

GRADE CROSSING SAFETY



BNSF
RAILWAY

Overview of BNSF's Approach to Grade Crossing Safety

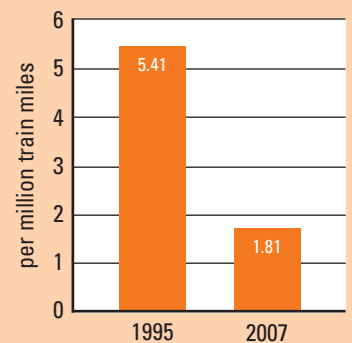
BNSF is committed to highway-railroad grade crossing safety. It is an integral part of our operation and culture and involves the cooperative daily effort of many employees. Since oncoming trains cannot stop for vehicles whose drivers violate motor vehicle laws when approaching railroad tracks, each grade crossing presents possible danger to motorists and train crews. Recognizing this potential hazard, BNSF is committed to grade crossing safety on many fronts, including community education and awareness, train crew education and field operations testing to monitor rules compliance, grade crossing closure, crossing safety technology, crossing resurfacing, vegetation control, installation of warning devices, and track and signal inspection and maintenance.

BNSF has one of the lowest highway-railroad grade crossing collision rates in the rail industry and, as an industry leader, will continue to work with the states and the communities we serve to further improve grade crossing safety.

General Information

- There are more than 229,100 highway-railroad grade crossings in the U.S., including just over 26,500 across BNSF's 32,000-mile network.
- BNSF's highway-railroad grade crossings include approximately 17,580 public and 8,770 private and pedestrian at-grade crossings. In addition, BNSF has more than 3,400 public grade separations and more than 500 private and pedestrian grade separations.
- BNSF has one of the lowest highway-railroad grade crossing collision rates in the rail industry. Since BNSF's merger in 1995, the rate of grade crossing collisions has declined by 67 percent – from 5.41 per million train miles in 1995 to a rate of 1.81 in 2007.
- From 1997 to 2007 more than 47 percent of the grade crossing collisions on BNSF occurred at crossings with active warning devices (automatic gates and/or flashing light signals).
- For the past several years, BNSF has averaged nearly \$90 million annually on programs related to grade crossing safety. BNSF expenditures include funding the educational and program activities of 18 grade crossing safety managers and 10 public projects managers, as well as crossing signal maintenance and vegetation control. The amount spent on grade crossing safety includes an annual average of \$17 million to maintain grade crossing road surfaces.

**Rate of
Grade Crossing Collisions**
since BNSF merger in 1995



Federal/Railroad Grade Crossing Safety Program

Federal and state processes for upgrading crossing signals: Each state determines the location and types of rail-highway grade crossing signals to be installed, under a federal program. Crossing signals are defined by the Federal Highway Administration as highway control devices, not railroad signals.

Each state receives an allocation of federal safety funds and develops a priority list of crossings each year for grade crossing improvements. The formula used to generate this list varies from state to state and typically includes elements such as train speed, train volume, average daily traffic and accident history.

Once a state determines which crossings are to be upgraded, it contacts the railroad to begin the “diagnostic” process. The railroad designs the circuitry for each crossing and estimates the cost. Once the state reviews and approves the estimate, the state issues an agreement to the railroad to install the specified signals. BNSF participated in more than 280 diagnostic projects in 2007.

Federal funds pay about 90 percent of the cost of a signal installation and the local government jurisdiction — city, county, etc. — pays the other 10 percent. The railroad maintains the signals from that time forward. These maintenance costs usually equal the cost of the initial installation in about 10 years. The railroad cannot, on its own, install crossing signals. It is required to get state permission.

FRA Locomotive Horn rule: On April 27, 2005, in response to a Congressional mandate, the Federal Railroad Administration (FRA) issued a Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings. This final rule took effect June 24, 2005, at public highway-rail grade crossings. Under the new rule, local governments may establish quiet zones or continue existing quiet zones, if they are willing to take remedial steps to address risk, based on a calculation of potential risk at the crossing. In many cases, the rule makes these designations subject to FRA review, approval and ongoing oversight.

These remedial steps can include crossing closure, grade separation, full-width crossing gates with an approved median divider, full-width gates and lights at crossings on a one-way street, temporary closure (for nighttime quiet zones only) or four quadrant gates. The rule also allows for an automated horn system at the crossing as a substitute for the train horn, if this provision is approved by the Federal Highway Administration. Certain Alternative Safety Measures are also described.

BNSF is working with a number of communities to review their requests for quiet zones and to perform a diagnostic review of proposed remedial steps. Community leaders who have questions about the rule or about BNSF’s role in implementing that rule should contact Mr. Lyn Hartley, Director Public Projects, who can be reached at Lyn.Hartley@bnsf.com.



Community Education/Law Enforcement/Awareness

Operation Lifesaver Program: In 2007, BNSF sponsored more than 4,600 Operation Lifesaver (OL) classes on highway-railroad grade crossing safety. BNSF's program targets the highest risk populations – new drivers, adult drivers and professional drivers. Approximately one fifth (982) of BNSF's OL courses were presented at drivers' education classes. Nearly 850 courses were conducted with truck and school bus drivers, more than 800 were offered to adult drivers, and about 200 were conducted with emergency response personnel. The rest were held at elementary and junior high schools. More than 300 employee and civilian volunteer presenters work on behalf of BNSF highway/rail grade crossing safety. Many of the volunteers were trained by BNSF field safety managers, who are certified by OL to teach using the OL curriculum.

