Report On High Risk Crossings and Mitigation Efforts by State

SUBMITTED PURSUANT TO CONFERENCE REPORT ON H.R. 2084
U.S. DEPARTMENT OF TRANSPORTATION
AND RELATED AGENCIES APPROPRIATIONS ACT, 2000

Office of Safety - Federal Railroad Administration
Office of Safety - Federal Highway Administration

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EXECUTIVE SUMMARY

The U.S. Department of Transportation, Federal Railroad Administration (FRA) and Federal Highway Administration (FHWA) were directed by Congress to undertake a study on highway-rail grade crossing safety, "...identify the 10 most deadly crossings in each state..." and establish ways these crossings could be improved or eliminated to reduce the dangers.

To meet Congress' directives for this report, FRA and FHWA worked with States to identify the ten most deadly crossings in each State and to update the USDOT Crossing Inventory. States were asked to review the FRA list of crossings, review the inventory information and update as necessary, and, if they wished, offer their own list of crossings.

Forty-four states provided updated inventory information. Twelve states provided information on additional crossings that were not on the list provided by FRA. Mitigation efforts identified by states include a whole range of initiatives that may be as simple as replacing crossbucks and adding advanced warning signs for $2,000 or as complex and expensive as $1 billion to upgrade an entire rail corridor. Forty states offered possible solutions to improve safety at the crossings, and identified an estimated $2.3 billion in costs. It should be noted that these proposed improvements, and the estimated costs, represent less than 1% of the 154,760 public grade crossings in the nation.

The Section 130 program has been the primary source for funding grade crossing improvements. However, the level of funding, $155 million per year under the 10% Safety Set Aside of the Surface Transportation Program, has been relatively unchanged since 1987. Thus, Section 130 funding has failed to keep pace with inflation, and has in fact, dropped significantly. If the program is to remain viable, an adequate funding level must be maintained. Optional Safety Funds, provided in TEA-21, are rarely used for grade crossing improvements. These funds could be channeled for grade crossing improvements, including grade separation and crossing closures. Yet in FY1999, only $26.9 million of a total $314.8 million was flexed into the grade crossing safety program.

Both FRA and FHWA agree that investments made in grade crossing safety improvements through the Section 130 program have reaped significant benefits in preventing collisions and saving lives. In 1975, there were 12,126 collisions at highway-rail grade crossings, resulting in 917 deaths. In 2000, the number of collisions shrank to 3,502 with 425 deaths. Even with a significant increase of nearly 16% in train traffic over the past decade, the number of fatalities has steadily declined from 698 deaths in 1990 to 425 in 2000.

Although we have made significant reductions, grade crossing collisions remain the second leading cause of all rail-related fatalities in the U.S., accounting for over 45% of deaths. Long-term safety trends show historical improvements, yet those gains have leveled off in recent years. The year 2000 actually saw an increase in grade crossing collisions and fatalities. Grade crossing collisions pose an especially significant risk to passengers on trains. Over the last five years 86%

of rail passengers killed in train accidents occurred at grade crossings. On March 15, 1999, an Amtrak passenger train struck a tractor-semitrailer in Bourbonnais, Illinois. Eleven passengers were killed and 122 persons injured. These statistics underscore the importance of maintaining a vital grade crossing improvement program.

An updated, accurate inventory of the nation's highway-rail grade crossings is essential in order to prioritize projects, allocate scarce funds and design appropriate engineering solutions to improve safety at grade crossings. A voluntary reporting system by the States and railroads has proven problematic. Congress may wish to consider other approaches.

No one solution, no one engineering fix will eliminate collisions and deaths at grade crossings. As both train traffic and vehicular traffic increase, we must collectively find solutions that will keep pace with an ever-changing transportation environment. Engineering improvements, increased funding, and public/private partnerships must combine to enhance safety at crossings and reduce the number of fatalities. DOT's goal of reducing collisions and fatalities at grade crossings can only be met by ever vigilant attention to programs that will meet our goals for the coming years.

INTRODUCTION

On September 30, 1999, as part of the Conference Report on H.R. 2084, the U.S. Department of Transportation and Related Agencies Appropriations Act, 2000, the Federal Railroad Administration (FRA) and Federal Highway Administration (FHWA) were instructed to undertake a study on highway-rail grade crossing safety. These agencies were directed to "...work with the states to identify the ten most deadly crossings in each state and identify ways that these crossings could be closed or reconfigured to reduce the dangers." (Appendix A, *Congressional Record, Page H9115*). This report is a collaborative effort by FRA, FHWA, and the states and has been produced in response to that request. The Conference Report also requested the FRA, FHWA and National Highway Traffic Safety Administration (NHTSA) to assess the effectiveness of state grade crossing safety laws. Such a study has been initiated with results anticipated by late 2002.

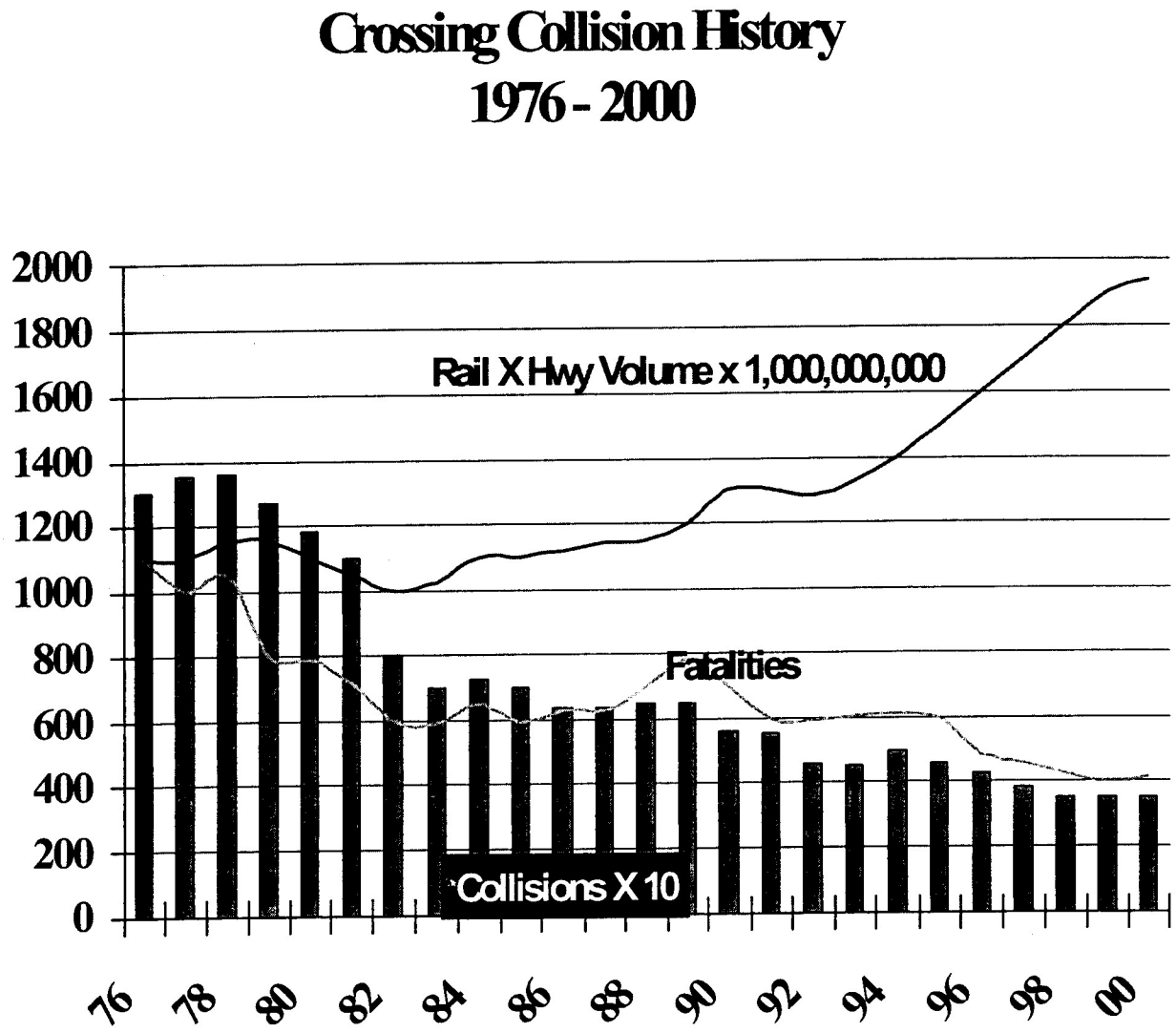
BACKGROUND

In 1972, John A. Volpe, then-Secretary of Transportation, set a goal of reducing grade crossing fatalities by 33 percent over ten years. Secretary Volpe's goal was achieved in 1982 when there were 607 fatalities as compared to 917 in 1975. Over the years there had been some level of success in improving grade crossing safety, but between the mid-1980's and early 1990's there was no significant improvement in grade crossing safety. In 1994 the U.S. Department of Transportation revitalized its efforts to improve grade crossing safety and developed its current strategy, identified in the Rail-Highway Crossing Safety Action Plan, and set its goal of reducing grade crossing fatalities by 50 percent between 1994 and 2004.

There have been many reasons for the success in reducing the number of grade crossing collisions and fatalities since the early 1970's. Congress, in establishing the Rail-Highway Crossing Program in the Highway Safety Act of 1973, created the Section 130 Program (implemented by state/local agencies and administered by the Federal Highway Administration) that continues to fund efforts to reduce collisions, injuries and fatalities at public highway-rail crossings. This includes funding the installation or improvement of signs and pavement markings, flashing light signals, automatic gates, crossing surfaces, crossing illumination, overpasses, underpasses, highway relocations and railroad relocations. Section 130 funding is also available to close crossings. The closing of crossings is the ultimate method of eliminating fatalities.

Both FRA and FHWA agree that investments made in grade crossing safety improvements through the Section 130 program have reaped significant benefits in preventing collisions and saving lives. Benefit/cost studies done by both agencies indicate that these investments have a positive benefit. The collision history also demonstrates the dramatic benefits these investments have had on the program. In 1975, there were 12,126 collisions at highway-rail grade crossings, resulting in 917 deaths. In 2000, the number of collisions shrank to 3,502 with 425 deaths. Even

with a significant increase of nearly 16% in train traffic over the past decade, the number of fatalities has steadily declined from 698 deaths in 1990 to 425 in 2000. In fact, when comparing fatalities per million train miles, the accident/incident rate went from 9.39 in 1990 to 4.84 in 2000. FHWA estimates that the Section 130 program has helped to prevent the loss of approximately 10,500 lives and prevented 51,000 injuries since the inception of the program. The following chart illustrates the reduction in collisions and fatalities from 1976 through 2000.



Although we have made significant reductions, grade crossing collisions remain the second leading cause of all rail-related fatalities in the U.S., accounting for over 45% of deaths. Long-term safety trends show historical improvements, yet those gains have leveled off in recent years. The year 2000 actually saw an increase in grade crossing collisions and fatalities. Grade crossing collisions pose an especially significant risk to passengers on trains. Over the last five years 86% of rail passengers killed in train accidents occurred at grade crossings. On March 15, 1999, an Amtrak passenger train struck a tractor-semitrailer in Bourbonnais, Illinois. Eleven passengers were killed and 122 persons injured. These statistics underscore the importance of maintaining a vital grade crossing improvement program. Adequate funding is critical to the success of the program.

The Section 130 program has been the primary source for funding grade crossing safety improvements. The program is currently funded at $155 million per year, under the 10% Safety Set Aside of the Surface Transportation Program. This level of funding has remained relatively unchanged since 1987, when the funding level was $156.8 million. The current funding level of $155 million corresponds to $102.3 million in 1987 dollars, meaning that Section 130 funding has not only failed to keep up with inflation, but has indeed dropped significantly since 1987. If the program is to remain viable, an adequate funding level must be maintained.

In 1991 Congress continued the Section 130 program in the Intermodal Surface Transportation Efficiency Act (ISTEA). ISTEA required that 10 percent of the Surface Transportation Program (STP) funds must be set aside for safety improvements, including allocations of between $140.6 and $152 million per year to be used specifically for grade crossing safety improvements under the Section 130 program. In 1999, the Transportation Equity Act for the 21st Century (TEA-21) continued funding for this program and continued to provide states with the flexibility to increase funding for grade crossing safety by giving states the ability to use safety set-a-side money for the Section 130 program.

TEA-21 includes highway-rail grade crossings as an eligible category for flexing of Optional Safety Funds within the Surface Transportation Program. Unfortunately, this eligibility is rarely used by States. In FY1999, for example, only $26.9 million of a total of $314.8 million was flexed into grade crossing safety. Flexing these Optional Safety Funds into the grade crossing safety program would be an excellent way for States to accelerate their grade crossing improvement programs, and to channel these optional safety funds into a safety program with a proven track record of preventing fatalities and injuries. These "flexed" funds may be used for grade crossing safety improvement encompassed by Section 130, up to and including grade separation.

OTHER DOT BACKGROUND ACTIVITIES
ACCIDENT PREVENTION AND HAZARD ELIMINATION

In addition to funding grade crossing improvements, investing in grade crossing safety research,

and promulgating rules, regulations, and guidance, the Department concentrates on three main areas to prevent grade crossing collisions: Education, Engineering, and Enforcement. A major partner in this effort is Operation Lifesaver, Inc. (OLI), which plays a premier role in crossing safety as a nationwide highway-rail crossing education program and highway-rail grade crossing safety advocate. This non-profit organization promotes the basic principles of highway-rail safety, utilizing over 1,700 volunteer presenters in forty-nine states to carry its lifesaving message to audiences of all ages. In FY 2001, FRA and FHWA provided almost $1.5 million to OLI in support of its efforts. Additionally, many of FRA's railroad safety inspectors, and all grade crossing managers and assistant managers are certified OLI presenters.

Other educational programs include the Department's "Always eXpect a Train" marketing campaign, which broadcasts thought-provoking highway-rail safety messages in a variety of media formats. A model driver's license manual developed by the National Highway Traffic Safety Administration (NHTSA) contains a special section on highway-rail grade crossings, and targeted outreach ensures that commercial motor vehicle operators are aware of the importance of avoiding a collision between trucks and trains.

In addition to the Section 130 program, the Department is studying and deploying newer technologies to improve grade crossing safety. These include: "second train coming" signs to warn motorists of a train approaching on a second track; four-quadrant gates to prevent motorists from going around lowered crossing gates; new train detection methods for automatic warning devices; and retro-reflective tape on trains to help prevent night collisions. The Department also supports testing and demonstration of elements that may have merit for inclusion in Intelligent Transportation Systems (ITS) and is sponsoring the development of ITS standards for highway-rail intersections.

Enforcement is another important method for preventing highway-rail grade crossing collisions. The FRA's Law Enforcement Liaison Program helps bridge the gap between the FRA and law enforcement agencies by having an officer conduct outreach programs to the law enforcement and judicial communities. Outreach to the judicial community will stress the importance of enforcing existing laws pertaining to highway-rail crossing safety. Federal regulations went into effect in 1999 that increased penalties for grade crossing traffic violations by commercial drivers license (CDL) holders. These new regulations require thirty day suspensions of the CDL for the first offense and progressively stricter sanctions for repeat violators.

