

## HIGHWAY – RAIL GRADE CROSSING CONSOLIDATION PROGRAM

- To decrease unnecessary train traffic exposure to life and property, promote public safety, and improve traffic conditions, the Texas Department of Transportation (TxDOT), working in conjunction with the various railroad companies, are actively encouraging local governments to identify and permanently close existing, redundant railroad grade crossings whenever possible.
- TxDOT has two safety improvement programs to provide funding to local governments who agree to permanently close existing passive grade crossings.
  - When a passive grade crossing has been selected by TxDOT to be upgraded with the installation of flashing lights or flashing lights with gates under the Federal Signal Program, TxDOT may provide up to \$150,000 per crossing should the local government agree to permanently close the crossing(s). The railroad company may also contribute funding if the crossing(s) is closed. The amount of funding to be provided is at the railroad company's discretion.
  - For any railroad grade crossing not selected by TxDOT for signal upgrades, a maximum of \$7500 per crossing is available. Under this condition, the railroad company must agree to match or exceed TxDOT's financial contribution.
- In the event the local government agrees to accept TxDOT's financial offer and close the grade crossing(s), the City must use these funds to make improvements which may include, but not limited to, (1) removing the existing pavement at the crossing; (2) constructing a satisfactory terminus of the roadway at the removed crossing; (3) installing proper signs acknowledging the closing of the crossing; (4) upgrading existing railroad signals; or (5) improving existing streets in the vicinity of the closed crossing to handle the diverted traffic.
- Funding provided by TxDOT is on a cost reimbursement basis. The local government must incur the costs associated with the improvements described above and submit the appropriate requests for reimbursement to TxDOT.
- To participate in the grade crossing closure program, the local government must pass an ordinance or resolution of the governing body to permanently close the grade crossing(s) and execute an agreement with TxDOT.
- TxDOT's District Railroad Coordinators and the Rail Division's Rail Highway Section staff are available to answer questions or provide additional information regarding the grade crossing safety improvement program.

## **Grade crossing consolidation programs**

Train-vehicle collisions not only result in death and injury, but also may cause destruction of property, fires and explosions. Rail-highway crashes may cause train derailments resulting in hazardous-material spills, which often necessitate evacuations. In fact, whenever locomotive engineers apply emergency brakes attempting to avoid hitting vehicles or pedestrians, they risk derailment.

Texas has 9,904 public and 8,641 private crossings 11,000 miles of mainline track. Many of those crossings are unnecessary. Existing resources cannot cover the costs of automated warning devices or bridges at all locations where highways cross railroad tracks. In addition, many crossings have vehicle and train volumes too low to justify expenditures for those purposes. When low-volume and redundant crossings are closed, the volume of traffic rerouted to adjacent Crossings may justify funding for improving the remaining crossings.

Communities that close crossings can save money by eliminating installation and maintenance costs associated with warning devices, crossing surfaces and foliage removal to improve sight distance. Consolidating crossings also improves a community's quality of life by reducing noise from train horns sounded for safety at each crossing. Working together, TXDOT and local communities have closed an average of 156 railroad-highway crossings since 1989.

We are actively pursuing opportunities to consolidate and close railroad crossings in connection with projects to improve safety at adjacent crossings. Under the federal railroad signal program, we can now offer incentives to local governmental entities for their cooperation in closing crossings. The railroad companies are also aggressively pursuing opportunities and cooperating in our efforts to close crossings on active rail lines. While many of these projects are still being developed, we anticipate an increase in the number of crossings being closed on active rail lines as a result of this initiative.

One of the best ways to address grade crossing safety is to reduce the number of at-grade crossings. TXDOT's grade crossing safety program includes an aggressive initiative to close public grade crossings, working closely with municipalities. 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.

### **Candidates for closure**

TXDOT is currently working with several railroad companies and municipalities to identify crossings for possible consolidation or elimination. Candidates include:

- Crossings within a quarter mile of one another that is part of the same highway or street network.
- Crossings where vehicular traffic can be safely and efficiently redirected to an adjacent crossing.
- Crossings where a high number of crashes have occurred.
- Crossings with reduced sight distance because of the angle of the intersection curve of the track, trees, undergrowth or man-made obstructions.
- Adjacent crossings where one is replaced with a bridge or upgraded with new signaling devices.
- Several adjacent crossings when a new one is being built.

# RAIL-HIGHWAY GRADE CROSSING CONSOLIDATION SELECTION PROCESS

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## **I. Identify Crossings for Possible Closure**

A railroad-highway grade crossing having any of the following characteristics should be analyzed for closing:

- a) Redundant railroad crossings such as crossings in cities/towns where the track crosses a road every few hundred feet.
- b) Crossings on unpaved roads and those with minimal average daily traffic (ADT) where an alternative route is readily available.
- c) Any crossing without active warning devices being considered for the installation of active warning devices.
- d) Adjacent crossings that are located within one-half mile of any crossing being upgraded or grade separated.
- e) Crossings involved in a high speed corridor or passenger route.
- f) Crossings with four or more trains crossing per day.
- g) Crossings where the geometrics of the track and/or roadway make the location of the crossing a hazardous location such as a "humped" crossing where trucks could get stuck on the track or a diagonal crossing where there is no safe way for a truck or long machinery to cross safely due to limited sight distance. (One solution to closing a diagonal crossing is to build a parallel road with the tracks to the next crossing).

