

1/27/92

CHAPTER 8830
DEPARTMENT OF TRANSPORTATION
PROGRAM MANAGEMENT DIVISION
RAILROADS

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|--------------------------------|--------------------|
| In the matter of the Proposed) | |
| Adoption of Rules governing) | |
| the establishment, vacation,) | STATEMENT OF FACTS |
| relocation, consolidation,) | ESTABLISHING NEED |
| and separation of grades at) | AND REASONABLENESS |
| public grade crossings and) | OF RULES |
| the revision of existing) | |
| rules governing RAILROADS) | |

The Minnesota Department of Transportation (Mn/DOT) agency rules governing railroads have been in existence since 1974. No revisions have been made to the rules since that time. Minnesota Statutes, section 219.073, enacted by the 1990 Minnesota Legislature, requires the Commissioner of the Minnesota Department of Transportation to "adopt rules ... that contain standards governing the establishment, vacation, relocation, consolidation, and separation of grades at public grade crossings". This legislation states that the number of grade crossings in the state should be reduced to enhance public safety. The railroad companies were instrumental in getting this legislation passed because their attempts to vacate grade crossings have usually been unsuccessful. Since no standards for vacation existed, any opposition to the vacation of a grade crossing has generally been sufficient to keep that grade crossing open. In conjunction with the development of the new rules, the commissioner considered it advisable to review the existing rules governing railroads.

A Notice of Intent to Solicit Outside Opinion Regarding Proposed Rules Governing the Establishment, Vacation, Relocation, Consolidation, and Separation of Grades at Public Grade Crossings and the Revision of Existing Rule Governing Railroads was published in the State Register on Monday, September 17, 1990. Comments were received from two railroad companies and one consulting engineering firm.

A six-member Rail Rules Task Force was formed by Mn/DOT's Railroad Administration Section to formulate the new rules and review the existing rules concerning grade crossings. Two of the members of this task force were from Mn/DOT's Railroad Administration Section, one was from Mn/DOT's Office of Traffic Engineering, one was a Mn/DOT District Traffic Engineer from an outstate district, one was from Mn/DOT's Office of State Aid, and one represented the railroad industry. The task force met seven times between September 21, 1990, and March 28, 1991.

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Representatives of counties in the Twin Cities Metropolitan Area attended the fourth and fifth meetings to give the task force members another viewpoint on the proposed rules. A representative of Hennepin County also attended the sixth and seventh meetings of the task force.

The Rail Rules Task Force reviewed the existing rules concerning grade crossings, including the changes proposed by the Railroad Administration Section, and suggested any revisions which they thought were appropriate. The task force also developed the new rules containing standards for the establishment, vacation, relocation, consolidation, and separation of grades at public crossings, as mandated by the legislation passed in 1990.

In developing the new rules, a literature search was conducted to determine if standards for the establishment, vacation, relocation, consolidation, and/or separation of grades at public grade crossings existed elsewhere. Although several documents were found concerning these subjects, they did not contain specific standards.

Letters were sent to the departments of transportation or highway departments of all the other states, except Hawaii, requesting copies of any standards they have regarding the establishment, vacation, relocation, consolidation, and/or separation of grades at public grade crossings. Replies were received from 31 states, none of which have standards for the establishment, vacation, relocation, or consolidation of grade crossings. Five states have some type of standards for grade separations, but the standards were not appropriate for use in Minnesota. These states are located in New England, where, because of high-speed commuter rail lines, some states require that all crossings, and other states require that all mainline crossings, be grade-separated.

To keep others informed of developments in the rule-making process, a notice was sent to all cities, counties, and townships in Minnesota, in October 1990. The notice described the legislation requiring the adoption of new rules and the efforts up to that time regarding the development of the new rules.

To help establish standards for vacating grade crossings, questionnaires were sent to the 83 county engineers of the counties in which there are active rail lines. The questionnaires contained a list of factors which were being considered for use in determining which grade crossings should be vacated. The county engineers were asked to rate how important they believed each factor was in making this determination. Replies were received from 62 counties. The results were used in the development of the rules for the vacation of grade crossings.

In the Fall of 1991, a seven-member committee was formed by Mn/DOT's Rail Planning and Programs Section to review the existing rules regarding the Rail Service Improvement Program and the Rail Bank Program. Three of the members of this committee were from Mn/DOT's Rail Planning and Programs Section, one represented the large Class I railroads, one represented the smaller Class II and III railroads, one represented the Regional Railroad Authorities, and one represented the railroad users. The committee met twice, on October 17 and November 14, 1990, to review the existing rules and all changes proposed by the Rail Planning and Programs Section. The committee members were also asked to propose any revisions that they thought were appropriate.

The first draft of the proposed agency rules regarding railroads was sent out on February 14, 1991. Copies were sent to all counties, cities, and townships in which there are active rail lines; all railroad companies operating in Minnesota; the Transportation Regulation Board; the Minnesota Department of Natural Resources; the Minnesota Department of Public Safety; Mn/DOT's State Aid Engineer in St. Paul and the District State Aid Engineers; Mn/DOT's Director of the Office of Traffic Engineering in St. Paul and the District Traffic Engineers; the Federal Highway Administration; and other interested parties. Comments were received from one county, two cities, six railroad companies, Mn/DOT's Office of Traffic Engineering and three District Traffic Engineers, one Mn/DOT Transportation Planner from an outstate district, the Minnesota Department of Natural Resources, and the Federal Highway Administration. The Rail Rules Task Force met to review the comments received and determine which of the suggested revisions to the proposed rules were appropriate for inclusion. In addition, the comments received were reviewed by Mn/DOT's Railroad Administration and Rail Planning and Programs Sections.

A second draft of the proposed agency rules regarding railroads was sent out on April 24, 1991, using the same mailing list as for the first draft of the rules. Comments on the second draft were received from five railroad companies and two counties. The suggested revisions were reviewed by Mn/DOT's Railroad Administration and Rail Planning and Programs Sections to determine which were appropriate for inclusion in the proposed rules.

The proposed adoption of rules, amendments, and deletions governing the rule for RAILROADS contain changes to the existing Chapter 8830 of the Minnesota Rules. Because the rules are in the process of review, it is considered advisable to also make minor changes to make the rule easier for the layperson to understand. The Revisor of Statutes has made many non-substantive changes in the selection of words. Many other non-substantive changes have been made for clarity and to conform to statutes that have been revised. Major changes have occurred in the revision of the following parts:

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|-----------|-----------|-----------|-----------|
| 8830.0500 | 8830.0600 | 8830.0700 | 8830.0800 |
| 8830.1000 | 8830.1500 | 8830.2200 | 8830.2500 |
| 8830.2700 | 8830.2800 | | |

the addition of the following parts:

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|-----------|-----------|-----------|-----------|
| 8830.0220 | 8830.0250 | 8830.2650 | 8830.2705 |
| 8830.2710 | 8830.2715 | 8830.2720 | 8830.2725 |
| 8830.2730 | 8830.2750 | 8830.2755 | 8830.2760 |
| 8830.2765 | 8830.2770 | 8830.2775 | 8830.2780 |
| 8830.2785 | 8830.2790 | 8830.2850 | 8830.2950 |
| 8830.3510 | 8830.5450 | 8830.9901 | 8830.9904 |
| 8830.9906 | 8830.9908 | 8830.9911 | 8830.9921 |
| 8830.9931 | 8830.9941 | | |

the elimination of the following parts:

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|-----------|-----------|-----------|-----------|
| 8830.2600 | 8830.2900 | 8830.3500 | 8830.5400 |
| 8830.6100 | 8830.6200 | 8830.6300 | 8830.6400 |
| 8830.6500 | 8830.6600 | 8830.6700 | 8830.9900 |
| 8830.9910 | 8830.9920 | 8830.9930 | 8830.9940 |
| 8830.9950 | | | |

and the renumbering of Part 8830.5600 as Part 8830.5250. All changes except minor language changes are discussed below.

Throughout the rules, references to "the commission" have been changed to "the board" or "the commissioner," to reflect the transfer of responsibilities from the Public Utilities Commission to the Minnesota Transportation Regulation Board or the commissioner of the Minnesota Department of Transportation, in accordance with Minnesota Statutes, section 218.041. References to "the department" have been changed to "Mn/DOT" to reflect the transfer of responsibilities from the Department of Public Service to the Minnesota Department of Transportation, in accordance with Minnesota Statutes, section 218.041.

8820.0100 DEFINITIONS

Subpart 1. **Scope.** This subpart was added to make clear that these definitions apply to all of Chapter 8830.

Subp. 1a. **AAR signal manual.** Language indicating the availability of the AAR signal manual was changed to reflect the fact that the AAR signal manual is now available for loan through the Minitex interlibrary loan system.

Subp. 1b. **AASHTO.** Because the abbreviation "AASHTO" is used in the rules, a definition of American Association of State Highway and Transportation Officials was added.

Subp. 1c. **ADT.** Because the abbreviation "ADT" is used in the rules, a definition of Average Daily Traffic was added.

Subp. 1d. **Abandoned.** Because the term "abandoned" is used in the rules, a definition of the term was added.

Subp. 1e. **Bicycle path.** Because the term "bicycle path" is used in the rules, a definition of the term was added.

Subp. 1f. **Board.** Because the term "board" is used in the rules, a definition of the term was added.

Subp. 2. **Commission.** Because the responsibilities which were formerly assigned to the Public Utilities Commission have been transferred to the Minnesota Transportation Regulation Board and the Commissioner of the Minnesota Department of Transportation in accordance with Minnesota Statutes, section 218.041, the definition of the term "commission" was eliminated.

Subp. 2a. **City.** Because the term "city" is used in the rules, a definition of the term was added.

Subp. 2b. **Commissioner.** Because the term "commissioner" is used in the rules, a definition of the term was added.

Subp. 3. **Department.** Because the responsibilities which were formerly assigned to the Minnesota Department of Public Service have been transferred to the Minnesota Department of Transportation in accordance with Minnesota Statutes, section 218.041, the definition of the term "department" was deleted and the term "Mn/DOT," the common abbreviation for the Minnesota Department of Transportation, was added to the rules.

Subp. 5a. **Grade crossing.** Because the term "grade crossing" is used in the rules, a definition of the term was added.

Subp. 5b. **Grade separation.** Because the term "grade separation" is used in the rules, a definition of the term was added.

Subp. 6. **Manual.** Because the abbreviation "MMUTCD" is the common means of referring to the "Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways," the definition of the term "manual" was deleted and the abbreviation "MMUTCD" was added to the rules.

Subp. 7. **Railroad crossing.** Because the term "grade crossing" was added to the rules, the term "railroad crossing" is no longer used and this definition was eliminated.

Subp. 8. **USDOT.** This subpart was renumbered as subpart 19, placing it after the new subparts which were added to keep it in alphabetical order.

Subp. 9. **MMUTCD.** Because the abbreviation "MMUTCD" is used in the rules, a definition of "Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways" was added.

Subp. 10. **Mn/DOT.** Because the abbreviation "Mn/DOT" is used in the rules, a definition of Minnesota Department of Transportation was added.

Subp. 11. **Public way.** Because the term "public way" is used in the rules, a definition of the term was added.

Subp. 12. **Reflectorized.** Because the term "reflectorized" is used in the rules, a definition of the term was added.

Subp. 13. **Road authority.** Because the term "road authority" is used in the rules, a definition of the term was added.

Subp. 14. **Roadway.** Because the term "roadway" is used in the rules, a definition of the term was added.

Subp. 15. **Rural area.** Because the term "rural area" is used in the rules, a definition of the term was added.

Subp. 16. **Trail.** Because the term "trail" is used in the rules, a definition of the term was added.

Subp. 17. **Trail administrator.** Because the term "trail administrator" is used in the rules, a definition of the term was added.

Subp. 18. **Urban area.** Because the term "urban area" is used in the rules, a definition of the term was added.

8830.0200 APPLICATION

8830.0220 CHANGES REQUIRED BY COMMISSIONER

Part 8830.0200 was modified to reflect the transfer of responsibilities from the Minnesota Department of Public Service and the Minnesota Public Utilities Commission to the Minnesota Department of Transportation and the Minnesota Transportation Regulation Board, in accordance with Minnesota Statutes, section 218.041. Language was added stating that parts 8830.0100 to 8830.3900 apply only to public grade crossings and grade separations. This does not represent a change in the application of the rules, but the statement was added for clarification, since Minnesota Statutes, section 219.165, which was enacted by the 1991 Minnesota Legislature, requires that the Commissioner of the Minnesota Department of Transportation "adopt rules establishing minimum safety standards at all private railroad grade crossings in the state".

The material in part 8830.0200 was divided into parts 8830.0200 and 8830.0220, because the commissioner's right to require changes or improvements to conform to parts 8830.0100 to 8830.3900 is a separate subject from the application of the rules.

8830.0250 FAILURE TO COMPLY

This new part was added to define the procedure to be followed if a railroad company or road authority fails to comply with the rules set forth in parts 8830.0100 to 8830.3900. In the past, because the rules contained no language regarding actions to be taken for noncompliance with the rules, the effectiveness of the rules was largely based on voluntary compliance. Minnesota Statutes, sections 219.41 and 219.42, regarding orders of the Transportation Regulation Board, are cited for reference.

8830.0300 GRADE CROSSING INVENTORY NUMBER

Because the grade crossing inventory number is mentioned several times in the rules, this part is included to explain what the grade crossing inventory number is and assign the responsibilities for issuing and maintaining the crossing number and keeping the inventory current. Language was revised in this part to reflect the fact that the national inventory and numbering project has been completed. The name of the agency responsible for maintaining the grade crossing inventory was added to this part for reference.

This part assigns the responsibilities for issuing and maintaining the crossing number to the railroad company and specifies that any party making a change at a crossing must complete an inventory form so that the inventory will be kept current. The assignment of these responsibilities does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well. The location for obtaining forms and submitting the completed forms was added to this part for reference.

8830.0500 RAILROAD CROSSBUCK SIGN

Language was added to subpart 1 requiring that the use of the crossbuck comply with the MMUTCD, and language in the rule which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are incorporated in the rules. Language was added stating that the figures of the crossbuck and auxiliary signs are shown in part 8830.9904, Railroad Crossbuck and Auxiliary Signs. These figures were formerly shown in subpart 3. The requirement that the crossbuck be mounted on a post which meets the breakaway criteria of the FHWA's "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" replaced the previous language requiring the post to be "of wood or other yielding design". The previous language was vague, and disagreements have occurred between Mn/DOT and the railroad companies regarding what posts were acceptable. The FHWA's criteria were added to the rules to enhance public safety by requiring the use of posts which will break when struck by a

vehicle, resulting in less vehicular damage and reduced personal injury than occurs when a driver strikes an unyielding post.