In addition, FHWA has a Safety Engineer in each of its State Division Offices and Resource Centers whose responsibilities include grade crossing safety. The FHWA also has in each of its Resource Centers safety engineers who are also responsible for grade crossing safety. These individuals contribute significantly to the combined efforts of the US DOT's efforts to address highway-rail grade crossing safety.

SPECIAL FACTORS AND CONSIDERATIONS

As previously stated, there are many factors that may be considered when determining the potential risk at highway-rail grade crossings and how best to improve crossing safety at specific locations. This section describes two such issues.

Private Crossings

As of 2000 there are 98,369 private crossings in the U.S. Four hundred seventy of the 3,502 vehicle-train collisions in 2000 occurred at private crossings resulting in 56 of the 425 fatalities suffered at all crossings. One such incident underscores the serious hazards associated with private crossings, especially those along passenger train routes. On June 18, 1998, a Northern Indiana Commuter Transportation District (NICTD) 2-car passenger train struck the second trailer of a longer combination vehicle that consisted of a tractor pulling two flat-bed semi-trailers loaded with steel coils at a private highway-rail grade crossing in Portage, Indiana. This collision resulted in three fatalities and five minor injuries to the 13 passengers and 2 crew members on board. Approximately 41 passenger trains (27 NICTD commuter trains and 14 Amtrak) and 60 to 70 freight trains operated by 7 railroads (not including switching movements) travel daily across this private crossing, which is the entrance to a steel company.

Private crossings are categorized as either farm, residential, recreational, or industrial. Many of these industrial or commercial crossings, and recreational crossings in public parks, are open for the public to use. However, most of them do not have basic signage (cross bucks and advance warning signs) posted to notify motorists that a railroad track is going to cross the roadway ahead. Only a few states, including Alaska and California, have acted to standardize responsibilities and treatments for private crossings. Federal funding for safety improvements are limited to public crossings, except for funding that has been set aside for the elimination of grade crossing hazards at public and private crossings on high-speed rail corridors.

In the NTSB's safety study Safety at Passive Grade Crossings, Volume 1: Analysis, the following recommendation was made to the U.S. Department of Transportation: "Determine within 2 years, in conjunction with the States, governmental oversight responsibility for safety at private highway-rail grade crossings and ensure that the traffic control on these crossings meets the standards contained in the Manual of Uniform Traffic Control Devices" (H-98-32). The Federal Highway Administration and most state and local highway agencies lack jurisdiction over private crossings. Though FHWA has not proposed previous legislation, it encourages the concept of applying MUTCD standards at private highway-rail grade crossings.

National Highway-Rail Crossing Inventory Data Files

Every highway-rail crossing in the United States has a unique ID number (six digits followed by a letter) assigned to each crossing and recorded in the National Highway-Rail Crossing

Inventory. These include public, private, pedestrian, at grade, and grade-separated crossings. The DOT crossing ID number was created so that local authorities, State and Federal agencies, and railroad companies would have a common method to refer to a particular crossing.

The Inventory Data File is a record of grade crossing characteristics (location, physical, and operational) that provide information for the administration and statistical analysis of crossings. This information is reported to the FRA on the United States Department of Transportation-Association of American Railroads (U.S. DOT-AAR) Crossing Inventory Form. FRA is the custodian of the database; however, each state and railroad is responsible for providing the appropriate information and does so on a voluntary basis.

Inventory and highway-rail crossing collision data (Railroad Accident/Incident Reports System) are used for a variety of purposes. The inventory is the only national database containing information on highway-rail grade crossings. The data is an integral part of the USDOT's accident prediction methodology. Some of the uses of the inventory include the development of Federal grade crossing safety programs; funding alternatives for crossing improvements, studies related to railroad safety programs, effectiveness of warning devices, high-speed railroad corridors, collision costs, public awareness and driver training, and other safety program development and research opportunities.

Unfortunately, the inventory data have not been kept up-to-date. Currently, information is provided on a voluntary basis, and the accuracy varies from state to state and from railroad to railroad. Along with missing information for some crossings, in some cases the existing database does not accurately reflect the current status of a crossing. For example, the average age of the annual daily vehicle traffic (AADT) data and day and night through trains data is twelve years old. Much of the data is more than twenty years old and some is even thirty years old.

With the increase of residential and industrial development near railroad tracks and an increase in registered vehicles and train movements in recent years, it is highly unlikely that the crossing inventory for many regions accurately reflects current traffic volumes. When the data are updated, the accident prediction list also changes. If this information is to be used to make sound decisions when investing Federal funds, a law is needed that would mandate initial reports and updates to key data elements in the National Highway-Rail Crossing Inventory by both the States and the railroads. Both FRA and FHWA have proposed legislation that would require periodic updating of the inventory, however no action has been taken by Congress (Appendix D).

Enacting a statutory requirement will result in more current data on highway and train traffic at crossings and provide a more accurate basis for identifying high-risk crossings that should be improved or eliminated and therefore receive Federal crossing safety funds. Such a requirement will also permit a more cost-effective use of finite Federal funds.

METHODOLOGY

FRA and FHWA wanted to find the best method for determining the ten highest risk crossings in each state. Each state has its own priority ranking system and decision-making process for determining where Federal funds will be spent for grade crossing safety improvements. Allowing each state to determine its top ten crossings using disparate methodologies would result in individual state rankings that would be virtually impossible to analyze on a nationwide basis. Therefore, FRA and FHWA developed a methodology that could be applied for all states in the selection process. The following discusses the different methodologies considered in ranking the crossings consistently for all states.

Fatal Collisions

The first method considered was to use the number of fatal incidents as the ranking factor. This methodology had the advantage of being very easy to calculate as railroads are required to report every highway-rail grade crossing collision to the FRA. FRA's Railroad Accident/Incident Reports System (RAIRS) database could be searched for fatal collision incidents by individual crossings. A report based on historical records could then be created that would rank crossings by the total number of fatal crashes. This analysis would provide a historical view of fatal collisions that could be used to determine the crossings included in the study.

However, using the number of fatal collisions as the only determining factor presents several problems. While fatal crossing collisions occur far too often, they do not occur often enough to be a statistically valid measuring tool. It would also be necessary to go back many years in order to accumulate enough incidents to make ranking decisions. Using the state of Texas as an example, ranking crossings by the number of fatal collisions for the past fifteen years results in two crossings having four fatal incidents, two crossings having three fatal incidents, and thirty-three crossings having two fatal incidents. This clearly illustrates the difficulty in using only the number of fatal incidents to determine the top ten crossings.

The use of fatal collisions as the only ranking factor is further complicated because, as older historical data are gathered for each crossing, it becomes more likely that collisions will have occurred under varying conditions at the crossings identified. For example, data collected from 15 years ago at many of the crossings would have shown crossings without lights and gates. Data collected from five years ago would have identified the same crossings with lights and gates. Many of the older fatal collision reports would therefore not reflect the conditions that actually exist at the crossings today. To include collisions that do not reflect the current status of the crossings would not produce a valid rating system. Finally, using fatal collisions as the only determining factor relies on the false assumption that past collision history is the best predictor of future events. These reasons led to the rejection of using the number of fatal collisions as the measurement tool.

Total Fatalities

The second method considered was to use the total number of fatalities at each crossing as the determinant factor in a ranking system. The same problems were encountered using this method as using the number of fatal incidents previously discussed. Another complicating factor was the incidence of collisions involving multiple fatalities. Would a crossing that had one collision with five people fatally injured be considered more hazardous than a crossing that had four single fatality incidents? The number of occupants in a vehicle is a random element and not related to the degree of hazard at the different crossings. This method was also rejected.

Accident Prediction Formula

The third method considered was to use the Department's Accident Prediction Formula (APF) to rank the crossings. APF uses a number of physical and operational characteristics of crossings, coupled with five-year collision histories to determine the probability of a collision occurring in a subsequent year. The formula includes the following factors: number of trains, number of vehicles, train speed, number of main tracks, type of warning device, paved or unpaved highway, number of highway lanes, and collision history . The formula was created by using nonlinear multiple regression techniques and is a well-recognized and widely used accident prediction formula. Many states use it as part of their priority ranking systems for crossing improvements. In addition, those states that do not use it are at least familiar with the formula.

While APF is recognized as a valid method for predicting the probability of a collision occurring at a specific crossing, there are a few issues associated with this method that are subject to debate. APF uses two independent data bases as the source for its information — the USDOT Crossing Inventory (for physical and operational data) and RAIRS for collision history. Therefore, the values calculated by the formula are only as good as the information contained in the databases. The data in the RAIRS should be accurate as railroads are required to report crossing collisions; however, the crossing inventory is a voluntary system requiring input from both the states and the railroads. FRA has recognized that in some cases the inventory contains errors that may affect the outcome of APF calculations. Another issue identified as problematic is that APF predicts the probability of a collision occurring, not the probability of a fatality. The fact that a collision occurs does not necessarily mean that there is a resulting fatality. If this were the case, there would have been at least 3,502 fatalities (the total number of highway-rail grade crossing collisions in 2000) last year instead of the 425 reported. FRA therefore determined that using the APF does not provide the information that Congress is seeking.

Fatal Accident Prediction Formula

The fourth method considered was the US DOT's Fatal Accident Prediction Formula (FAPF). This formula is a derivation of the APF and predicts the probability of a fatality occurring at a crossing by multiplying the probability of a collision occurring at the crossing (as calculated by the APF) by the probability of a fatality occurring in that collision. The probability of a fatality

occurring in a vehicle-train collision has been calculated using nonlinear multiple regression techniques. The following factors are taken into consideration in determining whether a fatality occurs: maximum train speed, through trains per day, switch trains per day, and urban verses rural crossings. Train speed is the factor weighed most heavily in determining if a fatality occurs.

One of the drawbacks of the FAPF is that it also relies upon information obtained from the national crossing inventory database. This means that like the APF, the FAPF calculations are only as good as the data provided to FRA.

Prior to deciding whether to use the APF or FAPF, the Department compared the results of the two different formulas. Lists of thirty crossings with the highest prediction values using both formulas were created for five trial states: Illinois, North Carolina, Ohio, South Dakota, and Wyoming. These states were chosen as representative of states with large and small population bases and varying degrees of railroad activity. It was found that the FAPF lists contained more passive crossings (crossings equipped with crossbucks only) than the APF lists. The FAPF lists also contained more crossings with higher train speeds than the APF lists. In fact, in four of the five FAPF lists, there were no crossings that had maximum trains speeds of less than 25 mph. The APF lists, however, had an average of seven crossings per state that had maximum train speeds of less than 25 mph.

Additionally, in the three test states that had Amtrak trains, the FAPF lists contained more crossings used by Amtrak trains than the APF. It should be noted that not only are train crews and occupants of the motor vehicles endangered by vehicle-train collisions, but so are passengers of trains. There can be no better example of this than the 1999 incident in which the City of New Orleans Amtrak train struck a truck tractor-semitrailer truck in Bourbonnais, IL and 11 passengers lost their lives. Use of the FAPF resulted in identifying crossings with more passenger trains, higher train speeds, and fewer automated warning devices.

For these reasons the FRA and FHWA decided that using the FAPF would be the best method to rank the crossings in each state and would result in identifying the crossings with the highest risk of fatalities. The problems caused by using inaccurate data in the inventory could be addressed by requesting that the states provide updated inventory information. Once the inventory information was updated, the FAPF would provide a measurement tool that would rank the crossings in the state according to the probability of a fatal collision occurring. All things considered, the FRA and FHWA felt that this method would be the most responsive to Congress's request and would provide a uniform method for evaluating crossing hazards across the nation.

FRA and FHWA also recognized that many factors are used to assess risk at grade crossings and not all of these factors can be captured by a prediction formula. Some other things that should be considered at each crossing are sight distances (the ability to see down the track while approaching the grade crossing), school bus traffic, passenger and commuter rail operations, and

storage space (distance between the roadway stop line at the highway-highway traffic intersection and a railroad track). Many of these factors can only be determined by site visits at the local level. As the states were in a better position to either know of these conditions or determine them by site visits, the FRA and FHWA felt it would be appropriate to ask the states to volunteer additional crossings to be included in the study.

For the foregoing reasons, the FRA and FHWA determined to use the FAPF as the most appropriate means of determining the ten crossings that had the highest probability of having vehicle-train collisions resulting in fatalities. This would provide a uniform method of looking at risk for all of the states. States were also asked to nominate crossings they felt should be included in the study. This action provided states the flexibility to use their knowledge of local conditions that might have an impact on the ranking but which may not be included in the formula.

ANALYSIS

After determining the most appropriate method to analyze crossing data, a letter dated February 18, 2000 (Appendix B) was sent to each state's Department of Transportation Director, State Section 130 Contact, and State Grade Crossing Inventory Contact. In addition, FRA Regional Administrators and FHWA Division Administrators were sent copies of the letter to foster open communication between all of the involved Federal and state agencies. The letter explained the congressional request and stated that the FRA's Crossing and Trespasser Regional Manager along with the FHWA's Division Safety Engineer would discuss possible mitigation measures for each crossing.

Each letter also included:

- A list of the 30 crossings in that state with the highest Fatal Accident Prediction Formula values and
- The current US DOT Inventory Report for each of the 30 crossings.

The states were asked to perform the following actions:

- Review the FAPF list and inventory reports,
- Make any needed corrections to the inventory report to reflect the current conditions at the crossings,
- If the state so desired, provide a list of additional crossings that the state felt had the greatest potential for a fatal collision, and
- Return all materials to FRA within 30 days.

If there was no response from a state, the information in the FRA database would be used in the report on behalf of that state. Finally, the states were informed that a report would be prepared

listing the ten most hazardous crossings, proposed mitigation measures for those crossings, and cost estimates for those mitigation measures for both the FRA crossings and the state's crossings (if provided).

Any corrections of the initial 30 crossings and any state submitted crossings, which were received in the allotted time, were entered into the US DOT Inventory. The Fatal Accident Prediction Formula was used again, and the ten crossings in each state with the highest probability of having a fatal collision were selected. This new list benefitted from the use of corrected data as provided by the states.

A second letter (Appendix C) containing the new list of the ten crossings with the highest fatal collision probability values was sent out as before. Where states identified crossings they felt had higher FAPF values because of updated inventory information not possessed by FRA/FHWA, those crossings were provided in a separate list and included in mitigation reports. The letter again explained the congressional request and requested the state's assistance in providing the needed information. It stated that the FRA's Crossing and Trespasser Regional Manager and FHWA's Division Safety Engineer office staff would be contacting each of the states to discuss the mitigation measures. The states were asked to provide the following information for each of the ten crossings selected by FRA as well as any state nominated crossing:

- Type of mitigation proposed,
- Brief description of the proposed mitigation,
- Rough cost estimate for the mitigation, and
- Brief explanation, if not proposed, of why closure, separation or relocation were not recommended.

RESULTS

The responses from the states to the initial request for updating their inventory sheets for the thirty crossings were received in a variety of formats. Some states provided what was requested while others suggested ways to improve it. Overall, forty-four states responded to the initial request and provided updated inventory information. Several states provided information too late to be included in the final computer analysis used to generate the list of ten crossings in each state with the highest fatal accident prediction values. In these cases, as in the instances where the states failed to provide any updated inventory information, the list of the top ten crossings was generated using data currently on file at FRA. Twelve states took advantage of the offer to include additional crossings that were not on the list provided.

