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Chapter 17: Railroad Coordination

FDM 17-1-1 General

December 11, 2014

1.1 Originator

The Chief, Railroads and Harbors Section (RHS) is the originator of this chapter. Direct any questions or recommendations concerning this chapter to Supervisor, Railroad Engineering & Safety Unit (608) 267-7349 or Railroad Grade Crossing Safety Engineer (608) 266-2941, in the RHS.

1.2 Introduction

This chapter describes WisDOT activities relative to highway improvements affecting railroad property. It also describes WisDOT's relations with railroad companies regarding projects; railroad regulatory agencies, the Federal Highway Administration; counties, cities, villages and towns, and municipal area highway authorities; engineering consultants; and the public. Railroad-highway improvements include projects on both state and local roads and streets for the installation and adjustment of railroad crossing warning devices and surfaces; the elimination of hazards at railroad crossings by the relocation of railroad tracks and highways and closures of crossings; the construction of grade separation structures; and the acquisition of land rights from railroad companies.

Project required adjustments to, or construction of railroad facilities will be accomplished either by railroad company forces, by a contractor who has a continuing contractual relationship with the railroad, by a competitive bid let by the railroad, or by the WisDOT contractor with concurrence of the railroad. In order for any work to be eligible for public funding reimbursement, it must be covered by an approved agreement (contract). All continuing contracts must be approved by WisDOT for the work to be eligible for public funding reimbursement.

When federal or state highway funds are to be used to fund a project, WisDOT, through the RHS is mandated to negotiate necessary agreements with railroads.

Railroad coordination is part of the overall communication plan for a project. Refer to FDM 2-20-5.8 - Communication Management (and other references in FDM 2-20) for a discussion of communication from a project management perspective.

1.3 Policy Interpretation

WisDOT recognizes that the efficient movement of freight and passengers by rail is important to Wisconsin's economy. All policies of WisDOT are to be interpreted so as not to create or cause a negative impact on a railroad company's ability to carry out its business.

1.4 Goal of Railroad Coordination

WisDOT's goal is to obtain railroad acceptance of highway construction projects and railroad crossing safety improvements. Railroad cooperation is necessary to implement changes in or adjustments to railroad facilities in a timely manner to accommodate highway projects. This includes needed or identified warning devices at highway grade crossings as determined by the Office of the Commissioner or Railroads (OCR).

To help the reader, a list of terms and abbreviations used throughout this chapter or by railroad engineering professionals is included as Attachment 1.1.

LIST OF ATTACHMENTS

Attachment 1.1 Terms And Abbreviations

FDM 17-1-5 The WisDOT/Railroad Partnership

June 19, 2013

Railroad grade crossings of public highways create the potential for conflict and are thus very dangerous intersections. A unique partnership is required to provide appropriate warning devices and other treatments for the safety of the public at these intersections. That partnership is a 3-way one involving WisDOT, the Office of the Commissioner of Railroads (OCR), and the railroad company.

WisDOT is the agency responsible for the planning, design and construction of highway improvements, and for the administration of all federal transportation funds that are allocated to Wisconsin.

The OCR is the state agency that regulates railroads. The OCR is almost exclusively concerned with rail-

highway crossings. The OCR issues orders that are legally binding on railroads, municipalities, and WisDOT. Within its areas of responsibility, the OCR has broad discretionary powers. The OCR determines whether to allow physical changes to crossings (after a public hearing process) and what warning devices are required at crossings. The OCR can act upon petition or on its own motion. The OCR also has jurisdiction over rough riding crossings, clearance exemptions, drainage, exemptions from the 346.45 requirement to stop, and certain labor issues. The OCR does not do economic regulation of railroads and does not have jurisdiction over construction or removal of tracks.

The railroad companies are “for profit” businesses subject to regulation, primarily at the federal government level, but to some extent by the OCR at the state level.

Over the years, though legislation, court rulings and cooperative efforts, the general responsibilities of the partners for improving and maintaining the facilities at railroad crossings have become established. These include responsibilities for the maintenance of the crossing surface; the installation and maintenance of warning devices; building separations (bridges) at crossings; the closure of old crossings; and the creation of new crossings. These responsibilities are addressed in detail in specific subjects dealing with each type of project later in this chapter.

Initiating a safety project or a highway improvement at a rail-highway crossing immediately involves the railroad company in some manner. While legislation and public railroad regulatory agencies have established rules and regulations for rail-highway crossing improvements, WisDOT attempts to obtain the concurrence of the railroad for the proposed improvement at the highway crossing the railroad. This is accomplished through negotiations with the railroad company, culminating in an agreement; a formal document signed by all involved interests specifying the work to be accomplished and the reimbursement to be paid.

While concurrence and acceptance of WisDOT proposals by all involved parties is the goal, WisDOT will typically place the matter before the OCR for investigation hearing if necessary, and resolution. See FDM 17-1-10 for a more complete explanation of OCR powers.

Railroad negotiations with WisDOT have historically been conducted by the Railroad and Harbors Section (RHS) with the railroad's main office. The reasons for this are to provide consistency across the state with the many railroads that operate in the state, and because these negotiations require the specialized expertise. However, to support the negotiations, it is necessary for the DCR’s to develop and maintain liaison with staff in the Division offices of the railroads operating within their boundries for the status of track work and train operations, and for liaison on construction, maintenance, and operating matters.

Railroad companies usually designate one person to coordinate project negotiations. Other railroad personnel are involved however. These may include engineering (track, bridge and signal), train traffic operations, real estate, finance, legal and planning. In addition to the railroad’s main office reviews, plans are usually sent to the railroad’s regional or division engineer for comment.

In addition to obtaining project agreements with the railroad companies, other approvals may be required from agencies outside of the WisDOT such as local governments, the OCR and the FHWA. Within WisDOT, railroad projects involve both central office and region personnel, particularly in project selection, design, and construction. Other functional areas in WisDOT involved for special purposes include traffic, maintenance, real estate, program administration, accounting and audit.

FDM 17-1-10 The WisDOT/OCR Partnership

June 19, 2013

10.1 Introduction

WisDOT has long sought to incrementally improve the processes that identify and evaluate candidate railroad projects as the basis for developing longer range fiscal year programs of projects. To achieve this, and the efficiencies and coordination that result from longer- range programs, WisDOT has initiated and encouraged monthly coordination meetings between agency staffs, and have invited OCR staff to actively participate in decisions regarding the WisDOT Safety Program.

Today, both agencies are primarily concerned with the efficient investment of transportation dollars in facilities at railroad crossings in order to maximize the public benefits of these investments. While OCR interest in the investment area is limited to warning devices, WisDOT has responsibility for a broad program of investments, including crossing surfaces, crossing closures, and separations (bridges) at crossings, in addition to a wide variety of highway improvements.

10.2 OCR Powers

The Office of the Commissioner of Railroads (OCR) has broad statutory authority and powers as noted in FDM 17-1-5 and FDM 17-5-5.

- The OCR is the final authority on the appropriate treatment at a crossing – passive warning, active warning, or separation.
- The OCR must resolve issues placed before it via petition under Section 195.28 W.S., but may also act on its own motion (that is initiate action on its own, pro-actively).
- The OCR has the ability to resolve certain disputes between the railroad and WisDOT. If agreement between the parties cannot be reached and the OCR has jurisdiction, the matter may be placed before the OCR for hearing and order. Two railroads operating in Wisconsin have historically required an order from the OCR for all signal work – Canadian National (WCL/FVW/SSAM,) and the Union Pacific. It is expected that more railroads will require OCR Orders in the future. Allow an additional 120 days for a new or altered crossing when the OCR is involved. If the signal installation is a part of an OCR order following a public hearing, the required additional time is 240 days. (See Sections 195.28 and 195.29 Wisconsin Statutes)
- An OCR Order has the force of law.

On major projects (with potential for crossing consolidation), early OCR involvement is highly desirable. Such early involvement is also helpful on highway projects that parallel railroad tracks.

For controversial or contested projects on the State Trunk Highway System, the assistance of an attorney may be advisable. The BRH will make such recommendation to the DTSD Administrator, who, in turn, will determine the need and request such assistance from the Office of General Counsel. The RHS will assist the legal counsel on project matters and may provide direct testimony at the hearing as deemed necessary. A local government would decide when its corporate counsel is needed.

On crossing projects which have unresolved differences with the railroad, it is necessary to provide plans and testimony to fully support the highway project, not just any unresolved matters. The requirements and reasons for the project are to be clearly stated. This includes general highway and railroad information, method of crossing, clearances, who is to undertake the work, how the project is to be financed and responsibility for future maintenance. The signature page of the environmental impact statement, the screening work sheet, or the Design Study Report for the project are to be available and a copy may be submitted for the hearing record.

More information on the responsibilities of the OCR and guidance in DOT's involvement in OCR hearings is provided in FDM 17-10-15.

TERMS AND ABBREVIATIONS

For a comprehensive resource of railroad operating rules refer to www.sdrm.org/faqs/rulebook/. A glossary at the end of the site provides definitions for commonly used railroad operating terms.

A comprehensive glossary of railroad track and structure terms is available at the Division of Transportation Infrastructure Development, Railroad and Harbors Section website. Should you not have access to the Wisconsin Department of Transportation website, please contact the Railroad and Harbors Section Railroad Project Engineer at (608) 266-0233 to obtain a copy of this document.

TERMS AND ABBREVIATIONS	DEFINITION
AAR	Association of American Railroads
Advance Pre-emption	Notification of an approaching train that is forwarded to the highway traffic signal controller by the railroad equipment for a period of time prior to the activation of the railroad crossing warning devices.
ADT	Average Daily Traffic
AFO	Audio frequency overlay; type of signal circuit for flashing light signals.
AREMA	American Railway Engineering and Maintenance-of-Way Association
Alteration	The action or procedure to change or shift a highway railroad crossing, (also see S.195.29 W.S.). An alteration occurs if: a crossing is relocated; the number of traffic lanes is increased; the highway grade requires a raising or lowering of the track by 6 inches or more.
At grade Crossing	Highway and railroad crossing each other at the same plane.
BSHP	Bureau of State Highway Programs
BFS	Bureau of Financial Services
BHD	Bureau of Highway Development
Clear Storage Distance	The shortest distance between the intersection STOP BAR and a point 8’-6” from the centerline of the nearest track as measured perpendicular to the track. Ideally, this distance should exceed 80 feet.
Continuing Contract	A written agreement or contract between two-parties for service at prearranged conditions and prices on an as needed basis over a specified period of time.
Constant Warning Time Circuitry	Circuitry of a railroad crossing warning device system that includes a predictor unit to provide the same amount of time between the time the warning devices are activated and the time a train arrives at the crossing, regardless of the train speed. This time is usually between 20 and 30 seconds.
Design Vehicle	The longest vehicle permitted without a special permit on the roadway in question.
Devils Strip Area	Area between multiple tracks requiring special attention for adequate asphalt compaction.
Engineering Citation	The auditor's statement for “without profit” railroad's claim for reimbursement work or expense that is either not deemed to be included in the project agreement or not properly authorized.
Exposure Factor	The product of the roadway ADT times the average trains per day (generally over a 30-day period). Computed for both the existing and design year.
Fee Simple Title	Ownership of land without limitation or restrictions on transfer or assignment of interests.
Flagging	Services provided by the railroad at a construction site to assure the safety of train operations.
Force Work Agreement	A contract to have certain railroad work performed by railroad employees at cost and without profit

Federal Aid (FA)	Dollars allocated to the State of Wisconsin by the federal government for the financing of improvements to the highway system.
FHWA	Federal Highway Administration
FIIPS	Financial Integrated Improvement Program System
Highway Easement	Partial rights in land for construction, operation and maintenance of a highway.
Interlocker	A system of tracks and signals designed to prevent simultaneous train movements on conflicting routes.
Isolated Projects	Projects involving only a crossing, and not part of a highway improvement project
LED	Light Emitting Diode. A type of lamp unit.
Limited Easement	Partial rights in land for a specified highway purpose, such as cut and fill slopes, drainage, etc. It may be temporary or permanent.
Motion Detector Circuitry	Circuitry of a railroad crossing warning device system to activate when a train moves toward the crossing and terminates when the train stops or moves away from the crossing.
MPO	Metropolitan Planning Organization
MUTCD	Manual of Uniform Traffic Control Devices
OCR	Office of the Commissioner of Railroads
Overpass	A grade separation structure with the highway over the railroad.
PMM	Program Management Manual
RHS	Railroad and Harbors Section
RRC	Regional Railroad Coordinator
Rail/Highway Crossing Project Review Committee	Certain WisDOT central office staff primarily from DTID and DTIM who review all project requests and recommendations for inclusion in the WisDOT Safety Program. The Committee determines the eligibility of projects for funding; allocates available funds to eligible projects; resolves and formalizes annual future year programs of projects.
Rail Weight	The weight of a one yard section of rail; weight is embossed on the web portion of the rail.
Railroad Crossing Improvement	Changes or additions that improve the safety and/or operation of a railroad highway crossing.
Railroad Crossing Repair	To restore a railroad crossing to a safe and sound condition by appropriate maintenance through adjustment or replacement of its parts.
Roadway	Highway travel lanes, shoulders and sidewalks.
Roundel	The curved glass used in a railroad crossing signal also referred to as a lens.
Shoo fly (Run around)	A temporary railroad track constructed to route trains around a construction site.
STB	Surface Transportation Board. A part of the federal government that has authority over rail abandonments.
Stipulation	A broad, conceptual agreement, which may require a later more detailed contract or agreement. An agreement to agree subject to approval of the OCR.
Structure Name	The designated name for a structure, usually the name of the street or highway, the locality or adjacent property owner.
TIP	Transportation Improvement Program (of the MPO)
Tied Projects	A crossing project that is a part of (or tied to) a highway improvement project.
Underpass	A grade separation structure with the highway under the railroad
W.S.	Wisconsin Statutes
Wig Wag	A type warning device at a highway/railroad crossing installed in the 1950's or

earlier. It represented a flagman swinging a lantern.

FDM 17-5-1 Sources and Types of Railroad Projects

May 2, 2003

1.1 Improvement Projects

Railroad Projects originate in a number of different programs. See FDM 17-15-1 for an overview of WisDOT improvement programs.

Railroad projects vary widely in the type of work they include. While the majority involve warning devices at crossings, either new installations, upgrades or relocations, there are many other types of work often required at the railroad – roadway interface. These include:

- active warning devices
- crossing surface projects
- railroad communication line adjustments for structure or grading projects
- easements to accommodate roadway appurtenances
- accommodations for: culverts, slopes, ditches & beam guard
- separation (bridge) projects on either the roadway or the railroad
- TEA (Transportation Economic Assistance) Projects

1.2 Other Projects

Transportation Economic Assistance (TEA)

The goal of the Transportation Economic Assistance (TEA) program is to attract and retain business firms in Wisconsin and thus create or retain jobs.

The (TEA) program is a part of the improvement program, and provides 50% state grants to governing bodies, private businesses, and consortiums for road, rail, harbor and airport projects that help attract employers to Wisconsin, or encourage business and industry to remain and expand in the state.

Applications are first come, first serve, and funded when all eligibility information is complete and satisfactory. For more information, see Chapter 06-07-01 of the Program Management Manual.

1.3 Railroad Status Report

As noted in Attachment 1.1, all railroad related projects in the improvement programs, regardless of source or type of work, are brought together in the Railroad Status Report which basically tracks the status of railroad projects through a series of “milestones”. The Railroad Status Report has two forms. Signal Projects include all work related to warning devices and Construction Projects include everything else. All projects are initially entered by the Railroads and Harbors Section (RHS) when the project is authorized and updated by the RHS as railroad negotiations progress. See the RHS Railroad Coordination Handbook for more detailed information.

LIST OF ATTACHMENTS

Attachment 1.1 Railroad-Highway Projects, Status Report Flow Chart

FDM 17-5-5 Relevant Statutes

August 25, 2010

5.1 Introduction

The authority for the administration of WisDOT and OCR policies and procedures described in this chapter is provided by the following referenced legislation. If the statutes do not grant WisDOT the authority to do something, then WisDOT cannot do it.

Also referenced here are the standards, guidelines and other technical data to assist the user in the administration of highway improvement programs affecting railroads and other railroad crossing warning device projects. These are not all-inclusive.

5.2 Legislation

Section 84.02(4)(e) directs the Department to adopt a manual establishing a uniform system of traffic control devices, consistent with and conforming to the current national standard. That manual currently is the Manual on

Uniform Traffic Control Devices (MUTCD) along with the Wisconsin Supplement to that Manual.

Section 84.05 - Railroad Crossing Improvements. This section describes the general authority of the WisDOT to plan and construct highway improvements that cross or otherwise affect railroad facilities and property, and to make the necessary arrangements, including any cost sharing, with the railroad companies as well as all other persons of interest. If arrangements cannot be made the WisDOT "Shall lay the matter before the Office of the Commissioner of Railroads (OCR)." The OCR proceedings shall be in accordance with ss. 195.28 and 195.29 Stats. described later in this procedure. If WisDOT and the railroad reach agreement for a grade separation structure and execute a stipulation without an OCR hearing, a copy of the stipulation is to be furnished to OCR for information and record maintenance.

Section 84.06(4) - Special Contracts With Railroads and Utilities. This section authorizes the WisDOT to contract for work by railroad (and utility) forces when it is deemed more feasible and advantageous to the state. Such contracts exceeding $5,000 are not valid until they are approved by the Governor.

85.077 Railroad projects and competitive bidding. This section was enacted in 2009 to require that the department or the recipient of public funds for a project involving the construction, rehabilitation, improvement, demolition, or repair of rail property or rail property improvements shall let the project by contract on the basis of competitive bids and shall award the contract to the lowest responsible bidder. The legislation provides exceptions for projects that are in response to a public emergency, are for the installation or maintenance of crossing warning devices, or are estimated to cost less than $25,000. Exceptions are also provided for projects on property owned or leased by a railroad and the project is performed by the railroad using its own employees, or if no responsible bid is received. Other than for the exceptions allowed, a railroad may not use a continuing contractor or preferred service provider on a publicly funded project. The section does not apply to professional service contracts such as for engineers, architects, and the like. If a railroad wishes to furnish materials for work to be performed by a contractor, the same bidding requirements apply to the materials furnished by the railroad. The only exception would be if the materials are routinely kept in stock by the railroad and the bidding documents state those routinely kept materials will be furnished by the railroad from its existing stock.

Section 86.12 - Highway Grade Crossings: Construction and Repair. This section relates to the railroad's ongoing responsibility at highway crossings. It requires railroad companies to keep railroad crossing surfaces in good condition and repair for highway travel. The railroad's crossing maintenance responsibility extends to a line four feet on either side of the outside rail and for the entire width of the adjacent roadway (including shoulders and sidewalks). Only railroad crossings of public streets and highways are included under this section. Railroad crossing reconstruction or improvement work may require the same or different surfacing materials from those existing in order to provide a suitable crossing for highway travel.

The town, county, village or city may give notice to the railroad of the need to improve or repair the surface of a specific crossing within its borders. The notice is by means of a resolution passed by the town board, county board, village board or common council of the municipality. The resolution is to identify the crossing and describe the work required.

The railroad is to respond to such notice within 30 days of receiving the resolution. If no action is taken by the railroad to comply with the resolution, the respective board or common council may file a complaint with the Office of the Commissioner of Railroads (OCR). The OCR will investigate the matter according to the provisions of s. 195 Stats.

Section 86.13 - Railroads to Maintain Highway Crossings. This section requires railroad companies to grade, construct and maintain railroad crossings in good and safe condition for public travel. This provision also applies to street and highway improvements adjacent to the railroad crossing and requires that the railroad improve, pave or surface the crossing to accommodate the planned improvement. The railroad responsibility for the crossing extends to a line 4 feet on either side of the outside rail and for the entire width of the roadway (See design notes on the back of the standard detail drawing of Pavement Detail for Railroad Approach, SDD 13B1 Chapter 16.

Section 86.13 covers all public rail-highway grade crossings. Further, this provision does not restrict cities from making special assessments for street improvements against railroads under the provisions of s. 66.694 Stats.

The principal difference between s. 86.12 Stats. and s. 86.13 Stats is the extent of the crossing work required. Section 86.12 primarily addresses on-going maintenance to keep or improve the existing crossing surfaces. Section 86.13 is in response to a highway improvement project and, in addition to addressing surface condition, requires the railroad to grade, construct and surface an existing crossing to accommodate the adjacent street or highway improvement. The railroad is to match the improved roadway in line and grade and to surface the crossing with suitable materials.

Certain highway improvements may be of such character and alignment that an affected railroad crossing may require an alteration. For an explanation of a crossing alteration see s.195.29 Stats.

Section 86.13 provides for a public board, committee or officer in charge of highway improvements adjacent to a railroad crossing to give notice to the railroad company responsible for track maintenance and improvements when improvement or repair of a crossing is required. The notice shall be in writing and shall be specific in describing the crossing location and the crossing work required.

The railroad is to respond to a notice within 30 days of receipt. If no action is taken by the railroad to comply with the notice, the person giving the notice may file a complaint with the OCR. For crossings on state trunk highways, or for crossings on federal-aid improvement projects, the complaint will be filed by the Railroads and Harbors Section (RHS).

The OCR will investigate the matter according to the provisions of s.195 Stats.

It is required that a notice be sent to the affected railroad for all projects at grade crossings which are funded with state or federal monies and this same procedure is recommended for projects regardless of funding. See FDM 17-20-1 for details of this activity.

Section 86.13(5) provides for reimbursement to the railroad for up to 85 percent of its costs for the repair of highway crossings on state trunk highways only. Repair with like-kind materials is not a requirement for this type of maintenance. Such work however must be approved, programmed and authorized by the WisDOT prior to actual construction to be eligible for reimbursement. (Railroad crossings on connecting streets and highways, although marked as state routes, do not qualify for reimbursement under this section as per memo dated 7/24/91 from the Secretary's office.) Notices for repair of railroad crossings shall also be specific as to the work required and division of costs. If a cost-share is to be offered the railroad on a project funded with state or federal monies, RHS will make that offer in a formal proposal.

Section 86.135 - Railroad Highway Crossings; Traffic control. This section requires railroads to provide proper traffic control when construction and maintenance activities are performed at public highway rail crossings.

Section 195.28 - Warning Devices at Grade Crossings. This section describes provisions for the installation of warning devices at public railroad crossings. Under the Administrative Code of the OCR the railroad is required to submit its plan and circuit design for railroad crossing signals to the OCR for approval. The installation of new railroad crossing signals or the up grade of existing signals may be made by the railroad without an order of the OCR, but the plans and circuit drawings must still be approved by the OCR.

Section 195.285 - Exempt Railroad Crossings. This section provides for exempting certain vehicles described in s. 346.45 Stats. from the requirement to stop at railroad crossings when a train is not present. A petition to the OCR for a public hearing is required. The provision is applicable to crossings with occasional and slow moving trains and a high volume of vehicular traffic including buses and trucks transporting hazardous materials. The selection criteria is further detailed in FDM 17-45-25.

Section 195.29 - Railroad Highway Crossings. Under this statute, proposed projects for the construction of new grade crossings of railroad tracks, new separation-of-grade structures and alterations of existing crossings are submitted to the OCR for its review, investigation and order. Current OCR administrative rules should be consulted, particularly RR 1.025 (Wis. Admin. Code) which sets forth the documents that must be filed with the OCR at the time the petition is filed. A public hearing by the OCR is required, unless all parties are in agreement and improvements proceed under s. 84.05 Stats. It is the practice of the WisDOT to obtain prior concurrence of the railroad for such projects by making an agreement for grade crossings and a stipulation for structures. Grade crossing projects requiring new public crossings or significant relocation of existing crossings always require a hearing and approval from the OCR, and should always include an evaluation of opportunities to close nearby, lesser used crossings.

Highway improvements at railroad grade crossings made under the provisions of s. 195.29 Stats. are distinguished from those made under s. 86.13 Stats. by qualifying and identifying highway changes which are considered to be alterations. Whereas the railroad companies are responsible for making certain crossing improvements under s. 86.13, the costs for crossing work required under the provisions of s. 195.29 are apportioned between the railroad and the highway authority. The railroad or public highway authority that initiates the alterations is generally responsible for the cost of the work based on their respective responsibilities and the benefits received. The cost -sharing is negotiated by the parties or determined by the OCR.

Changes in railroad crossings required to accommodate a highway improvement are set forth below as a guide in identifying railroad grade crossing alterations:

1. The crossing is relocated.
2. The number of traffic lanes is increased.
3. The grade of the highway requires the raising or lowering of the railroad track by six inches or more.

The state pays 100 percent of the costs associated with these changes.

Section 195.29(6) – View at Crossings. It is important to provide and maintain clear view of approaching trains at rail-highway grade crossings. The railroad and highway authorities are required to clear brush and trees from their respective rights of way for a distance of not less than 330 feet in each direction from the center of the crossing intersection. Both parties will be required to clear their rights of way for a greater distance if track alignment or train speeds require a greater train-viewing distance and ordered by the OCR.

Clearing of vegetation on private property within the 330-foot triangle is a responsibility of the property owner. For new crossings, or for major alterations to an existing crossing, the OCR may require the petitioning party to acquire easements to attain sufficient viewing distances. Section 195.29(6) Stats. provides a means for the OCR to require a property owner to clear vegetation from the 330-foot triangle upon the filing of a complaint, and after a public hearing on the matter. This is rare, however, as the municipality is in a better position to have this work performed under a local ordinance.

Section 349.065 directs that local authorities must place and maintain traffic devices on facilities under their jurisdiction that are in accordance with the MUTCD and the Wisconsin Supplement.

PSC 132 (Wis. Admin. Code) covers in detail the conditions for placing public utility facilities within railroad right-of-way and the procedures, conditions, requirements, responsibilities, and compensations related to such occupancy requirements. Refer to the Railroad Coordination Handbook for guidance.

5.3 OCR Regulatory Activities

Section 84.05 Railroad Crossing Improvements. On highways under department jurisdiction and which cross a railroad, if the department determines that the construction or reconstruction of a grade separation or the rearrangement or elimination of a grade crossing or other rearrangement of the highway or tracks is necessary in the interest of public safety or for convenience of public travel, the department is responsible for the development of a plan, the development of cost estimates, the coordination of construction and the apportionment of the cost. If the department is unable to reach an acceptable agreement with the parties involved regarding the apportionment of cost the matter shall go before the OCR. The OCR shall review the proceedings and hold a hearing in accordance with ss. 195.28 and 195.29 Stats. and shall apportion the cost of the construction and maintenance. The executed stipulation for a grade separation is to be furnished to OCR.

Section 86.12 Highway Railroad Grade Crossings; Construction and Repair. The railroad companies are responsible for keeping the surface of the crossings between tracks and rails and extending four feet beyond the outermost rail in good condition and repair for highway travel. Local governments may require the railroad to repair a crossing by resolution that is sent to the railroad. Failure of the railroad to perform the repairs could result in the local government filing a complaint with the OCR.

Section 86.13 Railroad to Maintain Highway Crossings. When roadway improvements are performed on crossing approaches, the railroad must repair or improve the crossing to accommodate the roadway improvement. The same procedure as s. 86.12 Stats. is followed for local roads. On state trunk highways, the department may reimburse the railroad for 85 percent of the repair or improvement costs. The railroad may be reimbursed for repair or improvement of a crossing on a connecting highway using improvement dollars when the crossing is within the limits of a highway improvement project. See FDM Section 17-30, Crossing Surface Projects.

Section 88.87 Railroad Grades Not to Obstruct Natural Drainage. Railroad companies are responsible to construct and maintain their grades so as not to impede the natural flow of storm water. If a railroad company fails to comply with this Statute, the DNR or any person or party may file a complaint with the OCR which will investigate and rule on the matter.

Section 190.08 Streams, Highways Restored. The railroads are responsible for the restoration of streams and highways a result of their construction of railroad track and structures. This statute is also applicable to railroad track abandonments. Some railroad facilities are permitted to remain after the line is abandoned for various reasons and generally with the concurrence of the abutting landowner, DNR and the highway authority.

Section 190.16(5) Removal; Industrial Spur Tracks. The Interstate Commerce Commission (ICC) Termination Act of 1995 preempts the OCR jurisdiction over the removal, discontinuance or abandonment of spur tracks. The position now taken is that the OCR does retain jurisdiction over the removal of spur tracks that have been abandoned by definition. Section 85.09(3) (b) Stats. defines abandoned rail property. If an unused spur track is within the limits of a highway project, the affected parties are free to negotiate the removal of the track. This can either be a real estate item initiated and negotiated by the party responsible for property acquisition or land rights on the project, or as a force work project initiated and negotiated by the highway maintaining authority for a locally funded project or by the RHS for a state and federal-aid project. For a state or federal-aid project, the region is responsible for identifying abandoned spur tracks. Usually this removal and patching of the void is to

be an item in the construction project unless the railroad company having operating rights on the track prefers to arrange the removal. When parties are not in agreement or when ownership of the track is unknown, the OCR will rule on the matter. In the petition to the OCR, include a list of property owners along the track in question.

Section 192.29(1) Train Speeds at Street and Highway Crossings. The Interstate Commerce Commission Termination Act of 1995 preempts the OCR from restricting train speeds.

Section 192.31 Telltales Over Railroads. The minimum vertical clearance above top of rail is 23 feet as specified in s. 192.31(3) Stats. Railroad companies are required to install and maintain telltales when the vertical clearance is less than 23 feet. The OCR may issue Orders granting exceptions to both the vertical clearance requirement and the telltales requirement. If a railroad and the maintaining authority of the overpass structure reach agreement through a signed stipulation that clearance less than 23 feet is mutually acceptable, the OCR may issue the necessary Order without public hearing. Title 23 Code of Federal Regulations, Subpart B Part 646.212(a)(3) and the Appendix to Subpart B determine the maximum clearances for structures on which federal funds can normally be used. See also the OCR Administrative Rules RR2.14 through 2.16.

Section 192.33 Fences, Cattle Guards, Crossings. This statute as well as ss.192.34 to 192.37 Stats. all relate to the requirements of the railroad to construct fences along railroad right of way.

Section 192.53 Railroad Track Clearance. Generally, the minimum lateral clearance measured from the centerline of track is 8 feet 6 inches for tangent track. Exemptions exist for certain facilities, but require OCR approval. For each degree of track curvature, the lateral clearance is increased one inch.

Section 195.28 Protecting Grade Crossings. This section covers both passive and active devices. Petitions to the OCR for the installation of new or changes in existing railroad crossing warning devices require an investigation, finding and order. In some instances a public hearing may also be required. No petition is required when the WisDOT and the railroad agree on the proposed changes for crossings on State Trunk Highways.

Section 195.285 Exempt Railroad Crossing. Petitions to the OCR to exempt certain vehicles identified in s. 346.45 Stats. from stopping at street and highway crossings of railroad tracks, except in common with all traffic, requires a public hearing, finding and order of the OCR (see s. 346.45 Stats. and FDM 17-45-25).