Subpart 1a was added to include standards for the reflectorized material to be used on crossbucks and standards for the use of double-faced crossbucks. Use of this reflectorized material and the double-faced crossbucks will enhance public safety by increasing the visibility of the signs. Mn/DOT is presently involved in a program to replace all existing crossbuck signs with signs which are reflectorized with wide-angle, prismatic, retroreflective sheeting and which meet the other requirements of this part. This program will be completed by January 1, 1995. After a crossbuck sign is installed by Mn/DOT, replacement of the sign is the responsibility of the railroad company and must be to the same level of reflectorization or better so that the enhancement to public safety gained by the installation of the new crossbucks will not be lost when the crossbucks are replaced.

Language was added to subpart 2 requiring that the location of the crossbuck comply with the MMUTCD, and language in the rule which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are also incorporated in the rules.

Subpart 3 was eliminated, because the figures of the crossbuck sign and the auxiliary multiple track sign were moved to new part 8830.9904, Railroad Crossbuck and Auxiliary Signs, as the result of a reorganization placing all of the figures in parts 8830.9901 to 8830.9941.

8830.0600 RAILROAD ADVANCE-WARNING SIGNS

Advance-warning signs W10-2, W10-3, and W10-4, which may be used on roadways which are parallel to railroad tracks, were added to subpart 1. Although these are not new signs, they were added to the rules to enhance public safety by encouraging their use where appropriate. Language was added requiring that the use of advance-warning signs comply with the MMUTCD, and language in the rule which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are incorporated in the rules. Language was added stating that the figures of the advance-warning signs are shown in part 8830.9906, Railroad Advance-Warning Signs. These figures were formerly shown in subpart 2. Language was added to clarify the responsibilities of the road authority for installation and maintenance of advance-warning signs.

Subpart 2 was eliminated, because the figure of the advance-warning sign was moved to new part 8830.9906, Railroad Advance-Warning Signs, as the result of a reorganization placing all of the figures in parts 8830.9901 to 8830.9941.

Subpart 3 was added to include standards for the reflectorized material to be used on railroad advance-warning signs. Use of this reflectorized material will enhance public safety by increasing the visibility of the signs. Mn/DOT is presently involved in a program to replace all existing advance-warning signs with signs which are reflectorized with wide-angle, prismatic, retroreflective sheeting and which meet the other requirements of this part. This program will be completed by January 1, 1995. After an advance-warning sign is installed by Mn/DOT, replacement of the sign is the responsibility of the road authority and must be to the same level of reflectorization or better so that the enhancement to public safety gained by the installation of the new advance-warning signs will not be lost when the signs are replaced.

8830.0700 SUPPLEMENTAL RAILROAD ADVANCE-WARNING SIGNS

Language was added to subpart 1 stating that the supplemental railroad advance-warning signs shall be as described "in this part and part 8830.9906". The reference to part 8830.9906 was added because the figures of the signs which were formerly shown in subpart 7 are now shown in part 8830.9906, Railroad Advance-Warning Signs, and the figure of the exempt-crossing sign was added. The responsibilities of the road authority for installation and maintenance of the supplemental advance-warning signs, and of the railroad company for installation and maintenance of the "exempt" sign used below the crossbuck, were added to this subpart. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

Subpart 1a was added to include standards for the reflectorized material to be used on supplemental advance-warning signs. Use of this reflectorized material will enhance public safety by increasing the visibility of the signs. Mn/DOT is presently involved in a program to replace all existing supplemental advance-warning signs with signs which are reflectorized with wide-angle, prismatic, retroreflective sheeting and which meet the other requirements of this part. This program will be completed by January 1, 1995. After a supplemental advance-warning sign is installed by Mn/DOT, replacement of the sign by the road authority must be to the same level of reflectorization or better so that the enhancement to public safety gained by the installation of the new supplemental advance-warning signs will not be lost when the signs are replaced.

In subparts 3, 4, and 5, language was added stating that the figures of the supplemental railroad advance-warning signs are shown in part 8830.9906, Railroad Advance-Warning Signs. These figures were formerly shown in subpart 7.

Subpart 5a, describing the exempt-crossing sign and its use, was added to the rule. Although this is not a new sign, it was added to the rule to enhance public safety by encouraging its use where train volumes are extremely low, as defined by Minnesota Statutes, section 169.28, subdivision 2, in compliance with the MMUTCD. This subpart contains an explanation of the actions taken upon authorization of an exempt crossing sign. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

Subpart 5b, describing the "do not stop on tracks" sign and its use, was added to the rule. Although this is not a new sign, it was added to the rule to enhance public safety by encouraging its use where the potential for vehicles stopping on the tracks is high, such as where a grade crossing is close to a roadway intersection.

Subpart 7 was eliminated because the figures of the supplemental advance-warning signs were moved to new part 8830.9906, Railroad Advance-Warning Signs, as the result of a reorganization placing all of the figures in parts 8830.9901 to 8830.9941.

8830.0800 STOP SIGNS

The existing language in this part was divided into subparts 1, 2, and 3 to better differentiate the subject matter contained in this part. Subparts 1 and 3 contain non-substantive changes as explained on page 4 of this statement.

Subpart 1 specifies that the use of stop signs must comply with the MMUTCD, and language regarding the physical description of the stop sign which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are incorporated in the rules. Language was added allowing the road authority to request the commissioner to authorize stop signs at a specific crossing, or the commissioner to authorize stop signs on his own motion. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

Subpart 2 specifies the standard size of the stop sign used at grade crossings. To enhance public safety by providing a more visible sign, the size of this sign has been increased from 30 inches by 30 inches to 36 inches by 36 inches. Mn/DOT is presently involved in a program to replace all existing authorized stop signs with signs which are reflectorized with wide-angle, prismatic, retroreflective sheeting, as described under subpart 6. The size of the new stop signs installed under this program, which will be completed by January 1, 1995, will be 36 inches by 36 inches.

Subpart 3 assigns the responsibility for installation and maintenance of stop signs. The reference to the figure in part 8830.9900, subpart 2, was changed to part 8830.9901, subpart 2, because part 8830.9900, subpart 2, was deleted from these rules and replaced with 8830.9901, subpart 2. The previous rules allowed stop signs to be either mounted on the crossbuck or separately mounted. Stop signs mounted on the crossbuck were the responsibility of the railroad, and separately-mounted stop signs were the responsibility of the road authority. To enhance public safety by providing uniform installation of stop signs at grade crossings, language allowing stop signs to be mounted other than on the crossbuck was eliminated from this part. In the past, when stop signs have been separately-mounted they have sometimes obscured the crossbuck or, in attempting to preserve the view of the crossbuck, have been mounted at locations not in compliance with the MMUTCD.

Subpart 4 was added to the rules to explain the procedure that is followed when the commissioner issues an order for the installation of a stop sign. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

Subpart 5, requiring the use of the "stop ahead" sign, was added to the rules to enhance public safety, by providing advance warning for the driver that a stop is required, in compliance with the MMUTCD. The responsibility for installation and maintenance of this sign is assigned to the road authority, which is consistent with the road authority's responsibility to install and maintain other advance-warning signs at grade crossings.

Subpart 6 was added to include standards for the reflectorized material to be used on stop signs. Use of this reflectorized material will enhance public safety by increasing the visibility of the signs. Mn/DOT is presently involved in a program to replace all existing authorized stop signs with signs which are reflectorized with wide-angle, prismatic, retroreflective sheeting and which meet the other requirements of this part. This program will be completed by January 1, 1995. After a stop sign is installed by Mn/DOT, replacement of the sign by the railroad company must be to the same level of reflectorization or better so that the enhancement to public safety gained by the installation of the new stop signs will not be lost when the signs are replaced.

8830.0900 PAVEMENT MARKINGS

Language was added requiring that the placement of grade crossing pavement markings comply with the MMUTCD, and language in the rule which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD will be incorporated in the rules. Because it duplicates an illustration in the MMUTCD, part

8830.9900, subpart 3, was eliminated from the rules, and reference to part 8830.9900, subpart 3, was eliminated from this part.

8830.1000 SIGNALS AND GATES

In subpart 1, the reference to part 8830.9900, subparts 4, 5, and 6, was changed to part 8830.9901, subparts 3, 4, and 5, because subparts 4, 5, and 6 of part 8830.9900 were deleted from the rules and replaced with part 8830.9901, subpart 3, 4, and 5. The requirement that active warning devices must be approved under part 8830.2300 was added to this part for reference. The requirement that a grade crossing be evaluated to determine whether it can be vacated or whether it should be grade-separated before authorizing the installation of signals was added. Although the installation of signals enhances public safety, the vacation of a grade crossing or grade separation of a crossing eliminates the point of interaction between trains and motor vehicles. The standards to be used in evaluating the grade crossing are contained in parts 8830.2710 (vacation) and 8830.2725 (grade separation). The requirement that future work done on warning devices be in compliance with the Association of American Railroads Bulletin Number 7, entitled "Railroad-Highway Grade Crossing Protection," was deleted because the standards contained in this document have been incorporated into the MMUTCD.

Because unusual circumstances may exist at a grade crossing which are not covered by the provisions of subpart 1, subpart 1a was added to specify the commissioner's right to modify the requirements of subpart 1 to meet the needs of a particular situation. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

The requirement in subpart 2 that alterations of warning devices be approved by the commissioner was added for reference, since this requirement is contained in part 8830.2300.

Subpart 3, concerning the acquisition of funds for signal installations, improvements, or alterations, was deleted because the language was vague. Deletion of this subpart does not represent a change in Mn/DOT policy, but removed language from the rules which provided no specific information or direction.

Subpart 4 was added to establish a procedure for the removal of an in-place signal system which is no longer needed. In the past, no such procedure existed and attempts to remove signal systems have largely been unsuccessful because of concerns by the railroad companies and the road authorities concerning liability if an accident occurred after a signal system had been removed. Since the commissioner will be responsible for determining when signal systems are no longer needed, uniform standards will be

used statewide. The statement that the treatment of signals and gates at abandoned grade crossings is governed by part 8830.2730 was added to this part for reference.

The statutory authority for parts 8830.1000 to 8830.2400 was changed from Minnesota Statutes, section 219.17, which is concerned with warning signs at grade crossings, to Minnesota Statutes, section 219.26, which is concerned with uniformity of devices used to protect grade crossings. Section 219.26 more specifically states the commissioner's authority to govern the design and operation of signal systems at grade crossings.

8830.1100 USE OF SIGNALS AND GATES

Because a cantilever signal is shown in part 8830.9901, subpart 4, a description of cantilever signals, and the requirement that use of this type of signal must comply with the MMUTCD, was added to this part. This does not represent a change in practice, because the previous rules contained a figure of a cantilever signal in part 8830.9900, subpart 5, but this new language was added to this part to formalize the description of a type of signal which is already in use and has worked well. A general description of the appearance and use of a grade-crossing gate was deleted because it provided no direction or information not available elsewhere in the rules. The requirement that signal systems be authorized by the commissioner is not new, since it is included in part 8830.2300, but it is added here for reference.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.1200 OPERATION OF SIGNALS AND GATES

The explanation of when signals may operate for less than 20 seconds before the train's arrival and how much warning should be provided in these situations was deleted from the rules because, in practice, signals are always designed to provide at least 20 seconds warning. A general description of signal operation was deleted because it provided no direction or information not available elsewhere.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.1300 SIGNAL CONTROLS

Language was added to subpart 2 to clarify that this subpart refers to locations where there are more than one track. This does not represent a change in practice, but the revision was made because questions have arisen regarding the meaning of the existing language.

Language was added to subpart 4 identifying the commissioner as the one responsible for determining when track circuits do not have to be provided. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well. The requirement that circuits be installed to provide consistent warning time where train speeds vary "by more than 20 miles per hour" replaced the previous language which required the circuits where train speeds vary "considerably". The previous language was vague, and if signals provide excessive warning time of a train's approach, motorists are more apt to cross in violation of the signal. Credibility of other grade crossing warning devices may then be reduced as well.

Subpart 5 was deleted because the technology described therein is obsolete.

Subpart 6 was added to the rules so that notice will be given to railroad company employees when there has been an interruption in the primary power source at the signal. This change reflects current technology and the current practices of the railroad companies.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of this statement.

8830.1400 ELECTRIC LIGHT UNITS

The existing language in this part was divided into four subparts to better differentiate the subject matter contained in this part. Language regarding alignment of light units was deleted from subpart 1 since this subject is covered in subpart 4.

The requirement in subpart 2 that the distance from the surface of the roadway to the electric light units be measured from the crown of the roadway to the bottom of the background was added. This language was added to this part for clarity and does not represent a change in practice, since part 8830.9900, subpart 4, showed that this dimension was from the crown of the roadway to the bottom of the background. Part 8830.9900, subpart 4, was deleted from the rules and replaced with part 8830.9901, subpart 3, which also shows that this dimension is measured from the crown of the roadway to the bottom of the background.

To enhance public safety by providing a more visible light, new language was added in subpart 3 requiring that a lamp unit be 12 inches in diameter. Although the previous rules did not specify a standard size for lamp units, the most common size was ten inches in diameter. With the advent of 12-inch light units, some railroad companies have started using backgrounds which are 24 inches in diameter. The language of the rule was revised to allow the use of backgrounds 20 inches to 24 inches in diameter. Language was added requiring that the design criteria for electric light units must comply with the AAR signal manual, and language in the rule which duplicated the AAR signal manual was eliminated. The 1990 edition of the AAR signal manual has been incorporated in the rules by reference, so it is unnecessary to duplicate the language. If a later edition of the manual is incorporated in the rules at a future date, only the edition of the manual will have to be changed, not all of the duplicated language. The requirement that "electric light units shall display a satisfactory indication at close range" was eliminated because of the inability to quantify the variables.

Language in subpart 4 allowing the alignment of reflector-type light units to be accomplished in accordance with railroad company procedures approved by the commissioner was added because one railroad company operating in Minnesota is developing procedures which combine portions of the AAR signal manual and the MMUTCD.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.1500 BELLS

New language was added to this part, and it was divided into three subparts to better differentiate the subject matter contained therein. A definition of a grade crossing bell was added in subpart 1 for clarification. Formerly, use of a bell at a grade crossing was optional. To enhance the safety of pedestrians and bicyclists by providing an additional means of warning of the approach of a train, the requirement that bells be used at all signalized grade crossings was added to this part. Language was added to permit the road authority to request an exception to this requirement at a grade crossing that is not regularly used by bicyclists or pedestrians.

The language in subpart 2 was revised to provide for an exception to the requirement that a bell must sound during the entire time the signal lights are operating, if approved by the commissioner. It would be reasonable to consider such an exception at locations where the noise of a bell is of concern to adjacent property owners.