There was a certain amount of concern expressed about the study. For example, one state was concerned with the use of the US DOT inventory data stating that it was not correct and would

ultimately change the results of the study. Another state, also displeased with the inventory, suggested that FRA update the entire inventory before using inaccurate data. Yet another state was concerned because four of the crossings on its list had never experienced a fatality. A problem was revealed when FRA/FHWA verified inventory data for a completely different project. In that case, FRA inspected 92 randomly selected crossings in a major metropolitan area. Based on the inspection of those crossings, FRA discovered that the US DOT Grade Crossing Inventory contained inaccurate data for 67 of the 92 crossings, including 39 that no longer existed.

These kinds of concerns are not new. Both FRA and FHWA have forwarded legislation to the Congress to require states and railroads to submit their data so that future records will be accurate (Appendix D).

The FRA/FHWA staff, concerned about the inaccuracy of grade crossing inventory data, asked the states to update the inventory for the original thirty crossings in order to increase the probability of a more accurate listing of those crossings in each state with the greatest risk. FRA/FHWA sought to balance the possible burden on states that would have to update data for a large number of crossings with the necessity of having accurate data on the crossings that were most likely to make the list of the 10 most hazardous crossings. It was determined that an analysis that included thirty crossings per state would accomplish that goal.

Some states also expressed concern about the use of the FAPF. As indicated previously, some factors not included in the FAPF are difficult to quantify,, such as sight distance and quality of crossing surface. Others, such as school bus traffic, and the number of passenger trains are not included in the prediction formulas. However, the impact of all these factors is accounted for in part by including the five year collision history.
The second request for mitigation suggestions received little or no written disagreement. The states seemed reasonably familiar with the study upon receipt of the second request, since FRA/FHWA representatives had already approached them. Many states eagerly submitted mitigation information.

Some states were reluctant to participate in providing initial proposals because they felt that they might have increased liability by being part of this process. These states were concerned that, if they publicly identified crossings with high risk, identified mitigation measures, and did not take steps to immediately remedy the situation, they could be held at fault in the event of a collision. In instances where a state chose not to participate, FRA and FHWA field personnel worked to provide suggested remedies. This was accomplished with the understanding that doing so does not take the place of a diagnostic review of the crossing. These suggestions are also made without the knowledge of local conditions that the states have.

Mitigation reports have been received for forty states. These reports follow and are grouped in two sections. The first section lists the states for which state-identified mitigation measures have been received. The second section contains the states that have not submitted mitigation

reports. The crossings are listed by US DOT Inventory Crossing number. If additional crossings were nominated by the state, these are shown in the second section of the report. Implementation efforts identified by states include a whole range of initiatives that may be as simple as replacing crossbucks and adding advanced warning signs for $2,000 or as complex and expensive as $1 billion to upgrade an entire rail corridor. The total cost of mitigation identified by the states reporting mitigation costs is $2,323,841,799. Individual state costs range from a low of $290,000 to a high of $1.3 billion.

OBSERVATIONS

Several conclusions can be drawn from this study. It is evident from the state responses, regardless of whether or not they approved of the study's concept and method, that they take their safety role seriously. It is evident that a great deal of thought went into the responses and that this undertaking has been a positive exercise for those most directly involved in improving crossing safety.

States used various approaches to this study. One approach focused on mitigating risks based on the availability of Section 130 funding. This approach rarely encouraged crossing closure because of the resistance that states encounter from localities or individuals when attempting to close grade crossings. This approach also renders grade separations virtually impossible because of the high cost associated with building overpasses and underpasses. For many states the cost of an overpass/underpass exceeds the total amount of Section 130 funds it receives in a single year. (See Appendix E for FY 2001 Section 130 Allocation Tables). Other states have pursued an aggressive closure and grade separation approach and have not allowed the lack of sufficient Section 130 funding to deter them from pursuing such projects.

Many of the crossings on the FRA/FHWA-furnished list have already been addressed by the states either through their Section 130 programs or by special projects. Some of the crossings have already been improved or the improvements are in various stages of implementation.

CONCLUSION AND RECOMMENDATIONS

DOT and its partners have made significant strides in reducing the number of collisions and fatalities at grade crossings since the early seventies. In 1975, there were 12,126 collisions at highway-rail grade crossings, resulting in 917 deaths. In 2000, the number of collisions shrank to 3,502 with 425 deaths. Even with a significant increase of nearly 16% in train traffic over the past decade, the number of fatalities has steadily declined from 698 deaths in 1990 to 425 in 2000. In fact, when comparing fatalities per million train miles, the accident/incident rate went from 9.39 in 1990 to 4.84 in 2000. Although we have seen significant reductions, grade crossing collisions remain the second leading cause of all rail-related fatalities in the U.S., accounting for over 45% of deaths. DOT and its partners have made significant progress in improving grade

crossing safety through numerous education, engineering and enforcement initiatives. The "Three E's", working together, have become a standard recipe for success. While each of the three ingredients is equally important in sustaining, and even improving our safety record at grade crossings, new commuter rail service, more freight service, and an increase in vehicular traffic necessitate a commitment to increased funding for grade crossing improvements.

Today, with emerging technologies and the need to maintain and improve the existing infrastructure, engineering improvements at grade crossings must play a vital role in the success of these programs. Many of these initiatives succeed through supporting new technological developments and innovative approaches to enhancing safety at grade crossings. Some States are leading the charge here, and DOT fully supports these efforts. For example, North Carolina's "Sealed Corridor" project employs the use of four-quadrant gates, longer gate arms, traffic channelization devices, video enforcement, grade separations and crossing closures in a corridor approach to reduce the risk of collisions and fatalities at crossings. Texas and Pennsylvania are participating in projects involving emergency notification systems at grade crossings. California is testing the feasibility of in-pavement illuminated devices at grade crossings to enhance warning systems at crossings.

All of these innovative projects, plus the $2.3 billion of mitigation projects identified in this report, require funding. The Section 130 program has been the primary source for funding grade crossing safety improvements. The program is currently funded at $155 million per year, under the 10% Safety Set Aside of the Surface Transportation Program. This level of funding has remained relatively unchanged since 1987, when the funding level was $156.8 million. The current funding level of $155 million corresponds to $102.3 million in 1987 dollars, meaning that Section 130 funding has not only failed to keep up with inflation, but has indeed dropped significantly since 1987.

TEA 21 includes highway-rail grade crossings as an eligible category for flexing of Optional Safety Funds within the Surface Transportation Program. Unfortunately, this eligibility is rarely used by States. In 1999, for example, only $26.9 million of a total of $314.8 million was flexed into grade crossing safety. DOT encourages flexing these Optional Safety Funds into the grade crossing safety program where crossing improvements warrant priority. This is an excellent way for States to accelerate their grade crossing improvement programs, and to channel these Optional Safety Funds into a safety program with a proven track record of preventing fatalities and injuries. These "flexed" funds may be used for grade crossing safety improvements encompassed by Section 130, up to and including grade separation.

One of the most important diagnostic tools needed in order to prioritize grade crossing improvement projects, allocate scarce funds and design the appropriate engineering solutions is an updated, accurate inventory of the nation-wide highway-rail grade crossing inventory. For example, some crossings listed as active in our inventory have actually been closed, while others have been upgraded. Without a clear picture of the current status of grade crossings it is impossible to plan appropriately–both from an engineering and funding perspective. A voluntary

reporting system by the States and railroads has failed to keep pace with changes to the inventory. A mandatory reporting system should be adopted. Congress is urged to consider legislation such as that attached here as Appendix "D".

No one solution, no one engineering fix will eliminate collisions and deaths at grade crossings. As both train traffic and vehicular traffic increase, we must collectively find solutions that will keep pace with an ever-changing transportation environment. Engineering improvements, increased funding, and public/private partnerships must combine to enhance safety at crossings and reduce the number of fatalities. DOT's goal of reducing collisions and fatalities at grade crossings can only be met by ever vigilant attention to programs that will meet our goals for the coming years.

10 CROSSINGS WITH THE HIGHEST FATAL ACCIDENT PREDICTION FACTOR (FAPF) VALUES

MITIGATION REPORTS RECEIVED FROM STATES

ALABAMA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
351270S	BUTLER	GEORGIANA	ROSE	XB	GATES
351271Y	BUTLER	GEORGIANA	MILL ST	XB	GATES
351342T	ESCAMBIA	FLOMATON	PALAFOX ST	XB	TO BE DETERMINED
351457M	MOBILE	BROOKLEY AFB	KOOIMAN RD	XB	GATES
726749Y	CALHOUN	ANNISTON	MILLIGAN ST	XB	GATES
726755C	CALHOUN	ANNISTON	KELLY LYNN DR	XB	GATES
731788A	MADISON	HUNTSVILLE	DUG HILL RD	XB	GATES
731844E	LIMESTONE	DECATUR	BIBB GAARETT RD	XB	GATES
831195J	LEE	AUBURN	DEAN RD	FL	SIGNALS
877346B	ESCAMBIA	ATMORE	COWPEN CREEK RD	XB	GATES

Total Mitigation Cost =>

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

ALASKA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
868263N	ANCHORAGE	ANCHORAGE	SPENARD RD	GT	NONE PROPOSED
868311B	MATANUSKA-SUSITNA	PALMER	GLENN HWY	GT	SURFACE REPAIR/GRADE SEPARATION
868318Y	MATANUSKA-SUSITNA	WASILLA	GOOSE BAY RD	GT	GRADE CROSSING SIGNAL/MEDIAN IMPROVEMENTS
868323V	MATANUSKA-SUSITNA	WASILLA	MEADOW LAKES RD.	GT	NONE PROPOSED
868325J	MATANUSKA-SUSITNA	HOUSTON	CHERI LAKE RD	XB	GATES
868332U	MATANUSKA-SUSITNA	WILLOW	FISHOOK-WILLOW RD	GT	NONE PROPOSED
868334H	MATANUSKA-SUSITNA	WILLOW	HIDDENHILLS ACCESS	XB	GATES
868345V	MATANUSKA-SUSITNA	CANTWELL	PARKS HWY	FL	GRADE SEPARATION (SCHEDULED FOR 2001)
868427C	FAIRBANKS NORTH STAR	FAIRBANKS	3 MILE GATE	XB	NONE PROPOSED
868453S	FAIRBANKS NORTH STAR	NORTH POLE	RICHARDSON HWY.	GT	GRADE SEPARATION/ CLOSURE

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

ARKANSAS
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
330454J	POLK	MENA	MENA ST	FL	* GATES
425775G	HOT SPRING	PERLA	C.R. 311	XB	* GATES
437661D	CROSS	WYNNE	WILSON	XB	* CLOSURE
437964M	WHITE	BEEBE	BOWMAN	XB	* GATES
437983S	WHITE	KENSETT	DANDRIDGE	FL	* GATES
437986M	WHITE	KENSETT	WESTPOINT	XB	CLOSURE/UPGRADE * ADJACENT CROSSING
437987U	WHITE	KENSETT	CORD 414	XB	* GATES
438640N	JACKSON	GRAND GLAISE	CORD 4	XB	REPLACE CROSSBUCK * AND ADD AWS
439838A	NEVADA	EMMET	ELM	XB	* GATES
672557D	POINSETT	TRUMANN	CO RD I 19	XB	* CLOSURE

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates .
HS = Highway Sign
NO = None

ARIZONA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
025017A	NAVAJO	HOLBROOK	NAVAJO BLVD (S77)	GT	
025131A	COCONINO	FLAGSTAFF	ENTERPRISE RD.	GT	SIGNALS, WIDEN ROAD
025170R	COCONINO	BELLEMONT	GARLAND PRAIRIE	GT	UPGRADE ROUNDELS
025419G	MARICOPA	GLENDALE	55TH AVE&MD.	FL	
025425K	MARICOPA	PHOENIX	35TH AVENUE	FL	
025430G	MARICOPA	PHOENIX	27TH AVE	FL	
025590V	MARICOPA	GLENDALE	BETHANY HOME RD	GT	
025594X	MARICOPA	GLENDALE	51ST AVE.	FL	
025617C	MARICOPA	GLENDALE	THOMAS RD	FL	
741101G	PIMA	TUCSON	INA RD	GT	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

CALIFORNIA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
026027J	SAN BERNARDIN	AMBOY	SALTUS ROAD	XB	CLOSURE
026560G	ORANGE	ANAHEIM	IMPERIAL HWY	GT	GRADE SEPARATION
026572B	ORANGE	ANAHEIM	ORANGETHORPE AVE	GT	UPGRADE AWS, SURFACE AND MEDIANS
026743A	ORANGE	SANTA ANA	MCFADDEN STREET	GT	ADDITIONAL FL
027656A	LOS ANGELES	SANTA FE SPRINGS	ROSECRANS BLVD	GT	UPGRADE AWS, MEDIANS AND CLOSE STREETS
028586R	FRESNO	FRESNO	SHAW AVE	GT	GRADE SEPARATION (SCHEDULED 2001)
028767V	STANISLAUS	RIVERBANK	PATTERSON RD	GT	UPGRADE AWS AND SURFACE
745997Y	LOS ANGELES	LOS ANGELES	COLDWATER CNYN RD	GT	AWS, IMPROVE SIDEWALK AND TURNING LANE, AND RELOCATE POLE
746052E	LOS ANGELES	LOS ANGELES	VAN NUYS BLVD	GT	4-QUADRANT GATES
765937U	MERCED	MERCED	HEALY ROAD	GT	CLOSURE

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
761132K	ORANGE	ANAHEIM	WEST ST. & SANTA ANA ST.	RECORD NOT FOUND	
027650J	LOS ANGELES	SANTA FE SPRINGS	LOS NIETOS RD.	GT	
028688J	MERCED	FLUHR	BELLEVUE RD.	GT	
746064Y	LOS ANGELES	SUN VALLEY	SUNLAND BLVD.	GT	
746934X	LOS ANGELES	POMONA	EAST END AVE	GT	
751527E	SOLANO	BENICIA	PARK RD.	XB	
760717G	RIVERSIDE	COACHELLA	50TH AVE	FL	
865215N	STANISLAUS	MODESTO	9TH ST AT P	XB	
865219R	STANISLAUS	MODESTO	L ST. - STATE 132	XB	

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

COLORADO
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
003288U	OTERO	LA JUNTA	CR Z WO US 350	XB	GATES
003375X	OTERO	ROCKY FORD	CR 2100 SO US 50	XB	GATES
057190R	ADAMS	ROCKY MT ARSENAL	96TH AVE WO SH 2	GT	SEPARATION
057262S	MORGAN	BRUSH	CR 25 SO US 34	XB	GATES
245018N	LARIMER	BERTHOUD	CR 2E-W OF CR 15	XB	GATES
253607Y	MESA	PALISADE	CR 36 NO US 6	XB	GATES
804433D	ADAMS	THORNTON	104THAVE EO US 85	GT	GRADE SEPARATION
804464C	WELD	FORT LUPTON	4THST WOPACIFICAV	FL	GATES
804481T	WELD	BRIGHTON	CR4 EO CR27	XB	GATES
804846X	WELD	GREELEY	CR 66 EO US 85	XB	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

FLORIDA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
628138P	PALM BEACH	WEST PALM BEACH	SUMMIT BLVD.	GT	Barrier Walls
272604E	DADE	NORTH MIAMI BEACH	N.E. 163RD ST.	GT	Curbing
272910W	PALM BEACH	BOCA RATON	GLADES RD	GT	4-Quadrant Gates
625419N	POLK	LAKE WALES	SR 60	GT	
628155F	PALM BEACH	DELRAY BEACH	ATLANTIC AVE.	GT	Barrier Walls, Gates
628160C	PALM BEACH	DELRAY BEACH	LINTON BOULEVARD	GT	Barrier Walls
628163X	PALM BEACH	BOCA RATON	S.E.YAMATO RD.	GT	Barrier Walls
628171P	BROWARD	POMPANO BEACH	HAMMONDVILLE RD.	GT	Barrier Walls, Gates
628183J	BROWARD	POMPANO BEACH	NW 62ND ST.	GT	Barrier Walls, Gates
628290Y	BROWARD	HOLLYWOOD	HALLANDALE BEACH	GT	4-Quadrant Gates

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

GEORGIA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
729202R	HOUSTON	BONAIRE	AZALEA AVE-BNAIRE	XB	CLOSURE
632469J	CHATHAM	SAVANNAH	GODLEY RD	XB	CLOSURE
638150Y	MADISON	COLBERT	LEM EDWARDS RD	XB	GATES
638341J	DOOLY	VIENNA	COTTON ST	FL	GATES
638365X	DOOLY	BYROMVILLE	POPULAR SPRINGS	XB	GATES
717801C	HALL	OAKWOOD	TUMBLING CIRCLE	XB	CONSULTING DISTRICT OFFICE
718062K	FULTON	ATLANTA	MCDONOUGH BLVD	FL	GATES
726690L	HARALSON	BREMEN	TALAPOOSA ST	XB	GATES
726704S	HARALSON	TALLAPOOSA	TALAPOSA ST	XB	CLOSURE
732764P	JEFFERSON	WADLEY	DONAVAN ST	XB	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

HAWAII
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
311009V	MAUI	LAHAINA	KAPUNAKEA	XB	None
311010P	MAUI	LAHAINA	FLEMING	XB	None
311011W	MAUI	LAHAINA	WAHIKULI	XB	None
311012D	MAUI	LAHAINA	KANIAU	XB	None
311013K	MAUI	LAHAINA	CIVIC CENTER	XB	None
311014S	MAUI	LAHAINA	PUUKOLII	XB	None

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

Note: State reported that no mitigation was needed at any of the crossings since the operating speeds were low (10 mph) and existing controls are determined to be adequate.