Section 195.286 Highway Crossings, Advance Warning Signs. This section relates to the furnishing of such signs to the county for use at county and town road crossings, a description of the sign, its location, and penalties for unauthorized removal. Railroads are responsible for supplying the signs and the highway authority is responsible for installing them.

Section 195.29 Railroad Highway Crossing. Projects to establish new rail-highway crossings or to close or make alterations at existing crossings often require a public hearing, finding and order by the OCR. Safety at crossings is a primary consideration in determining whether a crossing should be permitted, the manner of crossing and the apportionment of costs.

Section 195.29(6) - View at Crossings. It is important to provide and maintain clear reverse view of approaching trains at highway rail grade crossings. The railroad and highway authorities are required to clear brush and trees from their respective rights of way for a distance of not less than 330 feet in each direction from the center of the crossing intersection. Railroad companies may be required to clear their rights of way for a greater distance if track alignment or train speeds require a greater train-viewing distance.

Clearing of vegetation on private property within the 330-foot triangle is a responsibility of the property owner. For new crossings, or for major alterations to an existing crossing, the OCR may require the petitioning party to acquire sufficient easements to attain sufficient viewing distances. Section 195.29(6) provides a means for the OCR to require a property owner to clear vegetation from the 330-foot triangle upon the filing of a complaint, and after a public hearing on the matter. This is rare, however, as the municipality may be in a better position to have this work performed under a local ordinance.

Section 195.31 Bridges Made Safe. Complaints may be filed with the OCR for an alleged unsafe condition of a railroad bridge which may endanger public safety. Generally an investigation and a public hearing would be held on a complaint and a finding and order issued by the OCR on the remedy, if required.

Section 349.085 Authority to Install Stop Signs at Railroad Grade Crossings. This section allows local authorities on highways under their maintenance authority to install stop signs by ordinance at public railroad crossings which they deem to be necessary for public safety.

The MUTCD 8B.07 covers the criteria for stop signs.

Sections 350.137, 350.138, 350.139 and 350.1395 Snowmobile Rail Crossings. These sections relate to the assignment of statutory authority to the Department of Natural Resources for rule making in regard to public snowmobile railroad crossings and the latest DNR Rule should be consulted. In a rare instance the WisDOT

may have a snowmobile facility incorporated into an enhancement project or highway project.

FDM 17-5-10 Negotiating Guidelines

May 2, 2003

1. RHS handles all official WisDOT negotiations with railroads. While region involvement and assistance is typically required, regions are not involved often enough in the variety of projects that occur statewide, to develop sufficient expertise. Another important aspect is consistency in dealing with all railroads, which typically operate in more than one WisDOT region.
2. While consistency and expertise are the primary rationale for centralizing railroad negotiations, it's important that DRC's meet, cooperate and maintain good working relationships with the local field personnel of the railroads operating in their region.
3. Start early! Lead times vary, but are very important when negotiating with railroads. Recognize that WisDOT can be placed at a disadvantage in negotiations on an important sensitive project if negotiations are not completed in a timely manner. WisDOT's desired schedule for implementation can be delayed by the railroad which may lead to time-consuming hearings before the OCR. All of this may lead to unfortunate but necessary compromises by WisDOT. Discussing project strategies and schedules with RHS as early as possible is the best way to avoid placing WisDOT in a poor negotiating position.
4. Federal law and regulations largely dictate the railroad's cost obligations on highway projects built with federal aid (and most projects dealing with railroads do involve federal aid). There are always site specific details to be negotiated, but many basic elements are a matter of law.
5. There are similar statutory limitations on the state of Wisconsin's negotiating authority. The state's authority in all matters is limited to the "powers that can be found within the four corners of the statutes," i.e., specifically identified. If the statutes do not specifically empower WisDOT to do something, then WisDOT cannot do it.
6. Finally, it is WisDOT's goal in railroad negotiations to do what is "reasonable under the circumstances."

FDM 17-5-15 Manuals and Textbooks

May 2, 2003

15.1 Manuals

1. Department of Transportation, Facilities Development Manual and Standard Specifications for Highway and Structure Construction. The provisions of the Facilities Development Manual, Standard Specifications for Highway and Structure Construction and the supplemental specifications apply to proposed rail-highway work unless otherwise provided by the project plans and special provisions, and the agreement with the railroad. FDM design elements are adopted by the WisDOT as its standards. In event a railroad company requests that these standards be exceeded, they may be if approved by the WisDOT Bureau of Highway Development and the railroad company agrees in writing to fund the incremental difference in cost for the requested design and construction.
2. American Railway Engineering and Maintenance-of-Way Association (AREMA). The manual of the American Railway Engineering and Maintenance-of-Way Association provides recommend engineering practices associated with railroad facilities. While these are generally accepted by the various railroad companies, each railroad may also have certain standards and practices that they have adopted for use on their rail lines. However, in the selection and development of a particular design, WisDOT should not be expected to provide a more expensive design or product than the railroad would provide for improvements financed entirely with railroad company funds.
3. FHWA Manual on Uniform Traffic Control Devices (MUTCD). Part VIII of the Manual on Uniform Traffic Control Devices provides standards for normal application of highway marking, signing and train activated warning devices at railroad crossings. This subject is also addressed in FDM 17-60-15. Part VI of the MUTCD provides standards for traffic control during crossing construction and maintenance work. Note that the "Wisconsin Supplement to the MUTCD" is a part of the MUTCD.
4. Code of Federal Regulations. Chapter 23 Code of Federal Regulations, describes general design requirements and the eligibility of project work for financing railroad-highway improvements with federal-aid funds. The Code of Federal Regulations website address is http://www.gpoaccess.gov/cfr/index.html.
5. Financial Integrated Improvement Programming System (FIIPS) Manual, developed and maintained

by DTIM.

6. Program Management Manual. A manual by the Bureau of State Highway Programs for the programming and funding procedures of the various WisDOT engineering, right- of-way and construction programs.
7. AASHTO Policy on Geometric Design of Highways and Streets. This Manual by the American Association of State Highway and Transportation Officials provides a unified policy on design elements for highway appurtenances.
8. Institute of Traffic Engineers –1997, “Pre-emption of Traffic Signals at or near Railroad Grade Crossings with active warning devices.”
9. The 2002 USDOT Highway Grade Crossing Technical Working Group (TWG) Report providing “Guidance on Traffic Control Devices at Highway – Rail Grade Crossings”.

15.2 Textbooks

1. Railroad-Highway Grade Crossing Handbook, Second Edition (1986), FHWA. This handbook was developed by FHWA to provide general information on rail-highway grade crossing safety and operational problems.
2. Railroad Curves and Earthwork by Allen. This is a text book on the construction of railroad tracks. It may be used as a reference when laying out a railroad track relocation or temporary run around (Shoo-fly). There are other textbooks that could be used for the same purpose. Plan proposals effecting changes in railroad tracks are to be approved by the railroad.
3. Railroad Engineering by Hay (Second Addition). This book provides a comprehensive treatment of fundamental railroad engineering principles and practical applications.

FDM 17-5-20 Data Sources

May 2, 2003

20.1 Introduction

See the RHS Railroad Coordination Handbook for more detailed information.

This subject deals with physical data and railroad and highway operational data at railroad crossings. Other data regarding railroad project costs, project status, etc is available elsewhere in this chapter under the appropriate subject.

20.2 Background

Railroad crossing data is available in the WisDOT Railroad Crossing DATABASE. This database is available on the Internet at http://safetydata.fra.dot.gov/officeofsafety/

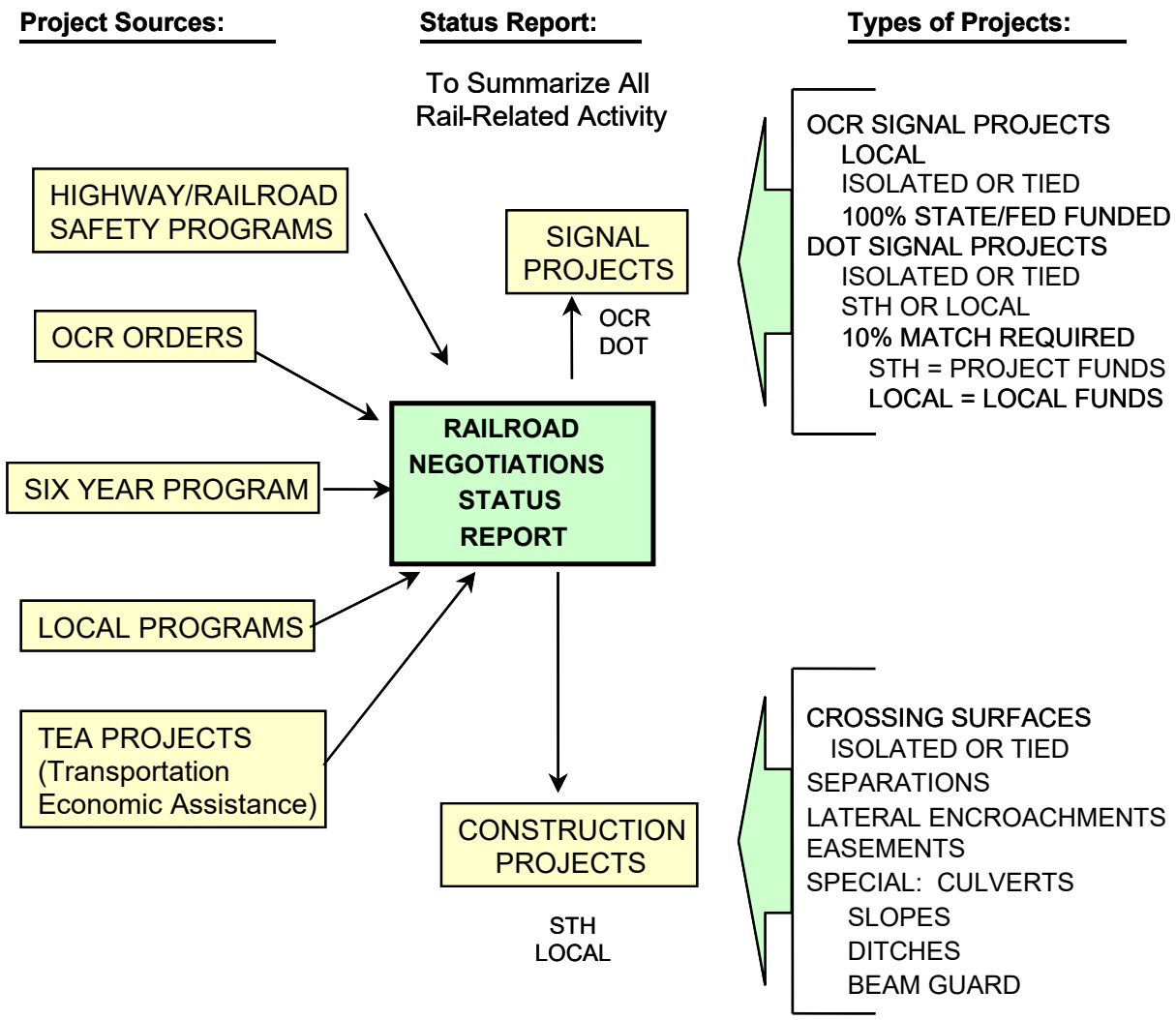
All data is identified by a unique Railroad Crossing I.D. Number. Each railroad crossing is assigned a unique number by the operating railroad. The initial number assigned to a crossing is identified in the field with a sign made of plastic. This WisDOT number is used to identify the crossing and for recording various facts and information about both the highway and railroad.

20.3 WisDOT Railroad Data File

WisDOT developed a very similar but somewhat enhanced parallel DATABASE in the late 70’s and has maintained data in both files so that they are as current as possible. However, the railroads are responsible for much of the data and their commitment to update has varied among them and their efforts over the years generally have been less aggressive than those of WisDOT.

To enhance maintainability, the FRA issued a “P.C. Version” of the database about 1990 called the “GX” Data File, and since that time most railroads have generally been more receptive to updating their physical and operational data.

Railroad - Highway Projects



FDM 17-10-1 Role of the Region Railroad Coordinator

June 19, 2013

The level of activity of the Region Railroad Coordinators varies significantly from region to region. In some regions, the involvement of the Railroad Coordinator varies depending upon whether the railroad project is a part of a larger, roadway improvement project, or whether it is an isolated stand-alone safety project.

As is the case with most region technical area coordinators and with the Railroad and Harbors Section (RHS) staff, the railroad coordinator must be involved in and advise consultant project managers as well as in-house staff. Only then can it be assured that consultant projects properly address rail issues in an appropriate as well as timely way, and thus avoid problems and delays late in the project development process.

1.1 Position Summary

While the specific list of tasks and responsibilities will vary, the basic function of the rail coordinators is essentially the same.

1. Serve as a point of contact for general railroad-related information for region project managers.
2. Be the primary liaison between the region and RHS on railroad related matters.
3. Be familiar with this chapter and the statutes and procedures that are documented therein.
4. Raise the general awareness of railroad coordination among project managers in the region.
5. Assist in the identification of candidate railroad related projects when these are solicited by RHS, DTIM, OCR, etc.
6. Provide notices to railroads when field reviews are to be conducted on railroad property.
7. Issue statutory notices in accordance with Section 86.13 W.S.
8. Monitor projects that are under development in the Six Year Program, and alert project managers of probable needed actions and lead times.
9. Recognize the need of specialized expertise on railroad related matters and seek that expertise on behalf of region project managers.
10. Arrange for joint reviews of improvement project plans in the field, as appropriate. (Railroads generally require their personnel to be actively involved in projects where their facilities are to be adjusted or altered, or where new signals or crossing surfaces are to be installed)
11. Monitor the contents of the Railroad Project Submittal Package including the Railroad Crossing Report and associated plans and documents to the RHS.
12. Review specific project documents related to railroad coordination and negotiation and alert region and RHS staff as to questions, omissions, conflicts, deadlines, etc.
13. Review PS&E's for inclusion of complete and accurate "Relations with the Railroad" item in the special provisions and arrange for additions or corrections.
14. Be aware of opportunities for:
    - closing or consolidating crossings in the region.
    - Identifying crossings for "exempt" status.
    - Improving railroad crossing safety in general.
15. Exercise delegated sign-off authority for PS&E Submittals (See FDM 19-10-15) from RHS.

FDM 17-10-5 Role of Project Managers

December 20, 2013

5.1 Overview

It is essential that project managers hold early discussions (during life cycle 10 -and- at least 24 to 36 months prior to PS&E date) with the Region Railroad Coordinator. It is also necessary to conduct early joint field reviews with the Region Railroad Coordinator and a representative of the RHS. By initiating these actions early, the

project managers will help avoid later project delays and assure a timely and satisfactory agreement (contract) as needed with the involved railroad.

Talk to the Region Railroad Coordinator (RRC). When a project has a railroad on/over/under/ adjacent to it, the project manager should first talk to the RRC. The Region Railroad Coordinator is the best source of information about what to do. It is necessary for the Railroads and Harbors Section (RHS) to negotiate all agreements with Railroads, including any local projects that have federal or state funding.

At least 24-36 months before the construction PS&E date, project staff should schedule a meeting at the project site with someone from RHS and the RRC. If a plan is available, bring it to the meeting – (if not, discussing what will be done would be okay). Signal and crossing options, along with funding will be discussed at the meeting.

At this meeting, attendees will decide what railroad coordination is necessary. If something is to be done with the railroad as part of the improvement project, a more detailed schedule of coordination with the railroad should be resolved.

The Railroad Project Submittal Package (See FDM 17-20-10) should be forwarded to the RRC and will be sent to RHS as a "Submittal package." This enables RHS to negotiate a project- specific agreement with the railroad to do the required work (and for the railroad to be reimbursed). Lead times vary but usually the whole process starts a minimum of 24 months before PS&E date.

Some cases will require a hearing before the Office of the Commissioner of Railroads (OCR) which will increase needed lead times. This will be decided by RHS and additional information will be provided by the RRC to assist the project manager in preparing testimony for the OCR hearing. Holding a pre-hearing conference with RHS is sometimes needed.

The following summarizes the role of the project manager and others in the railroad coordination process when work is involved:

1. Meet with RHS (and perhaps the OCR), and later with the railroad, RRC, and others as needed, including a field meeting at the site if appropriate.
2. Assemble the project information and send to RHS (generally within a month of meeting with RHS)
3. Review the proposal letter that RHS writes and sends to the railroad that requests a cost estimate.
4. Railroad engineers react and send an estimate back to RHS. OCR involvement may be appropriate if agreement cannot be reached.
5. RHS agrees to estimate, writes a formal agreement (contract) and sends to Railroad
6. Railroad signs agreement and sends to RHS
7. Agreement sent to Governor to sign
8. Agreement sent back to region
9. Region Railroad Coordinator or project manager sends Start Notice to railroad.
10. Invite Railroad to pre-construction meeting to coordinate installation schedule

For grade crossings, if nothing is done with the crossing as part of the project, it is still necessary to fulfill WisDOT's statutory requirement to notify the railroad of the impending project in accordance with Section 86.13 W.S. Details of the notification process and a sample letter can be found in FDM 17-20-1.

Where there is uncertainty as to the railroad involvement in the project, please consult the Region Railroad Coordinator.

FDM 17-10-7 Role of Local Program Management Consultant

June 19, 2013

7.1 Introduction

The general railroad coordination responsibilities of the Management Consultant (MC), the Design Consultant (DC), and the Construction Consultant (CC) are discussed below. The MC is to ensure that the DC and the CC fulfill their responsibilities.

The MC function is similar to that of a DOT design project manager; however there is a distinction. The MC must ensure continuity of DC and CC consultant involvement with the Region Railroad Coordinator (RRC) for railroad coordination from pre-design through construction.

Except for information gathering, neither the MC nor the DC is to contact a railroad unless authorized by the Railroads and Harbors Section (RHS) of DTIM. The MC or DC is to contact the RRC regarding railroad

coordination matters and questions.

7.2 Pre-Design Contract Activities

The MC is to:

1. Review the project application and SMA to ensure that the cost of railroad force work is included in the project application, including provision for adequate warning devices at grade crossings. Contact the RRC for assistance with determining what RR work is necessary and estimating costs.
2. Discuss railroad impacts and initiate railroad coordination with the RRC for all projects, including Local Force Account (LFA) projects and projects with traffic control that are within 1000 feet in any direction of a railroad corridor, whether it is an active railroad line or not, including Rails To Trails corridors; and for detour routes that cross railroads;
3. Review railroad impacts from the Project Scoping Checklist with the RRC and discuss railroad coordination requirements;
4. Ensure the following information is transmitted to the RRC:
   - Project application or Concept Definition Report (CDR) with location map showing project
   - Completed project scope (FDM 3-1-10)
5. Work with the RRC and RHS to determine whether railroad force work will be required or whether the statutory requirements of s. 86.13 apply. (If railroad force work will be required, the RRC arranges with the region FIIPS coordinator to set up a railroad force work project(s). If s. 86.13 applies, the RRC will draft the letter. Refer to FDM 17-20-1).

7.3 Design Contract Activities

During the design phase, the MC is to:

1. Ensure the DC has a copy of the project scoping checklist and discuss with the DC railroad coordination actions that have previously taken place;
2. Discuss with DC to ensure that project scheduling is accomplished in accordance with the FDM. FDM 17-10-5 discusses the role of the project manager and FDM 17-20-5 discusses scheduling of projects with a railroad component.
3. Ensure that the DC supplies the RRC all information needed for negotiation of railroad agreements, including a complete and accurate railroad project submittal package (RPSP) in accordance with FDM 17-20-10 for grade crossings and FDM 17-40-20 for grade separations. Ensure that the DC furnishes the RPSP to the RRC not less than the time frames shown in FDM 17-20-5. (The RRC reviews the information, discusses with the DC as necessary and forwards to RHS for railroad coordination and preparation of a stipulation or agreement(s). RHS begins coordination with railroad for a stipulation or agreement(s).
4. Ensure that the DC obtains a list of railroad contact people from the RRC to place on the construction plan.
5. Ensure that the DC submits OCR hearing testimony to the RRC and RHS not less than two weeks prior to the hearing date. If requested by RHS, arrange for the DC to attend a pre-hearing conference arranged by the RRC. The MC will only attend pre-hearings or hearings on an “as needed basis” and only as requested by the RRC and approved by DOT.
6. Ensure that the DC contacts or meets with RHS and the RRC as needed when railroad force work is involved.
7. Ensure that the DC contacts the RRC for guidance in the preparation of special provisions related to railroad coordination, flagging and insurance. (The RRC puts the STSP together and gives to MC to forward to DC).
8. Review the draft PSE plans and special provisions to assure their completeness and forward a copy along with MC concurrence or comments to the RRC not less than 30 days prior to the PS&E date. (The RRC may review and comment on the plans and special provisions).
9. Review railroad related special provisions, including prosecution and progress requirements and “Railroad Insurance and Coordination” or “Railroad Requirements and Coordination” not less than 30 days prior to the PS&E date to ensure that they are correct and advise the RRC that they are satisfactory for advertising. (Prior to the advertising date, RHS advises the Proposal Management Section in the Bureau of Project Development whether needed railroad agreements have been

executed and property interests acquired and if not, whether railroad coordination has progressed to the point that the project can be advertised for letting. RHS provides the RRC a fully executed copy of the force work agreement(s), RRC provides the MC a copy of the executed force work agreement(s), RRC sends “86.13” letter to railroad).

7.4 Post Design Activities

After the design phase has been completed, the MC is to ensure the RRC receives the following:

1. An electronic copy of the final construction plans, special provisions, and bidding documents, and the:
   - Letting date and anticipated construction start date
   - Name, address, and telephone number of the MC Area Construction Supervisor (ACS) who will monitor the CC
   - Name, address, and telephone number of the CC who will be responsible for construction engineering and management of the project.
2. A copy of the force work agreement transmittal message to the ACS and the CC (RRC sends a start notice to the railroad authorizing force work to begin and copies the MC)
3. A copy of the start notice transmittal message to the ACS and the CC

In addition, the MC ACS is to ensure that the CC:

1. Invites the railroad company public works representative and RRC to the pre-construction conference via letter or email
2. Coordinates railroad force work scheduling with the railroad and keeps the RRC informed
3. Does not allow the contractor to begin work on railroad right of way until the insurance requirements of standard specification 107.17.3(5) have been fulfilled
4. Complies with 2.58 of the Construction and Materials Manual and furnishes a copy of the field notes referred to in 2.58.3.5.5 to the RRC
5. Contacts the RRC early for guidance if disputes or problems arise during construction
6. Informs the RRC when the work has been completed and is ready for final inspection (RRC performs final inspection and reviews and approves bills when submitted by the railroad).

FDM 17-10-10 WisDOT *June 19, 2013*

10.1 Railroads and Harbors Section

The Railroads and Harbors Section (RHS) is the lead office responsible for making arrangements and agreements with railroad companies when state and federal funds are to be used. The following is a list of activities of the RHS related to roadway involvement with railroad property:

1. Formulate policies, standards, and project procedures in the areas of railroad adjustments, relocations, grade crossings, grade separations, warning systems and lateral encroachments.
2. Develop and maintain Chapter 17 of the Facilities Development Manual, and provide training in its use.
3. Administer approved policies, standards, procedures and guides.
4. Review existing and proposed legislation affecting highway-railroad improvement programs and prepare recommendations and fiscal notes for the Division Administrator. Report the results of existing programs and recommend changes in biennial budgets or legislation as appropriate.
5. Review region selections or recommendations for candidate projects for inclusion in highway rail program, and serve on the Highway Rail Projects Review Committee.
6. Develop and prepare agreements, obtain cost estimates and conveyances required for railroad crossings, lateral encroachments and for the rearrangement of railroad facilities.
7. Monitor the status of current project negotiations with railroads.
8. Offer comments and recommendations on proposed plans for railroad crossing improvements and rearrangements of railroad facilities.
9. Conduct field inspections of railroad crossings with representatives of the transportation regions,

railroad companies, FHWA, OCR, engineering consultants, local governmental officials, and other interested parties.

10. Review and comment on proposals and recommend change orders affecting railroad agreements.
11. Respond to public inquiries concerning rail-highway crossings (also a region function).
12. Represent WisDOT before hearings of the OCR on matters requiring approval and authorization of the OCR. The region may also be requested to provide testimony before the OCR on specific projects. See FDM 17-10 Attachment 15.2.
13. Confer with the region on matters relating to crossing improvements, in identifying the use or involvement of railroad property, the need of lateral encroachments and similar matters affecting railroad lands.
14. Review and recommend action on documents prepared by the railroad or by the region, such as contract special provisions, appraisals of railroad right-of-way, conveyances of interests in land, project estimates, reports, construction plans, contested invoices and insurance policies that are not in compliance with general and accepted policies, procedures and regulations.
15. Coordinate the development of crossing project agreements with companion highway improvements (also a region function).
16. Maintain files on both WisDOT-sponsored projects and those ordered by the OCR which are financed with state or federal funds.
17. Assure that all railroad negotiations are completed and that all required permits, agreements, and conveyances are executed or arrangements completed prior to the award of an associated highway construction project.
18. Analyze and review, when requested, audit reports and findings for compliance with approved agreements, construction plans and special provisions. This activity includes investigating audit citations requiring administrative review, preparing reports on findings, and recommending payment or adjustment of the disputed claim for reimbursement.
19. Attend regional and national conferences on highway rail crossing safety and report information to appropriate WisDOT employees.

10.2 Transportation Regions

The region staff are primarily responsible for:

1. The selection and recommendation of projects for highway programs.
2. The collection of project data and the preparation and development of plans, special provisions, and estimates for highway construction projects.
3. The review and approval of railroad liability insurance provided by contractors, the administration of construction contracts, including final inspection and acceptance of projects, preparation of contract change orders (after consultation with RHS), and the review and acceptance of project invoices.
4. Timely closing of projects.

The regions' activities relating to highway maintenance and improvement projects at railroad crossings and to highway encroachments on railroad rights of way include the following:

1. Collecting and recording railroad crossing data for developing the crossing report. Some of this information can be obtained from the railroad companies or from the FRA Grade Crossing Inventory.
2. Recommending specific projects for improvement programs including railroad grade crossings, rail-highway structures, railroad crossing warning devices and railroad crossing repairs on state trunk highways.
3. Developing highway plans, specifications and estimates for highway improvement projects affecting railroad facilities and property. This may include preparing railroad plans for the construction of detour tracks (shoo-fly) required to maintain train traffic at separation-of-grade structure projects.
4. Preparing and certifying PS & E's per FDM 19-10-15 and providing various exhibits required in connection with an Agreement for Railroad Force Work.
5. Determining the need for the relocation or adjustments of railroad facilities required as a result of proposed highway projects.

6. Preparing highway right of way plats, showing highway land interests required from railroad companies and description of right of way parcels. Preparing appraisals for railroad parcels estimated to exceed $5,000 in just compensation. For parcels valued at less than $5,000, an estimate of fair market value of railroad lands is to be determined and furnished to the RHS. See FDM 17-55-10.
7. Determining construction schedules including dates for starting and completing railroad work required for effective coordination with highway projects.
8. Coordinating railroad construction operations with highway contract work. Making field reviews and inspections of railroad work completed under Agreement with the WisDOT for compliance with the provisions of the Agreement, plans, specifications and cost estimate.
9. Analyzing railroad invoices for materials purchased, hours of labor and equipment usage for completed railroad force work as required by the Agreement, and recommending the amount for final or progress payments.
10. Reviewing and commenting on the engineering plans prepared by the railroad on all crossing projects in which the WisDOT has a financial interest whether with state or federal funds.
11. Maintaining liaison with the local railroad representatives to provide them with construction schedules of future highway improvements, to exchange information necessary for the preparation and development of highway plans, to coordinate construction of highway improvement and maintenance projects affecting railroad facilities and property, and to obtain railroad plans and proposals of railroad improvements, maintenance projects and track abandonments affecting highway facilities and property.
12. Certifying projects with railroad involvement in accordance with the RHS delegation directive (FDM 19-5-10 and FDM 19-10-15).

10.3 Engineering Consultants

Engineering consultants are often hired by state and local governments to prepare highway construction plans, special provisions and cost estimates. Such engineering contracts may require the consultant to correspond and discuss the project with railroad officials. The consultant may also be involved with the development of a right-of-way plat including acquisition of right of way parcels required from railroad companies.

When the WisDOT has a financial interest in such projects, the region, Railroads and Harbors Section, Bureau of Structures, and Bureau of Highway Real Estate should be appraised of the consultant activities for compliance with WisDOT and FHWA policies, procedures, rules and regulations. When an agreement is required with the railroad for work in which WisDOT has a financial interest, WisDOT shall be a party to such construction agreement. The RHS represents WisDOT interests at public hearings before the Office of the Commissioner of Railroads and will generally prepare and negotiate agreements with the railroad based upon information and recommendations furnished by the consultant or local governmental agency.

The specific extent and description of the consultant activities relating to railroads is to be included in the contract for engineering services. Generally the consultant performs the same activities as are performed by the transportation region in plan development including meeting with railroad officials and testifying at hearings before the OCR. When the activities with railroad companies are not fully defined in the contract, the consultant is to confer with the DRC for clarification.

10.4 Local Officials

Local governments which have the capacity to prepare their own highway construction plans, special provisions and cost estimates in which a railroad facility is within the project limits may proceed to do so under the same restrictions and allowances described in the subheading Engineering Consultants.

10.5 Summary Note

Only the Railroads and Harbors Section may negotiate railroad force work and cost-sharing arrangements on state and federal-aid projects. It is inappropriate for local governments, a transportation region or consultants to negotiate arrangements with a railroad company when state or federal funding is used to reimburse the railroad.

See Attachment 10.1 for an overview of WisDOT offices typically involved in projects that include railroads within their termini.

LIST OF ATTACHMENTS

Attachment 10.1 Principal Offices Involved With Railroad-Highway Projects

FDM 17-10-15 Office of the Commissioner of Railroads

June 19, 2013

15.1 Background

The WisDOT has authority under Section (S) 84.05 Wisconsin Statutes (W.S.) to proceed in making arrangements with railroad companies for additions to or changes in their facilities required for highway improvements. However, there are occasions when a highway crossing of a railroad requires an action by the Office of the Commissioner of Railroads (OCR). In highway-railroad conflicts involving crossing warning devices brought before the OCR, a hearing is generally required unless waived under provisions of S 195.28(1) W.S. Arrangements which cannot be made under S84.05 are brought before the OCR for hearing.

15.2 Office of the Commissioner of Railroads (OCR)

The RHS will represent the WisDOT at all hearings and meetings with the OCR for local road projects funded with state or federal dollars. A region representative is expected to attend also, as is a local government official. (See FDM 17-1-10.)

At the request of the transportation region, RHS may be a participant or “coach” at an OCR function when only local funds are involved. It is normal for local government and its consultant to represent themselves on locally funded crossing issues on local roads.

Local governments should follow the law explained in Section 86.12 W.S. for rough crossing problems on local roads.