The requirement in subpart 3 that the bell be mounted with the face of the gong parallel to the highway was deleted since many bells are now electronic and do not have a gong.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.1600 PLACEMENT OF SIGNALS

General language describing the placement of signals and controller cabinets was eliminated from subpart 1 because more specific language is included elsewhere in this part. Language was added to subpart 1 requiring the signal location to comply with the MMUTCD, and language in the rule which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are also incorporated in the rules.

Language was added to subpart 2 requiring that the use and location of additional signals must comply with the MMUTCD, and language in the rule which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are also incorporated in the rules.

Subpart 4 contains a non-substantive change as explained on page 4 of this statement. To enhance public safety by providing a clear zone along the roadway for errant vehicles to recover, language was added requiring that the location of controller cabinets adjacent to roadways where the speed is less than 40 miles per hour comply with the MMUTCD. The previous language specified clearances for controller cabinets where the roadway speed is 40 miles per hour or greater, but contained no direction for roadways where the speed is less than 40 miles per hour. The specified clearances are in accordance with the clear zone distance requirements in the Minnesota Department of Transportation's Road Design Manual.

The material contained in subpart 5 was divided into subparts 5 and 6 to show that two subjects are covered--the location of the signal foundation and the location of the signal support mast. Subpart 5 contains no substantive changes.

Language was added to subpart 6 requiring that the location of signals on medians comply with the MMUTCD, and language which required the location to comply with other subparts was eliminated, since the language in those subparts was revised to require compliance with the MMUTCD. The provision was added that, on a case-by-case basis, the commissioner may determine that support masts which cannot be located with the required clearances do not need to be protected by guard rail or other

barriers. In some locations, the physical limitations of the site may preclude the installation of guard rail, or the traffic may be of such low speed that guard rail is not considered necessary.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.1700 GUARD RAIL

The material in this part was divided into subparts 1 and 2 to better define the subject matter contained in this part. Subpart 1 requires that, where possible, a lateral escape route be provided along the railroad tracks at a grade crossing. This subpart contains no substantive changes.

Subpart 2 describes where guard rail installation is appropriate. The responsibilities for installation and maintenance of guard rail were added. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.1800 USE OF AUTOMATIC GATE

Language was added to this part to more accurately describe the appearance of the automatic gate, but this description, which is in compliance with the MMUTCD, does not indicate a change in the gate's appearance. Because part 8830.9900, subpart 6, was deleted from these rules and replaced with part 8830.9901, subpart 5, the reference to part 8830.9900, subpart 6, was replaced with a reference to part 8830.9901, subpart 5.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.1900 GATE ARM

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.2000 GATE OPERATION AND CONTROL

The material in this part was divided into three subparts to better define the subject matter contained in this part. Subpart 1, which describes the operation of the gate arm, and subpart 2, which describes the operation of the gate arm in the event of an operational failure, contain only minor language changes.

Language was revised in subpart 3, which describes operating a gate arm after a malfunction has occurred, to require that, at all signal systems where gates are installed, means must be provided to enable railroad company employees to raise the gate arm if the system malfunctions. This requirement is included because a gate arm that malfunctions assumes a horizontal position across the roadway, as required in subpart 2, preventing roadway traffic from entering the grade crossing. When informed of the malfunction, railroad company employees must be able to raise the gate arm and restore the traffic flow through the grade crossing. This change reflects current technology and the current practices of the railroad companies.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.2100 TRAFFIC SIGNALS NEAR GRADE CROSSINGS

In subpart 1, the road authority which is responsible for a traffic signal system at an intersection which is near a grade crossing is assigned the responsibility for determining if that traffic signal will be preempted upon the approach of a train. The road authority which has the responsibility for installation and operation of the traffic signal also determines the signal timing, which would be affected by such preemption.

The reference to part 8830.9950 was eliminated from subpart 2 because part 8830.9950 was deleted from the rules.

Subpart 2a, permitting the use of "no right turn" and "no left turn" signs at a roadway intersection near a grade crossing to restrict turning movements toward the grade crossing when the traffic signals are preempted, was added to reflect the addition of this subject to the latest edition of the MMUTCD. The purpose of these signs is to prevent traffic from queuing up at a grade crossing and extending the queue into a nearby roadway intersection, creating a safety hazard and stopping the traffic flow through the intersection.

The last sentence in subpart 4 was deleted because it provided no direction or information not available elsewhere.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.2200 MAINTENANCE AND OPERATION OF SIGNALS AT GRADE CROSSINGS

The requirement that all railroad companies have a written maintenance policy was added to this part, and specific items which should be covered in the maintenance policy are listed. Because the commissioner is responsible for insuring the safety of grade crossings, the commissioner has the authority to require that maintenance be performed to prevent a grade crossing from becoming a hazard to the motoring public.

This requirement was added to the rules because lack of maintenance can create safety problems, including non-functioning signals. A driver seeing signals at a grade crossing expects that these signals will warn of the approach of a train, so the driver may not be as observant as if there were no signals at the grade crossing.

Because a list of the specific subjects which should be dealt with in the maintenance policy was added to this part, general language describing signal maintenance was deleted.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.2300 PLAN APPROVAL; INFORMATION REQUIRED

Since the national grade crossing inventory and numbering project, information about which is contained in part 8830.0300, has been completed, item A of this part was revised to require that the information provided to the commissioner with plans for modifications, replacements, and installations of active warning devices at grade crossings include the grade crossing inventory number.

Other changes made in this part are minor language changes, or non-substantive changes as explained on page 4 of this statement.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.2400 OPERATING LICENSE

This part contains non-substantive changes which are explained on page 4 of this statement. Because part 8830.9910 was deleted from these rules and replaced with part 8830.9911, the reference to part 8830.9910 was changed to part 8830.9911.

The statutory authority for this part was changed from Minnesota Statutes, section 219.17, to Minnesota Statutes, section 219.26, as explained under part 8830.1000 of the this statement.

8830.2500 FLAGGER

Part 8830.2500 previously applied to a watchman who was permanently stationed at a grade crossing, and part 8830.2600 applied to a grade crossing at which all train movements must be preceded by a member of the train crew. Since the railroad companies no longer permanently station watchmen at grade crossings, language referring to watchmen was eliminated, and parts 8830.2500 and 8830.2600 were combined into part 8830.2500, which was renamed "flagger". New language added to this part specifies the circumstances under which a railroad company employee is temporarily stationed at a grade crossing and the requirements of this part apply. To enhance the safety of both the motoring public and the flagger by making the flagger more visible, the rules of the Minnesota Department of Labor and Industry regarding wearing high-visibility garments while directing roadway traffic are cited for reference.

The requirement that a watchman wear an orange vest and hat was deleted from item A because these garments could be provided to a watchman who was permanently assigned to a crossing, but a flagger who is temporarily stationed at a crossing may have a high-visibility vest, jacket, or some other garment available. The fact that the garment is highly visible is more important than the type of garment worn. The requirement that the garment be orange was deleted because some high-visibility clothing is available in other colors.

Language referring to use of a stop sign for directing traffic was deleted because this type of equipment could be furnished for a permanently-assigned watchman, but it is impractical to provide this type of sign for all employees who might do temporary flagging; a red flag, however, is more readily available. The 18-inch square red flag which is to be used for directing traffic, as specified in the rules, complies with the rules of the Minnesota Department of Labor and Industry.

The requirements regarding changing the time of a regularly employed watchman were deleted because such a position no longer exists.

8830.2600 FLAGGED CROSSING

This part was deleted because the information it contained was included in part 8830.2500.

8830.2650 MAINTAINING GRADE-CROSSING SURFACES

Because there have been disagreements between railroad companies and road authorities regarding maintenance of grade-crossing surfaces, this part was added to the rules. Minnesota Statutes, section 219.071, which assigns the responsibility for maintenance of grade-crossing surfaces, is cited for reference. The requirement that a railroad company not close a roadway to perform maintenance at a grade crossing without first notifying the road authority was included in this part because of problems which have arisen in the past regarding lack of communication between railroad companies and road authorities when maintenance was performed at grade crossings.

8830.2700 ESTABLISHING, RELOCATING, AND CHANGING GRADE CROSSINGS FOR ROADWAYS

Because a considerable amount of new language was added to this part, it was divided into subparts to better differentiate the various subjects contained herein. This part contains non-substantive changes as explained on page 4 of this statement. Because the relocation of a grade crossing can greatly change the geometrics and sight distances at the grade crossing, this part requires the same authorization for a relocated grade crossing as for a new grade crossing.

The language of subpart 1 was revised to require that relocated grade crossings be approved by the commissioner. This change was made to enhance public safety by providing a review to determine that the same design standards are used for relocated grade crossings as for new grade crossings. Reference to subpart 5 is included to clarify what type of construction constitutes a change to an existing grade crossing and does not require the commissioner's approval.

Subpart 2 assigns the responsibility for filing an application for a new grade crossing when the road authority and the railroad company agree upon the need for the grade crossing, the location of the grade crossing, and the type of warning devices required and specifies the commissioner's right to accept, reject, or modify the provisions of the application. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

In subpart 3, the list of information which must accompany applications for new grade crossings was made more specific. The

commissioner must have this data to determine if appropriate safety standards have been used in the design of the grade crossing.

Minnesota Statutes, section 219.072, concerning the commissioner's responsibilities in establishing new grade crossings when the road authority and the railroad company cannot reach agreement, is cited for reference in subpart 4. The requirement that a petition be accompanied by an application for the new or relocated crossing is included because the commissioner needs the information which accompanies the application to make a decision on the petition.

The language in subpart 5 was revised to specify what constitutes the modification of an existing grade crossing, thereby clarifying whether or not a proposed plan will require approval by the commissioner. The previous language stated that "modifications and minor relocations" of existing grade crossings did not require approval. This language was vague and disagreements have occurred between Mn/DOT and various road authorities regarding which grade crossing construction required approval. Repair and maintenance projects, as specified in this subpart, result in only minor changes which will not affect safety at the grade crossing; therefore, these projects do not require the commissioner's approval.

Subpart 6 was added to clarify the provisions of subpart 5 by specifying that the modification of active warning devices is not included in the provisions of subpart 5 and requires the commissioner's approval, in accordance with part 8830.2300, even if the modification is agreed to by the road authority and the railroad.

8830.2705 NEW GRADE CROSSINGS FOR ROADWAYS

This new part was added to the rules as required by Minnesota Statutes, section 219.073. This legislation states that the number of grade crossings in the state should be reduced to enhance public safety, yet, in requiring that this part be added to the rules, recognizes that the need to establish new grade crossings still exists. As stated in subpart 1, the purpose of this part is to enhance public safety by providing standards for establishing new grade crossings so that the number of new grade crossings will be controlled and the new grade crossings which are established will be constructed to uniform standards of safety.

The criteria listed in subpart 2 are the minimum standards for establishing a new grade crossing. They identify proposed grade crossings where the need for access is great enough to warrant consideration of a new grade crossing or where a significant increase in safety would result from such construction. Meeting one or more of these criteria does not

automatically mean that the proposed grade crossing will be established, but identifies grade crossings which, after review of the alternatives analysis required in subpart 3, deserve further analysis, utilizing the factors in subpart 4.

A proposed grade crossing which provides access to two or more private properties or to public lands, and for which no practical alternate access route exists, will be considered for establishment. However, as part of the alternatives analysis required under subpart 3, it is reasonable to consider the possibility of roadway construction to provide access from an existing roadway with an in-place grade crossing.

There is always some risk to public safety associated with the establishment of a new grade crossing because a new point of interaction between trains and motor vehicles is established. The criteria in item B identify proposed grade crossings at which the projected traffic volume, and therefore the need for access, is high enough to justify considering the establishment of a new grade crossing. Further analysis, in accordance with subparts 3 and 4, must be done to determine whether or not the establishment of the proposed grade crossing is warranted.

The consolidation of two or more existing grade crossings into one new grade crossing enhances public safety by reducing the number of grade crossings, and thereby the points of interaction between trains and motor vehicles. The ADT on the consolidated grade crossing may warrant the installation of signals, while the ADTs on the existing grade crossings do not, further enhancing public safety.

The construction of a new rail line, while rarely done, would necessitate the establishment of new grade crossings. This would provide the opportunity to evaluate all of the proposed grade crossings along the new rail line as one system, in accordance with subparts 3 and 4, to determine which grade crossings should be established.

Grade crossings may be proposed which do not fit the criteria in items A, B, C, or D of subpart 2, but at which a significant increase in public safety could result from the construction of a new grade crossing. For example, where a rail line crosses a river, a new grade crossing might be authorized on one side of the river although an in-place grade crossing exists on the other side of the river, in closer proximity than specified in item B. The road authority proposing the new grade crossing must document the need for the grade crossing to the satisfaction of the commissioner before any further analysis will be done.

Subpart 3 requires that a road authority proposing a new grade crossing must perform an alternatives analysis. Minnesota Statutes, section 219.073, in requiring that this part be added to the rules, recognized that the need to establish new grade

crossings still exists. However, the legislation also includes the statement that the number of grade crossings in the state should be reduced to enhance public safety. Therefore, the road authority must be able to document that all reasonable alternatives to the establishment of a new grade crossing have been considered and no viable alternative has been found before the proposed grade crossing receives further analysis, utilizing the factors in subpart 4.

A proposed grade crossing which meets the criteria for establishment contained in subpart 2 and for which an alternatives analysis has been prepared as required in subpart 3, and approved by the commissioner, must be evaluated utilizing the factors in subpart 4 to determine whether or not the grade crossing should be established.

In determining whether or not the establishment of a proposed grade crossing is justified, consideration must be given to whether or not the proposed grade crossing will be on a direct route for emergency vehicles, such as fire and police vehicles and ambulances. If so, a projection of the number of emergency vehicles which will use the grade crossing must be made, and consideration given to how the response time of these vehicles will be affected by the construction of the new grade crossing. If the grade crossing will be on a direct route for emergency vehicles and there will be a significant number of trains at the grade crossing, it is reasonable to consider if the crossing is an appropriate location for grade separation in accordance with part 8830.2725.

A projection of the number of vehicles carrying hazardous materials, vehicles carrying passengers for hire, and school buses which are expected to use the proposed grade crossing must be made. Because accidents involving these vehicles can result in numerous injuries and/or fatalities, these vehicles are required to stop at all grade crossings before proceeding across the tracks. This stop causes a delay to following vehicles, and may result in a rear-end collision. At grade crossings which have a significant number of these vehicles, it is reasonable to consider the construction of stopping lanes, to remove the vehicles from the through lane so that they can stop without delaying following vehicles and to reduce the chance of a rear-end collision, as well as to consider the installation of signals.

Available sight distances affect the safe speed at which a vehicle may approach a grade crossing. There are three sight distances to consider: the distance ahead to the grade crossing, the distance to and along the track on which a train might be approaching, and the distance along the track from a vehicle stopped at the grade crossing. The area from the driver ahead to the grade crossing should be free of clutter which can obstruct the motorist's view of the grade crossing. If possible, the motorist should have adequate sight distance to travel at the

legal speed limit for the approach roadway. When stopped at the grade crossing, the motorist must have adequate sight distance to accelerate and clear the grade crossing prior to the arrival of a train. At a proposed grade crossing which does not comply with the sight distance requirements of AASHTO's "A Policy on Geometric Design of Highways and Streets," it is reasonable to consider the installation of signals.