Keep in mind that the road crossing the track should not serve as a main route for fire, ambulances or any other emergency vehicles.

## **II. Select Crossing(s) for Possible Closure**

Target crossing(s) for possible closure. Survey the community or surrounding area for crossings that meet any or all of the above-mentioned criteria. Drive the roads several miles each way from the tracks to determine if the crossing could be closed or a least dead-ended. Crossings of specific rail corridors, or within an individual county or community, should be evaluated.

Prepare a field investigation. Prior to the field investigation, find out as much information as possible about the crossing including the information on page 1 of the attached form. This data can be obtained by reviewing the railroad inventory, Investigative Index, contacting the NCDOT's Traffic Engineering Branch or the appropriate railroad. It is also helpful to have an aerial photograph (which, if available, may be obtained from NCDOT's Photogrammetry Unit) and a location map of the crossing.

## **III. Investigate the Crossing in the Field**

Provide a map (from county or city road maps) and a detailed sketch of the crossing and surrounding roads (see pages 4-6). Also, include photographs of the site.

#### **IV. Answer the Questionnaire (shown on page 7)**

For question 1, state the initial reason(s) this crossing was proposed to be closed.

The answer to questions 2, 3, 5, 6, 9, 10 and 11 may be obtained by contacting the City Manager, City Traffic Engineer, Mayor, Division Engineer, Area Traffic Engineer, Statewide Planning Branch, Division Traffic Engineer and/or the Planning and Environmental Unit.

Questions 4, 7 and 8 can be determined by the field investigation. For instance, if an unpaved road runs parallel to the track and connects two separate streets which cross the track, it may be possible to pave the unpaved connector road and close one of the crossings.

The answer to question 11 may be the biggest obstacle to prevent the closing of the crossing. For instance, if a business is located near the crossing, the owners may oppose closing the crossing because of the inconvenience to their customers and employees. Home owners also may oppose the closing of a crossing. When a municipal system crossing is proposed to be closed, the town/city council will have to be involved with the closing of the crossing and a public hearing must be held. Public opinion has a significant impact on any action to close a crossing and public opposition to closing an existing railroad grade crossing ensures that any closing will be difficult. However, safety should always be considered as a priority over convenience.

Per Section 8A-4 of the Manual on Uniform Traffic Control Devices, "Any highway grade crossing for which there is not a demonstrated need should be closed." Having obtained as much information as possible by completing the Railroad Crossing Closing Form, you are now ready to recommend whether or not the crossing should be closed.

## RAILROAD CROSSING CLOSING FORM

CROSSING NO	DIVISION	COUNTY	CITY	ROUTE	ACCIDENTS /10 YEARS

MILEPOST	RR NAME	PROJECT IN THE TIP?	SCHEDULED IN FFY	PROGRAM I.D.
		(CIRCLE ONE) YES                      NO		

Circle type of rail traffic that applies: *High Speed Corridor*    *Passenger*    *Freight*

Normal Daily Train Moves = \_\_\_\_\_; Day (6am-6pm)= \_\_\_\_\_; Night (6pm-6am)=\_\_\_\_\_

Maximum Daily Train Moves = \_\_\_\_\_ (Include an explanation if necessary.)

Maximum Train Speed = \_\_\_\_\_ mph. Is train speed variable? (Circle) *Yes*                      *No*

Normal Passenger Train Speed = \_\_\_\_\_; Normal Freight Train Speed = \_\_\_\_\_

Number of Tracks = \_\_\_\_\_ Thru; \_\_\_\_\_ Switching/Auxiliary

Existing Invest. Index = \_\_\_\_\_ Existing Preemption? (Circle) *Yes*                      *No*

Existing Average Daily Traffic (ADT) = \_\_\_\_\_

Projected ADT Increase Per Year = \_\_\_\_\_%    School Bus Factor = \_\_\_\_\_

Existing Warning Devices are (Circle): *(a) Crossbucks*    *(b) Flashers*                      *(c) Cantilevers*

*(d) Flashers & Gates*                      *(e) Cantilevers & Gates*    *(f) STOP Signs*

*(g) Diamond-Grade Material*    *(h) Buckeye Crossbucks*    *(h) Other* \_\_\_\_\_

Is this railway track a candidate for future abandonment or is any significant increase or decrease anticipated in train traffic at this location?

