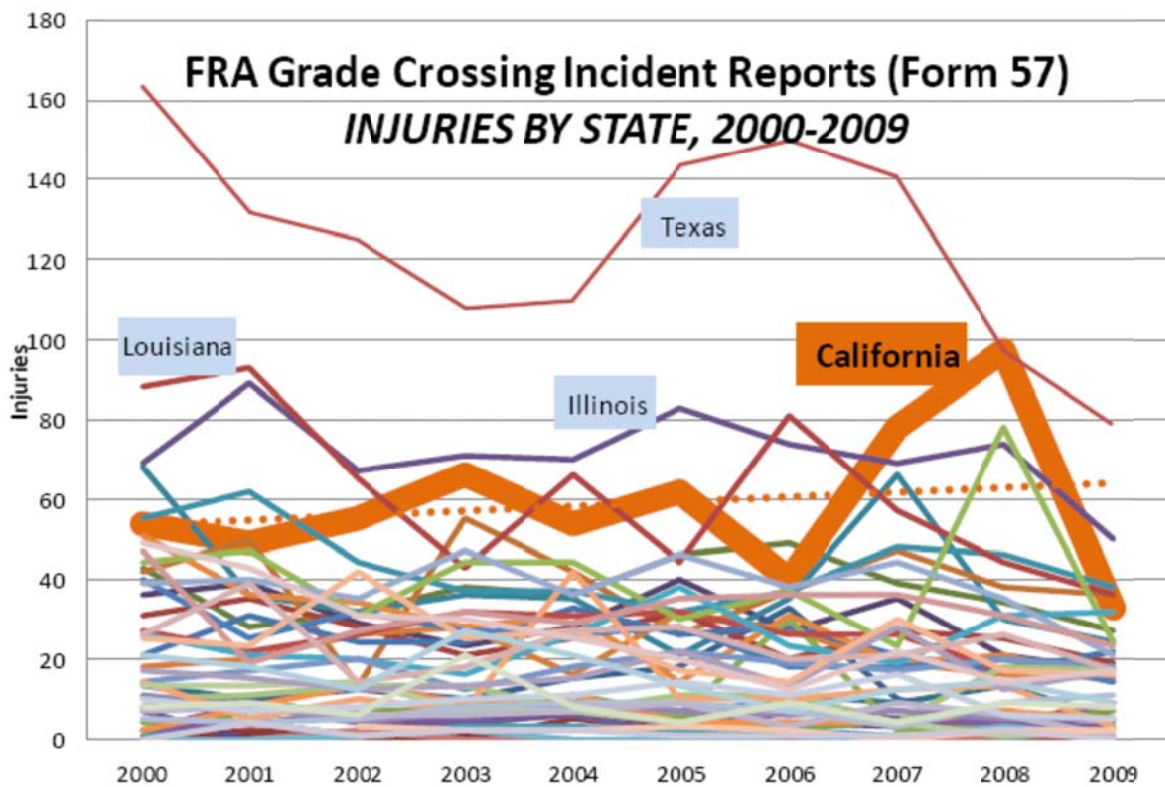
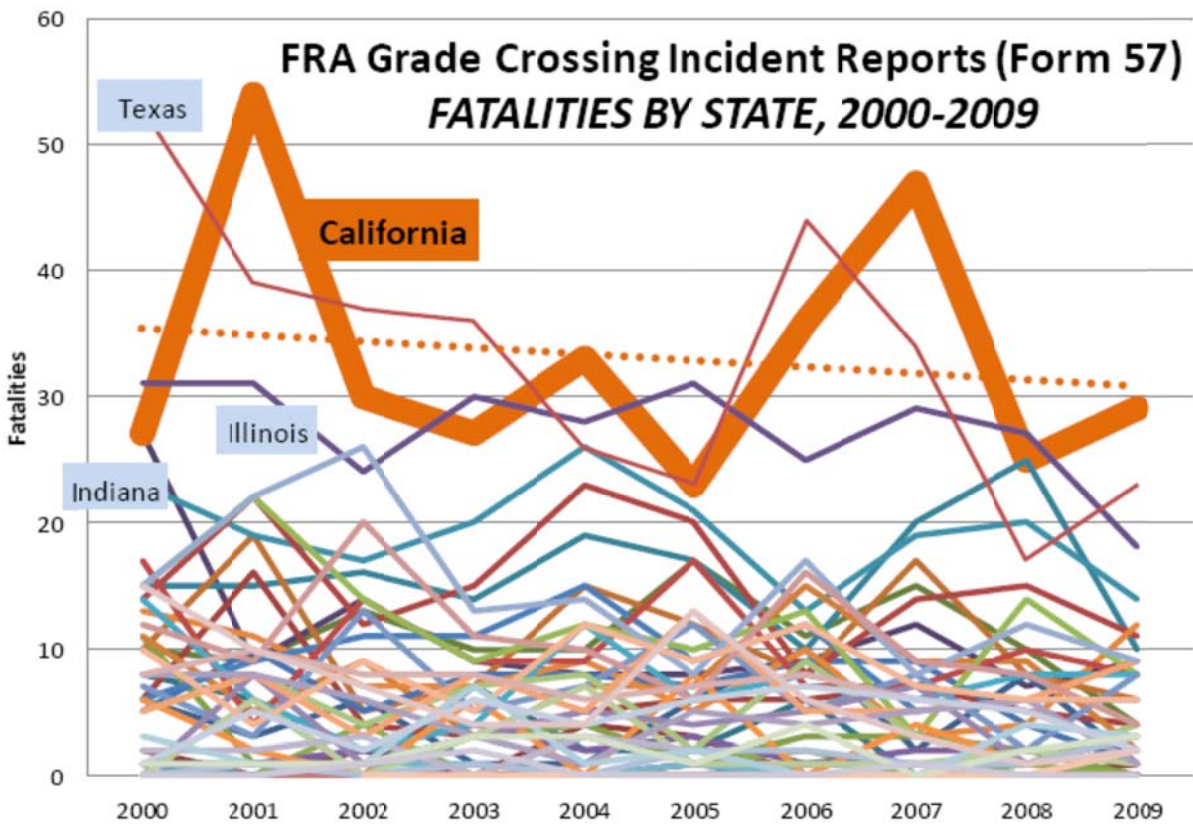
FRA Railroad Crossing Incidents (F57)
Total Incidents 2000-2009
BY COUNTY