To the extent practicable, grade crossings should not be located on either roadway or track curves. Roadway curvature obstructs the motorist's view of a grade crossing ahead, and a motorist's attention may be directed toward negotiating the curve rather than looking for a train. Track curvature restricts a motorist's view down the track on the approach to a grade crossing and from a stopped position at the grade crossing. Those grade crossings that are located on both roadway and track curves provide poor rideability due to conflicting superelevations. Variation from a right angle intersection between the track and the roadway should be minimized. At skewed grade crossings, a motorist must look over his or her shoulder to view the track. Because of this awkward movement, some motorists may only glance quickly and not take the necessary precautions. If the proposed grade crossing is located on roadway or track curvature or the intersection of the roadway and the track is skewed, it is reasonable to consider the installation of signals.

The intersection of the roadway and the track, including the approaches to the intersection, should be as level as possible for optimum sight distance, rideability, and braking and accelerating distances.

To enhance public safety by minimizing the number of grade crossings in the state, new grade crossing should not be established if an existing grade crossing or grade separation which provides access to the affected private properties or public lands is available within a reasonable distance and travel time, and the alternate route has sufficient capacity to accommodate the additional traffic safely and efficiently.

Where driveways and roadway intersections are near a grade crossing, there are more distractions to the motorist and more vehicle-vehicle conflicts, so that the motorist may not be looking for a train. Where roadways parallel tracks, intersecting roadways create a grade crossing near a roadway intersection, leaving a short storage area for vehicles waiting to move through the roadway intersection after passing over the grade crossing. If the roadway intersection is signalized, or if the approach to the roadway from the grade crossing is controlled by a stop sign, queues may develop to the grade crossing, leaving a vehicle trapped in the grade crossing. At new grade crossings, consideration must be given to the storage area provided for the vehicles predicted to be stopped by the traffic controls at roadway intersections which are close to the proposed grade crossing.

The projected volume of vehicular traffic at the proposed grade crossing must be considered in determining the need for the grade crossing. The conformance of the geometric design of a proposed grade crossing, including the approaches, with the appropriate criteria for the projected vehicular traffic volume and design speed which are contained in AASHTO's "A Policy on Geometric Design of Highways and Streets" must be considered. The volume of vehicular traffic has a direct bearing on safety at a grade crossing. The greater the number of motor vehicles, the greater the interaction between trains and vehicles with the greater chance for an accident. In the event of a train-involved accident, the speed of the motor vehicle can affect the amount of damage which results. Therefore, the projected volume and speed of the vehicular traffic must be considered in determining the appropriate warning devices for the grade crossing.

The volume of train traffic has a direct bearing on safety at a grade crossing. The greater the number of trains, the greater the interaction between trains and motor vehicles with the greater chance for an accident. In the event of a train-involved accident, the speed of the train can affect the amount of damage which results. Therefore, the projected volume and speed of the train traffic must be considered in determining the appropriate warning devices for the proposed grade crossing.

A projection must be made of the volume of pedestrians, bicyclists, and recreational users who will use the proposed grade crossing. Consideration must be given to whether adequate provision for these users has been made in the design of the grade crossing and the selection of warning devices.

The warning devices for the proposed grade crossing must be appropriate for the types of vehicles which will use the grade crossing, the volume of vehicular and train traffic, the operating speed of vehicular and train traffic, the geometrics of the grade crossing, available sight distances at the grade crossing, and use of the grade crossing by pedestrians, bicyclists, and recreational users.

It is not possible to develop a comprehensive list of every factor which needs to be considered in evaluating how the establishment of a new grade crossing will affect public safety. Therefore, it is relevant to consider other factors, in addition to those listed in subpart 4, which may affect the safety of roadway users, pedestrians, bicyclists, and recreational users at the proposed grade crossing.

Although the construction of a new grade crossing can provide improved access to some properties and reduce some travel times, there is always some risk to public safety associated with the establishment of a new grade crossing. The benefits of the new grade crossing have to be weighed against the costs of construction and maintenance of the grade crossing and traffic control devices, and the cost of the accidents which are

predicted at the grade crossing. If a new grade crossing consolidates two or more existing grade crossings, the benefits will include the reduced maintenance costs for the grade crossing surfaces and traffic control devices and a reduction in the number of accidents predicted to occur at the one new grade crossing over the number of accidents predicted to occur at the two or more existing grade crossings which would be vacated upon establishment of the new grade crossing. If a benefit/cost analysis justifies the construction of a new grade crossing, the funding participation which would be required of each of the parties that would be involved, such as federal, state, and local governmental agencies and the railroad company, must be considered in determining if the new grade crossing will be constructed, as well as whether or not the necessary funds would be available from each party. The availability of funds for the construction of a new grade crossing would depend, in part, on how high a priority each party placed on the construction in comparison to other demands on the same budget.

Public opinion regarding construction of a new grade crossing is a valid consideration in determining whether or not the grade crossing will be constructed. Local residents may possess knowledge of specific local conditions which have an impact on safety or need for access at the proposed grade crossing.

The responsibility for the cost of a new grade crossing, as assigned in subpart 5, does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well. Minnesota Statutes, section 219.071, which assigns the responsibility for maintenance of grade crossings, is cited for reference.

In subpart 6, the requirement that a new grade crossing be authorized as provided for in part 8830.2700 is included for reference. The procedure for the addition of the grade crossing to the grade crossing inventory does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

8830.2710 VACATING GRADE CROSSINGS FOR ROADWAYS

This new part was added to the rules as required by Minnesota Statutes, section 219.073. As stated in subpart 1, the purpose of this part is to enhance public safety by reducing the number of grade crossings, thereby reducing the number of points of interaction between trains and motor vehicles and the number of train-involved accidents.

Subpart 2 specifies who may initiate a proposal for the vacation of a grade crossing. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

The criteria listed in subpart 3 will be used to identify grade crossings which are candidates for vacation. The criteria identify grade crossings where the demand for access is low or where a significant increase in safety would result if the grade crossing were vacated. Meeting one or more of these criteria does not automatically mean that the grade crossing will be vacated, but identifies grade crossings which deserve further analysis, utilizing the factors in subpart 4.

So that the greatest enhancement to public safety can be realized by vacation, the grade crossing accident history for the last five years must be examined to identify those grade crossings at which accidents have occurred. Accident data older than five years is not considered because it may be misleading, due to changes that occur in grade crossing characteristics over time. Grade crossings at which there has been an accident involving a fatality or at which two property damage or personal injury accidents have occurred must be analyzed, utilizing the factors in subpart 4, to determine whether or not the grade crossing can be vacated. If it is determined that the grade crossing cannot be vacated, it is reasonable to consider other options to enhance safety at the grade crossing.

Item A of subpart 3 requires that an alternate crossing be available within a reasonable distance to a grade crossing being considered for vacation, to minimize the disruption in the travel patterns of motorists and the increase in travel time.

The criteria in item B identify grade crossings which have low ADTs, to minimize the number of motorists affected by the increased travel time which results from the vacation of a grade crossing and because the installation of signals is seldom warranted at such grade crossings. Grade crossings at which sight distance obstructions or other unsafe conditions exist are also identified as candidates for vacation because the potential for accidents is increased at such crossings. Subpart 6 contains a procedure by which road authorities may have a grade crossing which is identified for vacation in accordance with the criteria in item B removed from the list of grade crossings submitted to the board.

After a grade crossing has been identified as a candidate for vacation, the entire segment of the rail line must be evaluated to determine the appropriate grade crossings for vacation. At the same time, it is reasonable to consider appropriate safety improvements for the remaining grade crossings within the rail segment, especially those grade crossings which will carry additional traffic due to the vacation of a nearby grade crossing. The considerations involved in this evaluation are listed in subpart 4. They will be used to identify grade crossings where the greatest benefit to public safety would be realized by vacation.

It is necessary to consider the effect of a proposed grade crossing vacation on emergency vehicles because of the public's reliance on vehicles such as ambulances, fire equipment, and police cars, and the adverse effect on public safety which can result if an alternate crossing is not available within a reasonable distance and travel time.

At a grade crossing being considered for vacation, the accident history for the last five years should be examined. Information older than five years may be misleading because of changes that occur in grade crossing characteristics over time. If a significant change has occurred at a grade crossing during the most recent five years, such as the installation of active warning devices, only the accident data since that change should be used. An examination of the accident history will help to identify those grade crossings where the greatest safety benefits can be derived from vacation of the grade crossing. If an examination of other factors shows that a grade crossing at which accidents have occurred cannot be vacated, it is reasonable to consider other options to enhance safety at the grade crossing.

Vehicles which are of particular concern for safety at grade crossings are vehicles carrying hazardous materials, vehicles carrying passengers for hire, and school buses. Because accidents involving these vehicles can result in numerous injuries and/or fatalities, the vehicles are required to stop at all grade crossings before proceeding across the tracks. This stop causes a delay to following vehicles, and may result in a rear-end collision. It is seldom possible to vacate grade crossings which have high volumes of such vehicles because of the difficulty in finding suitable alternate routes. However, it is reasonable to consider the installation of signals at grade crossings which have a significant number of these vehicles, as well as the construction of stopping lanes, to remove the vehicles from the through lane so that they can stop without delaying following vehicles and to reduce the chance of a rear-end collision.

Available sight distances affect the safe speed at which a vehicle may approach a grade crossing. There are three sight distances to consider: the distance ahead to the grade crossing, the distance to and along the track on which a train might be approaching, and the distance along the track from a vehicle stopped at the grade crossing. The area from the driver ahead to the grade crossing should be free of clutter which can obstruct the motorist's view of the grade crossing. If possible, the motorist should have adequate sight distance to travel at the legal speed limit for the approach roadway. When stopped at the grade crossing, the motorist must have adequate sight distance to accelerate and clear the grade crossing prior to the arrival of a train. At grade crossings where sight distances do not comply with AASHTO's "A Policy on Geometric Design of Highways and Streets," and at which vacation is not possible, it is reasonable to consider the installation of signals.

To the extent practicable, grade crossings should not be located on either roadway or track curves. Roadway curvature obstructs the motorist's view of a grade crossing ahead, and a motorist's attention may be directed toward negotiating the curve rather than looking for a train. Track curvature restricts a motorist's view down the tracks on the approach to a grade crossing and from a stopped position at the grade crossing. Those grade crossings that are located on both roadway and track curves provide poor rideability due to conflicting superelevations. Variation from a right angle intersection between track and roadway should be minimized. At skewed grade crossings, a motorist must look over his or her shoulder to view the track. Because of this awkward movement, some motorists may only glance quickly and not take the necessary precautions.

The intersection of the roadway and the track, including the approaches to the intersection, should be as level as possible for optimum sight distance, rideability, and braking and accelerating distances.

If a grade crossing is to be vacated, an alternate grade crossing must be available within a reasonable distance and travel time. The alternate route must have sufficient capacity to accommodate the diverted traffic safely and efficiently.

Where driveways and roadway intersections are near a grade crossing, there are more distractions to the motorist and more vehicle-vehicle conflicts, so that the motorist may not be looking for a train. Where roadways parallel tracks, intersecting roadways create a grade crossing near a roadway intersection, leaving a short storage area for vehicles waiting to move through the roadway intersection after passing over the grade crossing. If the roadway intersection is signalized, or if the approach to the roadway intersection from the grade crossing is controlled by a stop sign, queues may develop to the grade crossing, leaving a vehicle trapped in the grade crossing.

The volume of vehicular traffic has a direct bearing on safety at a grade crossing. The greater the number of motor vehicles, the greater the interaction between trains and motor vehicles with the greater chance for an accident. In the event of a train-involved accident, the speed of the motor vehicle can affect the amount of damage which results. However, in determining whether or not a grade crossing should be vacated, the need for access across the tracks must be considered. A grade crossing with a low ADT should be considered for vacation, to cause the least disruption in the travel patterns of motorists and because the installation of signals is seldom warranted at such grade crossings. When a grade crossing within a segment of a rail line is vacated, the remaining grade crossings should be evaluated to determine if signals are warranted. Because travel patterns change when a grade crossing is vacated, the ADT on the remaining grade crossings may warrant the installation of signals, while the ADTs on the existing grade crossings do not.

The volume of train traffic has a direct bearing on safety at a grade crossing. The greater the number of trains, the greater the interaction between trains and motor vehicles with the greater chance for an accident. In the event of a train-involved accident, the speed of the train can affect the amount of damage which results. Train speeds also have a direct relation to vehicular delay at grade crossings. Therefore, train speeds are a factor in considering whether or not a grade crossing should be vacated from the standpoint of delay as well as safety.

The volumes of pedestrians, bicyclists, and recreational users, and the availability of alternate routes, must be considered in determining if a grade crossing should be vacated. If the grade crossing is vacated, these individuals may continue to cross the tracks at the site of the vacated grade crossing, since they typically travel by the shortest route. If a grade crossing with high volumes of pedestrians, bicyclists, and recreational users is vacated, measures should be employed to safeguard these individuals. If another grade crossing is not available within a reasonable travel time, a grade crossing may be maintained strictly for pedestrians, bicyclists, and recreational users, or an overpass may be constructed. A fence should be erected to channelize these individuals to the grade crossing. If another grade crossing is nearby, fencing and/or signs may be used to restrict access to the railroad right-of-way and direct pedestrians, bicyclists, and recreational users to the other grade crossing.

It is not possible to develop a comprehensive list of every factor which needs to be considered in evaluating how the vacation of a grade crossing will affect public safety. Therefore, it is relevant to consider other factors, in addition to those listed in subpart 4, which may affect the safety of roadway users, pedestrians, bicyclists, and recreational users at the grade crossing being considered for vacation.

Although the vacation of a grade crossing enhances public safety by reducing the number of points of interaction between trains and motor vehicles, disruptions in the travel patterns of motorists and increased travel times and costs result when a grade crossing is closed. The benefits of enhanced public safety and reduced maintenance costs for the grade crossing proposed for vacation must be weighed against the increased costs to motorists in determining whether or not a grade crossing should be vacated.

Minnesota Statutes, section 219.074, subdivision 2, requires that Mn/DOT implement a crossing vacation program. Because the volume and speed of train traffic have a direct bearing on safety at a grade crossing, subpart 5 specifies that the rail lines with the highest train volumes and the highest train speeds will have the highest priority for evaluation to identify grade crossings for vacation under this program. Before a final determination is made by the commissioner regarding whether or not a grade

crossing should be vacated, an opportunity for public comment will be provided. Public opinion regarding vacation of an existing grade crossing is a valid consideration in determining whether or not the grade crossing will be vacated. Local residents may possess knowledge of specific local conditions which have an impact on safety or need for access at the grade crossing being considered for vacation.