The OCR has broad discretionary powers. When a petition is filed, if it is to rule on an existing crossing (exemption, warning, etc.) it has the authority to include the subject of closure. Any order of the OCR is final and becomes an act of law that only the courts can overturn. If the petition is for establishment of a new crossing, the OCR may require a grade separation, or crossing warning devices, or at-grade crossing, or deny the petition. If the petition is for alteration of an existing crossing, the OCR may require widening, changing the manner of crossing, closure, the installation of crossing warning devices or deny the petition. Engineering and planning expertise presented at the OCR hearing has strong influence on OCR decisions.

15.3 WisDOT Role

The WisDOT role at OCR hearings for locally funded projects is determined by the region

There are five levels of involvement (or intensities of involvement) available to the WisDOT (See Attachment 15.1).

The appropriate level of involvement would usually be either 2, 3, or 4 above, with active RHS involvement required for 3, 4 or 5. Regions should typically handle level 2 and should later involve the RHS in brief preparation or review. Level 2 allows region planning staff to receive information on future rail traffic and highway traffic generating improvements that might affect a future state trunk highway project.

Section195.04(1) W.S. allows the OCR to require the WisDOT to investigate a complaint. Contact the Office of General Counsel when this request is made.

15.4 OCR Hearings

The OCR has promulgated rules, procedures and practices which are included in the Administrative Code as (Chapter RR 1). These administrative rules have the force of law and include rules and procedures for public hearing on highway matters placed before the OCR.

Attachment 15.1 of this procedure covers “Preparation for Hearing” and Attachment 15.2 is example testimony for use at OCR hearings.

Conducting public hearings for railroad-highway crossing projects may be necessary under the provisions of Sections 195.28, 195.285 and 195.29, Wisconsin Statutes. These hearings are held by the OCR.

The RHS mission is to obtain acceptance and concurrence of proposed highway projects crossing railroad property under Section 84.05 before petitioning for a hearing by the OCR. When an agreement is obtained, a hearing is not necessary unless a new crossing is being established or an existing crossing is to receive exempt status. When acceptance of a project plan cannot be obtained from the railroad within reasonable time constraints or when there are unresolved differences, the matter is placed before the OCR for resolution and order. Hearings may be scheduled in Madison or in the area near the project location.

Projects for which a hearing may be required are:

- railroad-highway grade separation structures,
- new highway crossings at grade,

- exempt crossings, and
- highway locations where WisDOT and the railroad cannot agree on the design of a crossing or the apportionment of costs for the work proposed.

A RHS staff person will usually represent the WisDOT at such hearings when state or federal funds are to be used. The authority to represent the WisDOT before the OCR for routine and non-controversial crossing matters has been delegated to the RHS by the Secretary. A region person responsible for the project design may also be requested to attend and present testimony in support for a specific project. Local officials would appear and testify in support of a local road project. Arrangements for this local support should be made by the region and coordinated with the RHS, if state or federal funds are to be used.

For controversial or contested projects on the state trunk highway system, the assistance of an attorney may be advisable. The RHS will make such recommendation to the DTID Administrator, who, in turn, will determine the need and request such assistance from the Office of General Counsel. The RHS will assist the legal counsel on project matters and may provide direct testimony at the hearing as deemed necessary. Local government would decide when its corporate counsel is needed.

On crossing projects which have unresolved differences with the railroad, it is necessary to provide plans and testimony to fully support the highway project, not just any unresolved matters. The requirements and reasons for the project are to be clearly stated. This includes general highway and railroad information, method of crossing, clearances, who is to undertake the work, how the project is to be financed and responsibility for future maintenance. The signature page of the environmental impact statement, the screening work sheet, or the Design Study Report for the project are to be available and a copy may be submitted for the hearing record.

LIST OF ATTACHMENTS

Attachment 15.1	Preparation for Hearings
Attachment 15.2	Example Testimony

FDM 17-10-20 Railroads *June 19, 2013*

20.1 Personnel

Attachment 20.1 is a list of railroad companies operating in Wisconsin. A partial list of railroad officials with addresses and telephone numbers is maintained by the Railroads and Harbors Section and is available on request. This list is furnished to each Regional Rail Coordinator (RRC) periodically.

20.2 Maps

The Division of Transportation Investment Management maintains a map showing the railroad companies and lines operating in Wisconsin. The map is titled Wisconsin Railroads and is published periodically and available from the Bureau of Planning.

20.3 Background

The railroad company's primary business is the transportation of goods and passengers. Railroads are private companies subject to governmental regulations and as such, have an obligation to the public for certain improvements and maintenance of rail-highway crossings. The railroads are also responsible for promoting safety of railroad operations.

Due to the expansion and extension of the street and highway systems, there are continuing negotiations required with the railroads to obtain their acceptance and assistance in changing their railroad tracks and other facilities and for placing new and expanded highway facilities on and across railroad rights of way.

20.4 Work Arrangements

It is WisDOT's expectation that railroads will promptly provide;

- Comments on preliminary and final highway plans.
- Plans and estimates for railroad force work.
- Review and approval of force work agreements and right-of-way conveyances.
- Coordination of work schedules.
- Prompt submittal of invoices for completed work.

These expectations are best realized when the railroads are provided adequate lead time, clear communications and complete highway plans. Surprise projects and special requests can be avoided by advising the railroad of

the public's current and long-range improvement programs which affect railroad facilities.

Changes in railroad facilities required for a highway project are generally performed with railroad forces at their actual costs and without profit. Work required of the railroad, for which railroad forces are not properly equipped or available, may be let to private contractors by either the railroad or the WisDOT, or may be accomplished by a Continuing Contractor for the railroad if approved by the WisDOT. Examples of this include:

- grading work for track construction
- furnishing and placing subbase material
- furnishing and placing ballast, railroad track construction
- installation, relocation, and upgrade of crossing warning devices.

20.5 Maintenance

Railroad maintenance responsibilities at rail-highway crossings include the following:

1. Grade Crossings.

   Railroads are to maintain highway grade crossings of their track within the crossing area inside lines located 4 feet outside of the outside rails. Crossing material is to cover shoulders and sidewalks. Reimbursement for crossing work may be arranged under qualifying conditions. These are explained in Section 17-30. Railroads are also to clear trees and brush from their right of way at rail-highway crossings to provide motorists with an unobstructed view of approaching trains for a distance of not less than 330 feet from the center of the crossing. (Section 195.29(6)).

2. Railroad Crossing Warning Devices. (Also see FDM 17-25).

   Railroads are to maintain cross bucks and the train-activated warning devices that have been installed at rail-highway crossings.

   Reimbursement for maintenance of the train activated warning devices may be authorized for up to 50 percent of a railroad's costs. These regulations and procedures are administered by the Office of the Commissioner of Railroads and are explained further in FDM 17-25-15.

3. Advance Warning Signs (Also see FDM 17-60-15)

   Advance railroad crossing warning signs are to be furnished by the railroads, at railroad expense, to counties for town and county road railroad crossings as required for their needs. The advance warning signs are to be installed by the respective town or county highway authority at its expense.

   Advance warning signs required for village, city and state highways and streets are to be furnished, installed and maintained by the respective highway authority as required by order of the Commissioner of Railroads, or as required in Chapter VIII of the MUTCD and the Wisconsin Supplement.

4. Grade Separation Structures (Also see FDM 17-40).

   The maintenance of highway rail grade separation structures is included as a provision of the stipulation between the highway authority and the railroad if one is negotiated and approved. The maintenance requirements are also included in the Findings of Fact and Order of the Office of the Commissioner of Railroads for a specific structure when OCR involvement is requested under either Sections 84.05 or 195.29 Wisconsin Statutes. At the present and for the past 20-30 years, railroads have been assigned the responsibility for the routine maintenance for the preservation of structures carrying trains over highways and the public highway authorities have the same responsibility for grade separation structures carrying highway traffic over railroads. Responsibility for the replacement of structures is left for future determination.

   Older stipulations and orders issued by the former Railroad Commission, the Office of the Commissioner of Transportation (OCT) or the Public Service Commission may have required the railroads to maintain all grade separation structures except for the roadway surface. Courts have held, however, that in many of these cases, the railroads are not expected to be responsible for replacement of grade separation structures necessitated by the ravages of nature and the deteriorating effects of winter highway maintenance.

5. Track Raises (See FDM 17-60-5)

   Where a railroad raises its track, it may be required to run off the grade change. FDM 17-60 Attachment 5.1 and FDM 17-60 Attachment 5.2, require a flat roadway surface within 2.5 feet of the rails, and only a 3 -inch change from the plane of the rails within 30 feet of the track.

LIST OF ATTACHMENTS

Attachment 20.1 Legal Names of Railroad Companies Operating In Wisconsin

FDM 17-10-25 Federal Agencies

May 2, 2003

25.1 FHWA (Federal Highway Administration)

The FHWA's goal for roadway/railway crossings is to reduce the number and severity of crashes at crossings. To accomplish this, FHWA focuses on policy development and technical assistance. The FHWA administers all federal-aid funds for highways, various portions of which are available for improvements at railroad crossings. These improvements include warning devices, hazard elimination, the replacement of existing deteriorated structures, as well as the construction of needed new structures.

25.2 FRA (Federal Railroad Administration)

FRA is a branch of USDOT and is the lead federal agency concerned with rail safety, which is its primary mission. To accomplish this, FRA issues and enforces railroad safety regulations, sponsors research in many areas including grade crossing technologies, and works to educate the public on the dangers at railroad crossings. The FRA also assists the NTSB in investigating major train crashes.

25.3 STB (Surface Transportation Board)

The STB is responsible for the economic regulation of interstate surface transportation, primarily railroads, within the United States. The STB's primary goal is to ensure that competitive, efficient, safe transportation services are provided to meet the needs of shippers, receivers and customers. To accomplish this, the STB is the sole authority for resolving railroad construction and abandonment applications, and is responsible for the processes, timelines, and criteria that guide railroad construction and abandonment issues.

25.4 NTSB (National Transportation Safety Board)

The NTSB investigates major crashes in all modes of transportation, including railroads. It also conducts special investigations and safety studies, and issues safety recommendations to prevent future crashes. The NTSB publishes reports on major railroad collisions, derailments, and crossing crashes.

FDM 17-10-30 Local Government

February 10, 2006

30.1 Introduction

Highway rail crossing improvements on streets and highways off the state trunk highway system are generally eligible for expenditures of Federal-aid Safety funds. The adjustment or changes in railroad facilities required by the highway construction may also be eligible for participating Federal-aid Highway improvement funds. In the case of railroad crossing signals, state funds for railroad crossing warning devices may be used if the signals are ordered by the Office of the Commissioner of Railroads (OCR) and included in the OCR's program.

The 23 CFR Code of Federal Regulations Part 646 requires that the construction plans as well as all pre-contract activities conform to federal policies and procedures. The WisDOT, as the administrator of all federal-aid highway funds is an interested party in all such projects and responsible for local compliance with these federal regulations.

30.2 Negotiations and Agreements

Negotiations with the railroads are often complicated and especially difficult for the person only occasionally involved. For this reason, local agencies and their engineering consultants are to discuss their proposed railroad construction requirements with the region. The WisDOT shall be a party to all agreements[1], OCR hearings and contract arrangements for work to be performed by a railroad which is to be funded with federal-aid or state highway funds. When state or federal funds are involved, the RHS will attend OCR hearings, draft the agreements and negotiate for the project acceptance and approval by the railroad. The conditions and provisions for the agreement are made in cooperation with the region and local agency involved. For projects funded entirely with local funds, the WisDOT would not be involved unless the local highway authority requests assistance. If local government deviates from this procedure, federal or state aid could be jeopardized.

In the administration of Federal-aid highway safety funds, it is the WisDOT policy to maintain liaison with local highway officials and to consider their project requests, recommendations and comments to help identify

[1] **EXCEPTION** – A current Administration directive allows that if the OCR rules that a highway overhead structure is to be repaired (rather than replaced), and the cost to the railroad for the repair would exceed 15% of the cost to replace the structure, the railroad and local government may develop a side agreement for cost sharing to replace the structure.

highway rail crossing hazards and potential problem crossings for improvement programs.

30.3 Local Costs

Funding local projects through WisDOT will usually require some local funds for preliminary engineering, right of way and construction. The amount of local funds will depend on the type of state or federal funds used to finance the project. Federal-aid Safety funds finance 90 percent of the costs for such projects with matching funds provided by the local community or the railroad.

There is an exception to the 10% matching requirement for the installation of railroad crossing signals when the signals are ordered by the OCR. In such cases, the 10 percent match is provided by the Office of the Commissioner of Railroads from a state appropriation for that purpose.

In order to recover WisDOT costs for engineering, construction or other items for a local project, an agreement between the WisDOT and the community is required. That Municipal Agreement is negotiated by the region and must be signed prior to RHS securing the needed railroad agreement.

WisDOT Organizational Structure:
https://wisconsindot.gov/Documents/about-wisdot/who-we-are/dept-overview/orgchart.pdf

Principal Offices Involved with Railroad - Highway Projects:

- Office of General Counsel
- Bureau of Traffic Operations
- Regional Offices (5)
- Bureau of State Highway Programs
- Bureau of Transit, Local Roads, Rails & Harbors

Outside Agencies:

- Office of the Commissioner of Railroads
- Federal Highway Administration
- Railroads
- Local Government Agencies

Preparations for Hearing

At Office of Commissioner of Railroads (OCR) hearings, there are five levels of involvement available to WisDOT:

1. Stay away - do not attend.
2. Attend, observe, takes notes, possibly file a brief later.
3. Appear, ask leading questions, offer no direct testimony.
4. Appear, offer direct testimony, relate the advantages of our recommended course of action.
5. Actively pursue our recommended course of action, treating the hearing as we would treat a STH crossing issue.

The appropriate level of involvement would usually be either number 2, 3, or 4 above, with active Railroad and Harbor Section (RHS) involvement required for 3, 4 or 5. Districts should typically handle level 2 and should later involve RHS in brief preparation or review.

The RHS stands ready to assist districts in all areas noted above.

Examples of preparation requirements, along with plan materials and information required for an at-grade crossing are listed below and sample testimony is included in FDM 17-10 Attachment 15.2. Similar information and materials would be required for other types of crossing projects.

1. Crossing situation - existing and proposed
    a. Location of crossing and crossing number.
    b. Direction of highway or street.
    c. Direction of railroad tracks, track grade, curvature and superelevation.
    d. Proximity of connecting roads and intersections.
    e. Angle of crossing.
    f. Grade of approach roadways and horizontal alignment.
    g. Type and width of pavement surfacing, shoulders and sidewalks.
    h. Number of traffic lanes, including parking lanes.
    i. Number of tracks and distance between track center lines, and the type of tracks (main, siding, spur) and crossing surface (asphaltic with flange rail, rubber, etc.).
    j. Obstructions to view of trains; sight distances.
    k. Length of crossing surface.
    l. Existing warning devices.
    m. Identification of railroad line.
    n. Drainage and soil conditions.
2. Traffic
    a. Type of traffic mix and speeds.
    b. Highway - passenger cars, trucks, buses, pedestrians, bicycles.
    c. Railroad - passenger, freight, special unit trains such as coal, ballast, other.
    d. Volume of vehicular and train traffic (present and projected).
    e. Published speed limits and time table speeds plus actual speeds observed if substantially different for highway and railroad traffic.
    f. Probability of two railroad trains or locomotives operating at or near the crossing at the same time (two or more tracks).
3. Accident record
    a. Vehicle-train.
    b. “Vehicle(s) only” at the crossing and within the vehicle stopping distance to the railroad crossing.
    c. Report of "near misses" from police and local witnesses.
4. Warning devices recommended and the rationale.
5. Financial arrangement proposed for the installation.

Example Testimony

Before the Office of Commissioner of Railroads (OCR)

Note: The OCR will provide guidance to those seeking new railroad crossing or alterations to existing crossings. The OCR has an information packet available on request that contains sample resolutions, sample testimony and a description of the OCR Administrative Rule and Practice.

Contact: Office of Commissioner of Railroads
610 N. Whitney Way
PO Box 8968
Madison WI 53708-8968

- Testifier should introduce himself or herself, state his affiliation, and explain how he is involved in the issue – his role.
- Testifier should provide a general description of the work that is proposed, using project/crossing, any meetings or hearings that have been held, and the results or issues that have resulted. For a project, discuss expected total costs, how or who will share in the cost, and the funding sources.
- Describe the crossing situation in detail, again with the use of maps, drawings, sketches, etc. to show distances, angles and topography including nearby driveways and intersections. Plan and profile details are also appropriate showing grades and cross sections.
- Describe the proposed improvement, with similar detail (ie, distances, widths, grades, slopes, angles, etc), for all elements of the roadway and related sidewalk, trails etc that are a part of the project. Stopping sight distances for roadway traffic traveling at the intended posted speed are necessary, along with the resultant available sight distance across the vision triangles of all approaches. Describe potential ways to improve sight distance or to deal with substandard sight distances.
- Provide existing and likely future traffic on both the roadway and railroad, as well as the crash history.
- Provide justification for the recommended crossing improvement given the traffic and physical and operational conditions at the site.
- Provide the construction schedule, particularly where the crossing is a part of and dependent upon a larger roadway construction project.
- The testifier should answer questions and offer clarifications at the conclusion of his testimony.

Note: All maps, drawings, sketches, etc. referred to in the statement should be entered into the official OCR record of hearing.

Legal Names of Railroad Companies

Operating In Wisconsin

Railroads
BNSF Railway Company
Duluth, Missabe and Iron Range Railway Company (Canadian National)
Duluth, Winnipeg Pacific Railway Company (Canadian National)
East Troy Electric Railroad
Escanaba and Lake Superior Railroad Company
Iowa, Chicago & Eastern Railroad Corporation
Mid Continent Railway Historical Society, Inc.
National Railroad Passenger Corporation (Amtrak)
Progressive Rail Incorporated, d/b/a Wisconsin Northern Railroad
Rat River Transportation Company (Nicolet Hardwoods Corp.)
Sault Ste. Marie Bridge Company (Canadian National)
Soo Line Railroad Company (Canadian Pacific)
Tomahawk Railway Limited Partnership
Union Pacific Railroad Company
Wisconsin Central Ltd. (Canadian National)
Wisconsin Great Northern Railroad, Inc.
Wisconsin & Southern Railroad Company

FDM 17-15-1 General Overview

March 21, 2007

1.1 Highway Improvement Program

The Highway Improvement Program has two components:

- State Trunk Highways (Major Projects, 3-R Projects, Bridge Replacement Projects, Corridors 2020 Backbone Projects, etc.) - When these highway projects approach, cross or parallel a railroad, they often result in railroad involvement (a railroad project.) Such railroad projects, require coordination, negotiation and agreements with the railroads, and are funded as a part of the highway improvement. Also, their implementation schedules are dependent upon the schedule of the larger highway improvement of which they are a part.
- Local Programs (Highway Projects, Local Bridge Replacements, etc.) - These projects are similarly the result of a multi-year program development process. Similar to the State Highway Improvement Programs, railroad involvement often generates a railroad project, which is funded and scheduled as a part of the highway improvement project of which it is a part.

1.1.1 Transverse Facility Crossings of Railroad Land

Sometimes a highway improvement project involves the construction or modification of a transverse facility across railroad land. Such facilities include sewer lines, water lines, culverts, or electrical or communication cable. Coordination of such activities is highly specialized. See FDM 17-60-45 for more guidance on these facilities.

1.2 WisDOT Safety Program

Both the WisDOT and OCR “Railroad Safety Programs” are a portion of the overall WisDOT Highway Safety Program created by federal legislation. WisDOT receives federal aid money that requires certain amounts be spent for railroad crossing safety. Of these railroad crossing safety funds, a minimum of one half must be spent on railroad crossing warning devices with remaining portions to be spent either on warning devices, or on other safety related applications at railroad crossings, such as upgrades to high-type crossing surfaces, channelization, separation structures, roadway relocations, closures or warning devices.

The Federal-Aid Highway Act provides reimbursement for up to 100 percent of the eligible project costs for all safety work including the installation of railroad crossing warning devices, for improvement to highway-rail grade crossings, improvement of highway approaches at railroad crossings and for the elimination of at-grade crossings. However, WisDOT policy is to fund such projects at 90%, with the 10% matching funds provided by the appropriate state program funds, by the railroad, or from local sources. Federal funds cannot be used to match other federal funds. Federal-aid safety funds are not generally eligible for the creation of new crossings or for funding their warning systems.

For information on the safety programs see Chapter 5, Section 6, of the WisDOT Program Management Manual.

For information on federal-aid for crossing closures, see FDM 17-35-1.

1.3 OCR Safety Program

By policy, WisDOT shares the federal safety funds available for warning devices at crossings with the OCR. The “OCR Safety Program” only includes warning devices and is a portion of the overall Highway Safety Program created by federal legislation. Wisconsin receives federal aid money that requires certain minimum amounts be spent for railroad crossing safety vs overall highway safety. Of these railroad crossing safety funds, one half must be spent specifically on railroad crossing warning devices. The other half may be spent on warning devices or on other safety related applications at railroad crossings, such as crossing surfaces, channelization, separation structures, etc.

1.4 STH Surface Repair

The repair of all crossing surfaces on the state trunk highways is eligible for 85% state cost participation, up to the limit of program dollars available annually. The program is intended to repair isolated STH crossings, not those that are within the limits of larger improvement projects. Crossings on connecting highways and local roads are not eligible for funding within this program; the railroads have responsibility for these crossings. See s.

86.13(5) stats and FDM 17-30-15 for additional detail.

The railroads are basically responsible for the maintenance and repair of all railroad crossing surfaces. As such, they have annual programs of work to address crossing surface needs, often in conjunction with track or other work on their system.

The Legislature created the STH Surface Repair Program as an incentive to attract railroad effort to the STH system in order to achieve smoother, higher quality riding surfaces on these higher function, higher speed STH routes.

1.5 Signal Maintenance

Railroads are responsible for the perpetual maintenance and operation of all active warning devices at crossings. Wisconsin has a program to assist the railroads with their costs of signal maintenance. The WisDOT biennial budget includes an annual appropriation for signal maintenance that provides reimbursement to railroads for up to 50% of their costs of maintaining signals in the state. The distribution is based on the total number of “signal units” at each crossing maintained by each railroad. In recent years however the appropriated amounts have covered less than 50% of the costs. When the state appropriation does not provide enough funds to reimburse the railroads for 50 percent of their signal maintenance expense, the amount due to each railroad is prorated. The OCR administers this program.

WisDOT staff should see the Railroads & Harbors Section’s Railroad Coordination Handbook for more detailed information.

FDM 17-20-1 General

August 25, 2010

1.1 Early Notification

Provide the railroad notice of highway construction activities, the notification provides the opportunity for the railroad to inform the Region of any plans they may have regarding track rehabilitation that might affect highway construction. This notification helps avoid the situation where a construction project is completed and the railroad enters the crossing shortly thereafter to make improvements or repairs. By providing a chance for the railroad to perform its crossing work in concert with the highway work, a second closure of the roadway can be avoided, and the road can be paved after crossing work is complete to provide a smooth transition across the track.

1.2 The 86:13 Letter/Notification

Attachment 1.1 describes the process to be followed when a highway improvement project anticipates no work involving railroad facilities.

If a highway authority anticipates no work at an at-grade crossing, the RRC or project manager is still required to notify the railroad of the highway project. This notification is required by s86.13 W.S. (often referred to as the "86.13 letter"). When it is determined that no railroad crossing work will be done as part of the project, the RRC must send an 86.13 letter at least 12 months before the start of project construction. Provide the following information in this letter.

- A description of the work to take place near the grade crossing,
- The time period the work will be performed,
- A request for the railroad company's plans for any anticipated track or crossing work, and
- A request for the railroad to arrange to complete any company planned railroad work in concert with the highway improvement project.

Attachment 1.2 is a sample 86.13 letter.

If a highway is being reconstructed, the railroads have an obligation to improve and/or repair crossings. The 86:13 letter should be specific in identifying the crossing location, including the crossing number and the proposed highway work. If it later appears that there may be minor work, that could be accomplished by the WisDOT highway contractor – work that could be covered by a "letter agreement" (see FDM 17-20-15) then the notification letter should mention this.

See the Railroads and Harbors Section (RHS) Railroad Coordination Handbook for more detailed information.

LIST OF ATTACHMENTS

Attachment 1.1 — Process that is followed for a Highway Improvement Project with a Railroad Crossing but No Railroad Work is Anticipated

Attachment 1.2 — Sample 86.13 Letter

FDM 17-20-5 Project Scheduling

August 25, 2010

5.1 Introduction

There are two major project scheduling reports that are used for railroad-highway projects. These are the MASTER CONTRACT SCHEDULE which is a portion of FIIPS under the direction of the Bureau of State Highway Programs and the RAILROAD NEGOTIATIONS STATUS REPORT under the direction of RHS. The purpose of these schedules is to keep others informed of the target dates when future designated events are expected to occur or the dates that events have been accomplished. The region and RHS are primarily responsible for first setting a reasonable schedule based on project costs and available dollars, and for meeting those established dates. However, the railroads, DTSD Division Administrator, and others may cause a change or otherwise influence project schedules and time requirements.

5.2 The Master Contract Schedule

The Master Contract Schedule is extracted from FIIPS. It is made up of the cost and time-line data in FIIPS. The BSHP has the basic responsibility for monitoring the Master Contract Schedule. Attachment 5.1 provides guidance for lead times. While these lead times are generally "worst case" situations they should be used for all projects and exceeded if possible to avoid later delays or project complications.

5.3 The Railroad Status Report

The Railroad Status Report is integrated with FIIPS for 3 Data Items – Letting Date, Contract amount, and fund type and is a product of the RHS. It includes all projects that have a railroad involvement or element, regardless of program origin. It is an after-the-fact record of actions completed and thus constitutes a summary of the status of all railroad projects and railroad negotiations. It requires that WisDOT offices, bureaus, and regions report events to the RHS as they occur. It is updated continually, is available to users continually, with all updates passing through the RHS. It is available in several formats to serve the needs of a variety of users. See FDM 17-5-1 for more information.

5.4 Scheduling Criteria

The correctness of the initial scheduling of railroad projects is an essential element in implementing the improvement program. This has a direct influence on the credibility of the WisDOT efforts with the railroad companies as well as the management of various other WisDOT resources. Attachment 5.1 contains information on average lead times required for scheduling various projects.

The elements in scheduling projects include:

1. The type of project construction concept and the estimated cost
2. Financing and origin of funds (State, Federal or local; Safety or Improvement.)
3. Time requirements for required activities and setting of completion dates
4. Monitoring the above three elements for any significant changes

In all cases the lead time of railroad negotiations will depend on the following:

1. The timelines of initiating negotiations. Often the responsibility of the project manager
2. The degree of railroad support or objection to the project.
3. The Office of the Commissioner of Railroads hearing requirements and timeline for the OCR Order.
4. Type and amount of railroad force work required.
5. The amount of railroad participation in the project costs.
6. The right of way requirements and their complexity and impact on the railroad operations.
7. Whether the project is isolated or a part of a larger highway improvement project.

Railroad facilities that conflict with the proposed highway construction should be relocated to the extent possible as part of the right of way clearance.

Railroad force work required in conjunction with other highway improvement construction should be coordinated to include the open-to-traffic date. The type of funds applied to improvements and fiscal year constraints are also important considerations.

LIST OF ATTACHMENTS

Attachment 5.1 Estimated Minimum Lead Times for Railroad Projects

FDM 17-20-10 The Agreement *August 25, 2010*

10.1 Introduction

The agreement (contract) between the state and the railroad covers a specific railroad project and describes the work to be accomplished. It also includes the essential terms and conditions for accomplishing the work. Samples of letter agreements are included in FDM 17-20-15. Other sample agreements are included in most of the procedures in Sections 25, 30, and 40 which follow.

10.2 Overview

The agreement process is accomplished as a part of preliminary engineering. The basic steps in the agreement

process are as follows:

1. Region identifies there is a railroad in the vicinity of the project.
2. Region sends a letter notifying the railroad of the scope of the project.
3. Region works with RHS to develop rough cost estimates for scheduling purposes.
4. Region puts together the project submittal packages and sends to RHS. (Plan sheets & RR X-ing Report).
5. RHS drafts proposal/estimate request or petitions the OCR depending on the circumstances.
6. OCR hearing held if appropriate and issues an Order.
7. Railroad performs preliminary (design) engineering, generates an estimate and sends to RHS.
8. RHS prepares agreement.
9. Agreement sent to railroad for approval.
10. May need further RR negotiations or amended agreement based on RR comments.
11. Railroad approves agreement.
12. Agreement to BFS --- Secretary --- Governor.
13. Agreement executed by BFS.
14. Copy of executed agreement sent to the railroad and to the RRC.
15. RRC issues written start notice to railroad and copies RHS. It there was an OCR Order then also send a copy to the OCR.
16. Construction project manager arranges with railroad to attend pre-construction meeting.
17. Railroad notifies RRC of intent to start.
18. Construction by RR and inspection by region.
19. Railroad notifies RRC of the completion date.
20. Region does field inspection for acceptance.

10.3 Railroad Project Submittal Package

To start the agreement process, the region or consultant project manager sends the RHS the following railroad project submittal package:

1. Form DT1589, the Railroad Crossing Report
2. Project title sheet
3. Typical section sheet
4. Plan and profile sheet
5. Drainage plan
6. Right-of-way plat as needed
7. Easement description if required.
8. Adjacent land values that Region Real Estate recommends.

10.4 OCR Petition

On all projects involving alterations, and on most projects involving signal work, it is necessary to petition the OCR and to obtain an OCR order for the proposed work. The RHS typically petitions the OCR by letter, based on project information furnished by the region. For details of OCR procedures, see FDM 17-10-15.

10.5 The Proposal Letter

The RHS drafts a project proposal letter to the railroad with a copy to the RR Division Office. The proposal sets forth the concept of the highway improvement, what work is required, a general statement on the proposed apportionment of costs and a request for a cost estimate from the railroad. The proposal letter may also authorize engineering by the railroad for any required railroad design work. For signal projects additional details are provided in FDM 17-25-10.

10.6 The Agreement

If RHS finds the cost estimate submitted by the railroad to be acceptable, RHS prepares an Agreement. Two originals and one copy are sent to the railroad (three originals and one copy if it's a 3 Party Agreement.) If acceptable, the railroad executes and returns the originals to the RHS

If extensive negotiations fail to produce concurrence by the railroad with the proposal or the proposed Agreement, the matter will be brought before the OCR by petition (letter). The OCR will schedule and hold a public hearing under Sections 195.28, 195.285 and 195.29, W.S., investigate the matter, and issue an order binding upon all parties. The order sets forth the terms of construction and will apportion the costs on the basis of benefits received. For details on the activities in preparation for a hearing before OCR, see FDM 17-10-15.

The Agreement is developed by RHS on the basis of the railroad cost estimate, final railroad work plans and final roadway plans. If there is shared responsibility for the required crossing work, an equitable percentage of the total project costs for the work by the railroad may be agreed upon for purposes of contract administration. If the Agreement is acceptable to the railroad, the contract development process prescribed in TAM 005-1 is followed to conclusion. Materials procurement is usually authorized by the RHS letter at the time the Agreement is prepared and sent to the railroad for signature. Responsibility for contract administration is primarily with the region staff following approval of the Agreement.