IDAHO
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
058712P	BONNER	SANDPOINT	SAMUELS RD.	XB	GATES AND CWT
058866A	KOOTENAI	RATHDRUM	MCCARTNEY ST.	FL	CLOSURE
058867G	KOOTENAI	RATHDRUM	MILL ST.	FL	GATES AND CWT
812405V	MINIDOKA	MINIDOKA	700E	XB	GATES AND CWT
812977W	ELMORE	MOUNTAIN HOME	S. 18TH E.	XB	GATES, CWT, AND RAISE GRADE
819294E	ELMORE	MOUNTAIN HOME	SIMCO RD.	XB	GATES, CWT, AND IMPROVE APPROACH
819342S	CANYON	NAMPA	COLUMBIA\LOCUST	XB	HUMPED CROSSING REMOVED
819345M	CANYON	NAMPA	ROBINSON BLVD.	XB	GATES AND CWT
819346U	CANYON	NAMPA	HAPPY VALLEY RD	XB	GATES AND CWT
819441P	PAYETTE	PAYETTE	N.W. 10TH	XB	GATES,CWT, RELOCATE CANAL AND RAISE GRADE

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
819350J	CANYON	NAMPA	AMITY	GT	
819403F	WASHINGTON	WEISER	AIRPORT RD.	XB	

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NOTE: CWT (Constant Warning Time)

INDIANA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
522584M	LA PORTE	ROLLING PRAIRIE	PRAIRIE ST	FL	Lights, Gates
326879R	LAKE	EAST CHICAGO	DICKEY ROAD	FL	
341292P	WHITE	BROOKSTON	1250S	XB	Lights, Gates
342287W	VIGO	TERRE HAUTE	FERREE RD	XB	Lights, Gates
478437F	WHITLEY	SOUTH WHITLEY	C.R. 600 E	XB	Lights, Gates
478506L	KOSCIUSKO	MENTONE	CR 1000W	XB	Lights, Gates
478683R	LAKE	GRIFFITH	COLFAX RD	FL	Lights, Gates
509591S	DE KALB	WATERLOO	PENETON ST	XB	Lights, Gates
522564B	ST JOSEPH	SOUTH BEND	GRANDVIEW AVE	GT	
522579R	LA PORTE	NEW CARLISLE	CNTY LINE (900E)	FL	Lights, Gates

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

IOWA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
190388K	CLINTON	DE WITT	6TH AVE	GT	ADDITIONAL GATES
190564F	BENTON	BLAIRSTOWN	23RD AVE	XB	REWORKING APPROACH AND RESURFACING
190581W	BENTON	BELLE PLAINE	7TH AVE	GT	REPLACE GATES
190702S	STORY	AMES	DUFF AVE	GT	SEPARATION
190715T	BOONE	AMES	COUNTY ROAD	XB	GATES
190720P	BOONE	BOONE	95S NW-C 29-84-25	GT	SIDELIGHT, LED AND WALKOUT CANTILEVER
190721W	BOONE	BOONE	COUNTY ROAD	XB	GATES
190997L	CRAWFORD	DENISON	IOWA BEEF RD	GT	AWS AND ESCAPE LANE
191039D	HARRISON	DUNLAP	COUNTY ROAD	XB	GATES
865575L	SCOTT	PRINCETON	285TH AVE	XB	GATES/SURFACING

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NOTE: AWS (Advanced Warning System)

KANSAS
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
005996A	OSAGE	BURLINGAME	CO. ROUTE 1540	XB	GATES
006200E	FRANKLIN	WELLSVILLE	OHIO TERRACE	XB	CLOSURE
009593A	BUTLER	AUGUSTA	TOWNSHIP RD #151	XB	CLOSURE AND SIGNALIZATION
009599R	BUTLER	AUGUSTA	TOWNSHIP RD #155	XB	CLOSURE
009618T	BUTLER	ROSE HILL	TOWNSHIP RD #412	SS	GATES
009621B	BUTLER	ROSE HILL	TOWNSHIP RD #69	XB	GATES
009667P	SUMNER	BELLE PLAINE	TOWNSHIP RD #311	XB	GATES (SECTION 130 PROJECT)
669886Y	CRAWFORD	CHEROKEE	K-126	FL	GATES
813198G	WYANDOTTE	KANSAS CITY	KANSAS AVE	GT	INTERCONNECTING SIGNAL SYSTEM
813204H	WYANDOTTE	EDWARDSVILLE	88TH ST	GT	INTERCONNECTING SIGNAL SYSTEM

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

Note: Proposed mitigations, which refers to the highest form of railroad device, and mitigation cost were developed in conjunction with FRA, FHWA and the state of Alabama

LOUISIANA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
300186U	TANGIPAHOA	TICKFAW	BUCKLES LANE	XB	TBD
302450G	RICHLAND	DELHI	CHICAGO	XB	GATES
302505S	OUACHITA	MONROE	DESIARD ST	FL	CLOSURE
302519A	OUACHITA	WEST MONROE	THOMAS ROAD	GT	GATES AND CWT (RECENTLY INSTALLED)
302616J	WEBSTER	SIBLEY	HORSESHOE LOOP	XB	GATES (INITIATED)
328996T	CADDO	VIVIAN	E TEXAS AVE	XB	GATES (FUNDED)
334775E	BOSSIER	BOSSIER CITY	ALFRED LN.	XB	CLOSURE
758210L	CADDO	SHREVEPORT	W. SIXTY-SECOND	HS	GATES
767508X	ST MARY	FRANKLIN	DIXIE ROAD	XB	TBD
768141H	CALCASIEU	VINTON	CLEVELAND RD	XB	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NOTE: TBD (To Be Determined)
CWT (Constant Warning Time)

MARYLAND
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
140450G	FREDERICK	LIME KILN	BUCKEYSTOWN PIKE	FL	GATES
140494G	MONTGOMERY	ROCKVILLE	RANDOLPH ROAD	GT	GRADE SEPARATION
140507F	MONTGOMERY	GAITHERSBURG	S SUMMIT AVE	GT	NONE PROPOSED
140512C	MONTGOMERY	GAITHERSBURG	METROPOLITAN GROVE	GT	NONE PROPOSED
140774J	CECIL	ELK MILLS	ELK MILLS RD	GT	GRADE SEPARATION
140883M	HOWARD	HANOVER	HANOVER RD.	GT	RELOCATE/GRADE SEPARATION
140899J	PRINCE GEORGE'S	COLLEGE PARK	SUNNYSIDE AVE	GT	GRADE SEPARATION
140905K	PRINCE GEORGE'S	RIVERDALE	QUEENSBURY RD	GT	NONE PROPOSED
145051M	ALLEGANY	CUMBERLAND	VALLEY ST	GT	CLOSURE
530843S	BALTIMORE	COCKEYSVILLE	TIMONIUM RD	GT	GRADE SEPARATION

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

MINNESOTA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
062769X	WADENA	WADENA	OINK JOINT RD	XB	GATES
062814P	OTTER TAIL	PERHAM	TWP 357	XB	GATES
062860R	BECKER	DETROIT LAKES	WINE LAKE RD	XB	CLOSURE/CONNECTING ROAD
067265P	BENTON	SARTELL	FROST RD	XB	GATES
067270L	BENTON	RICE	LAKE WOOD SHORE RD	XB	CLOSURE/ROADWAY IMPROVEMENTS
067273G	BENTON	RICE	105TH ST NW	XB	GATES
082513Y	SHERBURNE	BIG	TWP 182 (200TH ST)	XB	GATES
097674N	MORRISON	LITTLE FALLS	CSAH 13	GT	CLOSURE
097837V	SHERBURNE	BECKER	CO 53	XB	GATES
097908P	PIPESTONE	PIPESTONE	8TH AVE NE	FL	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mititation
There were no state submitted crossings.					
0					
0					
0					
0					
0					
0					
0					
0					
0					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

MISSISSIPPI
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
297746S	DE SOTO	WALLS	CHURCH STREET	XB	GATES/RAISE APPROACH
300611T	QUITMAN	MARKS	ROGERS ROAD	XB	GATES
300626H	QUITMAN	LAMBERT	DENTON RD	XB	STOP SIGNS
300725F	LEFLORE	SIDON	COUNTY ROAD 245	XB	GATES/RAISE APPROACH
300727U	LEFLORE	SIDON	COUNTY ROAD 512	XB	GATES/RAISE APPROACH
300887H	HINDS	JACKSON	GREEN'S CROSSING	XB	GATES
340261M	HARRISON	LONG BEACH	NICHOLSON	XB	CLOSURE
340264H	HARRISON	LONG BEACH	GIRARD AVE.	XB	CLOSURE
664476H	DE SOTO	OLIVE BRANCH	DEPOT ST	XB	CLOSURE
664494F	MARSHALL	BYHALIA	FULLER ST	XB	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

MISSOURI
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
005091A	MACON	LA PLATA	RTE 156	GT	GRADE SEPARATION
005263F	CHARITON	MARCELINE	CO RD 223	XB	SIGNALIZATION
005285F	CHARITON	MENDON	CO RD 111	XB	GATES
330039N	JASPER	JOPLIN	ELK ROAD	FL	CLOSURE/GRADE SEPARATION
424990P	ST LOUIS	WEBSTER GROVES	ROCK HILL	GT	REALIGN ROAD
441994L	CASS	STRASBURG	ROGERS RD	XB	GATES
442012P	JOHNSON	HOLDEN	CO.RD. 1451	XB	GATES
442187T	MONITEAU	TIPTON	TOWER RD.	XB	GATES
673300W	LAWRENCE	MARIONVILLE	CO RD	XB	CLOSURE/GATES
673308B	LAWRENCE	AURORA	FM RD 2200	XB	CONNECTING ROAD

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

MONTANA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
059206S	LINCOLN	LIBBY	RIVERSIDE DRIVE	XB	
059535R	VALLEY	TAMPICO	FAX-246	FL	
059618E	ROOSEVELT	CULBERTSON	1ST AVE WEST	XB	
060081R	GALLATIN	BELGRADE	GALLATIN FIELD	XB	
060226A	POWELL	ELLISTON	ELLISTON	XB	
087376L	YELLOWSTONE	BILLINGS	LOCKWOOD-TRANSBAS	XB	
087383W	YELLOWSTONE	BILLINGS	MOORE LANE	GT	SEPARATE
088057W	TOOLE	SHELBY	HEART BUTTE RD	XB	
091412L	MISSOULA	FRENCHTOWN	BECKWIT	XB	
664476H	GLACIER	BROWNING	HEART BUTTE RD	GT	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
060193P	LEWIS AND CLAI	HELENA	MONTANA AVE	GT	GRADE SEPARATION
060021G	PARK	LIVINGSTON	5TH STREET	GT	GRADE SEPARATION
060055B	GALLATIN	BOZEMAN	ROUSE AVE	GT	GRADE SEPARATION
060073Y	GALLATIN	BOZEMAN	GRIFFEN DRIVE	GT	GRADE SEPARATION
060090P	GALLATIN	BELGRADE	JACKRABBIT LANE	GT	GRADE SEPARATION
060199F	LEWIS AND CLAI	HELENA	BENTON AVE	GT	GRADE SEPARATION
087491T	YELLOWSTONE	BILLINGS	27TH STREET N	GT	GRADE SEPARATION
087493G	YELLOWSTONE	BILLINGS	N 29TH STREET	GT	GRADE SEPARATION
088059K	TOOLE	SHELBY	2ND AVE	GT	GRADE SEPARATION

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

Note: All of the crossings nominated by MT for grade separation are currently in the design phase. MT felt that it would be inappropriate to provide cost estimates at this time.