Minnesota Statutes, section 219.074, subdivision 2, requires that the commissioner submit grade crossings proposed to be vacated as part of a grade crossing vacation program to the board for action. As stated in subpart 6, all other grade crossings proposed for vacation will also be submitted to the board for action. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

Because a road authority may wish to perpetuate a grade crossing which has been identified for vacation, subpart 6 establishes a procedure for removing a grade crossing from the list identified for vacation. If the decision to vacate the grade crossing was based solely on safety considerations, such as alignment, sight distance, or other deficiencies, the road authority must, at its own expense, correct the identified deficiencies or install the appropriate warning devices, subject to approval by the commissioner. These conditions are relevant to a decision by the commissioner as to whether or not the grade crossing will be removed from the list submitted to the board.

8830.2715 RELOCATING GRADE CROSSINGS FOR ROADWAYS

This new part was added to the rules as required by Minnesota Statutes, section 219.073. The purpose of this part is to enhance public safety by establishing a procedure for evaluating grade crossings proposed for relocation so that all relocations are subject to the same standards.

In subpart 2, AASHTO's "A Policy on Geometric Design of Highways and Streets" and the MMUTCD are cited for reference. The requirement that relocated grade crossings be authorized in accordance with part 8830.2700 is included for reference, since that part states that all relocated grade crossings must be approved by the commissioner.

The relocation of a grade crossing can enhance public safety by changing the alignment of the roadway so that the intersection with the track is at a right angle instead of a skew, or to eliminate a horizontal curve which restricts sight distance. However, the vacation of a grade crossing or grade separation of a crossing eliminates the interaction between trains and motor vehicles and should be considered before a grade crossing is relocated.

8830.2720 CONSOLIDATING GRADE CROSSINGS FOR ROADWAYS

This new part was added to the rules as required by Minnesota Statutes, section 219.073. The purpose of this part is to enhance public safety by consolidating grade crossings to reduce the number of grade crossings, and thereby the points of interaction between trains and motor vehicles. The ADT on the consolidated grade crossing may warrant the installation of signals, while the ADT on the existing grade crossing did not, further enhancing public safety.

The rules governing vacating, establishing, and authorizing grade crossings are cited in subpart 2 for reference. If grade crossings are consolidated by combining two roadway alignments into one before the grade crossing so that a grade crossing is created at a new location, the resulting grade crossing is considered to be a new grade crossing and must meet the criteria for establishment contained in part 8830.2705. The grade crossing is not considered to be a relocated grade crossing because the traffic characteristics of the new grade crossing will not be the same as at either of the original grade crossings.

8830.2725 GRADE SEPARATION AT ROADWAY CROSSINGS

This new part was added to the rules as required by Minnesota Statutes, section 219.073. As stated in subpart 1, the purpose of this part is to enhance public safety by providing standards to determine where grade separations will be built to eliminate the interaction between trains and motor vehicles. Construction of a grade separation also minimizes community disruption by providing free access across the tracks.

The criteria listed in subpart 2 will be used to identify grade crossings which are candidates for grade separation. Meeting one or more of these criteria does not automatically mean that the identified grade crossing will be replaced with a grade separation, but identifies grade crossings which deserve further analysis, utilizing the factors in subpart 3.

The major benefits of grade separations are reductions in accidents and in vehicular delay. Because of the high cost of constructing grade separations, they can generally be justified only where there are large vehicular and/or train volumes. The criteria in item A identify grade crossings at which train and vehicular speeds are high, thereby increasing the potential for serious accidents, and crossings at which vehicular volumes are high, thereby increasing the chance of an accident and imposing delays on large numbers of vehicles.

Item B requires that a grade crossing at which accidents have occurred, although active control devices are in place, be analyzed to determine if safety problems exist at the grade

crossing which cannot be solved by signals. If it is determined that such safety problems exist, it is reasonable to consider less costly solutions than the construction of a grade separation before continuing the analysis, utilizing the factors in subpart 3, to determine if a grade separation is a viable solution.

Crossings exist which do not fit the criteria in items A or B, but at which a significant increase in public safety could result from the construction of a grade separation. For example, on roadways where there is full control of access, grade separations must be constructed regardless of the volume and speed of the railroad and roadway traffic. The road authority proposing the new grade separation must document the need for a grade separation, to the satisfaction of the commissioner, before any further analysis will be done.

Once a grade crossing has been identified as a candidate for grade separation, many considerations are involved in determining whether or not the grade separation will be constructed, and, if so, the proper location for the grade separation. These considerations are listed in subpart 3.

Construction of grade separations should be considered at grade crossings which are along direct routes for emergency vehicles, such as fire and police vehicles and ambulances, and where there are significant numbers of trains. At a grade crossing, all vehicles are delayed when a train blocks the crossing, but emergency vehicles can least afford this delay. The construction of a grade separation can eliminate delays of emergency vehicles due to trains.

At grade crossings being considered for grade separation, the accident history for the last five years should be examined. Information older than five years may be misleading because of changes that occur to grade crossing characteristics over time. If a significant change has occurred at a grade crossing during the most recent five years, such as the installation of active warning devices, only the accident data since that change should be used. An examination of the accident history will help to determine where the greatest improvement in safety will result from the construction of a grade separation.

Crossings along routes with a substantial number of vehicles carrying hazardous materials, vehicles carrying passengers for hire, and school buses, and where there are a significant number of trains, should be considered for grade separation. Because accidents involving these vehicles can result in numerous injuries and/or fatalities, the vehicles are required to stop at all grade crossings before proceeding across the tracks. This stop causes a delay to following vehicles, and may result in a rear-end collision. If the construction of a grade separation is not feasible, it is reasonable to consider the construction of stopping lanes at grade crossings with high volumes of these vehicles, to remove the vehicles from the through lane so that

they can stop without delaying following vehicles and to reduce the chance of rear-end collisions.

The volume of vehicular traffic has a direct bearing on safety at a grade crossing. The greater the number of motor vehicles, the greater the interaction between trains and vehicles with the greater chance for an accident. In the event of a train-involved accident, the speed of the motor vehicle can affect the amount of damage which results.

The volume of train traffic has a direct bearing on safety at a grade crossing. The greater the number of trains, the greater the interaction between trains and motor vehicles with the greater chance for an accident. In the event of a train-involved accident, the speed of the train can affect the amount of damage which results. Train speeds also have a direct relation to vehicular delay at grade crossings. Therefore, train speeds are a factor in determining the need for a grade separation from the standpoint of delay as well as safety.

Where there is more than one track at a grade crossing, safety at that grade crossing can be affected by a train on one track, whether stopped or moving, which blocks the motorist's view of a train approaching on another track. A higher priority may therefore be placed on grade separations at crossings which have multiple tracks than at crossings which have only one track.

When a grade separation is considered, vertical and horizontal alignments of the roadway and tracks must be considered in determining if it is physically possible to construct a grade separation at the identified site. The need for and availability of additional right-of-way must also be investigated, because of the potential for increased cost of the grade separation, as well as displacement of residents and businesses, disruption of community activity patterns, and reductions in property values.

It is not possible to develop a comprehensive list of every factor which needs to be considered in evaluating how a proposed grade separation will affect public safety. Therefore, it is relevant to consider other factors, in addition to those listed in subpart 3, which may affect the safety of roadway users, pedestrians, bicyclists, and recreational users at the particular grade separation under consideration.

Although grade separations are the ultimate solution to eliminating the interaction between roadway users and trains, the cost of a grade separation can easily be \$1 million or more, so the cost of constructing a grade separation must be weighed against the benefits of reductions in accidents, reductions in delay to motorists and rail traffic, and reductions in maintenance costs for crossing surfaces and traffic control devices. It is also reasonable to consider other alternatives, such as making less costly improvements at a number of crossings

in lieu of constructing a grade separation. If a benefit/cost analysis justifies the construction of a grade separation, funding participation must be determined for the parties which would be involved, such as federal, state, and local governmental agencies and the railroad, and each party must determine whether the required funds are available. The availability of funds for the construction of a grade separation would depend, in part, on how high a priority each party placed on the construction in comparison to other demands on the same budget.

Public opinion regarding construction of a proposed grade separation is a valid consideration in determining whether or not the grade separation will be constructed. Local residents may possess knowledge of specific local conditions which have an impact on safety at the site of a proposed grade separation.

Subpart 4 requires that when a determination has been made to construct a grade separation, other grade crossings within that segment of rail line must be evaluated to determine whether the improved access and safety provided by the grade separation justify closing one or more nearby grade crossings. The longer travel time to the grade-separated crossing may be more than offset by the free access across the tracks, with no wait for trains. Also, travel time over a grade separation is more predictable, since the motorist cannot anticipate when a stop will be required at a grade crossing or how long that stop will be. Construction of a grade separation enhances public safety by eliminating the interaction between trains and motor vehicles at one location. However, if one or more nearby grade crossings are vacated, the safety benefits of the grade separation will be further enhanced.

The requirement in subpart 5 that plans for bridges that provide grade separations of roadways and railroad tracks be approved by the board under part 8830.2800 is cited for reference only.

8830.2730 ABANDONED CROSSINGS

This part was added to the rules because grade crossings on abandoned railroad lines present a safety problem which is different than that experienced at grade crossings on active rail lines. Motorists who consistently drive over grade crossings which are not maintained and at which they never see a train, but which have traffic-control devices in place, may develop a careless attitude toward these traffic control devices and not exercise appropriate caution. Credibility of grade crossing traffic-control devices may be reduced, not only for the abandoned grade crossing, but for other grade crossings as well.

Because the installation and maintenance of the crossbuck and other signs attached to the crossbuck sign post are the responsibility of the railroad, subpart 1 requires the railroad

company to also be responsible for the removal of these signs. The installation and maintenance of the advance-warning signs and the pavement markings are the responsibility of the road authority, and the road authority is also responsible for their removal.

Because the railroad company is responsible for the installation and maintenance of the grade crossing signals and gates, subpart 2 requires the railroad company to also be responsible for the removal of the gates and the removal or shielding of the signals.

The responsibility for the installation and maintenance of the "tracks out of service" sign is assigned to the road authority in subpart 3. This is consistent with the road authority's responsibility for the installation and maintenance of other advance-warning signs.

Subpart 4 establishes a procedure for track removal and pavement restoration at an abandoned crossing. In the past, some problems have arisen when a line is abandoned but the tracks are not removed at a grade crossing because maintenance of the grade crossing is no longer performed, resulting in deteriorated pavement and poor rideability at the grade crossing.

8830.2750 APPLICATION

Parts 8830.2750 to 8830.2790 were added to the rules at the request of the Minnesota Department of Natural Resources (DNR), to establish procedures regarding trail and bicycle path grade crossings on roadway right-of-way. The DNR and other trail authorities have encountered difficulties in the past in attempting to establish a grade crossing on a trail or bicycle path because the railroad companies have not been receptive to proposals for grade crossings used for recreational purposes due to the increased liability and costs of crossing and signal maintenance. Therefore, the DNR requested that Mn/DOT develop rules governing all trail and bicycle path grade crossings. However, Mn/DOT's statutory authority does not extend to grade crossings which are not located on roadway right-of-way. These new rules will enhance public safety by providing uniform procedures for the establishment, vacation, relocation, consolidation, and separation of grades at trail and bicycle path grade crossings on roadway right-of-way so that the number of grade crossings will be controlled and grade crossings and grade separations which are established will be constructed to uniform safety standards.

8830.2755 DESIGN

To enhance public safety at grade crossings on trails or bicycle paths, this part provides design standards. To the

extent practicable, trail or bicycle path grade crossings should not be located on either trail or bicycle path or track curves. Curvature in the trail or bicycle path obstructs the view of the grade crossing ahead, and a trail or bicycle path user's attention may be directed toward negotiating the curve rather than looking for a train. Track curvature restricts a trail or bicycle path user's view down the tracks on the approach to a grade crossing. The trail or bicycle path must be constructed so that the user can cross the railroad tracks at as close to a right angle as possible. At a skewed crossing, a trail or bicycle path user must look over his or her shoulder to view the railroad track. Because of this awkward movement, some users may only glance quickly and not take the necessary precautions. It is particularly important that bicyclists cross railroad tracks at a nearly right angle because of the possibility of getting the bicycle wheel caught in the rail, causing the bicyclist to fall.

8830.2760 SIGNALS, SIGNS, AND PAVEMENT MARKINGS

To enhance public safety by providing uniform warning devices at all grade crossings on trails and bicycle paths, this part requires that the signals and signs used at trail and bicycle path grade crossings comply with the MMUTCD standards for bicycle facilities. Most of the signs are the same as signs used on roadways, so they will be easily understood by the trail or bicycle path user. The few signs which are different from those used on roadways are those which show bicycles. These are variations of signs which are used on roadways, so they will also be easily understood by trail and bicycle path users. Since few grade crossings on trails or bicycle paths will warrant the installation of signals, stop signs are required at all grade crossings on trails and bicycle paths to provide the maximum level of protection possible with passive warning devices. This sign requires all trail and bicycle path users to stop at the grade crossing, so that they can look and listen for trains before entering the grade crossing.

Pavement markings which comply with the MMUTCD must be used in advance of grade crossings on all bicycle paths, but the qualification that pavement markings must be used in advance of grade crossings on trails "to the extent practicable" is included because some trails are not paved.

This part assigns the responsibility for installation and maintenance of signs and pavement markings to the trail administrator. This corresponds to the requirements in parts 8830.0600 to 8830.0900 that road authorities are responsible for signs and pavement markings on roadways.

**8830.2765 ESTABLISHING, RELOCATING, AND CHANGING GRADE CROSSINGS
FOR TRAILS**

This part is added to enhance public safety by requiring that the commissioner approve all new and relocated grade crossings on trails and bicycle paths, as stated in subpart 1, so that the number of grade crossings will be controlled and grade crossings which are established will be constructed to uniform safety standards. Because the relocation of a grade crossing can greatly change the geometrics and sight distances at the grade crossing, the same authorization is required for a relocated grade crossing on a trail or bicycle path as for a new grade crossing.

Subpart 2 assigns the responsibility for filing an application for a new trail or bicycle path grade crossing when the trail authority and railroad company agree upon the need for the grade crossing, the location of the grade crossing, and the type of warning devices required and specifies the commissioner's right to accept, reject, or modify the provisions of the application. This provision was included in this subpart because the procedure is already in effect for roadway grade crossings and has worked well. Inclusion of this procedure in this subpart extends this existing practice to trail and bicycle path grade crossings.