10.7 Contents of the Agreement

The Agreement states the essential terms and conditions between the parties. These include the following:

1. Regulatory provisions of the federal government. (federal-aid projects).
2. A detailed statement of the work to be done by each party.
3. The extent to which the railroad is obligated to move or adjust its facilities at its own expense.
4. The railroad's share of project costs.
5. The method of payment (lump sum or force account).
6. An itemized estimate of the work to be done by the railroad which details the material to be installed and salvage to be credited.
7. The method of performing the work, either with railroad forces or by private contractor.
8. Responsibility for maintenance.
9. Required insurance
10. Applicable plans and special provisions.
11. Requirement for third-party insurance
12. Traffic control measures and railroad crossing warning devices as required.
13. Provisions for inspection of recovered materials by reference to 23 CFR 140.908 (2).
14. Necessary coordination with highway contractor's work.
15. Description of highway appurtenances to be constructed or installed on or removed from railroad property.
16. Provisions for contractor use of railroad flag person when required other than as provided in the Standard Specifications for Highway and Structure Construction.

The region should be aware of the above items in the agreement when reviewing the work progress and final bill from the railroad.

10.8 Distribution of the Agreement

RHS forwards the agreement to BFS with the contract routing sheet for a comparison to the program authorizing the project and to see that scope and cost are consistent with earlier discussions. BFS forwards for final project approvals, Administrator's signature, and the Governor's signature if the agreement amount is $5,000 or more.

Following the return of the approved agreement to RHS, RHS then distributes the agreement as follows:

1. The railroad original is sent to the railroad.
2. The WisDOT original is forwarded to Central Office Files.
3. One copy goes to the region plus an original for any third party to the agreement.

4. One copy is retained by RHS.

FDM 17-20-15 Letter Agreements

August 25, 2010

An exchange of letters and preferably a single letter is often used to document agreement on minor or routine item of work. Examples are provided in this procedure's attachments.

The inclusion of any railroad force work requires an estimate of cost. The amount, if reasonable and representative of the actual costs, can be paid upon completion of the work as a lump sum.

The sample letter agreements included here cover a variety of situations:

- Attachment 15.1 covers the relocation of railroad facilities, with a lump sum reimbursement.
- Attachment 15.2 seeks railroad approval for the attachment of beam guard to the piers of a railroad structure.
- Attachment 15.3 seeks railroad approval for a WisDOT contractor extending the highway surface material back to new curb and gutter.
- Attachment 15.4 covers the WisDOT replacing surfacing in the track zone and for sidewalks, in exchange for the railroad providing flagging protection.
- Attachment 15.5 covers WisDOT's proposal to remove and restore a little-used track crossing the highway improvement.

In all cases the letter should fully describe the project location including the crossing number if a crossing is involved;

- what is required;
- when the work is to be accomplished
- why the work is necessary
- who will participate in cost sharing.

If the work is performed by the railroad, the agreement is to include the cost and how it is to be paid. This letter is signed by the Chief, Railroads and Harbors Section, with a place for the railroad to indicate their acceptance.

LIST OF ATTACHMENTS

Attachment 15.1	Sample Of Letter Agreement With Railroad (Lump Sum)
Attachment 15.2	Sample Of Letter Agreement With Railroad (Design Approval)
Attachment 15.3	Sample Of Letter Seeking Railroad Approval of Contractor Work
Attachment 15.4	Sample Of Letter Proposing WisDOT Work in Track Zone in Exchange for Railroad Providing Flagging Protection
Attachment 15.5	Sample Of Letter Proposing WisDOT Remove and Restore a Little-Used Track Crossing

FDM 17-20-20 Detours and Haul Roads

August 25, 2010

20.1 General

There are two situations addressed here:

- detours at isolated railroad crossing safety projects to permit crossing construction
- detours or haul roads on highway improvement projects that involve crossings off the project site, and the responsibility for damage to these crossings.

20.2 Detour Options

There are three options for getting detour work accomplished. The following is a summary of advantages for each:

1. Region arranges and funds with region funds:
   - No paperwork to document and bill the railroad
   - No hassle about quantities and costs with the railroad
   - Complete quality control on material/workmanship/adequacy

If this option is selected, the costs can be handled in one of the following three ways;

- Routine region maintenance and traffic funds
- Part of a roadway improvement project in the vicinity
- A specially set up improvement project for this purpose (could include several locations).

2. Region arranges and bills the railroad
   - Leaves a larger balance in budget for other DOT work
   - Provides some degree of accountability on the railroad
3. Railroad arranges and bills the project
   - No initial work by DOT. DOT would however review and approve any detour or traffic control plan.
   - No coordination by DOT

There are disadvantages and risks if option 3 is selected:

- Railroad will do the bare minimum.
- Railroad will get by as cheaply as possible.

Each project needs to be evaluated on the individual circumstances. When the project plans are submitted, it should include any paving/detour costs that are to be charged to the railroad as a part of the project. It is necessary to inform the railroad before the fact. The proposal is drafted specifying how this will be funded and the estimated cost to the railroad.

20.3 Isolated Crossings on Safety Projects

The implementation of the detour in the field must follow MUTCD (see Section 6C.09 and figures 6H-8, 6H-9, 6H-19 and 6H-20) and FDM requirements. See SDD 15-C2 as far as signing (size, height, visibility frequency, etc,) is concerned.

Most often the detours for an isolated safety project will use Option 1, with either the region or the local unit handling the cost with routine maintenance or traffic funds. Contact the region traffic staff to ensure that resources are available to accomplish the detour work.

Safety projects at railroad crossings are typically isolated (not associated with roadway construction projects) and often will require roadway detours during construction. Most region traffic sections have established a process for implementing detours on the STH system and the project manager or RRC should work through them. If the project or detour is on a local road, contact the local roadway authority and obtain their concurrence.

Lead times for establishing detours vary, so make initial contact and at least begin discussions well in advance, well before it is possible to identify specific dates for detour beginning and ending. This will help identify conflicting work or local events that might limit detour options and thus help in early coordination.

Regions and many local units will have a detour application form that initiates the process. Included are many detailed conditions that must be met. The application may ask for a proposed detour, tentative dates and duration, and any anticipated problems, etc. The detour schedule needs to be finalized 3 to 4 weeks prior to construction in order to implement the detour.

An important aspect of detour preparation is notifying those agencies and individuals likely to be affected, as well as the media. A summary memo should be drafted, listing the detour particulars, as well as a list of “who is to contact whom.” From this memo a more generalized press release can be drafted for wider distribution. Again the region traffic section can be an excellent resource.

The detour will typically be established in the field one day ahead of actual work to permit the final inspection and acceptance of all details of detour adequacy.

20.4 Highway Improvement Projects

The issue here is responsibility for damage to crossings off the project site that are used for haul roads or detours. If a STH highway is involved, there should be reference to this item in the bidding documents.

Occasionally a railroad crossing exists within the limits of a haul road or a detour route for a highway improvement project on local street or highway. Since Section 86.12 of the Wisconsin Statutes requires a railroad company to maintain local road crossings at its own expense, the same philosophy is employed as is used for repair of Connecting Highway crossings which are within the limits of a highway improvement project funded with state money. Repairs to crossings on local roads being used as haul roads or detour routes for local street or highway improvement projects are not eligible for reimbursement.

20.4.1 Haul Roads

The use of the haul road for construction equipment and trucks causes damage beyond “normal use” damage. Reimbursement to a railroad company for repair of a haul road crossing using project improvement dollars may be possible under the following situations:

1. Federal highway funds are being used on the improvement project requiring the haul road.
2. There is a bid item in the contract for “Maintenance and Repair of Haul Road.”
3. The haul road log includes “before” and “after” analysis of the condition of the crossing.
4. The Project Engineer certifies that damage to the crossing was a result of the road being used as a haul road.
5. The region notifies the RHS to begin railroad coordination.

20.4.2 Detour Routes

A marginally satisfactory crossing may be sufficient for light-vehicle use and low traffic volumes, but is not solid enough for high volumes of traffic which includes heavy trucks and busses. Reimbursement to a railroad company for repair of a detour route crossing using project improvement dollars may be possible under the following situations:

1. Federal highway funds are being used on the improvement project requiring the detour route.
2. There is a bid item in the contract for “Maintenance and Repair of Detour Route.”
3. Project funds are available early enough to complete the crossing work prior to the detour initiation.
4. The region notifies the RHS to begin negotiations.

Process that is followed for a Highway Improvement Project with a Railroad Crossing but **No** Railroad Work is Anticipated

1. Region Planning Unit identifies there is a railroad in the vicinity of the project.
2. Region Planning Unit informs Regional Railroad Coordinator (RRC).
3. Region sends a letter notifying the railroad of the scope of the project and invites them to the OPM.
4. RRC identifies there is **NO** railroad work to be done in conjunction with a project.
5. Region sends an "86.13 letter" to the railroad informing them no railroad force work is anticipated *.
6. RRC reviews with Railroad and Harbors Section (RHS) to determine if a letter agreement (or other agreement) is necessary (example: paving within the track zone may require a letter agreement).
7. RHS drafts agreement and sends to RRC for comments.
8. RRC and project manager/designer review the agreement.
9. RHS makes necessary changes.
10. RHS sends agreement to the railroad.
11. May need further negotiations or amended agreement based on railroad comments.
12. Railroad approves agreement, keeps a copy, and sends to RHS.
13. RHS sends a copy of the executed agreement to the RRC.
14. RRC provides a copy to the project manager.
15. Project manager ensures a copy of the executed agreement is given to the construction project manager.

* If the railroad responds that they have work that they would like to do then the RRC contacts RHS to determine what process needs to be followed.

Wisconsin Department of Transportation

_____ ___, _____

TRANSPORTATION DISTRICT 3
944 Vanderperren Way
P.O. Box 28080
Green Bay, WI 54324-0080
Telephone (920) 492-5643
FAX (920) 492-5640

_____ _____
_____
_____
_____, Wisconsin 54481

Dear M _____:

Subject: Project ID
_____
STH ___ To USH ___
USH ___
_____ County

DOT Crossing #_____
Proposed Letting Date _____
Anticipated Construction Start _____

In accordance with s. 86.13, Wisconsin Statutes, we are advising you of this proposed _____ project. We are not proposing any grade revisions or widening at this grade crossing. It is proposed to match the present rail grade and crossing width. **{**The condition of the crossing is considered to be adequate. However, if your company is planning to make any repairs or improvements to the crossing, we suggest that they be coordinated with our project.**} –OR- {**The crossing is in need of repair or rehabilitation. As required by s. 86.13(1), your company is to carry out the necessary work at its expense. We suggest that the work be coordinated with our project.**}**

We would appreciate knowing your plans for this crossing by _____ ___, 2___. If you have any questions or if a field meeting is desired, please call me at ___ - ___ - ____. Thank you.

Sincerely,

_____

Region Railroad Coordinator

Cc: Railroad and Harbors
Section Design File

ESTIMATED MINIMUM LEAD TIMES
FOR RAILROAD PROJECTS

Crossing Signals	24 months	New Installations
Crossing Signals	24 months	Signal Relocations and Upgrades
At-grade Crossings	24 months	New Crossings
At-grade Crossings	24 months	Alterations/Replacement of Existing Crossings
At-grade Crossings	15 months	Roadway Paving/within the Railroad limit of responsibility only (no crossing work)
At-grade Crossings	18 months	Crossing Repairs [86.13(5)]
Structure	48 months	Construct Highway Underpass (New and replacement)
Structure	36 months	Construct New Highway Overpass
Structure	24 months	Widen or Modify Highway Overpass
Culvert extensions; Cut and Fill Slopes,	12 months	Highway Encroachment

Division of Transportation Investment Management
Railroads and Harbor Section
4802 Sheboygan Ave.
P.O. Box 7914
Madison, WI 53707-7918

Scott Walker, Governor

Mark Gottlieb, P.E., Secretary

Internet: www.dot.wisconsin.gov

Telephone: (608) 267-7348

Date

ATTN:
COMPANY NAME
STREET ADDRESS
P.O. BOX
CITY, STATE 9-DIGIT ZIP CODE

SAMPLE OF LETTER
AGREEMENT WITH
RAILROAD (LUMP SUM)

Dear (Name):

Subject: Project I.D. 1351-00-70
43rd Street, W. Lincoln - W. National Avenue
STH 41
City of Milwaukee
Milwaukee County

This letter is prepared in duplicate as a Lump Sum Agreement for the relocation of one railroad signal and communication line pole.

The Wisconsin Department of Transportation plans to construct an off-ramp from STH 41 (43rd Street) between West Lincoln Avenue and West National Avenue in the City of Milwaukee. A single Soo Line signal and communication line pole is in conflict with the highway construction. The proposed construction schedule requires the pole be moved by June 1, 1988.

Attached are a right of way plat sheet and a highway plan sheet which show the location of the off-ramp and the pole location at Hwy. Sta. 2+03, 8 feet left of the "C" Ramp reference line. A suitable location for relocating the pole would be about 5 to 6 feet right of the "C" Ramp reference line. The exact location can be arranged with the project engineer in the field. Please contact our District Construction Engineer in Waukesha about two weeks prior to starting this work so that construction can be coordinated.

The Wisconsin Department of Transportation agrees to pay the Soo Line Railroad Company the lump sum amount of $1,526 upon completion of the pole line work described above. The amount is based on the attached detailed estimate dated April 1, 1988.

If these terms are satisfactory to the railroad, we would appreciate your signature approval in the space provided below and the return of one signed copy for our records.

Thank you.

Sincerely,

(Name)

Director, Railroads and Harbors Section
Attachment

Agreement for pole line work
by Railroad Approved
Soo Line Railroad Company

By:_____
(Name)

_____
(Title)

Division of Transportation Investment Management
Railroads and Harbor Section
4802 Sheboygan Ave.
P.O. Box 7914
Madison, WI 53707-7918

Scott Walker, Governor

Mark Gottlieb, P.E., Secretary

Internet: www.dot.wisconsin.gov

Telephone: (608) 267-7348

Date

ATTN:
COMPANY NAME
STREET ADDRESS
P.O. BOX
CITY, STATE 9-DIGIT ZIP CODE

SAMPLE OF LETTER
AGREEMENT WITH
RAILROAD (DESIGN APPROVAL)

Dear (Name):

Project I.D. 1193-6-71
Gordon - Solon Springs Road
USH 53
Douglas County
RR Crossing No. _____

The Wisconsin Department of Transportation, proposes to construct a portion of U.S. Highway 53 between Gordon and Solon Springs, Wisconsin. As part of this construction, it is proposed to install type "W" Steel Plate Beam Guard under the USH 53 subway located north of Gordon and Solon Springs, Wisconsin.

Attached are a location map, two plan sheets showing the beam guard locations, two details showing the beam guard attachments to your structure, and Standards 14B-2-8b and 8a (Exhibits "A" through "C" inclusive).

The proposed vertical clearance under your structure will be reduced about 1-inch to 19.0'±.

The attached Detail Sheet (Exhibit "D") indicates 6" x 8" x 1'-1" offset blocks and type "W" thrie beam guard rail attached to your piers by means of 5/8-inch expansion bolts. It indicates the holes will be drilled into your abutment footings.

Since no work is being done in the track zone, we do not propose to provide railroad protective insurance in connection with this work.

It is proposed that the railroad permit this work on the railroad structure subject to the following conditions:

The cost of the work will be at the expense of the state.

The work will be carried out in a manner and completed to the satisfaction of the railroad's General Manager Engineering or his authorized representative without expense to the railroad.

The steel plate beam guard and accessories covered herein will be maintained by the public highway authorities.

(Date)
(Name)
Project I.D. 1193-6-71
Page 2

This letter is being furnished in duplicate and if the terms are satisfactory to the railroad we would appreciate execution of the attached duplicate copy of this agreement on the part of the railroad and the return thereof for our files.

Sincerely,

(Name)
Director

Railroads and Harbors Section: a5577

Attachment

Agreement for work on railroad bridge approved:

Soo Line Railroad Company

_____ _____
(Name) Date

_____
(Title)

Division of Transportation Investment Management
Railroads and Harbor Section
4802 Sheboygan Ave.
P.O. Box 7914
Madison, WI 53707-7918

Scott Walker, Governor

Mark Gottlieb, P.E., Secretary

Internet: www.dot.wisconsin.gov

Telephone: (608) 267-7348

Date

ATTN:
COMPANY NAME
STREET ADDRESS
P.O. BOX
CITY, STATE 9-DIGIT ZIP CODE

SAMPLE OF LETTER
SEEKING APPROVAL OF CONTRACTOR WORK

Project I.D. 4125-01-71
USH 141 - East County Line Road
(FV & W Crossing)
STH 29
Brown County
RR Crossing No. 181 499D

Dear (Name):

During the 1997 construction season, the Wisconsin Department of Transportation proposed to alter the STH 29 crossing of your company's Green Bay Junction - Denmark single mainline track at Bellevue in Brown County by constructing a curb and gutter section. The crossing material already extends to the backs of the proposed curbs, and the existing locations of the crossing warning devices will provide a minimum distance of 4'-3" from the faces of curbs.

The Department needs to have its contractor extend the surface through the track a distance varying from three feet to seven feet to match the new curb lines.

If this is agreeable with your company, please sign and return the two "letter agreement" copies for our Administrator to sign.

The project Special Provisions will include flagging requirements and Railroad Protective Liability Insurance. The current letting date is March 18, 1997.

If you would like to field-review this location with us prior to signing the Agreement, please let me know within the next several weeks and arrangements will be made to meet with you.

Sincerely,

(Name)
Railroad Coordination Engineer

Agreement to Place Asphaltic Surfacing within the Track Zone

This Agreement permits the Wisconsin Department of Transportation to contract with its highway paving contractor to place asphaltic pavement through the STH 29 crossing of Fox Valley and Webster LTD. (RR Crossing No. 181 499D) at Bellevue in Brown County.

The Department agrees that the contractor will perform the work in accordance with the 1989 Edition of the ”Standard Specifications for Road and Bridge Construction.” This would include provisions for Railroad Protective Liability Insurance and flagging requirements.

(Name) (Date) Fox Valley and Western Ltd.	(Name) (Date) Wisconsin Department of Transportation Director Bureau of Railroads and Harbors
(Title)	

Division of Transportation Investment Management
Railroads and Harbor Section
4802 Sheboygan Ave.
P.O. Box 7914
Madison, WI 53707-7918

Scott Walker, Governor

Mark Gottlieb, P.E., Secretary

Internet: www.dot.wisconsin.gov

Telephone: (608) 267-7348

August 29, 2001

Mr. Randy Henke, Vice President – Engineering
Wisconsin Central Ltd.
6250 North River Road, PO Box 5062
Rosemont, IL 60017-5062

Dear Mr. Henke:

Project I.D. 9996-03-70
Second Street, City of Merrill
(WCL Crossing)
STH 64
Lincoln County
RR Crossing No. 392 898X MP 110.82

LETTER AGREEMENT

The following is an agreement I am presenting in advance of our proposed highway project. The Wisconsin Department of Transportation and the City of Merrill are planning to reconstruct Second Street in the vicinity of your company's crossings in the City of Merrill during the 2002 construction season. The project is scheduled for letting on November 13, 2001. The improvement crosses your company's Valley Sub.

The project plans to remove and replace the asphaltic pavement in the track zone of the timber and asphalt crossing surface in the roadway and for the sidewalks on both sides of the road at the expense of the roadway project. In exchange for the project repaving the crossing for your Company, your Company will provide the railroad flagging at the railroad's expense. The existing timber and asphalt crossing is in good shape and we anticipate no work to be done with the crossing. It will be possible for your company to replace the flange and guard crossing timbers during the project.

As per sections 107.17.1 and 107.17.3 of the State of Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction and Supplemental Specifications, the contractor will be required to provide Railroad Protective Insurance for your company along with complying with our standard flagging requirements.

This Letter Agreement is furnished in duplicate. If the arrangement described above is satisfactory with your company, please sign in the space provided below to indicate agreement by Wisconsin Central Ltd. and return one signed copy to me.

Sincerely,

Director

APPROVED:
WISCONSIN CENTRAL LTD.

By_____
Signature Date

_____
Title

Division of Transportation Investment Management
Railroads and Harbor Section
4802 Sheboygan Ave.
P.O. Box 7914
Madison, WI 53707-7918

Scott Walker, Governor

Mark Gottlieb, P.E., Secretary

Internet: www.dot.wisconsin.gov

Telephone: (608) 267-7348

July 2, 20XX

Mr. Randy Henke, Vice President - Engineering
Fox Valley & Western Ltd.
6250 North River Road, PO Box 5081
Rosemont, IL 60017-5081

Dear Mr. Henke:

Project I.D. 6200-08-71
Winneconne Road, City of Oshkosh
STH 110 (FVW Crossing)
Winnebago County
RR Crossing No. 179 806A MP 20.20

LETTER AGREEMENT

The following is an agreement I am presenting in advance of our proposed highway project. The Wisconsin Department of Transportation is planning to reconstruct Winneconne Road (STH 110) in the vicinity of your company's crossing in the City of Oshkosh, during the 2003 construction season. The project is scheduled for letting on March 11, 2003. The improvement crosses your company's North Oshkosh line.

This crossing was discussed with you and other representatives of your company on December 7, 2000 in our Green Bay District Office. At that meeting the possibility of abandoning this crossing was discussed. As pointed out at the meeting, the track is currently red boarded and the crossing has not been used in approximately 3 years.

Based on the discussions at the meeting the crossing should be abandoned and the warning devices removed. The Department at its own cost will remove the existing rubber crossing and track structure within the highway right of way, dispose of the material, fill the void left by the removal and pave where the crossing existed. The department at its own cost will also remove and dispose of the existing rotateable cantilevered signals and foundations.

If this is satisfactory with your company, please sign in the space provided below to indicate agreement by FVW.

Sincerely,

Director

APPROVED:
WISCONSIN CENTRAL LTD.

By_____
Signature Date

_____
Title

FDM 17-25-1 General

June 19, 2013

1.1 Background

The railroad companies generally accomplish the work of installing new signals and making improvements to existing crossing signals with their own forces. In some cases the work may be done under a continuing contract with a private railroad signal contractor, or by contract based on bids from qualified contractors. WisDOT must approve the continuing contract or the bid prior to the work being accomplished in order for reimbursement to be made for the work.

There are 3 types of warning device projects:

- "Installation" projects are generally these where the affected crossings have no existing active warning devices.
- "Upgradings" are generally those where active warning devices are present, but the projects are designed to increase lamp sizes, install gates, improve circuitry, or replace old worn out equipment.
- "Relocation" projects are those which relocate active warning devices out of shoulder areas or to accommodate minor roadway widenings.

Warning device hardware is expensive. Because of the expense of the material (usually between $30,000 and $100,000 per crossing), for a new installation railroad companies do not stock pile signal material. Depending on the complexity of the material technology, a railroad company usually needs between six and nine months after the WisDOT authorization notice to procure material before the material can be installed.

1.2 General

Train activated warning devices include flashing lights located on the side of the road or cantilevered over the street or highway, and bells. See FDM 17-60 Attachment 20.1. Half roadway gates (short-arm gates) may be installed at crossings having multiple tracks and at single track crossings;

- where the motorist may be confused by trains operating on nearby siding tracks;
- where the sight distance along the mainline track is inadequate at the crossing; or
- where ordered by the OCR.

Full roadway gates are installed at single directional roadways for reasons designated above. Gates at sidewalks or separate recreational crossings are not recommended but may be ordered by the OCR after its investigation and finding that they are necessary at a particular crossing. They are generally considered ineffective, subject to vandalism and can trap wheelchair bound or other users.

Another issue with train activated devices is motion detectors and constant warning time predictors. A minimum of 20 seconds of warning time is required. Excessive warning time (in excess of 30 seconds) is considered hazardous as it encourages the impatient motorist to drive over the crossing, often around crossing gates, while the warning devices are operating.

The railroad companies are responsible for maintaining train-activated crossing signals. The WisDOT is authorized by legislation to negotiate contracts with railroad companies for the installation of railroad crossing signals without bids (s84.06(4) WS).

1.3 Process

The detailed "Process" steps for projects in each program are detailed in Attachment 1 of each of the subjects which follow in this Section. The culmination of all coordination and negotiation is an agreement (contract) between WisDOT and the railroad covering the work at the crossing. See Attachment 1.1 for a sample agreement.

Whether a signal project is authorized in a WisDOT program or in an OCR program, or ordered by the OCR, the agreement necessary to accomplish the work is prepared by the Railroads and Harbors Section for approval by the railroad company and WisDOT. Following approval, the WisDOT region implements the project, including overseeing construction, and authorizing all payments in accordance with the agreement.

DT1589 is a Railroad Crossing Report that is necessary for all crossing projects. It also serves as a guide for what should be looked for during pre-design field reviews. Click here for a working copy of DT1589 and look

under “Plans and projects.”

1.4 Lead Times

Early notification and early coordination are critical. Initial contact with the railroad regarding any crossing work should occur as early as possible, but no less than 24 months before the anticipated start of construction. See FDM 17-20 Attachment 5.1 for a table of recommended lead times for different types of railroad work.

See the Railroad Coordination Handbook for more detailed information.

LIST OF ATTACHMENTS

Attachment 1.1	Sample Agreement for Highway-Railroad Grade Crossing Warning Devices
Attachment 1.2	Railroad Crossing Report Form, DT 1589

FDM 17-25-5 Highway Improvement Projects

June 19, 2013

5.1 Introduction

Any Federal-aid funded project with a highway-railroad grade crossing within or near the project limits shall have adequate warning devices at the crossing. The warning devices shall be installed and functioning properly, per 23 CFR 646 before opening the project to unrestricted use by traffic. The Railroads & Harbors Section of DTIM, or the Office of the Commissioner of Railroads will determine the adequacy of the devices."

Therefore, it is important for the region or consultant project manager to identify any and all potential railroad involvement in their projects as early as possible, and work with the Regional Railroad Coordinator (RRC) to determine the appropriate course of action. At a minimum they should notify the railroad of the project and coordinate any crossing track or other work that they have planned, (see FDM 17-20-1). It will also probably be necessary to negotiate an agreement (contract) with them (see FDM 17-20-10). Programming, scheduling and funding of railroad projects that are a part of larger roadway improvement projects are generally the same as for the main highway project. Specific details for various types of railroad projects are provided elsewhere in this chapter.

5.2 Lead Times

Identification of railroad facilities requiring relocation, adjustment, or the installation of a new crossing or crossing signals in conjunction with highway improvement projects should be made at an early stage of plan development.

Adequate lead-time is required to develop plans, estimate costs, negotiate acceptance by the railroad, and obtain contract approvals. If an OCR hearing becomes necessary, even greater lead times will be necessary. FDM 17-20 Attachment 5.1 identifies the lead times needed for various railroad projects.

5.3 Process

See Attachment 5.1 for a detailed description of this process. The region sets up a railroad project ID number and notifies the Railroads and Harbors Section of the probable involvement with railroad facilities. The RRC has the list of the current railroad contacts.

When crossing signal work is to be coordinated with a highway project, factors to be considered may include the need of a flagger. A flagger may be required when trains operate over the crossing and the crossing may need to be closed for a day while the crews are completing the work.

If the OCR has ruled on the establishment of a new crossing with signals, the OCR order may not permit the new crossing to be opened to public travel until the signals are operating.

LIST OF ATTACHMENTS

Attachment 5.1	Process that is followed for a Highway Improvement Project with an At Grade Railroad Component

FDM 17-25-10 WisDOT Safety Projects

June 19, 2013

10.1 Introduction

Both the WisDOT Safety Program and the OCR Safety Program most often deal with “isolated” railroad improvements, i.e., those not included within the limits of a larger, WisDOT or local highway improvement project.

The OCR Safety Program includes only warning devices, either new installations or upgrades or replacement of existing installations. The WisDOT Safety program also consists mostly of warning devices, but may also include many other project types, including crossing reconstruction, approach roadway reconstruction, structures to separate the roadway and the railroad, etc.

10.2 General

See Attachment 10.1 for a summary of the process. For warning device projects included in approved programs, the region submits the "railroad crossing submittal package", specified in FDM 17-20-10. After reviewing this submittal, Railroad and Harbors Section (RHS) prepares a proposal or an estimate request to the railroad which includes the following:

1. Location of crossing
2. Statement of changes proposed.
3. Position of proposed new signals with respect to roadway centerline or face of curb. (See FDM 17-60 Attachment 20.1)
4. Plan sheets
5. Current and proposed highway traffic volumes and speed limits.
6. Rail traffic and train speeds (usually obtained from local trainmaster by the region).
7. Description of existing crossing warning devices.
8. Cost sharing proposed.
9. Authorization for the railroad to begin preliminary engineering including development of the detailed cost estimate, signal location sketch, and circuit plans.

10.3 OCR Involvement

If the railroad and the RHS cannot reach an agreement on the proposed project the RHS petitions the OCR for a review of and decision on the proposed project. The petition includes the following:

1. A request for review of the adequacy of existing warning devices at the identified crossing under Section 195.28, Wisconsin Statutes.
2. Location Sheet.
3. Typical Section Sheet
4. Plan and Profile Sheet
5. The proposal/estimate request that was sent to the railroad.
6. Copies of other correspondence to and from the railroad.
7. Railroad Crossing Report

The OCR may either schedule a public hearing or make an investigation of the crossing without a hearing. Any person affected by the OCR Order issued without a hearing may request a hearing if dissatisfied with the Order.

If a public hearing is scheduled by the OCR, the following activities take place. Also See FDM 17-10-15.

1. The region and occasionally Bureau of Highway Operations are requested to submit to the RHS exhibits (plans) and written justification (testimony) regarding the project. This often takes place at a preliminary meeting weeks before the scheduled OCR hearing.
2. The RHS reviews the materials and statement and returns it to the region. Any changes are to be incorporated in a final typed statement. Testimony may also be developed by a series of questions and answers.
3. The RHS and region staff (and local officials, if a local road or community is involved) attend the hearing in support of the petition. Usually, this is scheduled a minimum of a couple of months after the OCR receives the petition. The region provides a minimum of five copies of all exhibits and the prepared statement. A RHS staff person appears for the WisDOT unless someone else is designated. The region representatives and representatives from other WisDOT offices such as the Railroads and Harbors Section and Bureau of Highway Operations may be called as witnesses.
4. The OCR will issue a Proposed Decision or a final Order if the Commissioner attends the hearing usually within three months of the hearing date.

5. The RHS does one of the following:
    - Responds with comments to the Proposed Decision, including a possible appeal, or
    - Proceeds to obtain an agreement based on the Final Order and railroad's estimate.

Should the OCR fail to approve the proposed project, the RHS discusses the project with other central office staff and the region to re-evaluate the need for railroad warning devices. If there is not sufficient need for the warning devices, the project would be withdrawn from the Program. If central office and the region determine that railroad signals are required, the Order will be appealed with the approval of the DTID Administrator.