Officer on the Train: In 2007, BNSF conducted 97 Officer on the Train (OOT) programs. These programs give local law enforcement the opportunity to observe motorist and pedestrian behavior from the cab of a locomotive or from the ground at a grade crossing in coordination with a BNSF train, to learn about grade crossing safety laws and get a sampling of compliance levels. Traffic citations or warnings are often issued as part of OOT programs.

In addition, in 2007 BNSF participated in more than 190 positive enforcement efforts, a much larger number than in 2006, due to a very successful proactive effort in Missouri. This program places law enforcement officers near crossings to watch driver behavior. Motorists who obey grade crossing laws are stopped and thanked for their safe driving and rewarded with a small token of appreciation.

Roll Call: In BNSF's "Roll Call" program, over 490 follow-up visits were conducted with patrol officers at law enforcement agencies to offer training or to reinforce prior training on the importance of enforcing grade crossing safety and trespassing laws.

Grade Crossing Collision Investigation: In 2007, BNSF participated in 113 Grade Crossing Collision Investigation (GCCCI) courses, which are four- to 16-hour courses offered as standard training at law enforcement academies. This program has been endorsed and certified by the National Sheriffs' Association and the International Association of Police Chiefs through OL and is now the standard for training nationwide. In addition, BNSF has developed an online, computer-based, interactive version of GCCCI to provide officers convenient access to this program.

Industrial truck driver education program: In 2007, BNSF offered more than 164 truck driver education programs to trucking companies located along BNSF track. Primary targets included trucking companies that are BNSF customers, as well as trucking companies that haul commodities such as aggregate and gasoline over BNSF tracks.



Train crew education and operations testing: BNSF train crew employees receive extensive hands-on, performance-based training that covers safety and operating rules, air brake and train handling rules, and practice on stationary and full-motion locomotive simulators. This training, provided to newly hired employees as well as current employees as part of BNSF's recertification program, includes skills essential to grade crossing safety, such as a review of train whistle procedures and proper train speeds. This training is reinforced by frequent operations testing, as BNSF supervisors regularly monitor train operations to ensure all safety and operating rules are consistently followed.

Grade Crossing Consolidation Programs

Grade crossing consolidation: One of the best ways to address grade crossing safety is to reduce the number of at-grade crossings. BNSF's grade crossing safety program includes an aggressive initiative to close public and private at-grade crossings, working closely with communities and property owners. Good candidates for closure include those that are redundant (other crossings nearby allow access to the same roads or areas), are not designated emergency routes, have low traffic volumes, or are private crossings that are no longer needed or used. Since 2000, BNSF has closed more than 3,800 at-grade crossings and has a goal of closing 450 more in 2008.

Private crossing permits review: In 2007, about 17 percent of BNSF's grade crossing collisions occurred at private crossings. In response, BNSF is working to reduce the number of private grade crossings, especially those that are rarely used or redundant, and closely scrutinizes all requests for new private crossings. During 2007, there were 127 requests for new private crossing permits. Only 14 new crossings were installed – and six of those were temporary for construction purposes.

Track and Signal Inspection and Maintenance

Track inspection programs: Key corridors on BNSF are inspected four times a week by BNSF track inspectors, and many heavily-traveled routes are inspected daily. These inspections include a review of condition of track and right-of-way as well as whistle posts, crossbucks and active warning devices. In addition, BNSF train crews are instructed to report any signal and crossing warning malfunctions immediately to BNSF's Network Operations Center in Fort Worth. This program includes "power-on" lights at active warning devices that indicate a working power supply to the lights and gates.

Grade crossing warning inspection and maintenance: BNSF is responsible for maintenance of active warning devices and spends an average of about \$38 million annually on grade crossing signal maintenance and repair. Each of the active warning devices is thoroughly inspected monthly by BNSF signal employees, including a review of functionality of gates, lights and battery back-up power sources.



Vegetation Control

Vegetation treatment and brush control: As much as practical, BNSF's goal is to reduce vegetation and other obstructions on its right-of-way that would materially interfere with motorists' ability to see approaching train traffic. In 2007, BNSF treated 27,500 acres along its right-of-way with herbicides to prevent growth of new vegetation at railroad crossings.

Crossing Safety Technology and Management Processes

Crossing surveillance systems: BNSF cooperated with various cities across the system to test surveillance systems that digitally record drivers who violate highway-rail grade crossing laws. Drivers receive correspondence advising them that they were observed behaving unsafely.

1-800 number signs: BNSF has posted an emergency contact number at all public grade crossings for the public's use in contacting BNSF's 24-hour Resource Operations Center with concerns regarding crossings or related questions (800-832-5452). These signs allow motorists who become stalled or in any way obstruct railroad tracks to call a number and simply provide the information on the sign. This information includes the Department of Transportation identification number that pinpoints their location for BNSF's dispatching center and allows us to warn or stop trains in the affected area.

Other technologies: BNSF continues to investigate new technologies that enter the marketplace related to highway-rail grade crossing safety. Examples are four quadrant gates, extended cantilever arms, median barriers, in-pavement LED lights, barrier gates, stationary horns and instantaneous reporting of active warning device failures via cellular technology. BNSF is also working with several interested communities to explore pilot video enforcement programs that would monitor driver behavior at grade crossings.



Operations Monitoring Programs

Reports of unsafe motorists/trespassers: As part of BNSF's unsafe motorist and trespasser program, train crews and other field employees submitted more than 1,340 reports in 2007 of trespassers or drivers who violated grade crossing safety laws. The information is provided to state highway department personnel for consideration in preparing their grade crossing priority index to determine the possible need for traffic control devices, as part of the Federal Highway-Rail Grade Crossing and Trespasser Prevention Program. BNSF also uses this data to identify problem areas, respond with educational training and seek assistance from local law enforcement authorities.