Circle One:                      *Yes*                      *No*                      *Unknown*

Comments:

**MAP OF AREA** (*From County Road or City Street Map*)

**FIELD INVESTIGATION FOR CROSSING NO. \_\_\_\_\_**

DRAW SKETCH ON NEXT PAGE TO INCLUDE THE FOLLOWING:

- (a) Indicate road name/state road number and intersecting alternative road.
- (b) Indicate paved or unpaved roadways.
- (c) Indicate railroad name and track configuration.
- (d) Indicate type of road, (i.e., connector, dead end, etc.).
- (e) Indicate location and type of warning devices at adjacent crossings.
- (f) Indicate distance to adjacent crossings and alternative road routes.
- (g) Indicate type of warning devices at adjacent crossings.
- (h) Show existing and proposed traffic patterns including length of road in miles (kilometers).
- (i) Indicate quadrants with sight distance problems and type of problems (i.e., trees obscuring view, high embankments, horizontal & vertical curves).
- (j) Indicate approximate location and names of local businesses, location of adjacent homes and any other pertinent information.
- (k) Indicate potential roadway residue remaining as result of potential crossing closure.

If aerial photograph available, attach to closing form package.

Mission No. \_\_\_\_\_ Photo No. \_\_\_\_\_ Date of aerial photograph  
\_\_\_\_/\_\_\_\_/\_\_\_\_

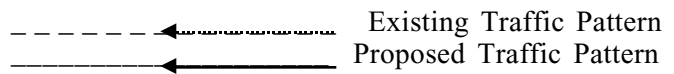
**FIELD INVESTIGATION FOR CROSSING NO. \_\_\_\_\_**

Name: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

No. of Field Photos Attached \_\_\_\_\_

SKETCH



**QUESTIONNAIRE**

- 1) What is/are the reason(s) this crossing is proposed to be closed?

- 2) Provide the estimated ADT on alternative road routes after traffic shift (list affected roads and respective ADT):
- 3) Is the roadway paved? If not, when is it scheduled to be paved?
- 4) If any, how much additional mileage is required because of the re-routing of roadway traffic due to the closing of the crossing? How much inconvenience in terms of alternative route time will the closing cause?
- 5) Are there any nearby safety operations such as fire, police or rescue departments which could be adversely affected by the closing of the crossing?
- 6) Is the crossing located on a School Bus route?
- 7) Do any of the other roads in the vicinity of the crossing need to be upgraded to facilitate traffic movement if the crossing is closed?
- 8) If the crossing is closed, will any roadway residues remain that may be abandoned?
- 9) How many homes could be affected by the closing? Are any businesses affected? If so, provide company name and approximate number of employees.

- 10) Is road part of a future thoroughfare or any other long term development project?
  
- 11) Do you anticipate any local opposition? If so, who and why? (For example, city officials, local citizens, local industries, etc.)
  
- 12) Would you recommend closing this crossing (include any pertinent comments)?

*October 6, 1995*

- Complex crossings where it is difficult to provide adequate warning devices or which have severe operating problems - such as multiple tracks, extensive railroad switching operations.

**Grade crossings can be eliminated by:**

- Constructing a connector road, or improving roadways along alternate routes to direct traffic to an adjacent crossing.
- Dead-ending affected streets and rerouting traffic, creating cul-de-sacs.
- Constructing bridges.
- Relocating or consolidating railroad operations.

**Project Evaluation Process**

The TXDOT has developed a list of criteria to determine whether a particular crossing should be improved or closed. Criteria include:

- Accident history.
- Vehicle and train traffic (present and projected).
- Type of roadway (thoroughfare, collector, local access, truck route, school bus route or designated emergency route).
- Economic impact of closing the crossing.
- Alternative roadway access.
- Type of property being served (residential, commercial or industrial).
- Potential for bridging by overpass or underpass.
- Need for enhanced warning devices
- Feasibility for roadway improvements.
- Crossing condition (geometry, sight distance, crossing surface).
- Available federal, state and/or local funding.

**Corridor studies program**

In its corridor studies program, TXDOT works with local communities and townships to identify consolidation opportunities for groups of grade crossings within proximity of each other, such as within city limits, county limits, or a subdivision. The communities supply information about vehicle traffic patterns at grade crossings, with the goal of closing selected grade crossings and re-engineering others as necessary. Handling crossings as part of a corridor, rather than one-by-one, increases the effectiveness of crossing consolidation and re-engineering. Many times the states will support crossing consolidations by offering communities signal and surface improvements, grade separations and other engineering improvements, or parallel roads connecting proposed closed crossings to existing crossings. TXDOT has aggressively pursued the corridor study approaches, will continue implementation of several corridor studies, and is planning additional corridor studies through 2012.

**Funding Sources**

Federal funds and/or state highway funds can be used to improve or consolidate crossings and to defray costs associated with crossing consolidation and elimination. TXDOT can provide details on how to apply for those funds. Financial assistance and in-kind services from railroad companies have proven to be additional resources