LIST OF ATTACHMENTS

Attachment 10.1	Process that is followed for a WisDOT Railroad Safety Project (RR Force Work Component)

FDM 17-25-15 OCR Safety Projects

June 19, 2013

15.1 Introduction

Both the WisDOT Safety Program and the OCR Safety Programs deal mainly with "isolated" railroad improvements, i.e., those not included within the limits of a larger, WisDOT or local highway improvement project.

The OCR Safety Program includes only warning devices, either new installations or upgrades or replacement to existing installations.

15.2 General

Projects in the OCR Safety Program are the result of:

- OCR initiatives to identify and investigate crossings needing improvement. These are often accomplished on "railroad corridor" basis by the OCR, as well as by liaison with local officials and railroad officials.
- Petitions from local units of government, neighborhoods, or others, that cite dangerous conditions at crossings in their area. Such petitions may originate with a local unit of government, 5 or more electors, the railroad, the WisDOT or at the initiative of the OCR.

A portion of the Federal-Aid Safety funds appropriated to Wisconsin has been designated to fund the projects that are subsequently ordered by the OCR. All projects in the OCR Safety Program are actually administered by the WisDOT. This includes coordination of all implementation activities after program approval, all field construction activity, oversight, vouchering payments and finally closing the projects.

A detailed list of "Process Steps" is included as Attachment 15.1.

15.3 WisDOT Assistance

WisDOT has a policy of recovering its costs from the OCR projects. This is intended to cover region costs of inspection, reviewing billings and approving payments, securing traffic counts, attendance at meetings and hearings, etc.

- See PMM Chapter 11-00-01, page 11 for more information.
- See the RHS Railroad Coordination Handbook for more detailed information.

LIST OF ATTACHMENTS

Attachment 15.1	Process that is followed for an OCR Railroad Safety Project (RR Force Work Component)

State of Wisconsin/Department of Transportation

AGREEMENT FOR HIGHWAY-RAILROAD
GRADE CROSSING WARNING DEVICES

Project I.D. 4100-10-50
Calumet Avenue, City of Manitowoc
(FVW Crossing Signals)

USH 151
Manitowoc County
DOT No. 181 165V M.P. CG 76.32

This Agreement, by and between the State of Wisconsin, Department of Transportation, Division of Transportation Infrastructure Development, hereinafter referred to as the "State" and the Fox Valley & Western Ltd., hereinafter referred to as the "Company", provides for the performance of work described herein by the Company on the above named projects.

WITNESSETH

WHEREAS, the Wisconsin Commissioner of Railroads has made a determination and finding under Section 195.28, Wisconsin Statutes, that automatic warning devices are to be upgraded at the above described locations pursuant to his Order, dated April 17, 2002 in docket #9068-RX-114; and

WHEREAS, the State desires to finance the upgrading of the highway-railroad grade crossing warning devices with a combination of federal aid and local funds as provided under Section 84.03, Wisconsin Statutes; and deems it more feasible and advantageous for highway purposes to have such work performed by the Company directly and without bids pursuant to Section 84.06(4), Wisconsin Statutes.

NOW, THEREFORE, in consideration of the premises and of their mutual and dependent agreements hereinafter set forth, the parties hereto hereby agree as follows:

STANDARD PROVISIONS. The work described below shall be performed by the Company in accordance with the provisions contained herein and the "Standard Provisions", dated April 10, 2001, Exhibit "A", attached hereto and made a part of this Agreement, except for Items numbered 8 and 9.

WORK TO BE PERFOMED BY THE COMPANY. (a) Install cantilevered automatic flashing-light signal with 12-inch LED lamp units, electronic bell, type C circuitry and bungalow at the Calumet Avenue (USH 151) crossing of the Company's Lake Shore Sub in Manitowoc County, in the City of Manitowoc, Manitowoc County.

Such work is further described in the agreement summary, Exhibit "B", detailed estimates, Exhibit "C", the Materials Lists, Exhibit "D", the signal location diagram, Exhibit "E", and further shown in Exhibits "F" through "H", which are attached hereto and made a part hereof. The Agreement cost of such work based on the estimate is Seventy Nine Thousand Two Hundred Forty Dollars ($79,240).

DESIGN. The installations of the railroad crossing warning devices shall be in responsible conformance with the State's "Guideline for the Lateral Placement of Railroad Signs and Signals" as

provided in its Facilities Development Manual and Part VIII – Traffic Control Systems for Railroad-Highway Grade Crossings of the Manual on Uniform Traffic Control Devices for Streets and Highways published by the U.S. Department of Transportation, Federal Highway administration, to the extent practical and feasible.

Auxiliary signs shall be reflectorized.

CONSTRUCTION. The Company by a bid contract will make these signal installations together with the necessary connections to tracks, line circuits and power supply, in accordance with the plans and specifications therefore and the standard and accepted practices for such work. The operative parts of warning devices upon their having been installed shall be covered until placed in service.

All work under this agreement, as set forth herein and in the exhibits and attachments hereto and made a part hereof, shall be performed under normal Company practices and the applicable requirements of the United States Department of Transportation, as set forth in 23 CFR Part 646 Subpart B.

OPERATION AND MAINTENANCE. (a) Upon completion of the installations and their acceptance by the State, the Company will operate and maintain these installations under the rules and regulations of the Office of the Commissioner of Railroads.

If subsequent to any these installations the highway-railroad grades are separated, the grade crossing closed, or if for any other reason the operation of the warning devices is no longer necessary at the crossing, the State and the Company shall negotiate an agreement for the disposition of the warning devices.

The warning devices and appurtenances will become the property of the State upon completion of the project and formal acceptance by the State.

APPORTIONMENT OF COSTS. The State agrees to reimburse the Company for 100 percent of the costs eligible under this Agreement.

The execution of this Agreement by the State Shall not relieve the Company from compliance with the applicable Federal and State laws, Wisconsin Administrative Codes, and local laws or ordinances which may affect the performance of the work covered herein, and shall not be construed to supersede any other governmental agency requirements for plan approval or authority to undertake the work.

INVOICE AND BILLS. (a) The Company will submit all invoices and bills for reimbursement, to the Transportation District Office, 944 Vanderperren Way, Green Bay, WI 54304-0080. The State Project I.D. number will be included on all invoices and bills. The Final Bill is to be submitted within one year of the State's acceptance of the Company's work in accordance with Federal Law. If the Final Bill is not received by that date, the last detailed progressive bill will be considere4d to be the Final Bill.

If this Agreement contains more than one project, a separate invoice and a separate final statement shall be submitted for each individual project.

Project I.D. 4100-10-50

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their proper officers and representatives on the day and the year below written.

FOX VALLEY & WESTERN LTD.

By _____
Signature Date

_____
Title

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION
INFRASTRUCTURE DEVELOPMENT

By _____
Contracts Manager Date

APPROVED:

_____
Governor of Wisconsin Date

Project I.D. 4100-10-50

Form can be found on the WisDOT forms page at:
http://wisconsindot.gov/Pages/global-footer/formdocs/default.aspx .
Type "Ctrl+F" and search for the correct DT form number.

RAILROAD CROSSING REPORT

DT1589 4/2011 (Replaces ED705)

Wisconsin Department of Transportation

1. Railroad Project ID	2. Operating Railroad	
3. Companion Construction Project ID	4. Companion Hwy Constr. Letting Date	5. Engineering ID
6. Road Name	7. Official DOT/AAR Crossing Number	
8. Highway Number/Town Road/Street Name	9. Railroad Subdivision and Milepost	
10. County	11. Town/City/Village of	

Attach sketch of crossing including track centers, approach grades and obstructions to view of approaching trains.

EXISTING DEVICES AT CROSSING

Provide information for both approaches	Northbound/Eastbound		Southbound/Westbound		Comments
	YES	NO	YES	NO	
12. Stop Signs	☐	☐	☐	☐	
13. Cross Bucks	☐	☐	☐	☐	
14. Wig Wag Signals	☐	☐	☐	☐	
15. Flashing Light Signals	☐	☐	☐	☐	☐ 8" ☐ 12" ☐ INC ☐ LED
16. Cantilever Signals	☐	☐	☐	☐	☐ 8" ☐ 12" ☐ INC ☐ LED
17. Gates	☐	☐	☐	☐	
18. Crossing Illuminated	☐	☐	☐	☐	
19. Flagging	☐	☐	☐	☐	
20. Bell	☐	☐	☐	☐	☐ M ☐ E
21. Sidelights	☐	☐	☐	☐	
22. Stop Bar	☐	☐	☐	☐	Distance From Crossing
23. Public Road Intersection	☐	☐	☐	☐	
24. Humped Crossing Sign	☐	☐	☐	☐	
25. Railroad Advance Warning Signs	☐	☐	☐	☐	
26. RXR Pavement Markings	☐	☐	☐	☐	
27. Advisory Speed Signs	☐	☐	☐	☐	

OTHER CROSSING INFORMATION

28. Total No. of Tracks	29. No. of Main Line Tracks	30. No. of Other Tracks	31. Angle of Crossing ( ) LHF ( ) RHF

32. Total No. of Lanes	33. No. of Through Lanes	34. No. of Parking Lanes	35. No. Exclusive Use Lanes	36. No. Sidewalks	37. Sidewalk Width	38. Pavement Width	39. Curb ☐ Y ☐ N	40. Roadway Width

41. Crossing Surface Type	42. Length of Existing Crossing	43. Crossing Surface Condition

Average Daily	6 a.m.-6p.m. Number	6p.m.-6a.m. Number	Timetable Speed	Maximum Typical Train Speed		ADT	50. Year
44. Passenger Trains			MPH	MPH	47. Highway ADT (present)		( )
45. Freight Trains			MPH	MPH	48. Highway ADT (design)		( )
46. Switching Moves			MPH	MPH	49. Posted Speed Limit		

SIGHT DISTANCES

Stopping Sight Distances

Distances at which crossing warning devices first visible (WDV) [1] and vehicle stopping distances (VSD) from crossing based on speed [2]

51. Approach	52. WDV	53. VSD

Quadrant Sight Distances

View of trains from stopping distance

54. Quadrant	Sight Distance [3]	
	55. Actual	56. Req'd

Clearing Sight Distances

View of trains at 25 ft from nearest rail

57. Quadrant	Sight Distance [4]	
	58. Actual	59. Req'd

60. Obstructions, Comments

61. Diagram (Label Quadrants)

++++++++++++++++++.++++++++++++++++

62. By	63. Title	64. Date

Applies to right-angle single track crossings with vehicle speeds between 10 and 70 mph and train speeds between 10 and 120 mph. **Crossings that do not meet these criteria require special consideration.**

See:

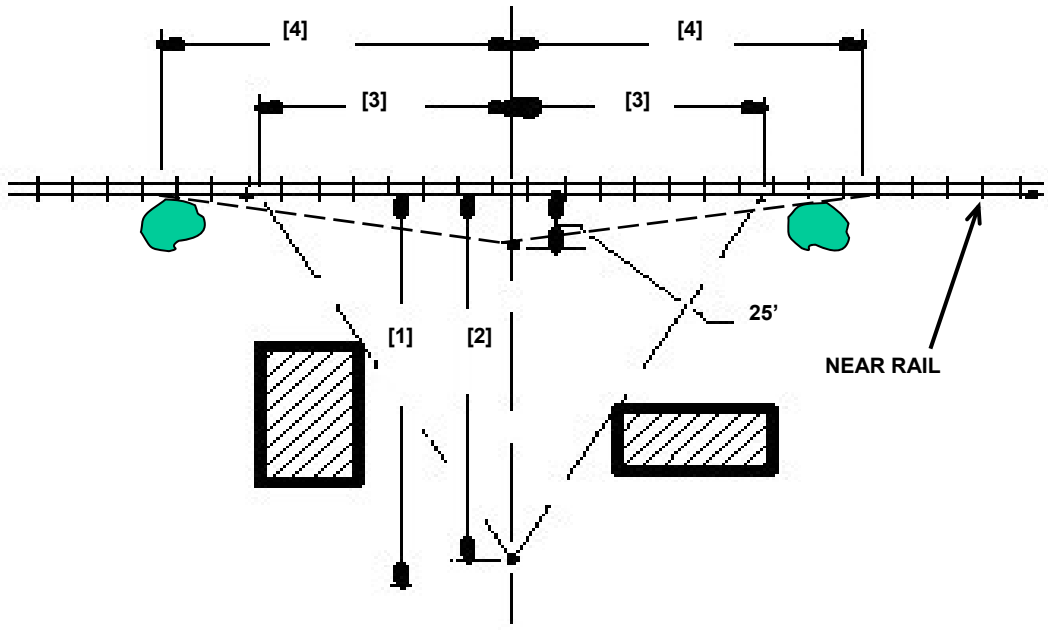
- AASHTO (2001). A Policy On Geometric Design Of Highways And Streets. 4th edition. Pages 735-743. Washington, DC.
- FHWA publication "Guidance on Traffic Control Devices at Highway-Rail Grade Crossings" for guidance on calculating clearing sight distance.

***** ***Crossings with a stop condition or where vehicle speeds are less than 10 mph are to be reviewed with the Grade Crossing Safety Engineer.***

EXAMPLE

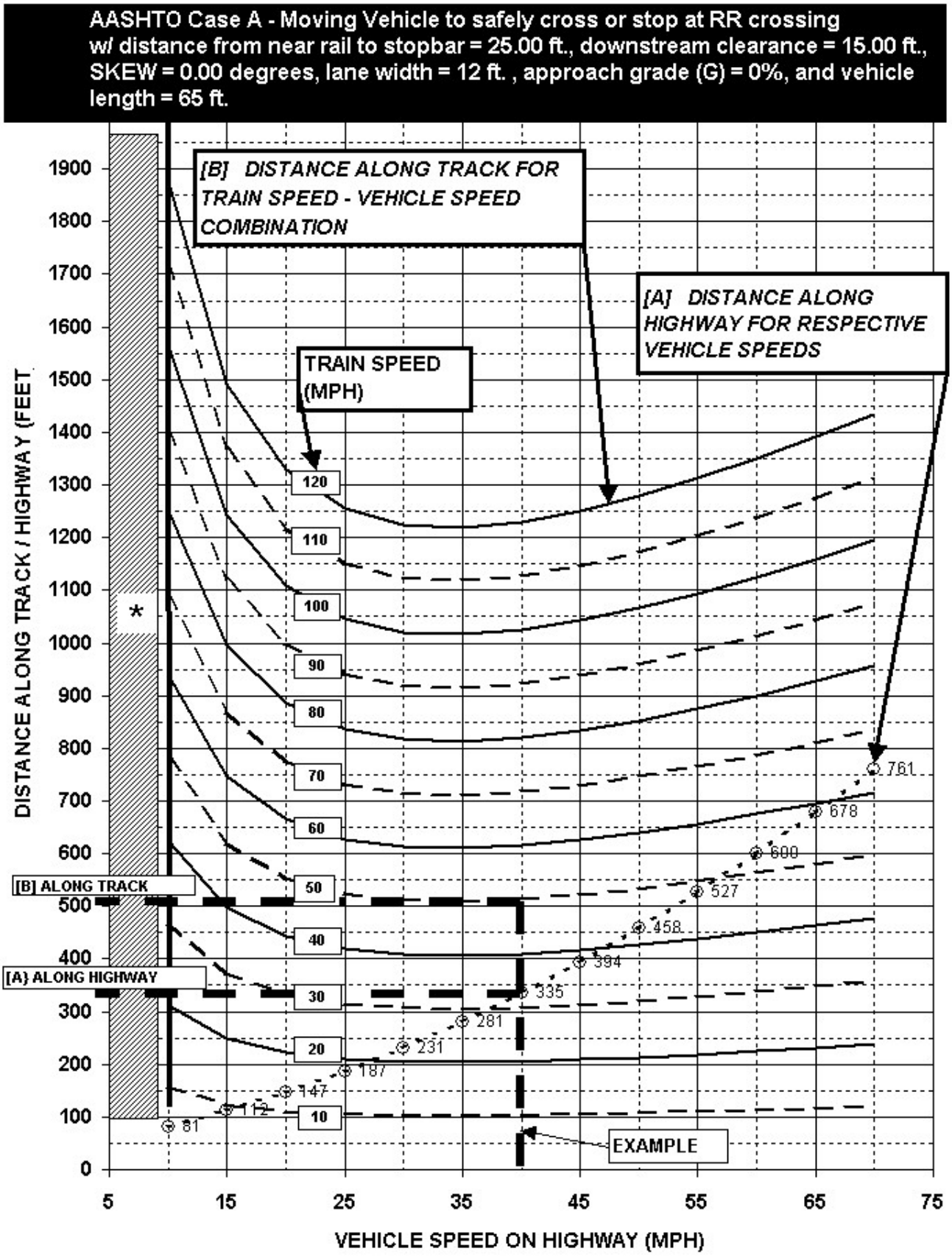
To evaluate an existing condition to determine if visual contact with a train is adequate to safely decide whether to STOP or PROCEED.
Given a 40 mph Posted Highway Speed on a 3% upgrade with an approaching 50 mph Train requires:
[A] 335' Distance Along The Highway
[B] 513' Distance Along The Track
[C] Apply Grade Adjustment Factors to both distances:

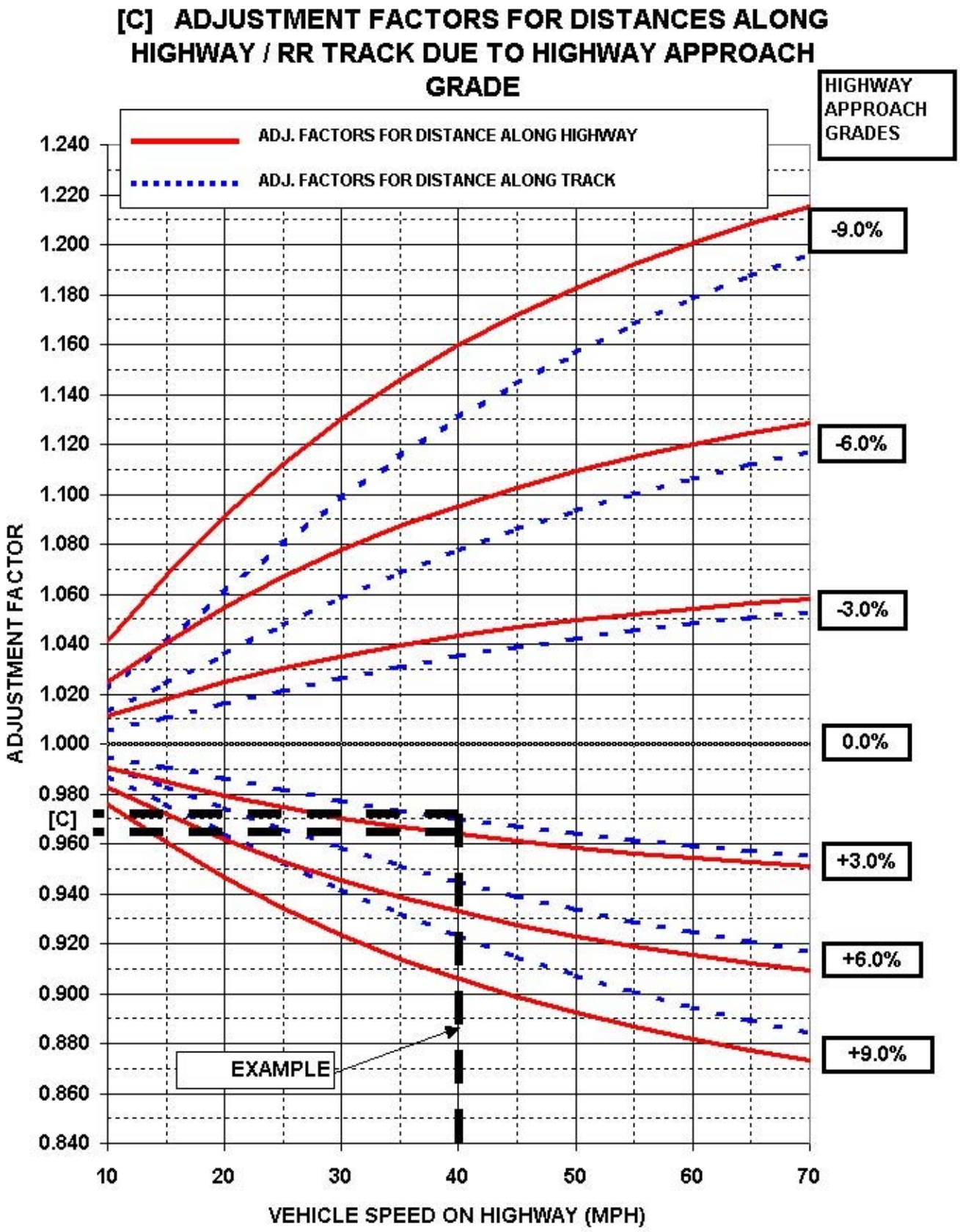
- Adjusted Distance Along The Highway = 335 x 0.965 = 323' (required [2] – see item 53)
- Adjusted Distance Along The Track = 513 x 0.97 = 498' (required [3] – see item 56)
-



[1] see item 52
[2] see item 53
[3] see items 55 and 56
[4] see items 58 and 59

ILLUSTRATION FOR ONE APPROACH


AASHTO Case A - Moving Vehicle to safely cross or stop at RR crossing
w/ distance from near rail to stopbar = 25.00 ft., downstream clearance = 15.00 ft.,
SKEW = 0.00 degrees, lane width = 12 ft. , approach grade (G) = 0%, and vehicle length = 65 ft.
[B] DISTANCE ALONG TRACK FOR TRAIN SPEED - VEHICLE SPEED COMBINATION
[A] DISTANCE ALONG HIGHWAY FOR RESPECTIVE VEHICLE SPEEDS
TRAIN SPEED (MPH)
DISTANCE ALONG TRACK / HIGHWAY (FEET
VEHICLE SPEED ON HIGHWAY (MPH)
[B] ALONG TRACK
[A} ALONG HIGHWAY
EXAMPLE
120
110
100
90
80
70
60
50
40
30
20
10
761
678
600
527
458
394
335
281
231
187
147
112
81
*


[C] ADJUSTMENT FACTORS FOR DISTANCES ALONG HIGHWAY / RR TRACK DUE TO HIGHWAY APPROACH GRADE
ADJ. FACTORS FOR DISTANCE ALONG HIGHWAY
ADJ. FACTORS FOR DISTANCE ALONG TRACK
HIGHWAY APPROACH GRADES
-9.0%
-6.0%
-3.0%
0.0%
+3.0%
+6.0%
+9.0%
ADJUSTMENT FACTOR
[C]
1.240
1.220
1.200
1.180
1.160
1.140
1.120
1.100
1.080
1.060
1.040
1.020
1.000
0.980
0.960
0.940
0.920
0.900
0.880
0.860
0.840
EXAMPLE
10
20
30
40
50
60
70
VEHICLE SPEED ON HIGHWAY (MPH)

INSTRUCTIONS

5. Enter the ID number the government agencies (DOT, local) are using for surveys, plans, etc. (preliminary engineering).

12. – 20. Under each of the two approaches, indicate if the item exists. Under the "Comment" column, enter any pertinent information such as "too low," "poor condition," etc.

13. Also include reflectorization information.

15. – 16. Also check off the lamp size and whether the lamps are incandescent (INC) or light emitting diodes (LED).

18. Also, under the "Comment" column, enter the distance from the crossing. NOTE: Crossing Illumination should be within 150 feet of the crossing before being included.

19. Also record "yes" in the approach where the flagger is normally located. Flaggers may select a favored approach due to geometrics or obstructions.

20. Also record whether bell is mechanical (M) or electronic (E).

21. – 27. Under each of the approaches, indicate if the item exists and at what distance it is located from the crossing. Measure the distance along the roadway from the near side of the near rail to the closest point of the item to the crossing.

22. NOTE: Record intersection(s) entering within the vehicle safe stopping distance (as shown on FDM 17-25 Attachment 1.1 of the nomograph), and describe the intersection traffic control under 63.

27. Also enter the posted advisory speed.

28. Enter the total number of tracks located between the Railroad Crossing Warning Devices.

31. Enter the most severe track angle in the crossing and check the appropriate box for left-hand-forward (LHF) or right-hand-forward (RHF). "Angle" is measured between the roadway centerline and the track centerline in the quadrant common to both. Boxes would be blank for a 90-degree crossing angle.

32. Enter the total number of paved lanes (driving, parking, bypass, etc.) through the crossing.

33. Enter the number of "through" driving lanes.

34. Enter the number of lanes available for parking (either marked or unmarked) through the crossing.

35. Enter the number of "exclusive use" lanes pullout (bypass, stopping, etc.) through the crossing.

36. Enter the number of sidewalks.

37. Enter the width and location of sidewalk(s) - distance from edge of pavement or face of curb to the inside edge of each sidewalk.

38. Enter the total pavement width between edges of pavement or between faces of curbs. Measure perpendicular to the roadway centerline.

39. Indicate if curb and gutter are constructed on the crossing approaches by checking the (Y) box "yes" or the (N) box "no."

40. Enter the total roadway width, between outside shoulder points, backs of curbs, or outside edges of sidewalks. Measure perpendicular to the roadway centerline.

41. Enter crossing surface type (rubber, concrete, flange and guard timber, etc.).

42. Enter the total length of crossing (width of roadway as defined in 38 as measured along the track centerline).

43. Record the assessment of the crossing surface condition (material not covering total roadway, timbers failing, etc.).

44. – 46. Record the number of scheduled trains between the indicated hours, and record the timetable speed for each type or train. Obtain the information from the operating railroad.

51. Enter the crossing approach.

52. Enter the actual distance from the crossing at which the crossing warning devices are first visible.

53. Enter the required vehicle safe stopping distance, refer to discussion in FDM 17-25 Attachment 1.1.

54. Enter the quadrant.

55. Enter the actual sight distance available at the vehicle safe stopping distance. Record obstructions in 60.

56. Enter the required sight distance, refer to discussion in FDM 17-25 Attachment 1.1.

57. Enter the quadrant at a distance 25 feet from the crossing.

58. Enter the actual sight distance at a distance of 25 feet from the crossing.

59. To be calculated after review with Grade Crossing Safety Engineer, only if necessary to evaluate required clearing sight distance [4].

60. Indicate obstructions and any comments for each quadrant.

61. Show the roadway centerline, and label the crossing angle, the quadrants, and the north arrow.

62. Identify the person to be contacted for additional information or clarification.

63. Record the contact person's title.

64. Enter the date the information was obtained.

NOTE: Train information must be secured from the operating railroad.

Process that is followed for a

Highway Improvement Project with an At Grade Railroad Component

1. District Planning Unit identifies there is a railroad in the vicinity of the project.
2. District Planning Unit informs Region Railroad Coordinator. (RRC)
3. District sends a letter notifying the railroad of the scope of the project and invites RR to the OPM.
4. RRC identifies there is RR work to be done in conjunction with a project.
5. Field review. (possibly with Railroads and Harbors Section (RHS) and the Railroad)
6. RHS develops rough cost estimate for scheduling purposes.
7. The RRC (with input from RHS and project manager) provides District Planning with the crossing ID number(s), project estimate, RR % of funding, location, schedule date and type of work. District assigns RR Project ID number(s) and initializes in FIIPS/FOS. Under "functional type" code as a construction project**. (R/R "Schedule Date" equals the 25th day of the month prior to the let date of companion highway project, I/E "Schedule Date" is left blank, "PS&E Date" should be 2 months prior to the schedule date) Public's share of funding should be similar to the funding on the associated highway project. Life Cycle 10, Status I**
8. District puts together the project submittal package and sends to RHS. (Plan sheets & RR X-ing Report)
9. If appropriate, the district gets a municipal agreement signed by the locals.
10. RRC requests of FIIPS/FOS Coordinator that the project be authorized for charges.
    A. If the request for authorization is prior to the same fiscal year as the R/R Schedule Date or the Environmental Document hasn't been approved, then request will be for railroad design costs. District requests authorization of BSHP for the total project estimate amount and sends an e-mail notification to the BFS Highway Accounting Unit that this is a railroad project with design cost authorization being requested. Environmental clearance date field is left blank if the environmental document hasn't been approved. In FIIPS under 'Project Notes' in the electronic FHWA 37 form, state "5% of project to be used for Railroad PE." The project remains in Life Cycle 10. **Status F**
    B. If the request for authorization is in the same fiscal year as the R/R Schedule Date and the Environmental Document has been approved, then request full authorization of the project. The project remains in Life Cycle 10. **Status F**
11. BSHP requests authorization of BFS. **Status G**
12. BFS Highway Accounting Unit electronically submits the FHWA-37 form. After submittal, BFS changes the FHWA Fiscal Management Information System **(FMIS)** to be 5% of the total project costs. The 5% modification is done only if following #10 'A' above.
13. FHWA electronically approves the 37 Form.
14. Project is authorized for charges by BFS. (5% of the total funding needed is obligated at this time if following #1 above) **Status H**
15. RHS drafts proposal/estimate request and sends to RRC for comments.
16. RRC and project manager/designer each reviews proposal/estimate request & sends comments to RHS.
17. RHS makes necessary changes.
18. RHS sends proposal/estimate request to railroad.
19. RHS petitions the OCR.
20. Project manager/designer prepares testimony.
21. RHS and District hold a pre-hearing conference.
22. OCR hearing is held.
23. Proposed OCR decision to RHS.
24. RHS forwards proposed decision to the RRC.
25. RRC and project manager/designer reviews proposed decision.
26. RHS comments to OCR on proposed decision within 15 days. (both CO and district comments)
27. Final OCR decision (Order) to RHS.
28. RHS forwards final decision to the RRC.
29. RHS sends revised proposal/estimate request to the railroad.
30. Railroad performs preliminary (design) engineering, generates an estimate and sends to RHS.
31. Estimate received by RHS.
32. RHS prepares agreement.
33. Agreement originals sent to railroad. RRC receives agreement copy, copies and forwards to

project manager. District FIIPS/FOS coordinator also receives a copy, checks out the project in FIIPS, updates the cost along with any other necessary information and requests BFS to obligate the remainder of the funds by delegating the project to BFS with a FIIPS draft delegation note including the environmental clearance date if it is blank in FIIPS (if following #1 above). **(= PS&E Date) Life Cycle 20**

34. BFS electronically modifies FMIS for the entire amount of project (if following #1 above).
35. May need further RR negotiations or amended agreement based on RR comments.
36. Railroad approves agreement and sends to RHS.
37. Agreement received by RHS. (Let highway project now OK to award)
38. RHS prepares DT-25 and cost share form.
39. Agreement to BFS ---- Secretary ---- Governor.
40. Agreement executed by BFS (Contract Administration Unit) and encumbers the dollars (Expenditure Accounting Section). **(=Schedule Date)**
41. Executed agreement to RHS.
42. Copy of executed agreement sent to the Railroad along with the RRC and District FIIPS/FOS Coordinator.
43. Progressive billing by RR may begin. (design and material bills may be submitted before construction with other progressive bills coming up until the final bill is submitted or 1 year after the completion certificate is sent to the railroad)
44. The District ensures that the R/R Schedule Date and the EAPS Encumbrance Date are in sync and moves the project to life cycle 40. **(Life Cycle 40)**
45. RRC provides a copy of the executed agreement to the project manager
46. Project manager ensures a copy of the executed agreement is given to the construction project manager
47. RRC reviews progressive bills and forwards to BFS for partial or complete payment. (an explanation of partial payment is required by BFS)
48. RRC issues written start notice to Railroad and copies RHS. If there was an OCR Order then also send a copy to the OCR.
50. Construction Project Manager arranges with Railroad to attend pre-construction meeting.
51. Railroad notifies RRC of intent to start
52. Construction by RR and inspection by district.
53. Railroad notifies RRC of the completion date. (If the railroad didn't notify the RRC of the completion date and a field inspection of the project indicates that the project is complete, then go ahead to the next step)
54. District does field inspection for acceptance.
55. DRC fills out final acceptance letter and completion certificate. The original gets sent to the railroad and copies get sent to RHS and BFS. If there was an OCR order then also send a copy to the OCR.
56. Railroad is given three months to dispute State's final acceptance of the project otherwise use the completion date from the final acceptance letter to start the one year for the railroad to send the final bill to the RRC.
57. Railroad needs to submit final bill to the RRC within one year of the State's final acceptance of the project, otherwise the RRC can close the project.
58. RRC reviews final bill and resolves with the railroad any disputed items.
59. RRC forwards undisputed final bill to BFS for payment along with advising BFS to disencumber any remaining project dollars and close the project to charging.
60. BFS disencumbers any remaining project dollars and close project to charging. **Life Cycle 50**
61. One month after sending the final bill to BFS, RRC checks EAPS to see if the final bill has been processed and marked as final and to see if the remaining funds have been released. Also check FIIPS to see if the project is closed except for journal voucher.