A list of the information which must accompany an application for a new or relocated grade crossing for a trail or bicycle path is included in subpart 3. Mn/DOT must have this data to determine if appropriate safety standards have been used in the design of the grade crossing. This list corresponds to the list of information required for the authorization of a new or relocated roadway grade crossing in part 8830.2700. In addition, however, this part requires that the agency assuming responsibility for construction and maintenance be designated to identify financial responsibility, and that the relationship to trail continuity be defined to help determine the need for the proposed grade crossing.

Minnesota Statutes, section 219.072, concerning the commissioner's responsibilities in establishing new grade crossings when the trail administrator and the railroad company cannot reach agreement, is cited for reference in subpart 4.

Subpart 5 specifies what constitutes the modification of a trail or bicycle path grade crossing, thereby indicating which grade crossings do not require approval by the commissioner. Repair and maintenance projects, as specified in this subpart, result in only minor changes which will not affect safety at the grade crossing; therefore these projects do not need the commissioner's approval.

The purpose of subpart 6 is to clarify the provisions of subpart 5 by specifying that a modification of active warning

devices is not included in the provisions of subpart 5 and requires the commissioner's approval, in accordance with part 8830.2300, even if the modification is agreed to by the trail administrator and the railroad.

8830.2770 NEW GRADE CROSSINGS FOR TRAILS

This new part was added to the rules to enhance public safety by controlling the number of grade crossings which are established on trails and bicycle paths and by defining a procedure for the establishment of these grade crossings so that the grade crossings which are established will be constructed to uniform standards of safety. The considerations contained in subpart 1 must be used to determine whether or not a proposed grade crossing on a trail or bicycle path may be established.

In determining whether a new grade crossing for a trail or bicycle path should be established, consideration must be given to the distance and travel time to an existing grade crossing or grade separation which can safely accommodate the trail or bicycle path users.

The volume of train traffic has a direct bearing on safety at a grade crossing. The greater the number of trains, the greater the interaction between trains and trail or bicycle path users with the greater chance for an accident. In the event of an accident, the speed of the train can affect the seriousness of the accident. The projected volume and speed of the train traffic is relevant to the determination of the appropriate warning devices, if the grade crossing is established.

The identification of the anticipated users of a trail or bicycle path is used to determine the speeds at which the trail or bicycle path users are travelling, which in turn is used to determine the sight distances required at the grade crossing. The volume of trail or bicycle path users has a direct bearing on safety at a grade crossing, because the greater the number of trail or bicycle path users, the greater the interaction with trains and the greater the chance of an accident occurring.

The relationship of the proposed grade crossing to the trail or bicycle path system must be identified, to establish the need for the grade crossing in preserving trail or bicycle path continuity.

The intersection of the trail or bicycle path and the railroad track, including the approaches to the intersection, should be as level as possible for optimum sight distance, rideability, and braking and accelerating distances.

To the extent practicable, grade crossings should not be located on trail or bicycle path curves or on track curves. Trail or bicycle path curvature obstructs the user's view of a

grade crossing ahead, and the user's attention may be directed toward negotiating the curve rather than looking for a train. Track curvature restricts a trail or bicycle path user's view down the tracks on the approach to a grade crossing and from a stopped position at the grade crossing. Those grade crossings that are located on both trail or bicycle path and track curves provide poor rideability due to conflicting superelevations. Variation from a right angle intersection between the track and the trail or bicycle path should be minimized. At skewed grade crossings, a user must look over his or her shoulder to view the track. Because of this awkward movement, some users may only glance quickly and not take the necessary precautions. If the proposed grade crossing is located on a trail or bicycle path curve or a track curve, or the intersection of the trail or bicycle path and the track is skewed, it is reasonable to consider the installation of signals at the grade crossing.

Available sight distances affect the safe speed at which a trail or bicycle path user may approach a grade crossing. There are three sight distances to consider: the distance ahead to the grade crossing, the distance to and along the track on which a train might be approaching, and the distance along the track from the point where a trail or bicycle path user would stop at the grade crossing. The area from the trail or bicycle path user ahead to the grade crossing should be free of clutter which can obstruct the view of the grade crossing. When stopped at the grade crossing, the trail or bicycle path user must have adequate sight distance to clear the grade crossing prior to the arrival of a train. At a proposed grade crossing where adequate sight distances cannot be achieved, it is reasonable to consider the installation of signals.

It is not possible to develop a comprehensive list of every factor which needs to be considered in evaluating how the establishment of a new trail or bicycle path grade crossing will affect public safety. Therefore, it is relevant to consider other factors, in addition to those listed in subpart 2, which may affect the safety of the trail or bicycle users at the proposed grade crossing.

Although the construction of a new trail or bicycle path grade crossing can provide additional recreational opportunities, there is always some risk to public safety associated with the establishment of a new grade crossing. The benefits of the new grade crossing have to be weighed against the costs of construction and maintenance of the grade crossing and the necessary signs and signals, if required, and the cost of the accidents which are predicted at the grade crossing. If a new trail or bicycle path grade crossing consolidates two or more existing grade crossings, the benefits will include the reduced maintenance costs for the grade crossing surfaces and signs and/or signals and a reduction in the number of accidents predicted to occur at the one grade crossing over the number of accidents predicted to occur at the two or more existing grade

crossings which would be vacated upon establishment of the new grade crossing. If a benefit/cost analysis justifies the construction of a new trail or bicycle path grade crossing, the funding participation which would be required of each of the parties that would be involved, such as federal, state, and local governmental agencies and the railroad company, must be considered in determining if the new grade crossing will be constructed, as well as whether or not the necessary funds would be available from each party. The availability of funds for the construction of a new trail or bicycle path grade crossing would depend, in part, on how high a priority each party placed on the construction in comparison to other demands on the same budget.

Public opinion regarding construction of a new trail or bicycle path grade crossing is a valid consideration in determining whether or not the grade crossing will be constructed. Local residents may possess knowledge of specific local conditions which have an impact on safety at the site of the proposed grade crossing. Groups such as bicycling, hiking, and snowmobiling clubs can assist in identifying users and estimating volumes of users for a proposed grade crossing.

Subpart 2, which assigns the responsibility for the cost of a new grade crossing and the responsibility for maintenance costs, is consistent with part 8830.2705, subpart 5, which assigns the responsibilities for the costs of construction and maintenance of new roadway grade crossings.

The requirement in subpart 3 that relocated grade crossings be authorized in accordance with part 8830.2765 is included for reference, since that part states that all relocated grade crossings must be approved by the commissioner. The procedure for issuing a grade crossing inventory number and adding the new grade crossing to the inventory is included for reference. This is the same procedure used for new roadway grade crossings, as contained in part 8830.2705, subpart 6. This procedure is already in effect for roadway grade crossings and has worked well. Inclusion of this procedure in this subpart extends this existing practice to trails and bicycle paths.

8830.2775 VACATING GRADE CROSSINGS FOR TRAILS

This new part was added to the rules to enhance public safety by reducing the number of grade crossings on trails and bicycle paths, thereby reducing the number of points of interaction between trains and the users of a trail or bicycle path.

Subpart 1 specifies who may initiate a proposal for the vacation of a grade crossing. This is the same procedure used for initiating vacation of roadway grade crossings as contained in part 8830.2710, subpart 2. This procedure is already in effect for roadway grade crossings and has worked well.

Inclusion of this procedure in this subpart extends this existing practice to trails and bicycle paths.

The considerations listed in subpart 2 must be used to determine the appropriate location of the grade crossing to be vacated. The reason vacation has been proposed must be reviewed to determine whether the proposal is valid and further analysis of the vacation of the grade crossing is warranted.

The availability of a grade crossing or grade separation within a reasonable distance and travel time which can safely accommodate the additional trail or bicycle path users must be considered in determining whether or not a trail or bicycle path grade crossing should be vacated.

The volume of train traffic has a direct bearing on safety at a grade crossing. The greater the number of trains, the greater the interaction between trains and trail or bicycle path users with the greater chance for an accident. In the event of an accident, the speed of the train can affect the seriousness of the accident.

The identification of the anticipated users of a trail or bicycle path is used to determine the speeds at which the trail or bicycle path users are travelling, which in turn is used to determine the sight distances required at the grade crossing. The volume of trail or bicycle path users has a direct bearing on safety at a grade crossing, because the greater the number of trail or bicycle path users, the greater the interaction with trains and the greater the chance of an accident occurring.

The intersection of the trail or bicycle path and the railroad track, including the approaches to the intersection, should be as level as possible for optimum sight distance, rideability, and braking and accelerating distances.

To the extent practicable, grade crossings should not be located on either trail or bicycle path curves or track curves. Trail or bicycle path curvature obstructs the user's view of a grade crossing ahead, and the user's attention may be directed toward negotiating the curve rather than looking for a train. Track curvature restricts a trail or bicycle path user's view down the tracks on the approach to a grade crossing and from a stopped position at the grade crossing. Those grade crossings that are located on both trail or bicycle path and track curves provide poor rideability due to conflicting superelevations. Variation from a right angle intersection between the track and the trail or bicycle path should be minimized. At skewed grade crossings, a user must look over his shoulder to view the track. Because of this awkward movement, some users may only glance quickly and not take the necessary precautions.

Available sight distances affect the safe speed at which a trail or bicycle path user may approach a grade crossing. There

are three sight distances to consider: the distance ahead to the grade crossing, the distance to and along the track on which a train might be approaching, and the distance along the track from the point where a trail or bicycle path user would stop at the grade crossing. The area from the trail or bicycle path user ahead to the grade crossing should be free of clutter which can obstruct the view of the grade crossing. When stopped at the grade crossing, the trail or bicycle path user must have adequate sight distance to clear the grade crossing prior to the arrival of a train.

Before selecting a grade crossing for vacation, the relationship of the grade crossing to the trail or bicycle path system must be identified, to establish the need for the grade crossing in preserving trail or bicycle path continuity.

At a trail or bicycle path grade crossing being considered for vacation, it is reasonable to consider the accident history in making this determination. If a significant change has occurred at a grade crossing, such as the installation of signals, only the accident data since the change should be used. An examination of the accident history will help to identify those grade crossings where the greatest safety benefits can be derived from vacation of the grade crossing.

It is not possible to develop a comprehensive list of every factor which needs to be considered in evaluating how the vacation of a trail or bicycle path grade crossing will affect public safety. Therefore, it is relevant to consider other factors, in addition to those listed in subpart 2, which may affect the safety of the trail or bicycle path users at the grade crossing being considered for vacation.

Although the vacation of a trail or bicycle path grade crossing enhances public safety by reducing the number of points of interaction between trains and trail or bicycle path users, disruptions in the travel patterns of these users and increased travel times and travel costs result when a trail or bicycle path grade crossing is closed. The benefits of enhanced public safety and reduced maintenance costs for the trail or bicycle path grade crossing proposed for vacation must be weighed against the increased costs to trail or bicycle path users in determining whether or not the grade crossing should be vacated.

Before a final determination is made by the commissioner as to whether or not a trail or bicycle path grade crossing should be vacated, an opportunity for public comment will be provided. Public opinion regarding vacation of an existing grade crossing is a valid consideration in determining whether or not the grade crossing will be vacated. Local residents may possess knowledge of specific local conditions which have an impact on safety at or usage of the trail or bicycle path grade crossing being considered for vacation.

Subpart 3 states that the commissioner will submit the locations of grade crossings proposed for vacation to the board for action. This is the same procedure as is used for proposing roadway grade crossings for vacation, as contained in part 8830.2710, subpart 6.

Because a trail authority may wish to perpetuate a grade crossing which has been identified for vacation, subpart 3 establishes a procedure for removing a grade crossing from the list identified for vacation. If the decision to vacate the grade crossing was based solely on safety considerations, such as alignment, sight distance, or other deficiencies, the trail authority must, at its own expense, correct the identified deficiencies or install the appropriate warning devices, subject to approval by the commissioner. These conditions are relevant to a decision by the commissioner as to whether or not the grade crossing will be removed from the list submitted to the board. This is the same procedure as is used to remove roadway grade crossings from the list proposed for vacation, as contained in part 8830.2710, subpart 6.

8830.2780 RELOCATING GRADE CROSSINGS FOR TRAILS

This new part was added to the rules to enhance public safety by establishing a procedure for evaluating grade crossings on trails or bicycle paths which are proposed for relocation so that all relocations are subject to the same safety standards. The requirement that relocated grade crossings be authorized in accordance with part 8830.2765 is included for reference, since that part states that all relocated grade crossings must be approved by the commissioner.

The relocation of a grade crossing can enhance public safety by changing the alignment of the trail or bicycle path so that the intersection with the track is at a right angle instead of a skew, or to eliminate a horizontal curve which restricts sight distance. However, the vacation of a grade crossing or the grade separation of a crossing eliminates the interaction between trains and the users of a trail or bicycle path and must be considered before a grade crossing is relocated.

8830.2785 CONSOLIDATING GRADE CROSSINGS FOR TRAILS

This new part was added to the rules to enhance public safety by reducing the number of grade crossings, and thereby the points of interaction between trains and trail or bicycle path users. The rules governing the establishment and authorization of grade crossings for trails and bicycle paths are cited for reference. If grade crossings are consolidated by combining two trail or bicycle path alignments into one before the grade crossing so that a grade crossing is created at a new location, the resulting grade crossing is considered a new grade crossing

rather than a relocated grade crossing because the user volumes of the trail or bicycle path will not be the same as at either of the original grade crossings.

8830.2790 GRADE SEPARATION AT TRAIL CROSSINGS

This new part was added to the rules to enhance public safety by establishing a procedure for determining where grade separations will be built to eliminate the interaction between trains and trail or bicycle path users. Once a grade crossing has been identified as a candidate for grade separation, many considerations are involved in determining whether or not the grade separation will be constructed, and, if so, the proper location for the grade separation. These considerations are listed in subpart 1.

The volume of train traffic has a direct bearing on safety at a grade crossing. The greater the number of trains, the greater the interaction between trains and trail or bicycle path users with the greater chance for an accident. In the event of an accident, the speed of the train can affect the seriousness of the accident. Train speeds also have a direct relation to delay at grade crossings. Therefore, train speeds are a factor in determining the need for a grade separation from the standpoint of delay as well as safety.

The use of the trail or bicycle path can aid in determining the suitability of a grade separation. The volume of trail or bicycle path users has a direct bearing on safety at a grade crossing, because the greater the number of trail or bicycle path users, the greater the interaction with trains and the greater the chance of an accident occurring.

The relationship of the grade crossing being considered for grade separation to the trail or bicycle path system is a relevant consideration in the decision of whether or not the grade separation is needed to preserve trail or bicycle path continuity.

The proposed vertical and horizontal alignments of the trail or bicycle path and railroad tracks aid in determining if it is physically possible to construct a grade separation at the identified site. The need for additional right-of-way may increase the cost of the grade separation, while the availability of additional right-of-way, or lack thereof, is relevant to the decision of whether or not the grade separation can be constructed at the identified site.