NEBRASKA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
813278A	ADAMS	HASTINGS	NOT PROVIDED	XB	Gates, Lights
064129E	LANCASTER	LINCOLN	ADAMS ST	GT	Grade Separation
073283B	ADAMS	HASTINGS	NOT PROVIDED	XB	Gates, Lights
083180D	ADAMS	JUNIATA	NOT PROVIDED	XB	Gates, Lights
083426Y	YORK	YORK	NOT PROVIDED	XB	Closure
813274X	ADAMS	HASTINGS	NOT PROVIDED	XB	Closed
817488D	HALL	ALDA	NOT PROVIDED	XB	Relocation & Realignment
817507F	HALL	SHELTON	NOT PROVIDED	XB	Widen Approach
817546W	MERRICK	SILVER CREEK	NOT PROVIDED	XB	Relocation & Realignment
817760B	DAWSON	GOTHENBURG	AVE J	GT	None

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NEVADA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
740724M	WASHOE	RENO	KEYSTONE ST	GT	GRADE SEPARATION
740763D	CHURCHILL	FERNLEY	CALIF RD HAZEN	XB	ROAD RECENTLY PAVED
740842P	ELKO	CARLIN	4TH STREET	FL	NONE PROPOSED
740889K	ELKO	MONTELLO	MONTELLO	GT	RECENTLY INSTALLED CWT AND LED FL
804003T	CLARK	NORTH LAS VEGAS	CRAIG ROAD	GT	GATES
804121V	CLARK	ARDEN	BLUE DIAMOND RD	GT	GATES
804209T	CLARK	LAS VEGAS	WYOMING AVENUE	GT	LED
833412N	PERSHING	GERLACH	HOT SPRINGS	XB	NONE PROPOSED
833420F	HUMBOLDT	WINNEMUCCA	NEAR RAGLAN	XB	GATES
906533R	CLARK	LAS VEGAS	DESERT INN RD	GT	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NOTE: CWT (Contant Warning Time), LED (Light Emitting Device)

NEW JERSEY
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
172359C	MIDDLESEX	MIDDLESEX	MOUNTAIN AVE	GT	GRADE SEPARATION
172387F	SOMERSET	BRANCHBURG	READINGTON RD	GT	GRADE SEPARATION
263186S	BERGEN	RAMSEY	MAIN STREET	GT	GRADE SEPARATION
263203F	PASSAIC	PATERSON	FIFTH AVE	GT	GRADE SEPARATION
263242W	ESSEX	MONCLAIR	PINE ST	GT	CLOSURE
586073E	ATLANTIC	HAMMONTON	BELLEVUE AVE	GT	GRADE SEPARATION
856889J	MONMOUTH	MIDDLETOWN	CHURCH ST	GT	GRADE SEPARATION
856891K	MONMOUTH	MIDDLETOWN	NAVESINK RIVER RD	GT	GRADE SEPARATION
856902V	MONMOUTH	LITTLE SILVER	OCEANPORT AVE	GT	GRADE SEPARATION
856918S	MONMOUTH	LONG BRANCH	CEDAR AVE	GT	GRADE SEPARATION

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
172360W	MIDDLESEX	MIDDLESEX BOROUGH	CEDAR AVE	GT	GRADE SEPARATION
263092K	HUDSON	NORTH BERGEN	83RD ST	FL	GATES
263412N	BARYEN	GARFIELD	MIDLOAD AVE	GT	GRADE SEPARATION
586045B	CAMDEN	BERLIN TWP	HARKER AVE	GT	CLOSURE
856899P	MONMOUTH	RED BANK	BROAD ST (SH35)	GT	GRADE SEPARATION
856901N	MONMOUTH	LITTLE SILVER	SYCAMORE AVE	GT	GRADE SEPARATION
856923N	MONMOUTH	OCEAN TWP	ROOSEVELT AVE	GT	CLOSURE
856988G	OCEAN	POINT PLEASANT	SEA AVE (SH35)	GT	GRADE SEPARATION
908864K	CAMDEN	BERLIN TWP	MILFORD RD	GT	GRADE SEPARATION
912696F	MIDDLESEX	MIDDLESEX BOROUGH	CEDAR AVE	GT	GRADE SEPARATION

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NEW YORK
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
338151C	NASSAU	BETHPAGE	STEWART AVE.	GT	CLOSE/SEPARATE
338145Y	NASSAU	MINEOLA	ROSLYN ROAD	GT	GRADE SEPARATION
338146F	NASSAU	WESTBURY	SCHOOL ST	GT	CLOSE/SEPARATE
338162P	SUFFOLK	WYANDANCH	STRAIGHT PATH	GT	CLOSE/SEPARATE
338172V	SUFFOLK	CENTRAL ISLIP	CARLTON AVE.	GT	CLOSE/SEPARATE
338309M	NASSAU	SYOSSET	JACKSON AVE	GT	CLOSE/SEPARATE
338357C	NASSAU	OCEANSIDE	ATLANTIC AVE.	GT	CLOSE/SEPARATE
514529S	MONROE	GATES	PIXLEY ROAD	GT	CLOSE/CANTILEVER SIGNALS
524307K	CHAUTAUQUA	RIPLEY	LOOMIS ST	XB	CLOSE/SEPARATE
529898H	WESTCHESTER	MOUNT KISCO	GREEN LANE	GT	CLOSE/SEPARATE

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There are no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NORTH CAROLINA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
629738V	JOHNSTON	BENSON	MAIN	HS	None
629833R	NASH	SHARPSBURG	MOORE ST	XB	Gates
629964U	JOHNSTON	SMITHFIELD	LEE	GT	None
630525G	FRANKLIN	FRANKLINTON	SR 1122	XB	Gates
630529J	FRANKLIN	YOUNGSVILLE	WINSTON ST	XB	Gates
630984C	ROBESON	ALMA	ALMA ST	XB	Gates
716230G	GASTON	GASTONIA	MAY ST	GT	Possible Tss
716278J	CLEVELAND	GROVER	CAROLINA AVE	GT	None
716279R	CLEVELAND	GROVER	CHERRY ST	GT	None
722542D	GUILFORD	GREENSBORO	YANCEYVILLE ROAD	GT	None

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NORTH DAKOTA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
071084S	CASS	FARGO		XB	GATES (PROGRAMMED IN 2000)
071092J	CASS	MAPLETON	7TH AV	GT	TBD
071099G	CASS	CASSELTON		XB	GATES
087636C	BURLEIGH	STERLING		XB	GATES (PROGRAMMED IN 1998)
093149U	GRIGGS	HANNAFORD		XB	TBD
093192A	FOSTER	GLENFIELD		XB	GATES (PROGRAMMED IN 2000)
093340S	MOUNTRAIL	WHITE EARTH	HILL STREET	GT	TBD
093446M	EDDY	NEW ROCKFORD		XB	TBD
102431A	WARD	SURREY		XB	TBD
102972C	CASS	PAGE		XB	TBD

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

Note: No cost estimates provided.

OHIO
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
142092G	ASHLAND	LODI	CR 681	XB	GATES (UPGRADED ON 4/6/99)
142145D	HURON	WILLARD	WURTZ RD	XB	CONSOLIDATED (7/00)
142255N	WOOD	BLOOMDALE	MAIN ST	FL	GATES (UPGRADED 9/16/98)
472533M	PAULDING	OAKWOOD	SIXTH STREET	XB	GATES (UPGRADED 5/10/98)
473681K	SANDUSKY	CLYDE	DURNWOLD DR	XB	GATES (COMPLETED 2001)
509451P	LUCAS	TOLEDO	WESTWOOD	GT	CIRCUITRY UPGRADE
509472H	LUCAS	HOLLAND	BERKLEY SOUTHERN	GT	CIRCUITRY UPGRADE
509519B	FULTON	PETTISVILLE	ARCHBOLD RD	GT	CIRCUITRY UPGRADE
509525E	FULTON	ARCHBOLD	DEFIANCE ST	GT	CIRCUITRY UPGRADE
523864T	LORAIN	AMHERST	WEST RIDGE RD	GT	CIRCUITRY UPGRADE

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

OKLAHOMA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
012121G	OKLAHOMA	OKLAHOMA	SO 29TH ST	GT	GATES RECENTLY INSTALLED
012210Y	CLEVELAND	NORMAN	NAVY BASE RD/CONS	FL	GATES & MEDIANS
014412D	WOODWARD	QUINLAN		XB	GATES
330785W	LE FLORE	HEAVENER	AVENUE F	XB	GATES
413536X	CRAIG	BIG CABIN		XB	GATES
413568D	MAYES	PRYOR	9TH S.W.	XB	GATES
433972R	NOWATA	NOWATA	MODOC	XB	CLOSE/SIGNALS
434002N	ROGERS	OOLOGAH	CO RD #38	XB	GATES
596137R	TEXAS	GUYMON	4TH STREET NORTH	HS	GATES (RECENTLY INSTALLED)
673155A	MARSHALL	MADILL	WOLF ST.	XB	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

OREGON
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
066759F	JEFFERSON	CULVER	IRIS DRIVE	XB	FLASHING LIGHTS
066762N	JEFFERSON	CULVER	FEATHER DR	XB	STOP SIGNS
749467X	WASHINGTON	HILLSBORO	SUSBAUER RD	XB	STOP SIGNS
759688C	LINN	ALBANY	34TH AV	FL	RAISED MEDIANS
759712B	LINN	HALSEY	D ST	XB	FLASHING LIGHTS
759780C	LINN	HALSEY	TWIN BUTTE W DR	XB	FLASHING LIGHTS
760044W	CLACKAMAS	CANBY	ELM ST	FL	RAISED MEDIANS/INTERCONNECT WITH TRAFFIC SIGNAL
760047S	CLACKAMAS	CANBY	BARLOW RD	GT	RAISED MEDIANS/INTERCONNECT WITH TRAFFIC SIGNAL
809034J	UMATILLA	PENDLETON	ISHKIT LANE	XB	FLASHING LIGHTS
809361U	UNION	LA GRANDE	GEKELER LANE	HS	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NOTE: Proposed mitigation and mitigation costs were developed in conjuction with the FRA and FHWA without input from state.

PENNSYLVANIA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
145466V	WESTMORELAND	SMITHTON	JACOBS CREEK RD	FL	RELOCATE CABINETS AND POLES
471926S	ERIE	FAIRVIEW	FAIRPLAIN ROAD	XB	GATES (1999)
507756F	WASHINGTON	CHARLEROI	2ND STREET	XB	GATES (APRIL 2000)
523921E	ERIE	SPRINGFIELD	DGNL-WHTN-LNCH RD	XB	GATES (SCHEDULED FY 2000-01)
529052H	INDIANA	JOHNSTOWN	SR 2009	FL	RECONSTRUCTION OF HIGHWAY
541424A	DELAWARE	MORTON	WOODLAND AVE	GT	NONE PROPOSED
588602S	MONTGOMERY	ROYERSFORD	MAIN STREET	GT	NONE PROPOSED
592390X	LEHIGH	ALBURTIS	ORCHARD RD	XB	CLOSURE/RELOCATE
592391E	LEHIGH	MACUNGIE	GEHMANS RD	XB	CLOSURE/RELOCATE
592405K	LEHIGH	EMMAUS	SECOND ST	FL	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
535163N	FRANKLIN	GREENCASTLE	T351	XB	NONE PROVIDED

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

RHODE ISLAND
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
861519R	PROVIDENCE	WOONSOCKET	RIVER ST	GT	MS TO GCP
861547U	PROVIDENCE	PAWTUCKET	COTTAGE ST	HS	MS TO GCP
861549H	PROVIDENCE	PAWTUCKET	COLUMBUS AVE	HS	MS TO GCP
861550C	PROVIDENCE	PAWTUCKET	DIVISION ST	HS	MS TO GCP
861551J	PROVIDENCE	PAWTUCKET	CENTRAL AVE	HS	MS TO GCP
861561P	PROVIDENCE	CUMBERLAND HILL	ANN & HOPE WAY	GT	MS TO GCP
861587S	PROVIDENCE	PAWTUCKET	WALCOTT ST	HS	MS TO GCP
861588Y	PROVIDENCE	PAWTUCKET	ARMISTICE BLVD.	HS	MS TO GCP
861591G	PROVIDENCE	PAWTUCKET	BROADWAY	HS	MS TO GCP
861593V	PROVIDENCE	PAWTUCKET	ROOSEVELT AVE	HS	MS TO GCP

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

MS to GCP = Motion Sensors to Constant Warning Time

NOTE: MS (Motion System), GCP (Grade Crossing Prediction)

SOUTH DAKOTA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
189455F	SPINK	NORTHVILLE	SO 20	XB	GATES
189707E	BEADLE	WOLSEY		XB	GATES
189716D	BEADLE	WOLSEY	COMMERCIAL AVE	FL	RELOCATE CANTILEVERS AND ADD GATES AND MEDIANS
190258N	PENNINGTON	RAPID CITY	ST PATRICK ST	FL	INSTALL GATES, UPGRADE CIRCUITRY
190276L	PENNINGTON	RAPID CITY	CROSS ST	XB	RELOCATE CROSSING AND RECONSTRUCT HIGHWAY
190292V	PENNINGTON	RAPID CITY	UNIVERSAL DR	XB	GATES
199776P	BUTTE	BELLE FOURCHE	US 85	FL	INSTALL INTER-TIE WITH TRAFFIC SIGNALS, ADD CANTILEVER AND UPGRADE CIRCUITRY
393648N	GRANT	TWIN BROOKS	CO. RD. 19	XB	GATES
393780L	BROWN	ABERDEEN	CROSS ST	XB	GATES
393905J	CORSON	WAKPALA		XB	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

TENNESSEE
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
297385P	DYER	NEWBERN	PARKS ST.	XB	NONE PROPOSED
297440M	LAUDERDALE	HENNING	WADSWORTH RD	XB	GATES
349260L	RUTHERFORD	MURFREESBORO	MURFREESBORO RD	XB	FL
349364T	BEDFORD	WARTRACE	YELL STREET	XB	GATES
730838X	ANDERSON	CLINTON	YARNELL RD	XB	FL
731149G	SULLIVAN	BLUFF CITY	ROCK LANE	XB	GATES
731183N	WASHINGTON	JOHNSON CITY	ROAN ST	FL	NONE PROPOSED
732084U	FAYETTE	LA GRANGE	CHESTNUT ST	XB	GATES
732163F	SHELBY	MEMPHIS	MASSEY RD	FL	GATES
841829F	SCOTT	ONEIDA	CROSS	XB	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

TEXAS
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
743708N	FORT BEND	SUGAR LAND	ADDICKS HOWELL RD	GT	Separation
331568A	WOOD	WINNSBORO	MILL ST	XB	Closure
331675P	HUNT	CAMPBELL	BEASLEY	XB	Gates (Plans Completed)
427978T	MONTGOMERY	WILLIS	STEWART	FL	Gates (Plans Completed)
430105A	WALLER	MAGNOLIA	RILEY ROAD	XB	Gates (Diagnostic Planned)
743165A	HARRIS	HOCKLEY	BECKNER RD	XB	Gates (Plans Completed)
743813P	COLORADO	EAGLE LAKE		XB	Gates (Under Design)
745077W	BRAZOS	BRYAN	OSR	FL	Gates (Diagnostic Planned)
794625P	HARRISON	LONGVIEW	MASON SPRING RD	XB	None Proposed
795335K	DENTON	ARGYLE	*PUBLIC FM 407	FL	Gates (Installed 6/00)

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

UTAH
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
254340N	SALT LAKE	DRAPER	123 S 500 W DRPRD	GT	WIDEN/IMPROVE STATE ROAD (STIP)
254405E	UTAH	SPANISH FORK	1200 E ON SR 147	FL	GATES (STIP 2003)
254880J	UTAH	LEHI	1250W ON 1220N WA	XB	REMOVE TREES/SHRUBS
254892D	UTAH	LEHI	8170 N ON 7800 W WA	XB	GATES
254900T	UTAH	AMERICAN FORK	5200 W ON 6400 N WA	XB	GATES (COMPLETED 2002)
805623K	DAVIS	CLEARFIELD	MAIN ST. 200 SO.	GT	SEPARATION (STIP 2000)
806625C	IRON	BERYL	CO RD	XB	REPLACE SIGNS
806649R	MILLARD	OASIS	CO RD	XB	NEEDS SURVEILLANCE
806707J	TOOELE	TOOELE	1000 W. 250 N.	XB	CLOSURE
806879S	UTAH	PAYSON	4200 W. 10000 S.	XB	CLOSURE

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
254892D					
254902G					
806682R					
806706C					
806822R					
806959K					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