Process that is followed for a
WisDOT Railroad Safety Project
(RR Force Work Component)

Project Identification and Approval

New Installation Projects (Passive to Active)

1. Local unit of government or the region identifies candidate new installation projects.
2. The Railroads and Harbors Section (RHS) requests that the Region Railroad Coordinator (RRC) check for any upcoming projects that could impact the railroad safety project.
3. Region field reviews (preferably with RHS and railroad (RR)) and conducts an inventory to determine any conflicts or unique geometric considerations that will need to be incorporated in the design.
4. Region assigns RR project ID number based on guidance found on the following link https://iisgtwyp.wi.gov/ffm/pmm/05/05-05-10e.pdf, **Life Cycle 00.**
5. Region sends submittal package (CDR, plan sheets if available, RR Crossing Report, map & digital photos) to RHS (Railroad Engineering and Safety Unit) and the Bureau of State Highway Programs (BSHP) Highway Safety Improvement Program (HSIP) manager.
6. WisDOT Rail Projects Review Committee reviews the application.
7. BSHP Highway Safety Improvement Program manager sends approval letter to region with FIIPS loading instructions.

Replacing Obsolete Equipment Projects

a) RHS solicits replacement projects from railroads that they would be willing to cost share at 50 percent for consideration to include in the WisDOT Rail-Highway Crossing Safety Program.
b) Railroads respond to solicitation with priority lists of candidate projects to replace obsolete equipment.
c) RHS requests that the RRC check for any upcoming projects that could impact the railroad safety project.
d) Region field reviews (preferably with RHS and railroad) and conducts an inventory to determine any conflicts or unique geometric considerations that will need to be incorporated in the design.
e) WisDOT Rail Projects Review Committee reviews the project lists and selects projects to be programmed.
f) BSHP Highway Safety Improvement Program manager sends approval letter to region with FIIPS loading instructions. (proceed to step 8).

From this point, the process steps are the same for new installation and replacing obsolete equipment projects.

Project Setup and Preliminary Engineering

8. Based on the FIIPS loading instructions provided by BSHP and input from the RRC, RHS, and the project initiator, the Region FIIPS Coordinator completes the project setup and initializes it in FIIPS. Under “functional type” code as a construction project. (Schedule Date equals 6-25 of its FY funding, PS&E Date should be 3-25 of its FY funding) Review Control Code A, **Life Cycle 10**.
9. The region identifies and ensures that projects in an MPO are included in the MPO’s TIP. When the TIP becomes available, the Region FIIPS Coordinator should enter the TIP number into FIIPS. The region should respond to both BSHP and the RHS Grade Crossing Safety Engineer with the TIP number.
10. RHS sets scoping meeting with the Bureau of Technical Services - Environmental Process and Documentation Section (BTS-EPDS) for the next fiscal year to discuss the project summary and determine appropriate next steps for any complex WisDOT Safety projects regarding the creation of

environmental documentation.

11. RHS with support from BTS-EPDS identifies potential project impacts for Categorical Exclusion Checklist (CEC):
    a. Archaeology/Historic sites
    b. Section 4(f) of NHPA
    c. Section 6(f)
    d. Potential wetland/waterway impacts
    e. Hazmat/asbestos/lead paint
    f. Agricultural land/drainage districts
    g. Potential controversy
    h. If a Hazardous Materials Investigation will be required.

12. If there is local participation in the project funding, the region gets a state/municipal agreement (SMA) signed by the locals. RHS requests the region work with the local unit of government to produce the SMA.

13. RHS Grade Crossing Safety Engineer requests full (100%) authorization of the Region FIIPS Coordinator.

14. Region FIIPS Coordinator:
    a. Makes any necessary FIIPS revisions from the e-mail provided by the RHS Grade Crossing Safety Engineer.
    b. Adds a FIIPS draft delegation note stating that the FIIPS estimate was provided with the FIIPS loading instructions from BSHP.
    c. Enters the correct environmental document type and impact date in FIIPS.
    d. Sets the All Work Complete (AWC) date at 36 months after December 31st of the schedule date year of the railroad project. *For example, if the schedule date is 6/25/2022, the All Work Complete Date will be December 31, 2025.*
    e. Moves the project to Review Control Code F.
    f. Requests authorization from the Program Finance Section (PFS) of BSHP. For projects with only federal/state funding (no local or railroad participation) Advance Construction (AC) will be used for the federal share of the costs.
    g. Makes sure the project remains at FIIPS Life Cycle 10.

15. PFS staff reviews project funding for any possible changes that may be needed, moves the project to Review Control Code G, then requests authorization of the Financial Operations Section (FOS) of the Division of Business Management (DBM).

16. DBM FOS electronically submits the FHWA-37 form requesting obligation authority for the entire amount of the project (PE and construction costs).

17. FHWA electronically approves the FHWA-37 form obligation authority for the entire amount of the project (PE and construction costs).

18. Project is authorized for charges by DBM FOS, and they move the project to Review Control H.

Environmental Documentation

19. RHS informs BTS-EPDS when commencing design.

20. RHS sends Tribal Notification Letters to appropriate tribes for the project county.

21. RHS prepares the DT1030 document and sends to WisDOT Cultural Resources with project location map for the Section 106 screening process.

    a. If not on screening list, BTS-EPDS works with RHS to make screening request to WisDOT Cultural Resources Team (CRT). Complete this as early as possible if inclusion on screening list is declined.

22. RHS prepares WDNR Project Coordination for an Initial Review Request and sends it to the appropriate WDNR Liaison for the project county.

a. Allow maximum of 45 days for response. If no response in that time frame, contact BTS-EPSD staff.

23. RHS receives WDNR Initial Review, considers issues with design, and coordinates with BTS-EPDS/ WDNR on any questions or issues that arise.

24. RHS begins coordination with other state/federal agencies, as appropriate.

    a. U.S. Fish and Wildlife Service (USFWS) for evaluation of habitat and threatened/endangered species at the crossing project.

25. RHS completes Section 106 (if not on screening list for Archaeology and History).

26. RHS finalizes the Environmental Documentation.

    a. If CEC, reviewed and signed by BTS-EPDS and WisDOT Project Manager.

    b. If an environmental review (ER), reviewed by:

        i. WisDOT Project Manager, Supervisor, and Region Environmental Coordinator (REC).

        ii. FHWA Engineer when project has federal involvement.

        iii. WisDOT BTS, ONLY on projects with Section 4(f)/6(f) issues or no federal involvement.

    c. If an environmental assessment (EA), reviewed and approved in the same fashion as an ER would be.

27. If there are wetland impacts with the project, RHS applies for:

    a. Section 404 Permit to U.S. Army Corps of Engineers.

    b. WDNR Final Correspondence/Section 401 Water Quality Certification (WQC).

    c. These need to be completed before construction, but the CEC can be signed by BTS-EPDS and project manager before applications are approved.

28. If no wetland impacts, RHS requests WDNR Final Concurrence/WQC (needed for all projects).

29. If required under the commitments laid out by WisDOT Cultural Resources, RHS requests authorization to work within the boundaries of a burial site within one year of construction.

Obtaining Railroad Force Work Agreement

30. RHS petitions OCR, if necessary, because of potential alterations. If an OCR petition is not needed, skip to step 38.

    a. If the project is going from passive to active warning devices, an OCR petition is required.

    b. If the project is an obsolete equipment upgrade, review any previous OCR orders that exist.

        i. If the previous OCR order differs from what is proposed, an OCR petition is required.

        ii. If the crossing is pre-empted, an OCR petition is required to ensure annual inspections and exemption requirements are included.

31. If OCR determines a hearing is necessary, RHS Grade Crossing Safety Engineer prepares testimony. If hearing is not being held, skip to step 34.

32. RHS and region hold a pre-hearing conference.

33. OCR hearing.

34. OCR final decision is published to docket database.

35. RHS and RRC reviews final decision.

36. RHS comments to OCR on final decision through an uploaded correspondence to the docket database (both central office and region comments).

37. If comments were submitted, OCR issues amended final decision (Order). Otherwise, initial final decision remains. https://apps.ocr.wi.gov/APPS/OCRapps/docket/search.aspx

38. RHS drafts proposal/estimate request. After seeking concurrence from the RRC, RHS sends the proposal/estimate request to the railroad and copies the RRC.

39. Railroad performs preliminary (design) engineering, generates an estimate, and sends to RHS.

40. Estimate reviewed and approved by RHS. The estimate may need further RR negotiations before development of the proposed force work agreement.

41. RHS prepares force work agreement. After seeking concurrence from the RRC, RHS sends the proposed agreement to the railroad and RRC.

42. Railroad approves and signs agreement, then sends to RHS.

43. RHS prepares DT-25 and sends, with signed railroad agreement, to the Audit & Contract Administration Section in the Bureau of Financial Management (BFM) (email: DOTCAU@dot.wi.gov). If signed railroad agreement utilizes docusign, send DT-25 separately.

44. The Audit and Contract Administration Section executes the agreement and DT-25. They send the fully executed agreement and DT-25 to RHS.

45. RHS Grade Crossing Safety Engineer verifies the schedule date, estimate amount, delivery amount, Review Control status, federal authorization amount, funding, All Work Complete date, and the environmental document type in FIIPS, and provides a request for any updates to the Region FIIPS Coordinator. Include fully executed agreement with request.

46. Region FIIPS Coordinator:
    a. Updates the estimate amount, schedule date and/or funding to reflect the information provided in the railroad agreement.
    b. Revises the FIIPS environmental document type and impact date, if necessary.
    c. Reviews All Work Complete (AWC) date set at 36 months after December 31st of the schedule date. *For example, if the schedule date is 6/25/2022, the All Work Complete Date will be December 31, 2025.* RHS Grade Crossing Safety Engineer will request an extension modification, if necessary.
        i. AWC extension has the potential to threaten encumbrance and authorization timeframes. The AWC extension can be completed after the turn of the fiscal year, as necessary.
    d. Moves project to **Life Cycle 20**.
    e. Delegates the project to PFS for review and provides them with a copy of the fully executed agreement.

47. PFS staff reviews funding for any required changes and converts the AC funding to the established cost share on projects that have been AC'd. Projects will then be delegated to the FOS Region Accountant (Theresa Schult), with a copy of the fully executed agreement.

48. The FOS Region Accountant may need to request a federal modification based on a new estimate in the railroad agreement.

49. When FIIPS is verified and fully updated, RHS Grade Crossing Safety Engineer requests encumbrance to the FOS Expenditure Accounting Unit (email: DOTExpenditureAccounting@dot.wi.gov). The request should include the Request to Encumber Railroad Project form and the fully executed agreement. Note, encumbrance does not include delivery. In E-mail, request FOS confirmation of encumbrance.

50. FOS Expenditure Accounting Unit encumbers the railroad agreement.

51. RHS Grade Crossing Safety Engineer checks to verify that the encumbrance date (creation of the Purchase Orders, found in Peoplesoft) either precedes or matches FIIPS schedule date.

52. After encumbrance is ensured, the Region FIIPS Coordinator moves the railroad project to **Life Cycle 40** and switches the encumbered flag to Yes in FIIPS.

53. RHS Grade Crossing Safety Engineer sends RRC fully executed agreement.

54. RRC verifies FIIPS and encumbrance. Once verified, RRC sends E-mail with fully executed agreement, and start notice to the railroad and copies RHS.

Project Construction and Billing (Region project management responsibilities start here)

55. RRC is responsible for performing all construction project management duties, including bringing project stakeholders together for project construction work.

56. Railroad notifies RRC of intent to start.

57. Progressive billing by RR may begin. (design and material bills may be submitted before construction with other progressive bills following until the final bill is submitted or one year after the final acceptance E-mail is sent to the railroad).

58. RRC reviews progressive bills and forwards to FOS for partial or complete payment. (An explanation of partial payment is required by FOS).

59. Construction by RR.

60. Railroad notifies RRC of the completion date. (If the railroad didn't notify the RRC of the completion date and a final invoice is submitted, then proceed to the next step).

61. Region does field inspection for acceptance.

62. RRC fills out final acceptance E-mail and sends to the railroad and copies RHS and FOS.

63. Railroad is given three months to dispute state's final acceptance of the project. Otherwise use the completion date from the final acceptance E-mail to start the one year for the railroad to send the final bill to the RRC.

64. Railroad needs to submit final bill to the RRC within one year of the state's final acceptance of the project, otherwise the RRC can close the project.

65. RRC reviews final bill and resolves with the railroad any disputed items.

66. RRC forwards undisputed final bill to FOS for payment along with advising FOS to disencumber any remaining project dollars and close the project to charging.

67. FOS disencumbers any remaining project dollars and closes project to charging. **Life Cycle 50.**

68. One month after sending the final bill to FOS, RRC checks PeopleSoft to see if the final bill has been processed and marked as final and to see if the remaining funds have been released. Also check FIIPS to see if the project is closed except for JV. More information on closing contracts and projects can be found in PMM 06-10-55e.pdf (wi.gov)

Process that is followed for an
OCR Railroad Safety Project
(RR Force Work Component)

Project Identification and Approval

1. Office of the Commissioner of Railroads (OCR) approves project to be included in OCR Safety Program and sends E-mail notification to Railroads and Harbors Section (RHS) and Bureau of State Highway Programs (BSHP) Highway Safety Improvement Program (HSIP) manager.
2. Candidate projects are put on master OCR projects list by RHS and BSHP.
3. BSHP sends the master list to the region planning section in August of each year so the region can identify and ensure that projects in an MPO are included in the MPO's TIP.
4. OCR performs a field review (Investigation).
5. OCR conducts hearing or makes a determination on the adequacy of warning devices.
6. OCR issues proposed decision, if a hearing was held.
7. OCR issues final decision (Order). https://apps.ocr.wi.gov/APPS/OCRapps/docket/search.aspx

Project Setup and Preliminary Engineering

8. RHS assigns railroad (RR) project ID number based on guidance found on the bottom of page 4 of the following link https://iisgtwyp.wi.gov/ffm/pmm/05/05-05-10e.pdf, creates a project scoping estimate based on the work outlined in the OCR final decision (Order), and then works with the RHS FIIPS coordinator to initialize the RR project in FIIPS (Schedule Date equals 6-25 of its FY funding, PS&E Date should be 3-25 of its FY funding) Review Control Code A, **Life Cycle 10**.
9. When the TIP becomes available, the Region FIIPS Coordinator should enter the TIP number into FIIPS. The region should respond to both BSHP and the RHS Grade Crossing Safety Engineer with the TIP number.
10. RHS requests that Region Railroad Coordinator (RRC) check for any upcoming projects that could impact the OCR project.
11. RRC contacts locals about upcoming OCR project.
12. RHS sets scoping meeting with the Bureau of Technical Services - Environmental Process and Documentation Section (BTS-EPDS) for the next fiscal year to discuss the project summary and determine appropriate next steps for any complex OCR projects regarding the creation of environmental documentation.
13. RHS with support from BTS-EPDS identifies potential project impacts for Categorical Exclusion Checklist (CEC):
    a. Archaeology/Historic sites
    b. Section 4(f) of NHPA
    c. Section 6(f)
    d. Potential wetland/waterway impacts
    e. Hazmat/asbestos/lead paint
    f. Agricultural land/drainage districts
    g. Potential controversy
    h. If a Hazardous Materials Investigation will be required.
14. If the Commissioner has determined that there is local participation in the project funding, the region gets a state/municipal agreement (SMA) signed by the locals. RHS requests the region work with the local unit of government to produce the SMA.

15. RHS Grade Crossing Safety Engineer requests full (100%) authorization of the RHS FIIPS Coordinator.

16. RHS FIIPS Coordinator:
    a. Makes any necessary FIIPS revisions from the e-mail provided by the RHS Grade Crossing Safety Engineer.
    b. Adds a FIIPS draft delegation note stating that the FIIPS estimate was provided by the RHS Grade Crossing Safety Engineer.
    c. Enters the correct environmental document type and impact date in FIIPS.
    d. Sets the All Work Complete (AWC) date at 36 months after December 31st of the OCR order completion date year. *For example, if the OCR order date is 6/25/2022, the All Work Complete Date will be December 31, 2025.*
    e. Moves the project to Review Control Code F.
    f. Requests authorization from the Program Finance Section (PFS) of BSHP. For projects with only federal/state funding (no local or railroad participation) Advance Construction (AC) will be used for the federal share of the costs.
    g. Makes sure the project remains at FIIPS Life Cycle 10.

17. PFS staff reviews project funding for any possible changes that may be needed, moves the project to Review Control Code G, then requests authorization of the Financial Operations Section (FOS) of the Division of Business Management (DBM).

~~18.~~ DBM FOS electronically submits the FHWA-37 form requesting obligation authority for the entire amount of the project (PE and construction costs).

19. FHWA electronically approves the FHWA-37 form obligation authority for the entire amount of the project (PE and construction costs).

20. Project is authorized for charges by DBM FOS, and they move the project to Review Control Code H.

Environmental Documentation

21. RHS informs BTS-EPDS when commencing design.

22. RHS sends Tribal Notification Letters to appropriate tribes for the project county.

23. RHS prepares the DT1030 document and sends to WisDOT Cultural Resources with project location map for the Section 106 screening process.

    a. If not on screening list, BTS-EPDS works with RHS to make screening request to WisDOT Cultural Resources Team (CRT). Complete this as early as possible if inclusion on screening list is declined.

24. RHS prepares WDNR Project Coordination for an Initial Review Request and sends it to the appropriate WDNR Liaison for the project county.

    a. Allow maximum of 45 days for response. If no response in that time frame, contact BTS-EPSD staff.

25. RHS receives WDNR Initial Review, considers issues with design, and coordinates with BTS-EPDS/ WDNR on any questions or issues that arise.

26. RHS begins coordination with other state/federal agencies, as appropriate.

    a. U.S. Fish and Wildlife Service (USFWS) for evaluation of habitat and threatened/endangered species at the crossing project.

27. RHS completes Section 106 (if not on screening list for Archaeology and History).

28. RHS finalizes the Environmental Documentation.

    a. If CEC, reviewed and signed by BTS-EPDS and WisDOT Project Manager.

    b. If an environmental review (ER), reviewed by:

        i. WisDOT Project Manager, Supervisor, and Region Environmental Coordinator (REC)

ii. FHWA Engineer when project has federal involvement

iii. WisDOT BTS, ONLY on projects with Section 4(f)/6(f) issues or no federal involvement.

c. If an environmental assessment (EA), reviewed and approved in the same fashion as an ER would be.

29. If there are wetland impacts with the project, RHS applies for:

    a. Section 404 Permit to U.S. Army Corps of Engineers

    b. WDNR Final Correspondence/Section 401 Water Quality Certification (WQC)

    c. These need to be completed before construction but the CEC can be signed by BTS-EPDS and project manager before applications are approved.

30. If no wetland impacts, RHS requests WDNR Final Concurrence/WQC (needed for all projects).

31. If required under the commitments laid out by WisDOT Cultural Resources, RHS requests authorization to work within the boundaries of a burial site within one year of construction.

Obtaining Railroad Force Work Agreement

32. RHS and/or region conducts field review and inventory to determine any conflicts or unique geometric considerations that will need to be incorporated in the design.

33. RHS drafts proposal/estimate request. After seeking concurrence from the RRC, RHS sends the proposal/estimate request to the railroad and copies the RRC and submits it to the OCR docket.

34. Railroad performs preliminary (design) engineering, generates an estimate and sends to RHS.

35. Estimate reviewed and approved by RHS. The estimate may need further RR negotiations before development of the proposed force work agreement.

36. RHS prepares force work agreement. After seeking concurrence from the RRC, RHS sends the proposed agreement to the railroad and RRC.

37. Railroad approves and signs agreement, then sends to RHS

38. RHS prepares DT-25 and sends, with signed railroad agreement, to the Audit & Contract Administration Section in the Bureau of Financial Management (BFM) (email: DOTCAU@dot.wi.gov). If signed railroad agreement utilizes docusign, send DT-25 separately.

39. The Audit and Contract Administration Section executes the agreement and DT-25. They send the fully executed agreement and DT-25 to RHS.

~~40.~~ RHS Grade Crossing Safety Engineer verifies the schedule date, estimate amount, delivery amount, Review Control status, federal authorization amount, funding, All Work Complete date, and the environmental document type in FIIPS, and provides a request for any updates to the RHS FIIPS Coordinator. Include fully executed agreement with request.

~~41.~~ RHS FIIPS Coordinator:

a. Updates the estimate amount, schedule date and/or funding to reflect the information provided in the railroad agreement.
b. Sets a limit on federal funding equal to the new federal amount (with delivery) on the priority 1 line. Establishes a new priority 2 line with zero dollars funded with 100 percent state funds. (Add a FIIPS funding note that this update is per RHS policy).
c. Revises the FIIPS environmental document type and impact date, if necessary.
d. Reviews All Work Complete (AWC) date set at 36 months after December 31st of the OCR order completion date year. *For example, if the OCR order date is 6/25/2022, the All Work Complete Date will be December 31, 2025.* RHS Grade Crossing Safety Engineer will request an extension modification, if necessary.
    i. AWC extension has the potential to threaten encumbrance and authorization timeframes. The AWC extension can be completed after the turn of the fiscal year, as necessary.

e. Moves project to **Life Cycle 20**.
f. Delegates the project to PFS for review and provides them with a copy of the fully executed agreement.

~~42.~~ PFS staff reviews funding for any required changes and converts the AC funding to the established cost share on projects that have been AC'd. Projects will then be delegated to the FOS Region Accountant (Theresa Schult), with a copy of the fully executed agreement.

~~43.~~ The FOS Region Accountant may need to request a federal modification based on a new estimate in the railroad agreement.

44. When FIIPS is verified and fully updated, RHS Grade Crossing Safety Engineer requests encumbrance to FOS Expenditure Accounting Unit (email: DOTExpenditureAccounting@dot.wi.gov). The request should include the Request to Encumber Railroad Project form and the fully executed agreement. Note, encumbrance does not include delivery. In E-mail, request FOS confirmation of encumbrance.

45. FOS Expenditure Accounting Unit encumbers the railroad agreement.

~~46.~~ RHS Grade Crossing Safety Engineer checks to verify that the encumbrance date (creation of the Purchase Orders, found in Peoplesoft) either precedes or matches FIIPS schedule date.

47. After encumbrance is ensured, the RHS FIIPS Coordinator moves the railroad project to **Life Cycle 40** and switches the encumbered flag to Yes in FIIPS.

48. RHS Grade Crossing Safety Engineer sends RRC fully executed agreement.

49. RRC verifies FIIPS and encumbrance. Once verified, RRC sends E-mail with fully executed agreement, and start notice to the railroad and copies RHS.

Project Construction and Billing (Region project management responsibilities start here)

50. RRC is responsible for performing all construction project management duties, including bringing project stakeholders together for project construction work.

51. Railroad notifies RRC of intent to start.

52. Progressive billing by RR may begin. (design and material bills may be submitted before construction, with other progressive bills following until the final bill is submitted or one year after the final acceptance E-mail is sent to the railroad).

53. RRC reviews progressive bills and forwards to FOS for partial or complete payment. (An explanation of partial payment is required by FOS).

54. Construction by RR.

55. Railroad notifies RRC of the completion date. (If the railroad didn't notify the RRC of the completion date and a final invoice is submitted, then proceed to the next step)

56. Region does field inspection for acceptance.

57. RRC fills out final acceptance E-mail and sends to the railroad and copies RHS and FOS.

58. Railroad is given three months to dispute state's final acceptance of the project. Otherwise use the completion date from the final acceptance E-mail to start the one year for the railroad to send the final bill to the RRC.

59. Railroad needs to submit final bill to the RRC within one year of the state's final acceptance of the project, otherwise the RRC can close the project.

60. RRC reviews final bill and resolves with the railroad any disputed items.

61. If the RRC determines that there is an overrun above the agreement amount, the RRC needs to instruct the Region FIIPS Coordinator to update the funding total on the FIIPS Funding Screen to the new total cost of the project.

62. RRC forwards undisputed final bill to FOS for payment along with advising FOS to disencumber any remaining project dollars and close the project to charging.

63. FOS disencumbers any remaining project dollars and closes project to charging. **Life Cycle 50**

64. One month after sending the final bill to FOS, RRC checks PeopleSoft to see if the final bill has been processed and marked as final, and to see if the remaining funds have been released. Also, check FIIPS to see if the project is closed except for JV. More information on closing contracts and projects can be found in PMM 06-10-55e.pdf (wi.gov)

FDM 17-30-1 General - Criteria

February 10, 2006

1.1 Background

In Wisconsin, railroads are responsible for the maintenance of all public railroad-highway crossing surfaces on both local and state trunk roadways, and for keeping these crossing surfaces in a good and safe condition for public travel (s. 86.12 and s. 86.13 Stats.)

While such work may be eligible for safety funding, crossing surface projects do not fare favorably in the benefit / cost analysis compared to warning device projects. Therefore, WisDOT policy is to direct safety funding towards new and upgraded active warning devices at crossings, rather than towards smooth rides for driver comfort. Thus projects for the upgrading, improvement, or replacement of crossing surfaces are usually accomplished as a part of highway improvement projects and are not a priority for use of federal safety funds.

1.2 Maintenance / Repair / Refurbishing

The railroad responsibility for the maintenance and repair of crossing surfaces includes such work as filling potholes, tightening crossing components, removing / replacing defective or worn panels, patching, etc.

Although railroads have the ultimate responsibility for grade crossing maintenance, the state provides a limited amount of funds for the “repair” of crossings on the state trunk system as an incentive for railroads to focus their maintenance efforts on the crossings on these higher function, higher speed routes. State crossing “repair” funds may be available for up to 85% of the costs to work on crossing surfaces on the STH system, not including connecting highways. (See FDM 17-30-15).

1.3 Replacement

This is replacing a crossing surface with a new surface but not upgrading to concrete panels or rubber if the crossing did not have it before.

1.4 Improvement or Upgrade

This includes the upgrading of a crossing surface from, for example, timber and asphalt to rubber or concrete panels. Such projects are eligible for Safety funds but as noted earlier, safety funds are directed to warning device projects. If such upgrades were within the limits of a highway improvement project, any crossing surface upgrade would be funded as a part of the improvement project, with highway improvement funds.

1.5 Alteration of a Crossing

Case law has defined an “alteration” as a significant change or shift or widening of an existing crossing as a result of highway construction. Such alterations are created by highway improvement projects and the crossing work is funded, at least in part, as a part of the highway improvement project of which it is a part. See FDM 17-1-1 for the full definition of an “Alteration.”

1.6 Roadway Improvement (Reconstruction and 3R) Projects

When a railroad crossing is within the limits of a roadway reconstruction project, crossing work that is needed, including work on the surface of the crossing, is accomplished with the roadway improvement and is funded as part of that larger project. More specifically, WisDOT policy is to pay for 85% of the cost of the existing crossing width on state trunk and connecting highways (0% on local, i.e. non-state-trunk roads), plus 100% of the cost of any widening. The work could be a replacement, an upgrade, or an alteration - whatever the project design has determined to be appropriate.

If no work is anticipated at a crossing as a part of a highway improvement project, notification of that “no work” decision is given to the railroad in accordance with s. 86:13 Stats.

If the railroad decides to do work at that crossing for reasons of its own, they are encouraged to coordinate the work with the highway work to minimize disruptions to both highway and rail traffic.

If WisDOT has determined that crossing surface work is needed at a crossing, the railroad is informed. Any needed crossing surface work within the limits of a highway improvement project should be included in state- or federal-aid projects.

1.7 Roadway Maintenance (SHRM and Federal Preventive Maintenance) Projects

Roadway resurfacing typically has minimal impact on railroad crossings. If no work is anticipated at the crossing based on an evaluation of crossing condition during project development, WisDOT is required to send the railroad a notice per s. 84:13(2) Stats. The intent is to ensure high quality, and timely accomplishment of needed crossing work.

1.8 Safety Projects

As noted above, crossing smoothness, ride quality or driver comfort are not priorities for expenditure of WisDOT safety funds - priority is instead given to grade crossing warning device projects.

FDM 17-30-5 Highway Improvement Programs

June 19, 2013

5.1 General

Upgrading or refurbishing of railroad crossing surfaces in conjunction with adjacent highway improvements is generally advisable. The advantages of upgrading railroad crossings with adjacent highway improvements include fewer interruptions to highway traffic, the construction work is coordinated, and the overall highway is improved within the construction limits.

Crossing work on state trunk highways and connecting streets is to be funded similar to the adjacent project, in which case the affected railroad may be requested to share in the cost of the crossing work in a manner similar to that provided in 86.13(5)W.S. Crossing improvements as a part of improvement projects on local roads are the responsibility of the affected railroad, but since such projects usually involve roadway and crossing widening, the cost is generally shared with the public based on the percentage of existing total width versus the percentage of new total width [S86.12 and 86.13(1)W.S.]

See FDM 17-30 Attachment 15.1 for a summary of activities for crossing surface improvements within highway improvement programs.

5.2 Unique Agreement Provisions

When the need of a railroad project as a part of a highway improvement project is identified, the region or the region on behalf of the consultant, sets up the project in FIIPS. See the FIIPS Manual.

Negotiations with the railroad are initiated by the Railroads and Harbors Section (RHS). An agreement (or contract) is required. See Attachment 5.1 for a sample agreement and FDM 17-20-10 and FDM 17-20-15 for procedures.

If there is shared responsibility for the required crossing work, an equitable percentage of the total project costs for the work by the railroad are to be agreed upon for purposes of contract administration.