It is not possible to develop a comprehensive list of every factor which needs to be considered in evaluating how a proposed grade separation will affect public safety. Therefore, it is relevant to consider other factors, in addition to those listed in subpart 1, which may affect the safety of the trail or bicycle users at the particular grade separation under consideration.

Although grade separations are the ultimate solution to eliminating the interaction between trail or bicycle path users and trains, the cost of a grade separation has to be weighed against the benefits of reductions in accidents, reductions in delay to trail or bicycle path users, and reductions in maintenance costs for crossing surfaces and traffic control devices. If a benefit/cost analysis justifies the construction of a grade separation, the funding participation which would be required of each of the parties that would be involved, such as federal, state, and local governmental agencies and the railroad company, must be considered in determining if a grade separation will be constructed, as well as whether or not the necessary funds would be available from each party. The availability of funds for the construction of such a grade separation would depend, in part, on how high a priority each party placed on the construction in comparison to other demands on the same budget.

Public opinion regarding construction of a proposed grade separation is a valid consideration in determining whether or not the grade separation will be constructed. Local residents may possess knowledge of specific local conditions which have an impact on safety at the site of a proposed grade separation. Groups such as bicycling, hiking, and snowmobiling clubs can assist in identifying users and estimating volumes of users for a proposed grade separation.

Subpart 2 requires that when a determination has been made to construct a grade separation, other grade crossings within one mile must be evaluated to determine whether the improved access and safety provided by the grade separation justify closing one or more nearby grade crossings. Construction of a grade separation enhances public safety by eliminating the interaction between trains and trail or bicycle path users at one location. However, if one or more nearby grade crossings are vacated, the safety benefits of the grade separation will be further enhanced.

The requirement in subpart 3 that plans for bridges providing grade separations of trails or bicycle paths and railroad tracks be approved by the board under part 8830.2800 is cited for reference.

8830.2800 APPROVAL OF BRIDGES BY BOARD

This part contains non-substantive changes as explained on page 4 of this statement. Minnesota Statutes, section 219.46, which assigns the responsibility for approval of bridge clearances, is cited for reference.

Language was added to this part to establish a procedure for granting temporary variances to minimum legal clearances. Minnesota Statutes, section 219.47, which assigns the responsibility for granting temporary variances, is cited for reference. When the request for a variance is submitted by a

road authority, the affected railroad company will be afforded an opportunity to submit comments to the commissioner before a variance is granted to ascertain that safety will not be compromised.

8830.2850 MODIFYING EXISTING RAILROAD BRIDGES

This new part was added at the request of the Minnesota Department of Natural Resources (DNR), to establish a procedure for the approval of modifications to existing railroad bridges. The DNR's interest in this subject is related to adding a walkway onto an existing railroad bridge, to tie the bridge into a trail system. Some railroad companies are more receptive to this concept than others, however, so the stipulation is made that the owner of the structure must apply to the board for the approval of the modification. Thus, the board will only consider modifications which are acceptable to the owner of the structure.

This part is also applicable to other situations in which an existing bridge is widened or otherwise modified in such a way that clearances could be affected. For public safety, it is important that such modifications be approved by the board.

8830.2900 WALKWAYS ON RAILROAD BRIDGES

This part was deleted because the United States District Court, in *Norfolk and Western Railway Company v. Public Utilities Commission of Ohio* (No. C2-87-766, 1990), determined that the authority of states to regulate walkways on railroad bridges was preempted by the Federal Railroad Safety Act of 1970, United States Code, title 45, section 421 et seq., which authorized the Secretary of the Department of Transportation to adopt railroad safety regulations.

8830.2950 ABANDONED BRIDGES

This new part was added to enhance public safety by assuring that, when railroad lines are abandoned, bridges which constitute a safety hazard are removed. Problems have arisen in the past when railroad lines have been abandoned and bridges which are owned by the railroad company have been left in place. Many of these old bridges do not conform to current safety standards for roadway clear zones, and, with no maintenance performed on these bridges, they deteriorate at an accelerated rate. In both cases, the bridges become a liability issue for the road authority.

The disposition plan described in subpart 1 requires the railroad company to identify the owners of the structures on a line scheduled for abandonment, specify which structures will be removed and which will be left in place, and identify the agency responsible for the maintenance of those structures left in place. This disposition plan will be prepared well before the

rail line is actually abandoned, to allow time for the affected agencies to review the plan. The public welfare can be positively affected by identifying structurally-sound bridges which, when abandoned, can serve as part of a trail system.

To preserve public safety by assuring that bridges which are a safety hazard are removed, and bridges which may become a safety hazard are repaired or removed, subpart 2 specifies that the commissioner can order an abandoned bridge to be repaired or removed, and assigns the responsibilities for the repair or removal of these structures.

Minnesota Statutes, section 219.27, which assigns the responsibility to the board for determining contested cases related to vacation, is cited in subpart 3 for reference.

8830.3000 CLEARANCES AND VARIANCES

This part contains non-substantive changes as explained on page 4 of this statement. References to parts 8830.9920, 8830.9930, and 8830.9940 were changed to parts 8830.9921, 8830.9931, and 8830.9941 because parts 8830.9920, 8830.9930, and 8830.9940 were deleted from these rules and replaced with parts 8830.9921, 8830.9931, and 8830.9941.

8830.3100 RAILROAD ACCIDENT REPORTS

Subparts 1, 2, and 3 contain non-substantive changes as explained on page 4 of this statement. Because the term "accidents" is used in this part, a definition of the term was added to subpart 1.

The requirement that grade crossing accidents which involve a fatality be reported to Mn/DOT within 24 hours of the accident was added to subpart 3. This does not represent a change in practice, since the railroad companies have been informed of this requirement and are complying with it, but it was added to the rules to formalize a procedure which is already in effect and has worked well.

Subpart 4 was added to the rules to require that the railroad companies provide Mn/DOT with copies of the FRA reports of grade crossing system failures. This information, along with reports of accidents and derailments, is needed by Mn/DOT to analyze the safety of grade crossings in the state and to plan for future safety programs, so that the greatest increase in public safety can be provided with the available funds.

8830.3200 TRACK SAFETY STANDARDS

For accuracy, the full citation for the "Track Safety Standards" was added to this part. This citation incorporates

future amendments made by the FRA into the rules, and is included in the rules for reference.

8830.3300 UNIFORM PROJECT ACCOUNTING AND BILLING

This part contains non-substantive changes as explained on page 4 of this statement. The reference to Policy and Procedure Memorandum No. 30-3 was replaced with a citation of the Federal Highway Program Manual 1-4-3 because the material which was contained in Policy and Procedure Memorandum No. 30-3 was incorporated into the Federal Highway Program Manual 1-4-3.

8830.3400 RAILROAD ACCOUNTING REGULATIONS; REPORTS

Subparts 1 and 3 contain non-substantive changes as explained on page 4 of this statement.

Language was added to subpart 2 allowing a railroad company to use an accounting system other than the uniform system of accounts prescribed by the Interstate Commerce Commission if the railroad's accounting system is approved by the Interstate Commerce Commission. This language was added because a railroad company operating in Minnesota recently received approval from the Interstate Commerce Commission for exemption from Class I railroad financial reporting requirements.

8830.3500 INFORMATION REQUIRED BY THE STATE OF MINNESOTA

Experience has shown that the level of detail required in this part for reporting railroad company operating statistics exceeded that which is necessary for Mn/DOT's record-keeping. Also, because of the amount of work involved in compiling these statistics, the railroad companies have not been supplying the information required in this part. Therefore, this part was eliminated and part 8830.3510 was added to the rules to enable Mn/DOT to obtain the data it needs to evaluate railroad company operations, without placing an unreasonable burden on the railroads.

8830.3510 INFORMATION REQUIRED

This new part was added to the rules to enable Mn/DOT to obtain the data it needs to evaluate railroad company operations. It replaces part 8830.3500, which required that railroad companies provide operating statistics in much more detail than was actually necessary for Mn/DOT's record-keeping.

8830.3600 ABANDONMENT OF AGENCY SERVICE

Because the Transportation Regulation Board has the responsibility of approving or denying a proposed abandonment of

agency service, the requirement that documents regarding the proposed abandonment be furnished to the board was added to this part. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well. References to custodian service were deleted from this part because railroad companies no longer provide this service.

Because the abbreviation "L.C.L." is used in part 8830.3700, subpart 3, a definition of less than carload was added.

8830.3700 INFORMATION REQUIRED FOR ABANDONMENT OF AGENCY SERVICE

References to custodian service were deleted from this part because railroad companies no longer provide this service.

8830.3800 RAILROADS

This part contains a non-substantive change as explained on page 4 of this statement.

8830.5100 DEFINITIONS

Subpart 1. **Scope.** The language of this subpart was revised to better define the parts to which these definitions apply and to incorporate definitions which appear in part 8830.0100 to avoid duplicating those definitions in this part.

Subp. 3. **Bankrupt railroad.** This definition was deleted because the term "bankrupt railroad" is no longer used in the rules.

Subp. 8. **Department.** The definition of the term "department" was deleted and the term "Mn/DOT," the common abbreviation for the Minnesota Department of Transportation, was added, as defined in part 8830.0100, subpart 10.

Subp. 9. **Federal rail service continuation program.** Because the Federal Railroad Administration changed the title of this program to "local rail freight assistance program," the term "federal rail service continuation program" was deleted and the term "local rail freight assistance program" was added to this part.

Subp. 9a. **Going concern value.** Because the term "going concern value" is used in the rules, a definition of the term was added.

Subp. 9b. **Grant.** Because the term "grant" is used in the rules, a definition of the term was added.

Subp. 10. **Loan.** The definition of the term "loan," as used in these rules, was revised to reflect the changed conditions under which Mn/DOT will make funds available.

Subp. 10a. **Local rail freight assistance program.** Because the term "local rail freight assistance program" is used in the rules, a definition of the term was added.

Subp. 10b. **Net liquidation value.** Because the term "net liquidation value" is used in the rules, a definition of the term was added.

Subp. 10c. **Net salvage value.** Because the term "net salvage value" is used in the rules, a definition of the term was added.

Subp. 12a. **Rail carrier.** Because the term "rail carrier" is used in the rules, a definition of the term was added. The term "railroad" was deleted in parts 8830.5100 to 8830.5700 of the rules and replaced with the term "rail carrier," since this is the term which is used in the Interstate Commerce Act.

Subp. 14. **Railroad.** Because the term "rail carrier" replaced the term "railroad" in parts 8830.5100 to 8830.5700 of the rules, the definition of the term "railroad" was deleted from this part. The term "rail carrier" is used because it is consistent with the definitions used in the Interstate Commerce Act.

Subp. 15a. **Regional Railroad Authority.** Because the term "Regional Railroad Authority" is used in the rules, a definition of the term was added.

Subp. 16. **State rail plan.** Because the term "state rail plan" is not used in the rules, the definition of the term was deleted.

Subp. 18. **Subsidy payments.** Because subsidy payments have been eliminated from the federal local rail freight assistance program, the definition of the term was deleted.

8830.5200 AUTHORITY AND PURPOSE

In subpart 2, reference to the federal rail service continuation program was changed to the local freight assistance program because the title of this program was changed by the Federal Railroad Administration.

8830.5300 RAIL REHABILITATION PROGRAM

Subpart 1 was revised to reflect the current criteria which proposed projects must meet to be eligible for funding under the Rail Rehabilitation Program. The change from "upon which a train

cannot operate safely at 25 miles per hour" to "which does not comply with FRA Class II Track Safety Standards" is a change in language only, since at the present time these two requirements are equivalent. The revision was made so that if a change is made in the FRA standards, these new standards will be incorporated in the rules. A rail line which belongs to a bankrupt railroad and requires rehabilitation to continue service must meet the same criteria as any other rail line to be eligible for funding; therefore, it was determined that there is no need to mention these rail lines specifically. This change was made for clarity and does not represent a change in practice.

Item F was added to subpart 2 to aid in assessing the total costs and benefits of a proposed project by identifying the impacts on the roadway system if the rail rehabilitation funding is not provided.

In subpart 3, language requiring rehabilitation which allows trains to operate safely at "25 miles per hour or more" was changed to "FRA Class II Track Safety Standards". At the present time, these two requirements are equivalent, but the revision was made so that any future changes in the FRA Class II Track Safety Standards are incorporated in the rules. The requirement that the maintenance level be included in the rehabilitation agreement was added to this subpart. Because there was no language in this part regarding this issue, disagreements have occurred in the past between Mn/DOT and the railroad companies regarding the level of maintenance to be performed.

In item A of subpart 4, the maximum percentage of the total cost of a rail rehabilitation project which can be funded by a grant, loan, or combination grant and loan was changed from 90 percent to 70 percent because the existing language in item A also requires that 10 percent of the project cost be provided by the rail users and 20 percent be provided by the railroad, leaving a balance of 70 percent. The maximum percentage of the total cost of a project which can be funded by a grant was reduced from 60 percent to 50 percent because a grant is provided with federal funding, which has been greatly reduced in recent years. The reduction in the amount of funding available for any one project will enable the available federal funds to assist a greater number of rehabilitation projects.

Items A and B of subpart 4 were revised to clarify that, for rail rehabilitation projects, grants can only be made from federal funds, but loans can be made from either state or federal funds. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

Item B of subpart 4 was revised to reflect the fact that rail lines belonging to bankrupt railroad companies and abandoned rail lines are eligible for funding under the rail rehabilitation program on the same terms as any other rail line, and to specify the funding which is available to Regional Railroad Authorities.

The maximum percentage of the total cost of a rehabilitation project which can be funded by a grant, loan, or combination grant and loan was changed from 90 percent to 80 percent because item B also requires that 10 percent of the project cost be provided by the rail users and 10 percent be provided by the Regional Railroad Authority, leaving a balance of 80 percent. The requirement that the Regional Railroad Authority provide a minimum of 10 percent of the total cost of a rehabilitation project replaced the previous language requiring the railroad to "furnish a portion of the cost of the project if its financial circumstances permit". The previous language was vague, and was replaced by language which requires all Regional Railroad Authorities to make a financial commitment to a rehabilitation project and specifies the amount of this contribution, so that all Regional Railroad Authorities are treated equitably.

The terms for repayment of a loan, as specified in subpart 5, were changed from a rigid payment schedule to a negotiated payment schedule, and the time period allowed for repayment of a loan by Mn/DOT was extended from ten years to fifteen years. These changes were made to allow the repayment of the shippers' loan first, while still allowing adequate time to repay the state. The requirement that the rehabilitation contract provide for an extension of time if service is stopped or reduced was modified by the words "by events beyond the control of the parties to the agreement". This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

8830.5400 RAIL LINE SUBSIDY PROGRAM CRITERIA

This part was deleted from the rules because the subsidy program was eliminated from the federal local rail freight assistance program.