VIRGINIA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
467423S	ISLE OF WIGHT	WINDSOR	S PRINCE BLVD	GT	SIGNAL INTERCONNECTION
467450N	SUSSEX	WAVERLY	BEAVERDAM ROAD	GT	TBD
467480F	PRINCE GEORGE	PETERSBURG	RIVES ROAD	GT	NONE PROPOSED
468419F	HENRY	FIELDALE	FIELD AVE	FL	CANTILEVERED FL
468915B	RUSSELL	HONAKER	PUTMAN ROAD	FL	GATES
623672C	RICHMOND	RICHMOND	WALMSLEY BLVD	GT	TBD
623683P	CHESTERFIELD	CHESTER	CURTIS STREET	GT	FL (1999)
623706U	PETERSBURG	PETERSBURG	HALIFAX RD	GT	SEPARATION (SCHEDULED)
714363S	PRINCE WILLIAM	GAINESVILLE	LEE HWY	GT	DUAL GATES (INSTALLED 1997)
860437F	HENRICO	RICHMOND	HUNGARY ROAD	GT	NONE PROPOSED

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

WASHINGTON
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
058650U	LINCOLN	DAVENPORT	WAKON ROAD	XB	SIGNALS
059147S	STEVENS	COLVILLE	GOLD CREEK ROAD	XB	INSTALL SIGNALS
085416A	KING	SEATTLE	GALER ST	GT	GRADE SEPARATION
085613N	KING	KENT	SW 43RD ST.	GT	GRADE SEPARATION
085691V	PIERCE	PUYALLUP	15TH ST SE.	GT	REPEATER TRAFFIC SIGNAL
092426X	CLARK	RIDGEFIELD	MILL ST	FL	CLOSE, CONSOLITDATE W/ DIVISION
092435W	COWLITZ	WOODLAND	DAVIDSON AVE	GT	INSTALL MEDIAN SEPARATORS
092446J	COWLITZ	KALAMA	TOTEFF ROAD	GT	SEPARATE
092493S	LEWIS	WINLOCK	SR-505 MP 0.01	GT	UPGRADE SIGNALS AND INSTALL MEDIANS
092508E	LEWIS	CHEHALIS	MAIN ST.	GT	INTER TIE WITH NEARBY SIGNALS

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

WEST VIRGINIA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
144588W	JEFFERSON	SHENANDOAH JUNCTION		GT	None Proposed
144601H	BERKELEY	MARTINSBURG	SHEPHERDSTOWN RD.	GT	None Proposed
144603W	BERKELEY	MARTINSBURG	FLAGG ROAD	GT	Improve Alignment
225351X	FAYETTE	DEEP WATER	PRIVATE RD	XB	None Proposed
225439V	KANAWHA	CHARLESTON	12 TH	XB	None Proposed
225588W	PUTNAM	HURRICANE	DOGFOOD CROSSING	XB	None Proposed
225594A	PUTNAM	HURRICANE	PUBLIC ROAD	XB	None Proposed
470863L	MINGO	WILLIAMSON	PRICHARD STREET	FL	Gates
471567D	MINGO	NOLAN		XB	None Proposed
471577J	MINGO	NAUGATUCK		GT	Separation

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

Note: Proposed mitigation were develped in conjunction with FRA, FHWA and the state of West Virginia.

WISCONSIN
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
692296K	WASHINGTON	ALLENTON	HILLCREST DR	XB	GATES
692213U	WAUKESHA	WAUKESHA	MAIN ST	FL	GATES (CY 2000)
390675A	COLUMBIA	RIO	WILLIAMS RD	XB	GATES
692579H	WOOD	MILLADORE	HAYNES AVE	XB	GATES
692527R	PORTAGE	CUSTER	COUNTY HWY J	FL	GATES
692483T	WAUPACA	WAUPACA	LARSON RD	XB	CLOSURE
690239P	WINNEBAGO	NEENAH	MAIN ST	GT	HIGHWAY BRIDGE PLANNED
697810T	OUTAGAMIE	APPLETON	COUNTY HWY JJ	FL	COMPLETION IN CY2000 TO INSTALL CONSTANT WARNING TIME CIRCUITRY
079906D	LA CROSSE	TREMPEALEAU	LYTLE RD	XB	GATES
692263X	WASHINGTON	COLGATE	WILLOW CREEK RD	XB	GATES

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
692218D	WAUKESHA	WAUKESHA	MORELAND BLVD.	GT	SEPARATION
692232Y	WAUKESHA	PEWAUKEE	COUNTY HWY M	FL	GATES

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

WYOMING
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
064920E	WESTON	NEWCASTLE	W. MAIN ST	GT	NONE PROPOSED
064922T	WESTON	NEWCASTLE	GROVE ST	FL	NONE PROPOSED
089208M	GOSHEN	TORRINGTON	MAIN ST	GT	SEPARATION
095097L	CAMPBELL	GILLETTE	FOOTHILLS BLVD	GT	NONE PROPOSED
098863N	SHERIDAN	SHERIDAN	0	FL	GATES
807292G	LINCOLN	COKEVILLE	FIRST ST-SH 231	GT	NONE PROPOSED
810472H	SWEETWATER	WAMSUTTER	BROADWAY	GT	SEPARATION
816334P	GOSHEN	YODER	US 85	FL	CANTILEVERED SIGNAL SYSTEM
817676T	LARAMIE	PINE BLUFFS	CO 212	GT	NONE PROPOSED
817686Y	LARAMIE	HILLSDALE	CO 136	GT	GATES (SCHEDULED FOR 2000)

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

10 CROSSINGS WITH THE HIGHEST FATAL ACCIDENT PREDICTION FACTOR (FAPF) VALUES

MITIGATION REPORTS NOT RECEIVED FROM STATES

CONNECTICUT
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
503877P	NEW HAVEN	MILFORD	PLAINS RD	GT	
500263U	NEW LONDON	STONINGTON	PALMER ST	GT	
500565W	FAIRFIELD	NORWALK	BROAD ST	GT	
500589K	FAIRFIELD	REDDING	TOPSTONE RD	FL	
500600H	FAIRFIELD	DANBURY	TRIANGLE ST	FL	
500698N	HARTFORD	WEST HARTFORD	FLATBUSH AVENUE	GT	
500725H	HARTFORD	WINDSOR	MEADOW ST	GT	
500734G	HARTFORD	WINDSOR	PIERSONS	GT	
504412G	WINDHAM	PLAINFIELD	PICKETT ROAD	FL	
839775C	TOLLAND	MANSFIELD DEPOT	MERROW RD	FL	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

DELAWARE
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
540862Y	NEW CASTLE	NEWARK	SR 72/SUNSET LAKE	FL	
140715G	NEW CASTLE	ELSMERE	RT62\NEWPORT GAP	GT	
140729P	NEW CASTLE	NEWARK	RT896\NEW LONDON	GT	
516095N	KENT	HARRINGTON	US 13	FL	
516116E	SUSSEX	MILFORD	JOHNSON ST.	FL	
531648V	KENT	WYOMING	SOUTHERN BLVD.	FL	
540860K	NEW CASTLE	NEWARK	OLD BALTIMORE PK.	FL	
540864M	NEW CASTLE	NEWARK	REYBOLD RD	FL	
540879C	NEW CASTLE	NEWARK	TR7\BEAR TYBOUTS	FL	
540890C	NEW CASTLE	WILMINGTON	CHERRY LANE	XB	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

DISTRICT OF COLUMBIA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
529472M	DIST OF COLUMBIA	WASHINGTON D C	V STREET NE	SP	Abandoned
140279V	DIST OF COLUMBIA	WASHINGTON D C	GOOD HOPE RD SE	SP	
140281W	DIST OF COLUMBIA	WASHINGTON D C	SUITLANDPKWY SE	FL	
140285Y	DIST OF COLUMBIA	WASHINGTON D C	SOUTHCAPITOLST	FL	
140298A	DIST OF COLUMBIA	WASHINGTON D C	MCCORD ST.	XB	
140299G	DIST OF COLUMBIA	WASHINGTON D C	RICE ST	XB	
529455W	DIST OF COLUMBIA	WASHINGTON D C	2ND ST SE	NO	Abandoned
529456D	DIST OF COLUMBIA	WASHINGTON D C	31ST STREET NE	SP	Abandoned
529478D	DIST OF COLUMBIA	WASHINGTON D C	VIRGINIA AVE SE	XB	Abandoned
545112F	DIST OF COLUMBIA	WASHINGTON D C	CANAL STREET SE	NO	Abandoned

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

ILLINOIS
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
372131E	COOK	ELMWOOD PARK	GRAND FAU 1376	GT	
004381E	WILL	JOLIET	PATTERSON RD	GT	
004386N	WILL	CHANNAHON	SMITHS BRIDGE RD	FL	
079508Y	COOK	LA GRANGE	LAGRANGE RD	GT	
176912X	COOK	MT PROSPECT	MAIN ST FAP 872	GT	
294423L	JERSEY	BRIGHTON	TR162A	XB	
386378A	COOK	CHICAGO	CALDWELL AVE	GT	
388037N	COOK	NORTHBROOK	DUNDEE RD	GT	
724637T	CLINTON	ALBERS	ILL 161	FL	
724818X	EDWARDS	BROWNS	TR104	XB	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
386378A	COOK	CHICAGO	CALDWELL AVE	GT	
079508Y	COOK	LAGRANGE	LA GRANGE RD	GT	
372131E	COOK	ELMWOOD PARK	GRAND AVE	GT	
388037N	COOK	NORTHBROOK	DUNDEE RD	GT	
176923K	COOK	ARLINGTON HTS	ARLINGTON HTS RD	GT	
176912X	COOK	MOUNT PROSPECT	ELMHURST RD	GT	
608304A	COOK	CHICAGO	103RD ST	GT	
294466E	MADISON	GRANITE CITY	PONTOON RD	GT	
289680Y	WILL	UNIVERSITY PARK	STUENKEL RD	GT	
372138C	COOK	FRANKLIN PARK	ROSE	GT	

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

KENTUCKY
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
343577H	HARDIN	SONORA	SR22	FL	
345246C	CHRISTIAN	PEMBROKE	DUFFEY STREET	XB	
345544C	OLDHAM	CRESTWOOD	POTTS LN	XB	
345974M	JEFFERSON	ANCHORAGE	CHAMBERLAIN RD	FL	
353537M	MADISON	BEREA	MAYDE RD.	XB	
720055A	GRANT	DRY RIDGE	NEEDHAM LN.	XB	
720056G	GRANT	DRY RIDGE	LEMON NORTH CUT	FL	
720063S	GRANT	WILLIAMSTOWN	US 25	GT	
841695J	LINCOLN	MORELAND	W. VONLINGER RD.	XB	
841799R	MCCREARY	WHITLEY CITY	GEORGE JONES RD.	FL	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
227241U	PIKE	PIKEVILLE	KY 1426	FL	
344959G	BELL	PINEVILLE	SR 221	FL	
345362R	WEBSTER	SEBREE	W DIXON ST	FL	
346822U	FAYETTE	LEXINGTON	FORBES RD	FL	
346933L	MUHLENBURG	SOUTH CARROLLTON	US 431	FL	
720060W	GRANT	WILLIAMSTOWN	GRANT IND. PARK RD	GT	
724513A	FAYETTE	GEORGETOWN	KEARNEY RD	FL	
725119B	JEFFERSON	LOUISVILLE	ROBARDS LANE	FL	
850980G	JEFFERSON	LOUISVILLE	13TH ST	FL	
851023F	JEFFERSON	LOUISVILLE	34TH ST	FL	

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

MAINE
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
170932N	OXFORD	SOUTH PARIS	RTE 26 MAIN	FL	
051186F	AROOSTOOK	ASHLAND	MAINE ROUTE 11	FL	
051189B	AROOSTOOK	MASARDIS	SQUAWPAN RT 11	FL	
170973T	OXFORD	GILEAD	GILEAD	XB	
364761D	CUMBERLAND	FALMOUTH	BLACKSTRAP RD	FL	
365119F	KENNEBEC	MONMOUTH	CRESSEY RD	XB	
365134H	KENNEBEC	BELGRADE	BARTLETT ROAD	XB	
365392M	PENOBSCOT	MILFORD	COUNTY ROAD	FL	
365455P	PENOBSCOT	ORRINGTON	PIERCE CROSSING	FL	
839759T	CUMBERLAND	YARMOUTH	RIVER BEND	XB	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
051194X	PISCATAQUIS	Brownville	Route 11/No. Wye	FL	
051153T	AROOSTOOK	Madawaska	Bridge Street	FL	
051191C	AROOSTOOK	Masandis	Route 11	FL	
051203U	PISCATAQUIS	Milo	Gould Street	XB	
364877E	KENNEBEC	Winslow	Sand Hill	FL	
364948Y	SAGADAHOC	Bath	School Street	FL	
365163T	ANDROSCOGG	Leeds	No. Leeds Road	FL	
365391F	PENOBSCOT	Milford	Bradley Street	FL	

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

MASSACHUSETTS
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
054326R	MIDDLESEX	READING	ASH ST	FL	
052315W	MIDDLESEX	BELMONT	BRIGHTON ST	GT	
052339K	MIDDLESEX	LINCOLN	SOUTH GREAT ROAD	GT	
052340E	MIDDLESEX	LINCOLN	LINCOLN RD	GT	
052349R	MIDDLESEX	CONCORD	COMMONWEALTH AVE	GT	
053004Y	MIDDLESEX	WILMINGTON	SALEM ST	FL	
053818T	WORCESTER	LANCASTER	DAMONS X-ING	FL	
054041E	MIDDLESEX	MEDFORD	HIGH ST	GT	
247883M	FRANKLIN	ERVING	LESTER ST.	FL	
525980N	BERKSHIRE	PITTSFIELD	EAST STREET	HS	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

MICHIGAN
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
234753D	VAN BUREN	HARTFORD	52ND AVE	XB	
232255M	OAKLAND	WIXOM	PONTIAC TRAIL@WIM	FL	
234460A	EATON	GRAND LEDGE	BENTON RD.	XB	
234628R	OTTAWA	ZEELAND	80TH AVE.	XB	
234742R	VAN BUREN	BANGOR	34TH AVE	XB	
283653G	INGHAM	EAST LANSING	HAGADORN	FL	
283819J	LAPEER	LAPEER	MAPLE LEAF	XB	
284549R	LAPEER	ATTICA	LARSON	XB	
477429K	LENAWEE	ADRIAN	S ADRIAN HWY-SR52	FL	
511706J	MONROE	NEWPORT	SWAN CREEK	FL	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NEW HAMPSHIRE
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
171023C	COOS	NORTHUMBERLAND	COLES	FL	
052805N	SULLIVAN	CORNISH FLAT	BALLOCH'S CROSSIN	FL	
053261W	MERRIMACK	HOOKSETT	BOW RIVER RD	FL	
054232P	STRAFFORD	MILTON	NUTTERS RD	FL	
054240G	CARROLL	OSSIPEE	HUTCHINS	HS	
170990J	COOS	GORHAM	BELLIVUE AVE.	XB	
171007T	COOS	BERLIN	HILSIDE AVE.	FL	
171017Y	COOS	BERLIN	BELL HILL RD	XB	
171026X	COOS	NORTHUMBERLAND	MAIN ST.	FL	
844280L	HILLSBOROUGH	AMHERST	NH 101A	FL	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
052767G	CHESHIRE	WALPOLE	RIVER ST	GT	
052781C	SULLIVAN	CHARLESTOWN	BOWEN'S CROSSING RD	XB	
052791H	SULLIVAN	CHARLESTOWN	GOWEN'S CROSSING RD	XB	
052803A	SULLIVAN	CLAREMONT	PUNKSHIRE HILL RD	XB	
053266F	MERRIMACK	BOW	HALL ST	GT	
170991R	COOS	GORHAM	US 2	FL	
364637X	CARROLL	CONWAY	INTERVALE CROSS RD	GT	
844301C	HILLSBOROUGH	WILTON	HOWARD ST	XB	