If the Agreement is acceptable to the railroad (and the interested local government), the contract development process prescribed in TAM 005-1 is followed to conclusion.

LIST OF ATTACHMENTS

Attachment 5.1	Sample Agreement for Highway-Railroad Grade Crossing Surface - Highway Improvement Program

FDM 17-30-10 WisDOT Safety Project

June 19, 2013

10.1 Background

While one half of the Federal Aid Safety Funds are restricted to use on warning devices, the remaining portion is available for the elimination of hazards at railroad crossings which can include separation projects and crossing surface improvement projects, projects to consolidate or close crossings, among others. This “Elimination of Hazards” portion of the federal safety funds are totally within the WisDOT safety program and none are allocated to the OCR Safety Program.

As a practical matter, WisDOT generally does not give high priority to crossing surface improvement projects on an isolated, stand-alone basis in the WisDOT Safety Program. Instead, WisDOT focuses its resources on eliminating other hazards, including separation structures, and leaves surface repairs to other programs and to the railroads, who have ultimate responsibility. It should be noted that federal safety funds can be used only to upgrade the surface type, not to repair crossing surfaces in-kind. See FDM 17-30-15 for information on the STH Crossing Repair Program.

For crossing surface projects in approved programs, it is necessary for the region to prepare the Railroad

Project Submittal Package (See FDM 17-20-10). RHS will then prepare a proposal letter to the railroad, and later will draft an agreement covering the work.

Attachment 10.1 is an example of an agreement covering surface improvement work by the railroad.

LIST OF ATTACHMENTS

Attachment 10.1	Sample Agreement for Highway-Railroad Grade Crossing Surface - WisDOT Safety Project

FDM 17-30-15 STH Surface Repair Program

March 21, 2007

15.1 Introduction

Projects to repair and improve railroad crossing surfaces on the state trunk highway system are eligible for inclusion in the state-funded program under s. 86.13(5) stats. The objective of this program is to help provide smoother riding surfaces over crossings on state trunk highways, which generally carry larger volumes of higher speed traffic than do other roadways. Crossings on connecting highways are not eligible for funding under this program.

This program usually provides 85% reimbursement of eligible crossing surface costs. The railroad is required to pay not less than 15%. Region design and construction engineering costs and costs for bypass roads, signing and detours are paid for under separate project I.D.s as explained at the end of this procedure.

Crossing work is to be performed by the railroad using its own forces, an approved continuing contractor, or a competitively procured contractor. Projects are selected by the WisDOT on a priority basis with input and cooperation of local government officials and railroad personnel.

Railroad costs are not eligible for reimbursement by the state unless WisDOT has approved the railroad's work plan and estimate prior to construction, the work is included and authorized in the crossing repair program, and a force work agreement has been executed. If funds are not available to accomplish crossing repairs under 86.13(5), other funds may be used if available. If funding assistance is not available, the railroad must perform the work with its own funds.

15.2 Process

Attachment 15.1 summarizes the process to follow for a Railroad Crossing Repair Fund project. Attachment 15.2 is a sample agreement with the railroad for such a project.

15.3 Limits of Cost Participation

15.3.1 Labor or material costs eligible for reimbursement:

1. Labor and employee direct fringe benefits to remove surface materials, track and soil from the crossing area.
2. All new or used materials installed and placed in the crossing area that are required for the crossing, less credits for similar materials recovered.
3. Labor, including employee direct fringe benefits, and company equipment or rented equipment used for repair of the crossing.
4. Traffic control measures including temporary signing, detour expense and cost for flagging.
5. Betterment through the use of welded rail, drains, surfacing panels, geotextile, or other materials recognized and accepted by the Railroads and Harbors Section as necessary for long term longevity and durability at the crossing.

15.3.2 Labor or material costs <u>not</u> eligible for reimbursement:

1. Patching potholes.
2. Removing snow and ice.
3. Overhead and indirect labor costs.
4. Ballasting, leveling, or other work outside the immediate crossing area, unless necessary because of approved crossing work.
5. Replacing speciality track work or signal equipment such as railroad diamonds, turnouts, switch heaters, electric locks etc. outside of the crossing area.

6. Charges to the railroad by the Office of the Commissioner of Railroads (s. 195.60 stats.)

15.4 Charging Costs

Region costs for design engineering and construction engineering are to be charged to Project I.D. 0656-22-85. Costs for temporary bypass roads, signing, detours and necessary paving on the crossing approaches and in the track zone are to be charged to Project I.D. 0656-22-86. Costs for crossing work performed by railroad forces are to be charged to a project I.D. established by the region.

WisDOT staff go to the DTSD website for the current charging policy.

LIST OF ATTACHMENTS

Attachment 15.1	Process for a Crossing Repair Fund Project (No Federal Funds)
Attachment 15.2	Sample Agreement for a Railroad Crossing Repair Fund Project

State of Wisconsin/Department of Transportation

AGREEMENT FOR HIGHWAY - RAILROAD GRADE CROSSING SURFACE

PROJECT I.D. 5990-03-54
Beloit Avenue, City of Janesville
(UP Crossing Surface)
City Street
Rock County
DOT No. 177 987A MP 88.84

This Agreement, by and between the State of Wisconsin, Department of Transportation, Division of Transportation Infrastructure Development, hereinafter referred to as the "State" and the Union Pacific Railroad Company hereinafter referred to as the "Company", provides for the performance of certain work described below by the Company on the above project.

WITNESSETH

WHEREAS, the Wisconsin Commissioner of Railroads has determined under Section 195.29, Wisconsin Statutes that the highway-railroad grade crossing, identified as DOT No. 177 987A, of the Company's Harvard Subdivision and Beloit Avenue in the City of Janesville, Rock County, needs to be improved pursuant to his Order dated August 23, 2001 in Docket # 9040-RX-1150; and

WHEREAS, the State desires to finance the installation of the highway-railroad grade crossing surface with a combination federal and local funds as provided under Section 84.03, Wisconsin Statutes; and deems it more feasible and advantageous for highway purposes to have a certain part of the project work performed by the Company directly and without bids pursuant to Section 84.06(4), Wisconsin Statutes.

NOW, THEREFORE, in consideration of the premises and of their mutual and dependent agreements hereinafter set forth, the parties hereto hereby agree as follows:

1. STANDARD PROVISIONS. The work to be performed by the Company described below shall be done in accordance with the provisions contained herein and the "Standard Provisions", dated April 10, 2001, Exhibit "A", attached hereto and made a part of this Agreement.
2. WORK TO BE PERFORMED BY THE COMPANY.

   (a) Retamp the existing roadway two-track crossing, shift the existing concrete panels to the east and widen the crossing to the west to accommodate the widening of the roadway and install concrete panels extending at least one foot beyond the edges of the sidewalks.

   (b) Such work is further described in the agreement summary, Exhibit "B", the detailed estimate, Exhibit "C", and shown on Exhibits "D" through "G" which are attached hereto and made a part hereof.
3. WORK TO BE PERFORMED BY THE STATE. Provide traffic control barricades for use at the crossing, sign and mark a detour for a maximum of 7 consecutive days and pave the asphaltic surfacing to accommodate the crossings.
4. DESIGN AND CONSTRUCTION. The installation of the highway crossing surface and modification of the railroad facilities described herein under Item 2 above shall be in conformance with the approved project plans. All such work shall be performed under normal company practices and the applicable requirements of the State and of the United States Department of Transportation, Federal Highway Administration, as set forth in 23 CFR Part 646 Subpart B.
5. MAINTENANCE. The Company agrees to maintain the railroad crossing described herein as a public highway crossing as long as so used or required by Wisconsin Statutes or regulatory agency.
6. RIGHT OF WAY. The Company agrees to permit the State or its agents to construct, operate and maintain the named highway, exclusive of the railroad crossing, across Company lands in accordance with the approved project plans.
7. APPORTIONMENT OF COSTS. The estimated Agreement cost of the labor for the work described herein and as shown on Exhibit "B" is $35,097. The State agrees to reimburse the Company for 100 percent of such cost eligible for reimbursement under this Agreement. The Company agrees to fund all materials and equipment costs.
8. INVOICE AND BILLS. The Company will submit all invoices and bills for reimbursement, to the

Transportation District Office, 1681 Second Avenue South, PO Box 8021, Wisconsin Rapids, Wisconsin 54495-8021. The State Project I.D. number will be included on all invoices and bills. The Final Bill is to be submitted within one year of the State's acceptance of the Company's work in accordance with Federal Law. If the Final Bill is not received by that date, the last detailed progressive bill will be considered to be the Final Bill.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed the year and the day below written by their proper officers and representatives.

UNION PACIFIC RAILROAD COMPANY

By_____

Title_____

Date_____, 20_____

DEPARTMENT OF TRANSPORTATION

By _____

Contracts Manager

Date _____

APPROVED _____, 20_____

_____

Governor of Wisconsin

AGREEMENT SUMMARY

PROJECT ID 5990-03-54

LOCATION		ESTIMATE PRICE
Beloit Avenue, City of Janesville		$ 48,853
Materials& Equipment Costs (UP Funded)		(16,947)
	Subtotal	$ 31,906
	Contingencies 10%	$ 3,191
	Agreement Total	$ 35,097
	VE	$ 351
	Project Total	*$ 35,448*

EXHIBIT B

State of Wisconsin/Department of Transportation

AGREEMENT FOR HIGHWAY - RAILROAD GRADE CROSSING SURFACE

PROJECT I.D. 6997-05-32
Mountain Bay Trail
(WCL Crossing)
City of Shawano
Shawano County

This Agreement, by and between the State of Wisconsin, Department of Transportation, Division of Transportation Infrastructure Development, hereinafter referred to as the "State" and the Wisconsin Central Ltd. hereinafter referred to as the "Company", provides for the performance of certain work described below by the Company on the above project.

WITNESSETH

WHEREAS, the Wisconsin Commissioner of Railroads has determined under Section 195.28 and 195.29, Wisconsin Statutes that the trail-railroad grade crossing of the Company's Shawano line and the Mountain Bay Trail located in the City of Shawano, Shawano County, needs to be established pursuant to his Order dated September 6, 2001 in Docket # 9164-RX-456; and

WHEREAS, the STATE desires to finance the establishment of the highway-railroad grade crossing surface with local funds as provided under Section 84.03, Wisconsin Statutes; and it deems it more feasible and advantageous for highway purposes to have certain parts of the project work performed by the COMPANY directly and without bids pursuant to Section 84.06(4), Wisconsin Statutes.

NOW, THEREFORE, in consideration of the premises and of their mutual and dependent agreements hereinafter set forth, the parties hereto hereby agree as follows:

1. STANDARD PROVISIONS. The work to be performed by the Company described below shall be done in accordance with the provisions contained herein and the "Standard Provisions", dated April 10, 2001, Exhibit "A", attached hereto and made a part of this Agreement.

2. WORK TO BE PERFORMED BY THE COMPANY. (a) As necessary remove and replace cross ties, ballast and associated track material and install flange and guard timbers extending the full 32 feet across the Multi-use Trail and Snowmobile Crossing.

(b) Such work is further described in the agreement summary, Exhibit "B", the detailed estimate, Exhibit "C", and shown on Exhibits "D" through "E" which are attached hereto and made a part hereof.

3. WORK TO BE PERFORMED BY THE PUBLIC. Install traffic signs, clear the sight triangles, grade the approaches, furnish and install the asphaltic surfacing needed to accommodate the crossing including in the track zone.

4. DESIGN AND CONSTRUCTION. The installation of the highway crossing surface and modification of the railroad facilities described herein under Item 2 above shall be in conformance with the approved project plans. All such work shall be performed under normal company practices and the applicable requirements of the State and of the United States Department of Transportation, Federal Highway Administration, as set forth in 23 CFR Part 646 Subpart B.

5. MAINTENANCE. The Company agrees to maintain the railroad crossing described herein as a public highway crossing as long as so used or required by Wisconsin Statutes or regulatory agency. The City of Shawano agree to maintain the approaches to the crossing shown in Exhibits "D" and "E".

6. RIGHT OF WAY. The Company agrees to permit the State or its agents to construct, operate and maintain the named highway, exclusive of the railroad crossing, across Company lands in accordance with the approved project plans.

7. APPORTIONMENT OF COSTS. The estimated Agreement cost of the work described herein and as shown on Exhibit "B" is $6,191. The State agrees to reimburse the Company for all such costs eligible for reimbursement under this Agreement.

8. INVOICE AND BILLS. The Company will submit all invoices and bills for reimbursement, to the Transportation District Office, 944 Vanderperren Way, Green Bay, WI 54304. The State Project I.D. number will be included on all invoices and bills. The Final Bill is to be submitted within one year of the State's acceptance of the Company's work in accordance with Federal Law. If the Final Bill is not received by that date, the last detailed progressive bill will be considered to be the Final Bill.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed the year and the day below written by their proper officers and representatives.

WISCONSIN CENTRAL LTD.

By_____

Title_____

Date_____, 20_____

CITY OF SHAWANO

By_____

Title_____

Date_____, 20_____

DEPARTMENT OF TRANSPORTATION

By_____

Contracts Manager

Date_____, 20_____

APPROVED_____, 20_____

_____

Governor of Wisconsin

AGREEMENT SUMMARY

PROJECT ID 6997-05-32

LOCATION		ESTIMATE PRICE
Mountain Bay Trail, City of Shawano		$ 5,628
	Subtotal	$ 5,628
	Contingencies 10%	$ 563
	Agreement Total	$ 6,191
	I/E	62
	Project Total:	**$ 6,253**

EXHIBIT B

Process that is followed for a

Railroad Crossing Surface Repair Project (No Federal Funds)
(RR Force Work Component)

Project Identification and Approval

1. A comprehensive detailed surface rating is conducted by a single individual in the summer of the even numbered calendar years for all railroad (RR) crossings on the State Trunk Highway System. (Connecting Highway crossings are not rated since they are not eligible for this funding). The most deficient crossings identified through the field rating process are candidates for the Rail Crossing Repair Program.
2. Candidate projects can also be identified by the Region Railroad Coordinator (RRC), RR or the local unit of government. These candidates will also be evaluated using the results of the statewide surface rating.
3. WisDOT Rail Projects Review Committee reviews the field rating results and selects projects to be programmed.
4. Railroads and Harbors Section (RHS) requests that the RRC check for any upcoming projects that could impact the railroad crossing surface repair project.
5. Bureau of State Highway Programs (BSHP) Highway Safety Improvement Program manager sends approval letter to region with FIIPS loading instructions.
6. RHS informs the RR of the approved crossing surface repair project and fiscal year that it is scheduled and verifies that the RR has not already addressed the deficiency.

Project Setup and Preliminary Engineering

7. Based on the FIIPS loading instructions provided by BSHP and input from the RRC and RHS, the Region FIIPS Coordinator completes the project setup and initializes it in FIIPS. Region assigns RR project ID number based on guidance found at PMM 05-05-10e, *(only accessible to WisDOT employees)* Under “functional type” code as a construction project. (Schedule Date equals 6-25 of its FY funding, PS&E Date should be 3-25 of its FY funding) Review Control Code A, **Life Cycle 10**.
8. The region identifies and ensures that projects in an MPO are included in the MPO’s TIP. When the TIP becomes available, the Region FIIPS Coordinator should enter the TIP number into FIIPS. The region should respond to both BSHP and the RHS Grade Crossing Safety Engineer with the TIP number.
9. RHS Grade Crossing Safety Engineer requests that the Region FIIPS Coordinator authorize the full project for charges. The Region FIIPS Coordinator moves the project to Review Control Code F. These types of projects have a categorical environmental exemption.
10. Region FIIPS Coordinator requests authorization from the Program Finance Section (PFS).
11. PFS staff reviews project funding for any possible changes that may be needed, moves the project to Review Control Code G, then requests authorization of the Financial Operations Section (FOS) of the Division of Business Management (DBM).
12. Project is authorized for charges by DBM FOS, and they move the project to Review Control Code H.

Obtaining Railroad Force Work Agreement

13. RHS drafts proposal/estimate request. After seeking concurrence from the RRC, RHS sends the proposal/estimate request to the railroad and copies the RRC.
14. Railroad performs preliminary (design) engineering, generates an estimate, and sends to RHS.
15. Estimate reviewed and approved by RHS. The estimate may need further RR negotiations before development of the proposed force work agreement.
16. RHS prepares force work agreement. After seeking concurrence from the RRC, RHS sends the proposed agreement to the railroad and copies the RRC.
17. Railroad approves and signs agreement, then sends to RHS.

18. RHS prepares DT-25 and sends, with signed railroad agreement, to the Audit & Contract Administration Section in the Bureau of Financial Management (BFM) (email: DOTCAU@dot.wi.gov). If signed railroad agreement utilizes docusign, send DT-25 separately.
19. The Audit and Contract Administration Section executes the agreement and DT-25. They send the fully executed agreement and DT-25 to RHS.
20. RHS Grade Crossing Safety Engineer verifies the schedule date, estimate amount, delivery amount, Review Control status, authorization amount, funding, All Work Complete date, and the environmental document type in FIIPS, and provides a request for any updates to the Region FIIPS Coordinator. Include fully executed agreement with request.
21. Region FIIPS Coordinator:
    a. Updates the estimate amount, schedule date and/or funding to reflect the information provided in the railroad agreement.
    b. Confirms that FIIPS shows a categorical environmental exemption.
    c. Reviews All Work Complete (AWC) date set at 36 months after December 31st of the schedule date. *For example, if the schedule date is 6/25/2022, the All Work Complete Date will be December 31, 2025.*
    d. Moves project to **Life Cycle 20**.
    e. Delegates the project to PFS for review and provides them with a copy of the fully executed agreement.
22. PFS staff reviews funding for any required changes. Projects will then be delegated to the FOS Region Accountant (Theresa Schult), with a copy of the fully executed agreement.
23. When FIIPS is verified and fully updated, RHS Grade Crossing Safety Engineer requests encumbrance to the FOS Expenditure Accounting Unit (email: DOTExpenditureAccounting@dot.wi.gov). The request should include the Request to Encumber Railroad Project form and the fully executed agreement. Note, encumbrance does not include delivery. In E-mail, request FOS confirmation of encumbrance.
24. FOS Expenditure Accounting Unit encumbers the railroad agreement.
25. RHS Grade Crossing Safety Engineer checks to verify that the encumbrance date (creation of the Purchase Orders, found in Peoplesoft) either precedes or matches FIIPS schedule date.
26. After encumbrance is ensured, the Region FIIPS Coordinator moves the railroad project to **Life Cycle 40** and switches the encumbered flag to Yes in FIIPS.
27. RHS Grade Crossing Safety Engineer sends RRC fully executed agreement.
28. RRC verifies FIIPS and encumbrance. Once verified, RRC sends E-mail with fully executed agreement, and start notice to the railroad and copies RHS.

Project Construction and Billing (Region project management responsibilities start here)

29. RRC is responsible for performing all construction project management duties, including bringing project stakeholders together for project construction work.
30. Railroad notifies RRC of intent to start.
31. Progressive billing by RR may begin. (design and material bills may be submitted before construction with other progressive bills following until the final bill is submitted or one year after the final acceptance E-mail is sent to the railroad).
32. RRC reviews progressive bills and forwards to FOS for partial or complete payment. (An explanation of partial payment is required by FOS).
33. Construction by RR.
34. Railroad notifies RRC of the completion date. (If the railroad didn't notify the RRC of the completion date and a final invoice is submitted, then proceed to the next step).
35. RRC does field inspection for acceptance.
36. RRC fills out final acceptance E-mail and sends to the railroad and copies RHS and FOS.
37. Railroad is given three months to dispute state's final acceptance of the project. Otherwise use the completion date from the final acceptance E-mail to start the one year for the railroad to send the final bill to the RRC.

38. Railroad needs to submit final bill to the RRC within one year of the state's final acceptance of the project, otherwise the RRC can close the project.
39. RRC reviews final bill and resolves with the railroad any disputed items.
40. RRC forwards undisputed final bill to FOS for payment along with advising FOS to disencumber any remaining project dollars and close the project to charging.
41. FOS disencumbers any remaining project dollars and closes project to charging. **Life Cycle 50**.
42. One month after sending the final bill to FOS, RRC checks PeopleSoft to see if the final bill has been processed and marked as final and to see if the remaining funds have been released. Also check FIIPS to see if the project is closed except for JV. More information on closing contracts and projects can be found in PMM 06-10-55e. *(only accessible to WisDOT employees)*

State of Wisconsin/Department of Transportation

AGREEMENT FOR HIGHWAY - RAILROAD
GRADE CROSSING SURFACE
STH SURFACE REPAIR PROGRAM

Project I.D. 2302-06-50
STH 167 (Holy Hill Road)
Town of Richfield
WSOR crossing surface
Crossing No. 386 994L – MP 109.62
Washington County

This Agreement, by and between the STATE of Wisconsin, Department of Transportation, hereinafter referred to as the "STATE" and the Wisconsin and Southern and Railroad Company, hereinafter referred to as the "COMPANY", provides for the performance of certain work described below by the COMPANY on the above project.

WITNESSETH

WHEREAS, the STATE has determined that the highway-railroad grade crossing, identified as DOT No. 386 994L MP 109.62, on STH 167 in the Town of Richfield, Washington County needs to be improved; and

WHEREAS, the STATE desires to finance the installation of the highway-railroad grade crossing surface with a combination STATE and COMPANY funds as provided under Section 84.13, Wisconsin Statutes; and deems it more feasible and advantageous for highway purposes to have a certain part of the project work performed by the COMPANY directly and without bids pursuant to Section 84.06(4), Wisconsin Statutes.

NOW, THEREFORE, in consideration of the premises and of their mutual and dependent agreements hereinafter set forth, the parties hereto hereby agree as follows:

1. STANDARD PROVISIONS. The work to be performed by the COMPANY described below shall be done in accordance with the provisions contained herein and the "Standard Provisions", dated January 2, 2007, Exhibit "A", attached hereto and made a part of this Agreement.
2. WORK TO BE PERFORMED BY THE COMPANY.
   (a) Remove the existing track and crossing material, prepare track structure, install concrete panels approximately 42 feet from the shoulder points through roadway. Provide detour advance warning signage (for a maximum of 7 consecutive days), traffic control in the vicinity of the crossing, saw cut the existing concrete pavement, furnish and install the asphaltic surfacing needed to accommodate the new concrete crossing.
   (b) Such work is further described in the agreement summary, Exhibit “B”, the detailed estimate, Exhibit "C", and shown on Exhibit “D-E” which are attached hereto and made a part hereof.
3. DESIGN AND CONSTRUCTION. The installation of the highway crossing surface and modification of the railroad facilities described herein under Item 2 above shall be in conformance with the approved project plans. All such work shall be performed under normal COMPANY practices and the applicable requirements of the STATE and of the United States Department of Transportation, Federal Highway Administration, as set forth in 23 CFR Part 646 Subpart B.
4. MAINTENANCE. The COMPANY agrees to maintain the railroad crossing described herein as a public highway crossing as long as so used or required by Wisconsin Statutes or regulatory agency.
5. RIGHT OF WAY. The COMPANY agrees to permit the STATE or its agents to construct, operate and maintain the named highway, exclusive of the railroad crossing, across COMPANY lands in accordance with the approved project plans.
6. APPORTIONMENT OF COSTS. The estimated Agreement cost of the work described herein and as shown on Exhibit "B" is Eighty One Thousand Two Hundred Two Dollars ($81,202). The STATE agrees to reimburse the COMPANY for 85 percent of such cost eligible for reimbursement under this

Agreement.

7. INVOICE AND BILLS. The COMPANY will submit all invoices and bills for reimbursement, to the South East Transportation Region Office, 141 NW Barstow Street, Waukesha, WI 53188. The STATE Project I.D. number will be included on all invoices and bills. The Final Bill is to be submitted within one year of the STATE's acceptance of the COMPANY's work in accordance with Federal Law. If a Final Bill is not submitted within one year of the STATE'S acceptance of the COMPANY'S work, the last detailed progressive bill will be considered to be the Final Bill pursuant to 23 CFR 140.922.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed the year and the day below written by their proper officers and representatives.

WISCONSIN AND SOUTHERN RAILROAD COMPANY

By_____

Title_____

Date_____, 20____

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

By_____
Contracts Manager

Date_____, 20____

_____
Governor of Wisconsin

APPROVED_____, 20____

AGREEMENT SUMMARY

PROJECT ID 2302-06-50

LOCATION		ESTIMATE PRICE
Holy Hill Road (STH 167), Town of Richfield		$ 74,137
Credit for scrap rail 317 LF @ $1 per LF		(317)
	Subtotal	$ 73,820
	Contingencies 10%	$ 7,382
	AgreementTotal	$ 81,202
	IE	$ 812
	Project Total:	$ 82,014

EXHIBIT B

FDM 17-35-1 Overview *May 2, 2003*

1.1 Background

In the early 1990s the FRA established a national goal of closing at least 25% of the then-existing railroad-highway crossings in the country. WisDOT and the OCR have both taken this goal seriously and have initiated efforts to focus attention on crossing closure and consolidation opportunities.

- OCR has undertaken railroad corridor studies to identify crossing needs, including opportunities for closure or consolidation.
- WisDOT has attempted to identify and pursue closure opportunities in conjunction with every improvement or upgrade project.
- Both the OCR and WisDOT have urged the railroads, to identify and jointly pursue the closure of crossings that are dangerous or redundant.

WisDOT should assist in identifying closure candidates, but responsibility for actual accomplishment falls primarily on the community and the railroad. In every project with railroad involvement, it will be WisDOT policy to evaluate all alternatives for railroad crossings including all reasonable opportunities to close crossings. The WisDOT has the greatest leverage for accomplishing crossing consolidation or closures during the early scoping stages of improvement projects. Regions must actively seek such opportunities and provide sufficient oversight on all local and state projects to assure that consultants are responsive to this policy.

1.2 Guidance

Excellent guidance in accomplishing crossing closure and consolidation is available in two publications:

- “Roadway – Railroad Grade Crossing – A Guide to Crossing Consolidation and Closure,” July 1994, Federal Railroad Administration
- “Highway – Rail Crossing Elimination and Consolidation – A Public Safety Initiative”, an AASHTO Committee Report, March 1995.

1.3 Options

Projects for the elimination of at-grade crossings can be accomplished by:

- Closing the crossing
- Closing the crossing with improvements to adjacent crossings
- Closing the crossing with improved access to an adjacent crossing
- Constructing a grade separation
- Relocating the highway
- Relocating the railroad

As a guide, in an urban area, any crossing within 1,000 feet of the new or grade-separated crossing should be included in the study. In a rural area, crossings within -1 mile should be included.

Conditions to consider in evaluating the closing of a crossing include:

1. Response time for emergency vehicles
2. Physical conditions and visibility
3. Feasibility of moving traffic to new/reconstructed facility
4. Accident history or predicted accident frequency rate
5. Improvement in quality of life in the area where a crossing is closed.
    - No train horns
    - No through highway traffic

1.4 Incentives

In support of the “crossing closure” initiative, FHWA has made provision for incentive payments to communities, matching (up to a $7,500 maximum per crossing closure) similar incentive funds that a railroad provides to a

community. It should be emphasized that the railroad must make its incentive payment as a pre requisite to the federal incentive payment. The federal share must be used towards a community transportation safety purpose. With such incentives, it is expected that crossing closures will increase in future years

1.5 Process

See Attachment 1.1 for a summary of the process.

The incentive payment process requires that the region and community enter into a Municipal Agreement to include two exhibits. One exhibit will be proof of the railroad's payment to the Community, and the other a letter from the community requesting the federal incentive money and identifying what transportation safety effort the community will undertake with the federal funds.

Unless the local government vacates a street or highway in accordance with Chapter 80 of the Wisconsin Statutes, the Commissioner of Railroads must approve all public crossing closures (see Section 195.29 W.S.). While the funds provided by the WisDOT must be used to enhance transportation safety not currently in the community's budget, funds provided by the railroad may be used for any local purpose.

1.6 Payment

The WisDOT (federal -aid) funds will be presented to the community after:

1. The Commissioner of Railroads issues an order to close the crossing when required to do so;
2. A Municipal Agreement is executed between the WisDOT region and the community which is to include (a) a statement from the community relating how the federal portion of the payment is to be used and (b) a copy of the check from the railroad to the community; and
3. Verification from the region that the road is officially vacated or the requirements of the Commissioner's orders have been satisfied (i.e. barricades installed, crossing surface removed, approaches removed, etc.).

LIST OF ATTACHMENTS

Attachment 1.1	Crossing Closure Incentive Payment Project Process

Process that is followed for a
Crossing Closure Incentive Payment Project

Project Identification and Approval

1. Identify possible closure. Can be initiated by the railroad (RR), Office of the Commissioner of Railroads (OCR), local unit of government (locals) or WisDOT Region Railroad Coordinator (RRC).
2. Railroad offers incentive payment. (RR normally will not pay an incentive if the closure is contested through the OCR. If this is the case, WisDOT cannot make an incentive payment as it can only match an incentive payment made first by the RR).
3. RRC notifies Railroads and Harbors Section (RHS) of closure if RHS isn't already aware of it.
4. RRC contacts locals about the process if they haven't already.
5. Locals hold Public Information Meeting (PIM) to get public input. Locals must follow the required guidelines for notifying the public of the PIM.
6. After the PIM, the locals need to pass a resolution to close the roadway. The resolution should contain a date for the closure.
7. Locals provide a copy of the executed resolution to the OCR and the RRC.
8. Locals close the roadway. RR removes the crossing surface. The locals and the RR can negotiate who will remove or pay for the roadway removal, barricading, ditching, seeding, etc., as needed. If barricades are permanent and will not be removed in the future, the barricades should be beam guard from outside edge of roadway to edge of roadway or sidewalk, if present. Road closed signs and reflective diamonds should be installed on each side of the closed crossing.
9. RR makes payment to locals.
10. Locals contact RRC and request payment from WisDOT.
11. RRC does a field visit to ensure that the crossing is properly closed. If not, the RRC works with the locals to correct the issue before submitting the project for an incentive payment. The RRC takes photographs of the crossing closure.
12. RRC prepares and sends a Two-Party Agreement between WisDOT and the locals to the locals.
13. Locals sign the Two-Party Agreement and return to the RRC.
14. Once returned, the RRC can sign the Two-Party Agreement.
15. RRC submits a project to the WisDOT Rail Projects Review Committee.
16. RRC requests that the Region FIIPS Coordinator assign a FIIPS project ID number based on guidance found on the following link, https://iisgtwyp.wi.gov/ffm/pmm/05/05-05-10e.pdf, **Life Cycle 00.** *(only accessible to WisDOT employees)*
17. Region submits project application (copy to RHS (Railroad Engineering and Safety Unit) and the Bureau of State Highway Programs (BSHP) Highway Safety Improvement Program (HSIP) manager.) WisDOT can match up to $30,000 in incentive payments made by the RR to the locals with Federal Rail Elimination of Hazards funds but cannot exceed the RR's incentive payment. Applications for closure incentive payments must include the following items:
    a. Crossing Closure Incentive Payment Project Submittal Sheet. (Can be found in the RHS Share with Regions Sharepoint page, in its own dedicated "Crossing Closure Incentive Project" subfolder).
    b. Signed copy of the Two-Party Agreement between WisDOT and the locals, (Also can be found in the RHS Share with Regions Sharepoint page "Crossing Closure Incentive Project" subfolder).
    c. Letter from the locals specifying how the WisDOT incentive payment will be used. WisDOT incentive payment funds must be used to enhance transportation safety.
    d. Resolution from the locals vacating the rail-highway crossing.

e. Copy of the check from the RR to the locals or a receipt of payment.
f. Railroad Crossing Report (DT1589). Write “Closed” across the form.
g. Photo documenting that the crossing has been closed.