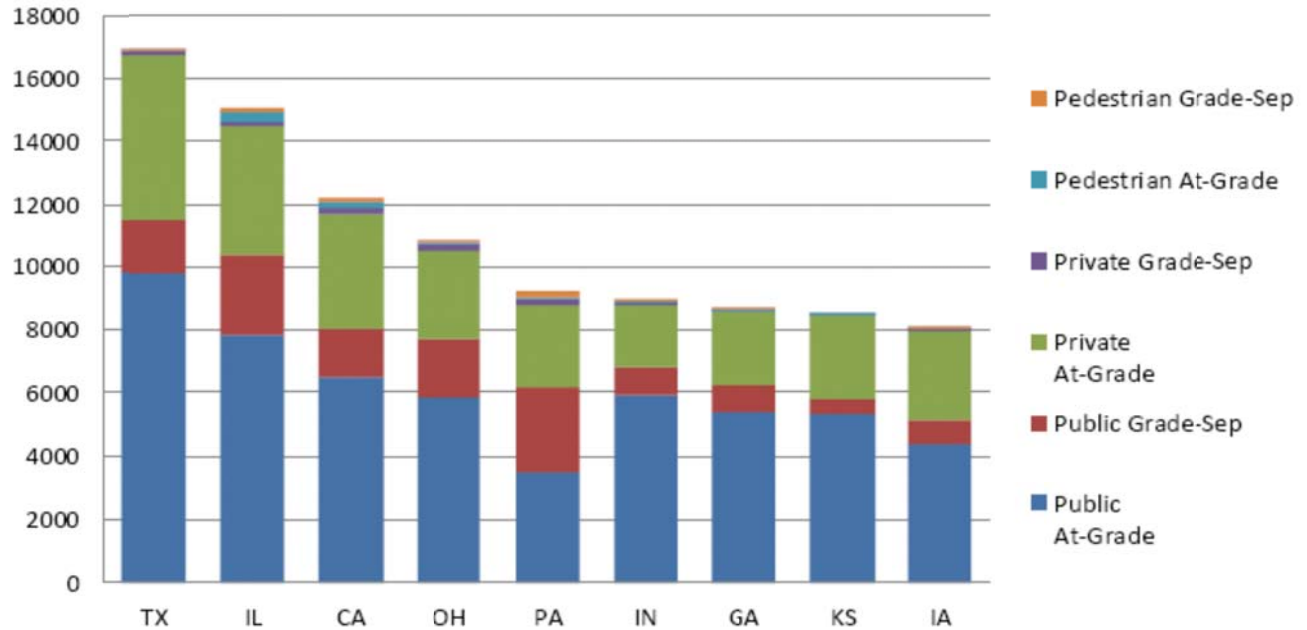


Number of AT-GRADE Crossings BY STATE (FRA Form 71)





Number of ALL Crossings BY STATE (FRA Form 71)



State	Public At-Grade	Public Grade-Sep	Private At-Grade	Private Grade-Sep	Pedestrian At-Grade	Pedestrian Grade-Sep	TOTAL
TX	9817	1671	5238	131	29	18	16904
IL	7838	2572	4081	156	338	83	15068
CA	6491	1553	3671	184	169	113	12181
OH	5848	1890	2820	167	41	40	10806
PA	3490	2691	2609	181	102	159	9232
IN	5928	903	1976	72	47	15	8941
GA	5390	857	2369	10	44	13	8683
KS	5352	475	2660	20	23	0	8530
IA	4404	732	2843	44	43	19	8085
MO	3964	1091	2785	69	46	17	7972
MI	4847	709	2270	7	89	18	7940

By dividing the total number of crossing incidents (2000 to 2009), and dividing by the number of at-grade crossings in the FRA crossing inventory an average is found for the number of incidents per crossing in a given state. California is approximately 15th in such a ranking, which places the accident per crossing well below Texas (5th) over the past decade, and is approximately equal to Illinois (17th).