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

NEW MEXICO
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
019247M	DE BACA	FORT SUMNER	(NONE PROVIDED)	XB	
019327F	TORRANCE	MOUNTAINAIR	#50	XB	
019339A	VALENCIA	BELEN	SH47	GT	
019720B	DONA ANA	LAS CRUCES	(NONE PROVIDED)	XB	
019915N	CHAVES	ROSWELL	STATE 256	XB	
024887X	MCKINLEY	THOREAU	PEREA ROAD	GT	
024935K	CIBOLA	NEW LAGUNA	CASA BLANCA RD	GT	
024950M	MCKINLEY	GALLUP	2ND STREET	GT	
024951U	MCKINLEY	GALLUP	3RD STREET	GT	
024953H	MCKINLEY	GALLUP	ALLISON ROAD	GT	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
019735R	Dona Ana	Las Cruces	Box 4735	Passive	
013602D	Colfax	Raton	St. 555	FL	
013772X	Bernalillo	Albuquerque	Alameda Road	Gates	
019306M	Torrance	Encino	Not Reported	Passive	
019336E	Valencia	Belen	Not Reported	Gates	
019337L	Valencia	Belen	Not Reported	Passive	
019918J	Chaves	Roswell	CR65	FL	
024873P	McKinley	Prewitt	Not Reported	Gates	
024937Y	Cibola	Acomita	Indian Service Road	Gates	
596235G	Quay	Logan	A099	Passive	
741923T	Lincoln	Carrizozo	White Oaks Rd.	Passive	
741994P	Otero	Tularosa	Higuera Road	Passive	

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

SOUTH CAROLINA
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
634037S	LAURENS	WATERLOO	RIVERFORK RD	XB	
631974A	BERKELEY	GOOSE CREEK	RED BANK ROAD	GT	
634030U	GREENWOOD	GREENWOOD	SCO246	FL	
715671B	AIKEN	GRANITEVILLE	ASCAUGA LAKE RD.	FL	
715866N	RICHLAND	COLUMBIA	PICKENS ST	FL	
716286B	CHEROKEE	BLACKSBURG	MOUNTAIN ST	GT	
716327D	CHEROKEE	GAFFNEY	S-388 HAMRICK ST	XB	
716655V	SPARTANBURG	FAIRFOREST	N. BLACKSTOCK RD.	GT	
717146C	PICKENS	EASLEY	B ST. X-OVER	GT	
717169J	PICKENS	LIBERTY	FARMERS HILL RD	XB	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
There were no state submitted crossings.					

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

VERMONT
MITIGATION ANALYSIS DATA

FRA GENERATED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation
900596A	FRANKLIN	SAINT ALBANS	INDUST. PARK RD.	XB	
247522H	WASHINGTON	BERLIN	CARVER'S	XB	
850879H	ORLEANS	ORLEANS	MAIN ST	FL	
247328P	CHITTENDEN	MILTON	MAY'S XING	FL	
851367U	ADDISON	NEW HAVEN MILLS	NONE LISTED	FL	
247496V	WASHINGTON	ROXBURY	THURSTON'S ROAD	XB	
247397X	FRANKLIN	GEORGIA CENTER	NONE LISTED	FL	
247412X	FRANKLIN	SAINT ALBANS	ELM ST.	XB	
247370N	WINDHAM	VERNON	VERMONT 142	FL	
247636V	FRANKLIN	SWANTON	LAKEWOOD ROAD	XB	

STATE SUGGESTED CROSSINGS

Crossings	County	City	Street	Present Device	Proposed Mitigation

Warning Device Codes

XB= Cross Bucks
FL = Flashing Lights
GT = Gates
HS = Highway Sign
NO = None

APPENDICES

Appendix A - Congressional Record — House, September 30, 1999, Page H9114
Appendix B - Letter to states dated February 18, 2000
Appendix C - Letter to states dated June 2, 2000
Appendix D - Proposed Legislation for Mandatory Reporting of Crossing Inventory (Federal Railroad Safety Enhancement Act of 1999, Section 503, H.B.2683 and S.1496)
Appendix E - FY 2001 Allocation Table for Section 130 Program (Note: a state's total Section 130 allocation is the sum of the first two columns: Protective Devices and Elimination of Hazards)

Appendix A

Congressional Record
House, September 30, 1999, Page H9114

Railcar weight study.—The conferees encourage FRA to conduct a study regarding track and bridge requirements for handling 286,000-pound rail cars, as specified in the House report.

RAILROAD REHABILITATION AND IMPROVEMENT PROGRAM

The conference agreement includes bill language proposed by both the House and Senate specifying that no new direct loans or loan guarantee commitments can be made using federal funds for the payment of any credit premium amount during fiscal year 2000. No federal appropriation is required since a non-federal infrastructure partner may contribute the subsidy amount required by the Credit Reform Act of 1990 in the form of a credit risk premium. Once received, statutorily established investigation charges are immediately available for appraisals and necessary determinations and findings.

NEXT GENERATION HIGH-SPEED RAIL

The conference agreement provides $27,200,000 for the next generation high-speed rail program instead of $22,000,000 as proposed by the House and $20,500,000 as proposed by the Senate. The following table summarizes the conference agreement by budget activity:

Train control projects:	
Illinois project	$6,500,000
Michigan project	3,000,000
Alaska project	5,000,000
Transportation safety research alliance	500,000
Non-electric locomotives:	
Advanced locomotive propulsion system	4,000,000
Prototype locomotives	3,000,000
Grade crossings and innovative technologies:	
North Carolina sealed corridor	400,000
Mitigating hazards	2,500,000
Low-cost technologies	1,100,000
Track and structures	1,200,000
Total	27,200,000

Rail-highway crossing hazard eliminations.—Under section 1103 of TEA21, an automatic set-aside of $5,250,000 a year is made available for the elimination of rail-highway crossing hazards. A limited number of rail corridors are eligible for these funds. Of these set-aside funds, the following allocations are made:

North Carolina's sealed corridor initiative	$750,000
High-speed rail corridor between Washington, D.C. and Richmond, VA	750,000
High-speed rail corridor between Mobile, AL and New Orleans, LA	1,000,000
Along the Empire Corridor between Schenectady and New York City, NY	500,000
High-speed rail corridor in Linn and Multnomah counties, OR	500,000
Along the Stampede Pass, near Yakima, WA	750,000
State of Wisconsin	750,000
Minneapolis/St. Paul to Chicago corridor	250,000

Grade crossing safety.—FRA and the Federal Highway Administration (FHWA) should work with the states to identify the ten most deadly crossings in each state and identify ways that these crossings could be closed or reconfigured to reduce the dangers. The conferees believe that focusing on the most dangerous crossings in each state would greatly reduce the likelihood of fatal accidents. FRA and FHWA shall identify those crossings and the mitigations under consideration in a report to the House and Senate Committees on Appropriations by August 1, 2000.

In addition to these activities, FRA, in conjunction with NHTSA and FHWA, should initiate an evaluation assessing the costs, benefits, and impacts of state grade crossing safety laws. These evaluations should establish the basis for FRA to develop model state laws to promote grade crossing safety.

ALASKA RAILROAD REHABILITATION

The conference agreement provides $10,000,000 for the Alaska Railroad instead of $14,000,000 as proposed by the Senate. The House bill contained no similar appropriation. This funding should be used to continue ongoing track rehabilitation.

RHODE ISLAND RAIL DEVELOPMENT

Total funding for the Rhode Island rail development project is $10,000,000 as proposed by both the House and the Senate. Language has been included which directs that obligation of these funds is subject to authorization of the program.

CAPITAL GRANTS TO THE NATIONAL RAILROAD PASSENGER CORPORATION

The conference agreement provides $571,000,000 for capital grants to the National Railroad Passenger Corporation (Amtrak) as proposed by the Senate instead of $570,976,000 as proposed by the House. Bill language, as proposed by the House, is retained that limits the Secretary from obligating more than $228,400,000 of the funding provided to the National Railroad Passenger Corporation prior to September 30, 2000. The Senate bill contained no similar provision.

Vermont service.—The conferees direct Amtrak to provide a report to the Appropriations Committees on the capital costs necessary to upgrade the rail line between Hoosick Falls, New York and Burlington, Vermont to passenger rail standards no later than November 30, 1999.

Fencing along the Northeast Corridor.—The conferees recognize that Amtrak has made progress in enhancing safety along the tracks where high-speed rail will be operating. Amtrak should continue to work closely with the Northeast Corridor community, as well as state transit officials and owners of the track, to identify danger spots and install perimeter fencing along the Corridor, wherever needed. In particular, Amtrak should continue to focus on increased community coordination in urbanized areas where there have been problems or community concerns have been expressed, such as Attleboro, Foxboro, Mansfield, and Sharon, Massachusetts. Amtrak should make it a high priority to ensure that the fencing improvements for these areas be completed before high-speed rail is operational.

FEDERAL TRANSIT ADMINISTRATION

ADMINISTRATIVE EXPENSES

The conference agreement provides $60,000,000 for administrative expenses of the Federal Transit Administration as proposed by both the House and the Senate. Within the total, the conference agreement appropriates $12,000,000 from the general fund and $48,000,000 from the Highway Trust Fund, as proposed by both the House and the Senate. The conference agreement provides that the general fund appropriation shall be available through September 30, 2000, as proposed by the House.

The agreement includes a provision that transfers $1,500,000 from funds made available for administrative expenses to the Inspector General to reimburse costs associated with audit and financial reviews of major transit projects, instead of $800,000 from project management oversight funds as proposed by the House. The Senate bill proposed that $9,000,000 from funds under this heading shall be used to reimburse the Inspector General for costs associated with audits and investigations of all transit-related issues and systems.

Full-time equivalent (FTE) staff years.—The conference agreement provides that the FTE level in fiscal year 2000 shall not rise in excess of 485 FTE, the same level as provided in fiscal year 1999. Additional staffing increases may be considered by the House and Senate Committees on Appropriations through the regular reprogramming process.

Information technology activities.—The conferees have deleted funding requested for the development of the human resources information system (−$200,000).

In addition, the conferees have deferred consideration of several information technology activities (−$2,500,000), since the FTA has not been able to inform the House and Senate Committees on Appropriations in a timely manner of the out-year financial requirements to complete systems review, development and acquisition. The House and Senate Committees on Appropriations may consider providing funds for these activities through the regular reprogramming process.

Project management oversight reviews.—The conferees agree that the FTA shall increase its financial management oversight reviews within the funds provided for section 23 activities and direct the FTA to provide not less than $4,500,000 for such financial management oversight activities in fiscal year 2000.

Full funding grant agreements.—The conference agreement includes a provision (sec. 347) that requires the FTA to notify the House and Senate Committees on Appropriations as well as the House Committee on Transportation and Infrastructure and the Senate Committee on Banking 60 days before executing a full funding grant agreement. In its notification to the House and Senate Committees on Appropriations, the conferees direct the FTA to include therein the following: (a) a copy of the proposed full funding grant agreement; (b) the total and annual federal appropriations required for that project; (c) yearly and total federal appropriations that can be reasonably planned or anticipated for future FFGAs for each fiscal year through 2003; (d) a detailed analysis of annual commitments for current and anticipated FFGAs against the program authorization; and (e) a financial analysis of the project's cost and sponsor's ability to finance, which shall be conducted by an independent examiner and shall include an assessment of the capital cost estimate and the finance plan; the source and security of all public- and private-sector financial instruments, the project's operating plan which enumerates the project's future revenue and ridership forecasts, and planned contingencies and risks associated with the project.

The conferees also direct the FTA to inform the House and Senate Committees on Appropriations before approving scope changes in any full funding grant agreement. When submitting such notification to the House and Senate Committees on Appropriations, the FTA shall include a finance plan that details how the project sponsor shall finance the costs to complete the revised project.

FTA is directed to enter into full funding grant agreements only when there are no outstanding issues which would have a material effect on the estimated cost of the project or on the local financial commitment to complete the project under the terms of the agreement. Areas which FTA should consider in ensuring that this condition is met include: the degree of certainty, and any remaining risks in, capital cost estimates and the availability of adequate contingency

Appendix B

Letter to states dated February 18, 2000

U.S. Department
of Transportation
**Federal Railroad
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

FEB 18 2000

The Honorable Leon S. Kenison
Commissioner
New Hampshire Department of Transportation
P.O. Box 483
Concord, New Hampshire 03302

Dear Mr. Kenison:

The Federal Railroad Administration (FRA) and the Federal Highway Administration (FHWA) have been directed by Congress to work with the states to identify the "ten most deadly crossings in each state" and identify ways in which these crossings can be closed or reconfigured to reduce the dangers. This directive was initiated through the Conference Committee Report on U.S. Department of Transportation Appropriations for FY 2000.

The conferees believe that focusing on the most dangerous crossings in each state would greatly reduce the likelihood of fatal collisions. A report must be submitted to the House and Senate Committees on Appropriations by August 1, 2000. In order to complete the report, FRA and FHWA need the assistance of the states in updating information to be used to identify these crossings.

We are sending a packet of information that will assist us in this effort to your state's designated Highway-Rail Crossing Program (Section 130) and Association of American Railroad/Department of Transportation (DOT) Crossing Inventory contacts. The packet contains the following:

- A list identifying the thirty crossings in your state with the highest FRA Fatal Accident Prediction values
- A one page DOT Inventory Report for each crossing on the list showing the current inventory information

Since many inventory reports have not been updated for several years, it is important that the information on each crossing be correct in order for the list to be accurate. Therefore, you are asked to please have the following tasks accomplished:

1. Review the accident prediction list and the inventory reports to ensure that the information is current and accurate.
2. Make any needed corrections directly onto the enclosed inventory reports.
3. If your state would like to provide a list of those ten crossings which it believes

has the greatest potential for a fatal collision, provide FRA with the list and with the current inventory records for those crossings. We will include those crossings in our report.

4. Return all materials to FRA within 30 days of receiving them.

After the updated information is returned, FRA will re-run the Fatal Accident Prediction list and provide you with a copy. If updated inventory information is not received, we will proceed with the study using the information currently in the inventory. FRA's Crossing and Trespasser Regional Manager and FHWA's Division Safety Engineer for your state will discuss with your designated Section 130 contact ways to mitigate the hazards at each crossing either through closure or other alternatives. A report will be prepared identifying the ten crossings with the highest fatal accident prediction values according to the FRA formula. Proposed mitigation methods and estimated costs will be compiled. If your state provided additional crossings to be included, these crossings and mitigation efforts will also be included.

We anticipate this information will be used by Congress to identify appropriate mitigation measures and the potential costs associated with any recommended corrective measures. The information you provide will be essential in this effort. Your partnership will help provide a report that will be very valuable.

If you have any questions concerning this matter, please contact Mr. Greg Harshaw, Acting Staff Director, FRA's Highway-Rail Crossing and Trespasser Division at (202) 493-6288. Thank you in advance for your cooperation.