8830.5450 REGIONAL RAILROAD AUTHORITY PURCHASE ASSISTANCE CRITERIA

This part was added to the rules because Regional Railroad Authorities are becoming more active in the purchase of rail lines and criteria needed to be established so that state assistance in these purchases would be fairly and equitably distributed.

Subpart 1 contains the criteria which must be met if a Regional Railroad Authority wishes to obtain financial assistance for the purchase of a rail line. These criteria are intended to insure that funds available for this purpose will be used in the most cost-effective manner possible through financial analysis of the rail line and evaluation of the ability of the Regional Railroad Authority to operate the rail line. Item E safeguards Mn/DOT's investment by prohibiting the transfer of ownership of the property without approval by Mn/DOT.

Subpart 2 lists the conditions under which project funding may be provided and the maximum funding available, based on the proposed use of the rail line, to insure that state funds are fairly and equitably distributed.

To safeguard the state's financial investment in a rail line purchased under this program, subpart 3 contains the circumstances under which repayment of state funds is required, so that all parties to the loan agreement will be aware of the conditions under which the funds are made available.

8830.5500 CAPITAL IMPROVEMENT PROJECT LOAN

Language was added to subpart 1 to specify that interest-free loans for capital improvement projects are available only to rail users. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

Item B of subpart 1 was revised to include the requirement that rail users receiving loans for capital improvement projects must make a financial commitment to preserving rail service. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well, and to insure that all loan applicants are aware of the conditions under which the funds are made available.

Item F was added to subpart 1 to specify the limits of funding available for an individual project. This does not represent a change in practice, but this item was added to the rules to formalize a procedure which is already in effect and has worked well, and to insure that all loan applicants are aware of the conditions under which the funds are made available.

In subpart 2, the means of funding capital improvement demonstration projects was changed from a grant to an interest-free loan and the funding available was increased from 50 percent to 100 percent of the total project cost so that demonstration projects will receive the same financial assistance as other capital improvement projects.

Item D, which required that the project include two or more participant rail users, was deleted from subpart 2 to increase the number of capital improvement projects eligible for funding under the rail service improvement program.

8830.5600 MINNESOTA RAIL SERVICE IMPROVEMENT PROGRAM

In the next edition of Minnesota Rules, this part will be renumbered as part 8830.5250, so that general information about the Rail Service Improvement Program is located before the specific program criteria.

Language describing the period of time during which information must be provided to Mn/DOT was added to subpart 1. This does not represent a change in practice, but was added to the rules to formalize a procedure which is already in effect and has worked well.

Language in item C, subpart 2, was revised to state that the contract will include the level of service to be provided during the "contract period," which is more specific than the previous language "effective rehabilitation or operations subsidy period". This does not represent a change in practice, but the language was revised for clarity.

Revisions were made to item D of subpart 2 to require that the level of maintenance to be performed be specified in the contract. The previous language was vague, and disagreements have occurred in the past between Mn/DOT and the railroad companies regarding the level of maintenance to be performed.

Item M was added to subpart 2 so that the agreement will contain the remedial action to be taken or penalties to be imposed for non-compliance with the contract. This item was added so that all parties to an agreement will be aware of the consequences of non-compliance with the contract.

Item N was added to subpart 2 to specify the commissioner's right to include in the contract any additional items and conditions he considers necessary for the successful completion of the specific improvement project provided for in the contract. This does not represent a change in practice, but was added to formalize a procedure which is already in effect and has worked well.

Subpart 2a was added to state the requirements of the bidding process. The Code of Federal Regulations is cited so that any future revisions to the Code are incorporated in the rules. This does not represent a change in practice, but was added to formalize a procedure which is already in effect and has worked well.

8830.5700 DISCLOSURE OF RAIL CARRIER DATA

Since the United States Code regarding confidential information is cited in subpart 1, language which duplicated the regulation was deleted. By referencing the Code rather than duplicating the material, future changes made to the Code are also incorporated in the rules.

8830.5800 DEFINITIONS

Subpart 1. **Scope.** The language of this subpart was revised to incorporate definitions which appear in part 8830.0100 to avoid duplicating those definitions in this part.

Subp. 1a. **Abandoned.** Because the term "abandoned" is used in the rules, a definition of the term was added.

Subp. 5. **Continued rail operation.** The term "continued rail operation" was deleted because these operations are not part of the rail bank program. Other uses of this term were deleted in the rules dealing with the rail bank program.

Subp. 7. **Department.** The definition of the term "department" was deleted and the term "Mn/DOT," the common abbreviation for the Minnesota Department of Transportation, was added, as defined in part 8830.0100, subpart 10.

Subp. 12a. **Rail carrier.** Because the term "rail carrier" is used in the rules, a definition of the term was added. The term "railroad" was deleted in parts 8830.5800 to 8830.5860 of the rules and replaced with the term "rail carrier," since this is the term which is used in the Interstate Commerce Act.

Subp. 14. **Railroad.** Because the term "rail carrier" replaced the term "railroad" in parts 8830.5800 to 8830.5860 of the rules, the definition of the term "railroad" was deleted from this part. The term "rail carrier" is used because it is consistent with the definitions used in the Interstate Commerce Act.

Subp. 14a. **State rail bank.** Because the term "state rail bank" is used in the rules, a definition of the term was added.

8830.5810 PROGRAM CRITERIA

Subparts 3 and 4 were deleted because continued rail operation projects are not part of the rail bank program.

- 8830.6100 DEFINITIONS**
- 8830.6200 AUTHORITY**
- 8830.6300 APPLICATIONS FOR STATE OR FEDERALLY CHARTERED BANK LOANS**
- 8830.6400 APPLICATIONS FOR LOANS BY MUNICIPALITIES AND COUNTY OR RURAL DEVELOPMENT FINANCING AUTHORITIES**
- 8830.6500 ELIGIBILITY REQUIREMENTS FOR LOANS BY STATE OR FEDERALLY CHARTERED BANKS**
- 8830.6600 ELIGIBILITY REQUIREMENTS FOR LOANS BY MUNICIPALITIES, COUNTIES, OR RURAL DEVELOPMENT FINANCING AUTHORITIES**
- 8830.6700 INTEREST ADJUSTMENTS**

Parts 8830.6100 to 8830.6700, which described the Rail User Loan Guarantee Program, were deleted from the rules. Although the program was in effect for over ten years, only two rail users utilized it, and one canceled the loan guarantee after one year. Mn/DOT will honor its commitments made in connection with the one loan guarantee which is still outstanding, but will accept no additional applications for this program, which does not benefit the rail users as much as it protects the lending institutions.

8830.9900 SIGNS

The figures in this part, with the exception of subpart 3, were incorporated in part 8830.9901, with minor modifications. Subpart 3, which showed pavement markings at grade crossings, was deleted because these pavement markings are illustrated in the MMUTCD, and part 8830.0900 requires that the design and placement of grade crossing pavement markings comply with the MMUTCD. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are also incorporated in the rules.

8830.9901 SIGNS, SIGNALS, AND LOCATIONS

Subpart 1 replaces part 8830.9900, subpart 1. The crossbuck assembly is required to be located in compliance with the MMUTCD and language which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are also incorporated in the rules. Also, the requirement that the post meet the breakaway criteria of the FHWA's "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" was added to this figure, as it was to part 8830.0500, subpart 1, to enhance public safety.

Subpart 2 replaces part 8830.9900, subpart 2. The figure of the stop sign mounted separately from the crossbuck was deleted because, in the past, when stop signs have been separately-mounted they have sometimes obscured the crossbuck, or, in attempting to preserve the view of the crossbuck, have been mounted at locations not in compliance with the MMUTCD. The deletion of the figure of the separately-mounted stop sign is consistent with language changes made in part 8830.0800, subpart 3.

Subpart 3 replaces part 8830.9900, subpart 4. The requirement that the signal be located in compliance with the MMUTCD was added to this figure, as it was to part 8830.1600, subpart 1. With the advent of light units which are 12 inches in diameter, some railroad companies are using backgrounds which are 24 inches in diameter. This figure was revised to allow the use of backgrounds 20 inches to 24 inches in diameter. This change is consistent with language changes made in part 8830.1400, subpart 3. Because of the range of sizes used for the dimension of the background, the dimension of 2'-1" from the center of the signal support mast to the edge of the background was deleted. To enhance the safety of pedestrians and bicyclists, language making use of a bell optional at a signalized grade crossing was deleted. This change is consistent with language changes made in part 8830.1500, subpart 1.

Subpart 4 replaces part 8830.9900, subpart 5. Because of the range of sizes used for the dimension of the background in subpart 3, the dimension of 2'-1" from the center of the signal support mast to the edge of the background was deleted, as it was

in subpart 3. To enhance the safety of pedestrians and bicyclists, language making use of a bell optional at a signalized grade crossing was deleted. This change is consistent with language changes made in part 8830.1500, subpart 1.

Subpart 5 replaces part 8830.9900, subpart 6. To enhance the safety of pedestrians and bicyclists, language making use of a bell optional at a signalized grade crossing was deleted. This change is consistent with language changes in part 8830.1500, subpart 1.

Subpart 6 replaces part 8830.9900, subpart 7. The requirement that the signal be located in compliance with the MMUTCD was added to this figure, as it was to part 8830.1600, subpart 1, and language which duplicated the MMUTCD was eliminated. By referencing the MMUTCD rather than duplicating the material, future revisions to the MMUTCD are also incorporated in the rules. Because of the range of sizes used for the dimension of the background in subpart 3, the dimension of 2'-1" from the center of the signal support mast to the edge of the background was deleted, as it was in subpart 3, and the 4'-1" dimension from the center of the signal support mast to the face of curb was also deleted.

Subpart 7 replaces part 8830.9900, subpart 8. Because of the range of sizes used for the dimension of the background in subpart 3, the dimension from the center of the signal support mast to the face of curb or edge of shoulder was changed from 4'-1" to a range of 4'-1" to 4'-3".

8830.9904 RAILROAD CROSSBUCK AND AUXILIARY SIGNS

This new part contains the figures of the crossbuck sign, in subpart 1, and the auxiliary sign, in subpart 2. The use of both of these signs is described in part 8830.0500 and the signs were previously shown in part 8830.0500, subpart 3. This new location is the result of a reorganization placing all of the figures in parts 8830.9901 to 8830.9941 of the rules, but the design of the signs is unchanged, and is in compliance with the MMUTCD.

8830.9906 RAILROAD ADVANCE-WARNING SIGNS

This new part contains the figures of the railroad advance-warning signs. The location of these figures is the result of a reorganization placing all of the figures in parts 8830.9901 to 8830.9941 of the rules.

Subpart 1 is the figure of the advance-warning sign numbered W10-1. The use of this sign is described in part 8830.0600, and the sign was previously shown in part 8830.0600, subpart 2. The design of the sign is unchanged, and is in compliance with the MMUTCD.

Subparts 2, 3, and 4 are the figures of the advance-warning signs numbered W10-2, W10-3, and W10-4, respectively. The use of these signs is described in part 8830.0600. Although these are not new signs, they were added to the rules to encourage their use where appropriate. The design of the signs is in compliance with the MMUTCD.

Subpart 5 is the figure of the track-angle sign, the use of which is described in part 8830.0700. The sign was previously shown in part 8830.0700, subpart 7. The design of the sign is unchanged, and is in compliance with the MMUTCD.

Subpart 6 is the figure of the blind-crossing sign, the use of which is described in part 8830.0700. The sign was previously shown in part 8830.0700, subpart 7. The design of the sign is unchanged, and is in compliance with the MMUTCD.

Subpart 7 is the figure of the "look for trains" sign, the use of which is described in part 8830.0700. The sign was previously shown in part 8830.0700, subpart 7. The design of the sign is unchanged, and is in compliance with the MMUTCD.

Subpart 8 is the figure of the exempt-crossing sign, the use of which is described in part 8830.0700. Although this is not a new sign, it was added to the rules to encourage its use where appropriate. The design of the sign is in compliance with the MMUTCD.

8830.9908 OTHER REGULATORY SIGNS

Subpart 1 is the figure of the "do not stop on tracks" sign, the use of which is describe in part 8830.0700. Although this is not a new sign, it was added to the rules to encourage its use where appropriate. The design of the sign is in compliance with the MMUTCD.

Subpart 2 is the figure of the "tracks out of service" sign, the use of which is described in part 8830.2730, subpart 3. Although this is not a new sign, it was added to the rules to encourage its use where appropriate. The design of the sign is in compliance with the MMUTCD.

8830.9910 OPERATING LICENSE **8830.9911 OPERATING LICENSE**

Revisions have been made in the operating license issued by Mn/DOT, so part 8830.9910 was deleted and replaced with part 8830.9911, which shows the operating license which is currently used by Mn/DOT. Because issuance of the operating license is required in part 8830.2400, the form is shown in this part for illustrative purposes.

8830.9920 CLEARANCE DIAGRAM STRUCTURES, BRIDGES, AND TUNNELS
8830.9921 CLEARANCES FOR STRUCTURES, BRIDGES, AND TUNNELS

Part 8830.9920 was deleted and replaced with part 8830.9921. The information presented in part 8830.9921 is the same as was in part 8830.9920, with the exception that "Minnesota Public Service Commission" was changed to "Minnesota Transportation Regulation Board". This non-substantive change is explained on page 4 of this statement.

8830.9930 STANDARD NO CLEARANCE SIGNS
8830.9931 STANDARD "NO CLEARANCE" SIGNS

Part 8830.9930 was deleted and replaced with part 8830.9931. The information presented in part 8830.9931 is the same as was in part 8830.9930, with the exception that "Minnesota Public Service Commission" was changed to "Minnesota Transportation Regulation Board". This non-substantive change is explained on page 4 of this statement.

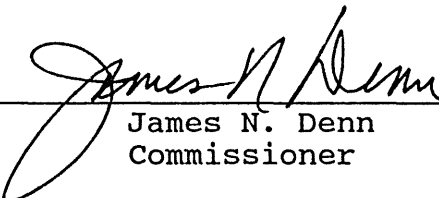
8830.9940 WARNING SIGN FOR TRAINMEN
8830.9941 WARNING SIGNS FOR TRAIN CREW MEMBERS

Part 8830.9940 was deleted and replaced with part 8830.9941. The information presented in part 8830.9941 is the same as was in part 8830.9940, with the exception that references to the "Minnesota Public Service Commission" were changed to the "Minnesota Transportation Regulation Board" or the "Minnesota Department of Transportation". These non-substantive changes are explained on page 4 of this statement.

8830.9950 EXCERPT FROM MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

This part was an interpretation of section 4B-21 of the 1971 edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," related to the use of flashing lights near grade crossings. Because this is not the current edition of the manual, the interpretation is no longer relevant and this part was deleted.

Date 1/29/92


James N. Denn
Commissioner