Sincerely,

George A. Gavalla
Associate Administrator for Safety
Federal Railroad Administration

Sincerely,

Vincent F. Schimmoller
Program Manager, Infrastructure
Federal Highway Administration

Enclosures

cc: State Section 130 Contact
State Crossing Inventory Contact
FRA Regional Administrator
FHWA Division Safety Engineer

Appendix C

Letter to states dated June 2, 2000

"(k) NATIONAL HIGHWAY-RAIL CROSSING INVENTORY.–(1) Mandatory Initial Reporting of Crossing Information.–No later than September 30, 2001, each State shall–

"(A) report to the Secretary of Transportation certain information, as specified by the Secretary by rule or order issued after notice and opportunity for public comment or by guidelines, concerning each highway-rail crossing located within its borders; or

"(B) otherwise ensure that the information has been reported to the Secretary by that date.

"(2) Mandatory Periodic Updating of Crossing Information.– On a periodic basis beginning no later than September 30, 2003, and not less often than September 30 of every third year thereafter, or as otherwise specified by the Secretary of Transportation by rule or order issued after notice and opportunity for public comment or by guidelines, each State shall:

"(A) report to the Secretary certain current information, as determined by the Secretary by rule or order issued after notice and opportunity for public comment or by guidelines, concerning each highway-rail crossing located within its borders; or

"(B) otherwise ensure that the information has been reported to the Secretary by that date.

"(3) Definitions.–In this subsection–

"(A) 'highway-rail crossing' means a location where a public highway, road, street, or private roadway, including associated sidewalks and pathways, crosses one or more railroad tracks either at grade or grade separated.

"(B) 'State' means a State of the United States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, Guam, American Samoa, and the Virgin Islands.".

(d) TABLE OF SECTIONS AMENDMENT.–The table of sections for chapter 1 of title 23, United States Code, is amended by striking the existing item for section 130 and substituting:

"130. Highway-rail crossings.".

(e) CIVIL PENALTIES.–(1) Section 21301(a)(1) is amended–

(A) by striking the period at the end of the first sentence and substituting "or with section 20155"; and

(B) in the second sentence, by inserting "or violating section 20155" between "chapter 201" and "is liable".

(2) Section 21301(a)(2) is amended by inserting after the first sentence the following: "The Secretary shall subject a person to a civil penalty for a violation of section 20155 of this title".

TITLE VI–MISCELLANEOUS PROVISIONS

SEC. 601. TECHNICAL AMENDMENTS REGARDING ADJUSTMENT OF CIVIL PENALTIES FOR INFLATION.

(a) CHAPTER 201 GENERAL VIOLATIONS.–In section 21301(a)(2), as amended by this Act, insert after "$10,000" and after "$20,000" the following: "or such other amount to which the stated maximum penalty is adjusted if required by the Federal Civil Penalties Inflation Adjustment Act of 1990 (Public Law 101-410, 28 U.S.C. 2461 note)".

(b) CHAPTER 201 ACCIDENT AND INCIDENT VIOLATIONS AND CHAPTER 203-209 VIOLATIONS.–In section 21302(a)(2), as amended by this Act, insert after "$10,000" and after "$20,000" the following: "or such other amount to which the stated maximum penalty is adjusted if required by the Federal Civil Penalties Inflation Adjustment Act of 1990 (Public Law 101-410, 28 U.S.C. 2461 note)".

(c) CHAPTER 211 VIOLATIONS.–In section 21303(a)(2), as amended by this Act, insert after "$10,000" and after "$20,000" the following: "or such other amount to which the stated maximum penalty is adjusted if required by the Federal Civil Penalties Inflation Adjustment Act of 1990 (Public Law 101-410, 28 U.S.C. 2461 note)".

SEC. 602. REVISION OF SPECIAL PREEMPTION PROVISION.

Section 711 of the Regional Rail Reorganization Act of 1973 (section 797j of title 45, United States Code), is revised to read as follows:

"SEC. 711. No State may continue in force any law, rule, regulation, order, or standard adopted before the date of enactment of the Federal

Appendix D

Proposed Legislation
for Mandatory Reporting of Crossing Inventory
Federal Railroad Safety Enhancement Act of 1999, Section 503
H.B.2683 and S.1496

U.S. Department
of Transportation

Federal Railroad Administration

400 Seventh St. S.W.
Washington, D.C. 20590

The Honorable David M. Laney
Chairman
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483

Dear Mr. Laney:

As indicated in the letter from Mr. Vincent Schimmoller and myself dated February 18, 2000, the Federal Railroad Administration (FRA) and the Federal Highway Administration (FHWA) have been directed by Congress to work with the states to identify the "ten most deadly crossings in each state" and identify ways in which these crossings can be closed or reconfigured to reduce the dangers. This directive was initiated through the Conference Committee Report on U.S. Department of Transportation Appropriations for FY 2000. You previously were provided with a list of the thirty crossings that our records indicated had the highest probability of having a fatal collision according to the U.S. D.O.T. Fatal Accident Prediction formula. Many states provided updated crossing inventory information to FRA, and some states included additional crossings to be included in the study.

You will find enclosed a listing of the ten crossings that have been identified as having the highest fatal accident probability in your state which will be included in our study. If your state provided updated inventory information, this listing reflects the changes you have noted. FRA's Crossing and Trespasser Regional Manager and FHWA's Division Safety Engineer for you state will be contacting your staff shortly to discuss ways to mitigate the hazards at each crossing either through closure or other alternatives. A report will be prepared identifying the ten crossings with the highest fatal accident prediction values according to the FRA formula. Proposed mitigation methods and estimated costs will be compiled. If your state provided additional crossings to be included, these crossings and mitigation efforts will also be included.

Specifically, the following information for each crossing will be needed:

- Type of mitigation proposed (closure, relocation, separation, warning device upgrades, Traffic channelization, etc.)
- Brief description of the proposed mitigation
- Rough cost estimate for the proposed mitigation
- If not proposed, provide a brief explanation why the following were not recommended: closure, separation, and relocation.

This information will be included in a report for each crossing studied. You will find enclosed a sample copy of the report format. If you have any questions concerning this matter, please contact Mr. Greg Harshaw, Staff Director, FRA's Highway-Rail Crossing and Trespasser Division at (202) 493-6288.

Your participation in this effort will provide valuable input to the study. We look forward to working with you in the near future on this study.

Sincerely,

George A. Gavalla
Associate Administrator of Safety

Enclosures

cc: State Section 130 Contact
State Crossing Inventory Contact
FRA Regional Administrator
FHWA Division Safety Engineer

Appendix E

FY 2001 Allocation Table

UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

TABLE 2, PART 11

COMPUTATION OF APPORTIONMENT OF SURFACE TRANSPORTATION PROGRAM FUNDS
AUTHORIZED FOR FISCAL YEAR 2001

STATE	MANDATORY SAFETY AMOUNTS			OPTIONAL SAFETY AMOUNTS	TOTAL SAFETY	MANDATORY TRANSPORTATION ENHANCEMENTS	STP PROGRAM DISTRIBUTED BASED ON POPULATION			STP PROGRAM AVAILABLE FOR ANY AREA
	PROTECTIVE DEVICES	ELIMINATION OF HAZARDS	HAZARD ELIMINATION				AREAS OVER 200K	AREAS 200K AND UNDER	AREAS UNDER 5K	
ALABAMA	1,610,192	1,610,192	2,987,824	8,499,267	14,707,475	14,707,475	21,207,736	39,140,485	13,189,152	44,122,423
ALASKA	1,219,593	1,219,593	828,325	4,116,068	7,383,579	7,383,579	-	-	-	59,068,630
ARIZONA	788,040	788,041	2,025,656	9,892,312	13,494,049	13,494,049	47,593,919	9,197,871	10,678,455	40,482,147
ARKANSAS	1,228,715	1,228,714	2,002,741	5,921,461	10,381,631	10,381,631	7,506,762	32,466,975	11,934,419	31,144,894
CALIFORNIA	5,091,358	5,091,358	14,159,451	41,302,449	65,644,616	65,644,616	251,595,929	49,849,980	26,777,174	196,933,849
COLORADO	1,101,364	1,101,364	2,327,131	5,313,212	9,843,071	9,843,071	27,950,589	9,351,141	11,913,623	29,529,212
CONNECTICUT	523,805	523,805	1,841,942	5,227,861	8,117,413	8,117,413	18,275,846	17,860,937	4,450,284	22,211,679
DELAWARE	252,388	252,388	828,325	2,186,890	3,519,991	3,519,991	10,778,232	3,621,995	3,199,729	10,559,974
DIST. OF COL.	105,365	105,363	828,325	2,001,479	3,040,532	3,040,532	15,202,662	-	-	9,121,598
FLORIDA	2,343,353	2,343,354	6,248,540	28,330,112	39,265,359	39,265,359	132,438,721	47,153,965	16,734,111	117,796,078
GEORGIA	2,348,132	2,348,132	3,994,783	19,957,619	28,648,666	28,648,666	57,698,117	68,248,916	17,296,297	85,945,998
HAWAII	195,896	195,897	828,325	2,429,485	3,649,603	3,649,603	-	-	-	29,196,820
IDAHO	714,660	714,660	1,132,419	2,437,858	4,999,597	4,999,597	-	17,046,659	7,951,329	14,998,793
ILLINOIS	3,963,130	3,963,131	7,422,690	9,045,821	24,394,772	24,394,772	76,986,293	26,749,278	18,238,287	69,935,540
INDIANA	2,481,187	2,481,188	3,840,609	11,282,522	20,085,506	20,085,506	35,675,766	49,776,371	14,975,392	53,458,312
IOWA	1,897,837	1,897,836	2,700,163	2,976,148	9,471,984	9,471,984	8,229,550	25,704,431	13,425,937	28,415,951
KANSAS	2,435,325	2,435,325	2,624,484	2,821,570	10,316,704	10,316,704	17,052,512	21,914,082	12,616,924	29,568,068
KENTUCKY	1,267,517	1,267,517	2,648,972	7,239,291	12,423,297	12,423,297	18,740,428	30,184,745	13,191,309	37,269,889
LOUISIANA	1,588,057	1,588,056	2,820,265	5,307,425	11,303,803	11,303,803	22,268,339	23,561,105	10,689,568	33,911,407
MAINE	469,028	469,029	828,325	2,025,441	3,791,823	3,791,823	-	13,390,461	5,568,655	11,375,469
MARYLAND	713,643	713,643	2,514,791	7,211,405	11,153,482	11,153,482	38,775,657	10,652,278	6,339,477	33,460,448
MASSACHUSETTS	1,005,634	1,005,633	3,369,865	6,836,934	12,220,066	12,220,066	39,203,340	15,253,801	6,643,189	33,413,163
MICHIGAN	2,676,093	2,676,094	6,097,701	15,115,125	26,565,013	26,565,013	71,284,712	42,484,932	19,055,419	79,695,038
MINNESOTA	2,020,968	2,020,968	3,488,032	5,909,084	13,439,052	13,439,052	31,940,847	19,525,593	15,728,819	38,528,063
MISSISSIPPI	1,120,004	1,120,003	2,076,141	5,139,255	9,455,403	9,455,403	5,854,031	29,765,597	11,657,389	27,007,074
MISSOURI	1,999,011	1,999,011	3,832,323	9,687,545	17,517,890	17,517,890	41,308,611	29,185,121	17,095,716	47,879,795
MONTANA	806,683	806,684	1,153,693	2,755,123	5,522,183	5,522,183	-	15,887,159	11,723,757	15,104,378
NEBRASKA	1,330,662	1,330,661	1,784,553	1,988,773	6,434,649	6,434,649	9,873,881	12,309,045	9,990,322	19,303,949
NEVADA	391,995	391,995	886,240	3,517,358	5,187,588	5,187,588	11,011,414	-	3,513,834	26,975,461
NEW HAMPSHIRE	306,480	306,480	828,325	2,199,575	3,640,860	3,640,860	416,224	14,588,348	3,199,729	10,922,581
NEW JERSEY	1,345,630	1,345,629	4,231,203	8,648,545	15,571,007	15,571,007	64,108,597	7,857,874	5,888,564	46,713,021
NEW MEXICO	602,923	602,923	1,254,090	4,063,940	6,523,876	6,523,876	10,879,069	11,173,696	10,566,616	17,836,284
NEW YORK	3,010,222	3,010,222	10,391,048	11,315,472	27,726,964	27,726,964	103,277,178	15,954,706	19,402,937	83,180,892
NORTH CAROLINA	1,990,663	1,990,662	4,072,329	13,328,964	21,382,618	21,382,618	19,494,119	67,423,325	19,995,645	64,147,854
NORTH DAKOTA	1,404,592	1,404,591	1,238,907	317,434	4,365,524	4,427,445	-	14,550,416	7,586,810	12,689,640
OHIO	3,150,872	3,150,872	6,858,605	11,311,592	24,471,941	24,471,941	68,144,991	33,887,472	20,327,239	64,868,355
OKLAHOMA	1,650,416	1,650,416	2,749,793	6,342,906	12,393,531	12,393,531	24,803,985	24,566,856	12,596,816	37,180,595
OREGON	1,097,050	1,097,049	2,375,012	4,613,029	9,182,140	9,182,140	16,228,067	18,724,936	10,957,694	27,546,419
PENNSYLVANIA	2,902,195	2,902,196	7,449,696	11,931,971	25,186,058	25,186,058	64,308,986	37,408,902	24,212,405	75,558,175
RHODE ISLAND	222,506	222,507	828,325	2,365,470	3,638,808	3,638,808	13,656,500	1,337,812	3,199,729	9,678,157
SOUTH CAROLINA	1,292,463	1,292,463	2,307,995	9,131,067	14,023,988	14,023,988	20,915,380	38,902,401	10,302,157	40,213,621
SOUTH DAKOTA	827,416	827,416	1,136,573	2,161,261	4,952,666	4,952,666	-	16,489,484	8,273,847	14,198,443
TENNESSEE	1,633,692	1,633,692	3,287,836	9,668,887	16,224,107	16,224,107	31,431,943	34,627,937	15,060,658	37,453,593
TEXAS	5,453,140	5,453,140	10,656,567	41,816,181	63,379,028	63,379,028	165,798,903	110,665,847	40,430,391	173,327,387
UTAH	576,499	576,500	1,214,349	3,110,871	5,478,219	5,478,219	20,177,850	141,007	7,072,238	16,434,657
VERMONT	309,315	309,316	828,325	1,998,060	3,445,016	3,445,016	-	14,025,350	3,199,729	9,413,200
VIRGINIA	1,365,602	1,365,602	3,511,429	13,253,522	19,496,155	19,496,155	51,174,997	31,898,356	14,407,422	55,900,710
WASHINGTON	1,358,680	1,358,680	3,018,921	7,049,430	12,785,711	12,785,711	35,306,979	17,490,289	11,131,286	38,357,132
WEST VIRGINIA	854,154	854,155	1,384,223	2,535,369	5,627,901	5,627,901	-	19,961,855	8,177,651	15,440,655
WISCONSIN	1,964,511	1,964,510	3,614,824	9,317,570	16,861,415	16,861,415	25,345,520	44,337,824	14,623,730	50,584,245
WYOMING	456,159	456,159	828,325	1,564,100	3,304,743	3,304,743	-	8,824,659	7,699,054	9,914,228
TOTAL	77,464,815	77,464,815	162,189,334	414,522,109	731,641,073	731,702,994	1,753,923,182	1,245,122,275	592,890,914	2,187,975,944