18. WisDOT Rail Projects Review Committee reviews the application and acts on the submittal.

19. BSHP Highway Safety Improvement Program manager sends approval letter to the region contacts with FIIPS loading instructions.

Project Setup

20. Based on the FIIPS loading instructions provided by BSHP, the Region FIIPS Coordinator completes the project setup and initializes it in FIIPS. (Schedule Date equals 25th day of the following month) Review Control Code A, **Life Cycle 10.**

21. The region identifies and ensures that projects in an MPO are included in the MPO’s TIP. The Region FIIPS Coordinator should respond to the RRC, BSHP and the RHS Grade Crossing Engineer with the TIP number.

22. BSHP instructs the Region FIIPS Coordinator to request authorization of the Program Finance Section (PFS). PFS staff reviews the funding and then requests authorization of the Division of Business Management Financial Operations Section (DBM FOS).

23. DBM FOS electronically submits the FHWA-37 Form to FHWA **(Life Cycle 20).**

24. FHWA electronically approves the FHWA-37 Form.

25. Project is authorized for charges by DBM FOS, and they move the project to Review Control H.

26. Region FIIPS Coordinator notifies RRC once the project is authorized.

Payment to Locals

27. RRC requests payment by sending FOS Expenditure Accounting Unit (email: DOTExpenditureAccounting@dot.wi.gov) the Request to Encumber Railroad Project Crossing Closure Incentive Payment Form along with items listed in #17 above.

28. The Expenditure Accounting Unit sets up a purchase order (PO), processes a check and mails it to the locals, if not an ACH payment **(Life Cycle 40)**.

29. RRC requests that the Expenditure Accounting Unit close the PO. Once this is completed, the RRC requests that the Region FIIPS Coordinator move the project to Review Control L in FIIPS **(Life Cycle 50)**.

FDM 17-40-1 Overview

March 27, 2008

1.1 General

The safest railroad crossing is no crossing at all. That is why both the OCR and WisDOT discourage the creation of new crossings, and actively seek the consolidation of crossings where it is feasible and reasonable to do so. Whenever an investment is made in a project that upgrades warning devices, or that involves an existing or new grade separation, the question should be asked whether any nearby crossings can be eliminated.

The next safest crossing is a grade separation structure to carry one mode over the other. Because of their high cost, the benefits of a structure must be carefully considered. The primary benefits of separation are safety and delay avoidance.

Sources of funding to replace existing or create new railroad separations include the STH or local highway improvement programs, and the hazard elimination portion of the WisDOT Railroad-Highway Crossing Safety Program. The highway improvement programs would fund projects where the railroad separation is a part of the overall roadway improvement, whereas the WisDOT Safety Program would fund separations at isolated, stand-alone locations where separation is deemed appropriate and justified. Safety funding is limited to the incremental safety benefit that a grade separation would provide over a grade crossing. User benefits coming from reduced delay or fuel costs for example, are not to be funded through safety programs.

1.2 Lead Times

See Attachment 1.1 for a summary of the process for structures at railroad crossings.

Separation projects often require lengthy coordination and negotiations with the railroad, particularly if the railroad is to share in the costs, or where major facility changes are required, such as a shoo-fly or permanent offset alignment for underpass construction.

Because negotiations for structures are lengthy, lead-time is very important. It is essential that project managers recognize lead-time needs, and contact the RRC early to discuss railroad alternatives, decide on a course of action and begin railroad coordination. See FDM 17-20 Attachment 5.1 for estimated lead times. All negotiations with the railroad will be handled by RHS.

1.2.1 Highway Overpass

The time required between the formal WisDOT proposal to the railroad and the bid letting for the structure depends on the need for railroad force work, the railroad's approval of the structure plan and whether railroad cost participation is required. If the work can proceed under s. 84.05 Wis. Stats., less time is needed to complete railroad negotiations than if an OCR hearing is required. If the railroad is unwilling to sign the stipulation and the matter is taken to the OCR for hearing, more time may be required. See FDM 17-40-20 for a discussion of stipulations and agreements. Review with RHS whether an OCR hearing is likely to be needed. Early contact with the RRC and RHS is needed for timely completion of structure projects.

1.2.2 Highway Underpass

On a square foot basis a highway underpass structure costs about six (6) times more than a highway overpass due to railroad loading being heavier than highway loading. In addition, the railroad's review of highway and railroad structure plans is more detailed. A plan for handling railroad train traffic during construction is required. If Amtrak trains are involved, its service requirements are to be considered in the project arrangements. Construction scheduling requires consideration and planning to allow for track changes. Track is not readily constructed or shifted from mid-November to April or May. Requirements for trains to operate on a shoo-fly over winter months should be avoided when possible. The railroad force work agreement will usually include some track work. In addition, there may be utility facilities on railroad right of way that will require relocation, or pipeline under crossings that will require reinforcing under shoo-fly tracks, or new tracks on permanent alignment. The result of these additional activities is that more lead-time is required to reach agreement with the railroad and construct railroad plant changes. A four-year time frame from project inception to completion of arrangements prior to construction would not be unreasonable. See FDM 17-40-35 and the Bridge Manual Standard Drawing 38.31 for more details on underpass structures.

1.3 Submittals For Railroad Coordination

See Attachment 1.2 for a list of items to be furnished to the RRC to begin the railroad coordination process for a grade separation project.

LIST OF ATTACHMENTS

Attachment 1.1	Process When the Railroad is Willing to Sign the Stipulation
Attachment 1.2	Process When the Railroad is Unwilling to Sign the Stipulation
Attachment 1.3	Process For <23' Vertical Clearance
Attachment 1.4	Separated Grade Railroad Project Submittal Package

FDM 17-40-5 Structure Criteria/Justification

May 2, 2003

5.1 Options

Because of the high cost of structures, the project scoping should consider all reasonable alternatives to building or replacing a structure:

- An at-grade crossing
- Close the crossing
  - with improvements to adjacent crossings
  - with improvements to area roads connecting to adjacent crossings
- Relocate the highway
- Relocate the railroad

5.2 General Criteria

Grade separation project selection is based on a favorable analysis of the following general criteria:

1. Grade separation structures are to be provided on all freeways and are highly desirable on expressways.
2. Consider a grade separation under the following criteria:
   - In rural areas, when the highway design speed exceeds 50 mph and the exposure factor[1] exceeds 75,000. This criterion does not apply to freeways, but should be considered for 65 mph expressways.
   - In urban areas, where train/highway traffic speeds are generally lower but the highway ADT higher, grade separation structures should be considered when the exposure factor exceeds 100,000.[2]
3. The existing terrain is economically suitable for separating the railroad and highway grades.
4. The construction of a crossing at grade is deemed uneconomical, excessively hazardous and would not serve the public interests.
5. The construction/maintenance benefit/cost analysis indicates a separation structure is cost competitive with an at-grade crossing.

Projects to replace existing grade separation structures should also generally satisfy the above criteria. However, the final determination to replace an existing grade separation structure with another structure at a crossing that no longer meets the exposure factors for grade separation, should still be decided based on favorable economic analysis, safety and public convenience. The above exposure factors for grade separation could be reduced by one third and a grade separation structure may still be considered reasonable based on the other factors. However, the removal of an unsatisfactory grade separation structure and the construction of a crossing at grade may also be determined to be economical and in the public interest where traffic operations and safety can be reasonably and adequately accommodated.

Structures cannot be justified soley on the basis of safety, because structures have hazards associated with them. Structures can become slippery with frost earlier than the approaches. Accident records indicate that as

[1] For divided rural highways, the exposure factor should be considered separately for each roadway when the median is ≥ 50 feet.

[2] For divided urban streets, the exposure factor should be considered separately for each roadway when the median is ≥ 24 feet.

many as 20% of structures over railroads experience structure related crashes in any one year.

5.3 Other Criteria

Exposure factors are an indication of the expected frequency of grade crossing accidents. In addition to exposure factors the following should be considered:

- Sharp crossing angle. (<30° intersection angle between centerlines)
- Four or more active mainline or passing tracks.
- Presence of high speed freight and passenger trains.
- Route of school and commercial buses.
- Significant percentages of trucks carrying hazardous materials.
- Potential for unusually long delays for motorists.
- Poor sight distances along tracks or to the crossing.
- Future expansion or reduction in railroad or highway facilities.

5.4 Railroad Participation in Costs

23 CFR contains the following provisions which are or may be relevant to grade separations:

1. State laws requiring railroads to share in the cost of work for the elimination of hazards at railroad-highway crossings shall not apply to federal-aid projects.
2. Projects for the reconstruction of existing grade separations are deemed to generally be of no ascertainable net benefit to the railroad and there shall be no required railroad share of the costs, unless the railroad has a specific contractual obligation with the state or its political subdivision to share in the costs.
3. On projects for the elimination of existing grade crossings at which active warning devices are not in place and have not been ordered installed by a state regulatory agency, or on projects which do not eliminate an existing crossing, there shall be no required railroad share of the project cost.
4. Railroads may voluntarily contribute a greater share of project costs than is required.
5. The cost of restoring the company's service by adjustments of existing facilities away from the project site, in lieu of and not to exceed the cost of replacing, adjusting or relocating facilities at the project site, is eligible for federal participation.
6. The railroad shall contribute a 5 per cent (5%) share when a structure replaces a highway-railroad crossing with active warning devices.

5.5 Analysis of Alternatives

The following factors should be evaluated during the analysis of alternatives.

1. Economics. Economic analysis should include consideration of construction costs, real estate and utility costs, and maintenance costs, funding eligibility, including both participating and non-participating costs. There may also be other contributing factors such as future land development proposals

   Examples: The Village of McFarland rejected the at-grade crossing alternative for Terminal Drive because it would have required approximately two acres of prime commercial land in their Tax Incremental Financing District, valued at approximately $60,000 per acre, at 100% local cost. Additionally, McFarland would lose the economic benefit by removing these two acres from the TIF district.

   The Town of Bradford rejected the at-grade crossing alternative on Creek Road because it would require relocation of a major gas pipeline, estimated at a minimum of $50,000, at 100% local cost.
2. Engineering Factors. Typical engineering factors such as grades, horizontal and vertical alignments, and drainage, as well as impacts to adjacent side road and driveways.
3. Roadway and Railroad Traffic. Typical roadway traffic information, such as volume and type. Typical train data needs to be obtained.
4. Environmental Impacts and Associated Costs. Typical environmental factors need to be reviewed. Impacts to surrounding properties, wetlands, agricultural lands, archaeological or historical resources, and 4(f) or 6(f) protected lands.
5. Road & Railroad Functional Classification. It is expected that elimination of railroad crossings on

arterial and collector highways would be less likely than on local roads.

6. Adjacent Crossing. The distance to, and condition of adjacent crossings.

   Example: The Town of Ixonia supported the elimination of the Overland Drive bridge because of the close proximity and good condition of two adjacent at-grade crossings.

7. Public Safety. Public safety issues such as emergency vehicle access, number of bicycles, school busses and pedestrians need to be considered.

   Examples: One reason that Dodge County rejected the at-grade crossing alterative for CTH KW is because the highway is functionally classified as a major collector, and is the major school bus route between Juneau, Lowell and Reeseville. The Town of Lebanon selected the bridge replacement alternative on Bluebird Road because it is the major route that emergency vehicles use to serve the properties south of the railroad.

5.6 Selected Alternative

1. OCR Hearing. An OCR hearing is required when an agreement cannot be reached with the railroad Under Section 84.05 W.S.
2. Even if agreement is reached, railroad policy may require an order from the OCR, primarily for liability reasons.
3. Project Proceeds Following OCR Decision. The normal project development process continues, including development of preliminary plans, and preparation of the environmental documentation, the Design Study Report and a proposal letter to the railroad.
4. Interim Design Memo. This early memo is required for all proposed structure projects on the local system. See FDM 17-40-30.

FDM 17-40-10 Alternatives to Structures

May 2, 2003

10.1 General

Structure proposals need to be thoroughly scrutinized to see if other, lower cost alternatives make sense. For example:

- should the crossing be changed to an at grade crossing by removing the structure and its embankments? On low volume, low speed crossings, particularly on local roads, this may be a viable option.
- can the crossing be closed, with or without upgrading the adjacent crossings for the rerouted street traffic?
- can the relocation of either the rail line or the roadway either eliminate or reduce the need for (or size of) a proposed structure.
- can improvements to adjacent crossings, or improvements to roads connecting to adjacent crossings, eliminate the need of the subject crossing?

The high cost of structures demands that all reasonable alternatives be considered early, long before the general public, local officials or the railroad have expectations of a new structure.

10.2 Create An At-Grade Crossing

WisDOT has eliminated many structures over low volume railroad lines which have resulted in at-grade crossings. This has been done where the existing structure is deteriorated and the criteria for replacement are not met. This is particularly attractive in urban areas where roadway embankments were originally constructed in order to create the separation, and where elimination of such embankments today are beneficial to adjacent properties.

In rural areas, where the terrain tends to create natural separation, the creation of an at-grade crossing by removing a structure may not be justified based on benefit cost. However where embankments can be readily removed, and the cost of a structure avoided, the at-grade alternative should be evaluated.

10.3 Highway Relocation

This alternative would not require an agreement with the railroad unless an existing railroad grade crossing having train activated warning devices is closed as a result of the highway relocation, or the relocation affects another grade crossing. If a crossing with active warning devices is altered from an at-grade to a grade separated crossing, or is eliminated by highway relocation, the railroad share of the cost would be based on five

percent of the project cost to relocate the highway or for a theoretical structure project to separate the existing crossing. Likewise, if the same crossing was permanently and totally closed, the railroad share would be five percent of the closing cost (cul de sac, etc). [see 23 CFR 646.210 (c)(3)]. There may be other factors to consider in determining the railroad's share of the project costs, and the amount would be negotiated. It is likely that a "lump sum" amount would be contributed by the railroad.

A hearing and an order from the Commissioner of Railroads would be required to close a grade crossing and to apportion the project costs, if not agreed to by the parties.

10.4 Railroad Relocation

This alternative would require the approval of the railroad and a formal agreement. The probability of selecting this alternative to eliminate a grade crossing is unlikely due to the high cost of railroad facility construction. The same criteria would apply as contained in 23 CFR 646.210 (c)(3) to determine the apportionment of costs. If such an alternative were determined to be feasible and cost effective, a hearing and an order of the Commissioner of Railroads would be required to close the existing grade crossing, if not agreed to by the parties.

10.5 Crossing Closure

See Section 17-35. A permanent closure would require the railroad to pay a 5% share of the closing costs (signing, beam guard, cul du sac, etc.

FDM 17-40-15 Bridge Replacement Program

May 2, 2003

The objective of the Federal and State Bridge Replacement programs is the elimination of deficient bridges.

Both the State Trunk Highway Improvement Program and the Local Program have a bridge replacement sub-programs These are the only funds that should be used to replace existing bridges, including highway bridges over railroad tracks, and then only when a proposed bridge replacement meets the criteria for bridge replacement program as well as the criteria in FDM 17-40-5.

On the local system, a local unit of government may choose to either create a new bridge or replace a bridge that does not meet criteria. However that local unit must pay 100% of the incremental cost between the cost of the justifiable crossing treatment and the cost of the structure that they desire.

FDM 17-40-20 Structure Agreements

March 27, 2008

20.1 General

There are usually two agreements with a railroad for grade separation projects. One is the STIPULATION and includes all of the pertinent items and provisions for the structure, including construction, cost sharing, right of way, and maintenance. The other is an AGREEMENT (contract) for the performance of railroad force work and is necessary only when there are railroad facilities to be modified or installed. This usually involves adjustments of the railroad signal and communication lines, track changes made necessary by the project, and in some instances the construction of a temporary crossing for the contractor's construction operations.

> *Note: The contract special provisions usually require the highway contractor to make the arrangements with the railroad for a temporary crossing. An exception may be necessary if more than one prime contractor is to use the temporary crossing, or if the project cannot be reasonably built without a crossing. In such case, the Railroads & Harbors Section (RHS) will make arrangements with the railroad for a crossing.*

A stipulation is required for grade separations on a new location and for replacement of existing structures or for widening of existing structures that require substructure enlargement. A stipulation is not required for a deck replacement that does not alter or add to the existing beam configuration, or reduce existing minimum vertical clearances over tracks.

During the time the Stipulation is being prepared and processed, the right-of-way conveyance is also prepared and sent to the railroad for execution. The conveyance document is usually signed after the Stipulation is fully executed. In some situations, temporary land interests may be granted by the stipulation. For a description of responsibilities to acquire interests in railroad property, see FDM 17-55-5.

20.2 Stipulation Process

The RHS coordinates with the railroad to obtain acceptance and approval for the project, including arrangements for work by railroad forces.

The procedure for developing the Stipulation is as follows:

1. The region prepares and sends to RHS the information referred to in FDM 17-40 Attachment 1.2.
2. Preliminary Bridge Plans
   - Bureau of Structures (BOS) provides a copy of the bridge record for the existing structure if present and the approved preliminary bridge plan to RHS for structures on the State Trunk Highway System.
   - On consultant-designed structures, the consultant sends the preliminary bridge plans to the BOS for review. The BOS then sends the approved plans to RHS.
3. As detailed in Section 17-20 “Implementing Projects,” the RHS sends a project proposal letter to the railroad along with preliminary bridge plans. The proposal sets forth the concept of the highway improvement, what work is required, when work is to take place, the proposed structure maintenance responsibility and the proposed apportionment of costs. The letter may authorize engineering by the railroad for any required railroad force work. Information on railroad flagging for subsequent highway construction may also be requested at this time. The proposal may include two copies of the structure plan for the railroad’s review and comments.
4. If the preliminary bridge plans are acceptable to the railroad, the railroad will indicate their concurrence in the project concept and provide comments or acceptance of the preliminary bridge plan. (Cost sharing and right of way are negotiated later).

   The railroad will also develop a cost estimate and send it to RHS in accordance with the request contained in the proposal letter.
5. After negotiating with the railroad on all agreement items, the RHS will submit the Stipulation or submit a revised Stipulation to the railroad for signature. Two originals and one copy are sent to the railroad (three originals and one copy if a local unit of government has a project obligation or financial interest). If the Stipulation is acceptable to the railroad, the railroad will have the originals signed and returned to the RHS. The originals of the Stipulation are forwarded to the Contracts Manager in the Bureau of State Highway Programs for the Governor’s approval and execution by the department if the stipulation includes a provision for an actual payment to be made to the railroad. If the stipulation provides for a future State payment by a subsequent force work agreement, or if no payment is required, the Section Chief in RHS may execute the stipulation on behalf of the department.
6. If negotiations per s. 84.05, Wis. Stats. fail to produce agreement, the matter will be placed before OCR. (refer to s. 195.29, Wis. Stats.) The OCR will investigate the matter and issue an order binding upon all persons. The order sets forth the design elements, terms for the construction, the apportionment of costs and the party responsible for maintenance of the structure.

   It is the policy of the WisDOT to send approved Stipulations for grade separation structures to the OCR for its information.

20.3 Agreement For Railroad Force Work

1. The content of an agreement for work by railroad forces would be similar to other force work agreements. (See FDM 17-20-10 Contents of the Agreement.)
2. The RHS requests the plan and cost estimate from the railroad, prepares the agreement and sends it to the railroad for approval and signing. After its return to the RHS, it is forwarded to the Bureau of Financial Services for approval of the WisDOT and Governor.
3. If a railroad contribution is required to build the structure per 23 CFR, part 646.210, WisDOT and the railroad may agree to offset costs by providing force work in exchange for paying less for a railroad contribution. This would be covered in the stipulation and a separate force work agreement would not be needed if all the force work to be provided would be used to defray some or all of the required railroad share.

20.4 Structures On The Local System

See FDM 17-10-30, “Exception” to normal cost sharing when repair costs exceed 15% of replacement costs.

FDM 17-40-25 Costs/Cost Sharing

May 2, 2003

25.1 Background

Over the last 70 to 90 years the cost burden of work at both at-grade crossing and grade separation projects has shifted from the railroads to the public, largely because new roads crossed existing rail lines. Since the 1980’s the principal of assessment of costs on the basis of benefits received has been liberally interpreted in

favor of the railroads. For example, no railroad contribution is required for grade crossing improvements under federal policies or for signal installations under s. 195.28, Wisconsin Statutes.

The landmark “Brandeis Decision” of 1935 established the principle of assessment of costs on the basis of benefits received. WisDOT policy in cost sharing negotiation is to do “what is reasonable under the circumstances” considering, among other things the “benefits received.”

Cost sharing is largely defined by 23 CFR 646.210, applicable Wisconsin Statutes. WisDOT authority is limited to what statutes explicitly provide. To the extent that the law allows, WisDOT’s guiding principle in cost sharing is to seek “what is reasonable under the circumstances.”

25.2 Railroad Participation

Railroad participation in the cost of a highway improvement project is required under the following conditions:

1. The railroad has responsibility for maintenance of the existing grade separation structure, or
2. A highway/rail grade crossing that has train activated warning devices is eliminated by separation of grades, highway relocation or railroad relocation.

The railroad’s share for conditions described in 1. above is typically its future savings in structure maintenance expense that are relinquished. The railroad contribution may be offset by the cost of railroad force work, (signal line adjustments, flagging, etc,) required for the project and the cost of granting the additional highway crossing easement. The railroad’s share of 2. above is 5 percent of the theoretical or actual structure cost, whichever is less. Refer to 23 CFR 646.210.

There are several factors to consider when determining if there is a benefit to the railroad when a separation structure is to be constructed or re-constructed, as a basis for negotiating railroad participation in project costs:

1. Which was there first, the highway or the railroad?
2. Is there an agreement or a regulatory authority order assigning responsibility?
3. Does the railroad go over the highway or does the highway go over the railroad?
4. If an existing structure, who is responsible for maintenance now?
5. Will federal aid funds be used in the planned improvement?
6. Is a safety project or an improvement project involved?
7. Is the question whether the railroad company should participate in the cost of the improvement or the cost of railroad force work or both?
8. Who is initiating the project?
9. Regardless of past policies or practices, is there a quantifiable net benefit to the railroad company?

25.3 Projects on the Local System

See FDM 17-10-30, “EXCEPTION” to normal cost sharing when repair costs exceed 15% of structure replacement costs.

25.4 Current Practice In Cost Sharing

1. Federal CFR 23 Part 646 dictates that when a separation replaces an at-grade crossing with active warning device, the railroad pays a mandatory 5 % of the total costs of the separation (bridge itself and minimum approaches and fill slopes, etc). This typically will be an estimated or theoretical portion of the total project cost, since the improvement project will typically involve more than this minimum work. The limitations are explained in Part 646.210(c).
2. It has also been WisDOT policy on local projects, to allow the railroad to pay the local share of costs when the project qualifies for any type of federal aid.
3. The railroad share for the replacement of an existing structure “in kind” is typically 15% of structure costs.
4. In negotiations, WisDOT often has the railroad share of costs offset by railroad contributions of real estate, flagging, needed force account work, etc. of equal valve.

The affected railroad may also provide matching funds for railroad-highway projects when the improvement would be of particular benefit to them. One such example is, the replacement of a grade separation structure where the railroad has an existing responsibility for maintenance. When railroad lines were initially constructed, terrain and railroad profile requirements often required the railroad to construct separation structures. Section

190.08 W.S. requires railroads to maintain such crossings. If a highway improvement or safety project is undertaken to replace a railroad – maintained grade separation, railroad cost participation is expected and is subject to negotiations based on the facts of the specific location, including “who was there first” and “what is reasonable under the circumstances.” The present value of the railroad’s on-going maintenance responsibility should be included in cost participation negotiations. In the case of overpass structures, the highway authority usually takes over responsibility for routine repairs and maintenance, not including replacement, in exchange for railroad participation in the cost of the replacement structure. The amount or share is negotiated based on railroad responsibility and what’s reasonable under the circumstances. Cost sharing may be based on the following:

1. Railroad share is 15% of the cost to replace the existing structure “in kind.”
2. Railroad share is 5% of the cost to replace the existing structure with a new design.
3. Railroad share may be 100% of the required local match.

25.5 5 – Options-Grade Separations

There are two ways of adjusting railroad facilities, either at the project site or by adjustment away from the project site. If the Department is indifferent to the choice and the railroad wishes to adjust away from the project site because of benefits which it would derive, the railroad could apply any WisDOT share to the desired project and contribute any additional funds required.

When replacing an existing grade separation for which the railroad has a maintenance obligation and where the highway preceded the railroad, WisDOT will seek a railroad contribution for adjustments to their facilities or improvement costs in recognition of the benefits the railroad receives from new and improved facilities, or relief from an obligation to construct or maintain a grade separation at railroad expense.

WisDOT policy requires a railroad contribution when a highway overpass structure for which the railroad has a maintenance obligation is replaced and the public takes over routine maintenance and repairs.

Also, WisDOT typically seeks a "used life" credit from railroads when an improvement project replaces used materials with newer materials which extends the service life of the railroad facility.

25.6 Summary

With a few significant exceptions, most railroad force work is a relatively small cost element of improvement projects. The need to deliver the highway improvement and not miss letting dates puts pressure on WisDOT and the railroads to reach agreement. Providing sufficient lead time for railroad negotiations assists in reaching satisfactory agreement. Most projects are initiated by WisDOT, but the railroads are obligated to furnish plans and estimates promptly as requested.

25.7 Conclusions

Railroads and highways must coexist since they interface with each other throughout the state. WisDOT policies and expectations for railroad cost sharing should continue to be fair, consistently applied and uniformly enforced. With continued urbanization and population growth, the points of contact between highway and railroad facilities will increase and there will continue to be a need for adjusting railroad and highway facilities.

WisDOT must continue to be fair, consistent and uniform in adopting and applying policies requiring a railroad contribution. WisDOT should analyze each project to ascertain what if any benefits accrue to the railroad. Where not prohibited by law, WisDOT will seek a railroad contribution on the basis of what is reasonable under the circumstances, including benefits received, consistent with overall state goals. If a railroad is not willing to participate in costs on such a basis, and where not pre-empted by federal or state laws, the project may be taken to the OCR for allocation of costs under 195.29(2) W.S. Time must be built into the project delivery schedule to allow for this administrative step.

FDM 17-40-30 Structure On Local System

March 27, 2008

30.1 General

Separation projects on the local road system are usually developed by consultants working for the local unit of government.

In order to assure statewide consistency in project scoping, eligibility, etc., it is important that the Regional Railroad Coordinator (RRC) be involved early in the project, to assure that;

- proper procedures are followed; including portal opening coordination
- scoping of projects follows the criteria herein

- estimates are reasonable
- construction scheduling is feasible.

Railroad structure issues on all federal or state funded projects shall be reviewed with RHS early and consensus reached as to appropriate roles and actions. The region should be involved in project scoping with the assistance of the RHS as appropriate. However, there have been several instances where the local unit and their consultant have proposed replacement separation structures where there is no longer justification for a bridge. If the local unit chooses an improvement alternative that costs more than the solution WisDOT's criteria would warrant, then the local unit shall be responsible for 100% of the incremental cost above the minimum WisDOT solution or improvement alternative. Also note the "Exception" of FDM 17-10-30 and "Current Practice In Cost Sharing" of FDM 17-40-25 regarding railroad participation in the cost of the local match.

30.2 Interim Design Memo

On local road system projects, the project manager shall develop an "Interim Design Memo" prior to the finalization of a structure as the preferred alternative. An analysis of the various alternatives with supporting documentation for the preferred alternative shall be presented to the Local Program Manager, for ultimate approval by the Local Program Chief. The purpose of the "Interim Design Memo" is to:

- Document the selection of the preferred alternative
- Obtain concurrence by the Department in the preferred alternative
- Document the cost sharing responsibilities for the various alternatives
- Aid early coordination with RHS, including concurrence in project concept and petitioning OCR if a hearing will be needed.

WisDOT policy on local bridges recognizes the FRA/FHWA goal of reducing existing roadway rail crossings by 25%, most of which must occur on the local road system.

The "Interim Design Memo" calls for early region staff review of the alternatives that will be considered on each such project, including consideration of closures. The purpose is to obtain broad, conceptual agreement on the alternatives to be considered and justification for the recommended alternative. Factors that must be considered include:

1. opportunities to close nearby crossings
    - proximity to nearby crossings
    - volume of vehicular traffic affected
    - circuity of travel
    - cost to maintain/continue the crossings
2. traditional factors
    - exposure (average annual trains/day X AADT)
    - speed of trains and vehicular traffic
    - functional classification of railroad and highway
    - nature of the traffic (repeat., local, vs arterial)
    - Cost of options
        - closure
        - at grade
        - replacement structure

If an alternative is chosen that costs more than the solution resulting from the application of WisDOT criteria (and thus is not economically justified), the local unit must pay 100% of the incremental cost.

30.3 Alternative Selection

In accordance with project development procedures, alternatives analysis is an important element of all projects. FHWA expects alternatives analysis during preliminary engineering on all projects.

The following are typical alternatives to be considered for replacing a railroad grade separation.

1. Bridge Replacement - A bridge replacement alternative on new location would generally require an OCR hearing, unless the highway authority and the railroad reach agreement. (See s. 84.05, Wis. Stats.)
2. At-grade crossing.

3. Elimination of crossing.
4. Elimination of crossing with improvement to adjacent crossing(s).
5. Elimination of crossing with improved access to adjacent crossing(s). This alternative could include improving the existing roadway system or building a new road system.

FDM 17-40-35 Underpass Structures

May 2, 2003

35.1 General

Construction of all grade separation structures is of great concern to the railroad due to the potential for accidents during construction. Excavations near tracks, driving and removal of sheeting, operating construction equipment along and over tracks and proper falsework clearances all require careful attention in order to assure safe train operations. Underpass construction typically requires track changes which disrupt train operations.

35.2 Underpass Structures

Underpass structures typically cost six times more than overpass structures because of the heavier loading of trains, and the cost of handling railroad traffic during construction. Underpass construction typically requires track changes which disrupt train operations.

Refer to the Bridge Manual Standard Drawings.

A walkway for train personnel may be included in the design on a site-specific basis. Considerations include structure proximity to switches, visibility of approaching trains, length of structure and refuge space available on the bridge deck. It is important to check on current railroad safety rules, FRA Safety requirements and OCR Statutes and rules.

The structures design section will make the determination of final bridge design.

35.3 Maintaining Railroad Traffic During Underpass Construction

A site-specific evaluation of how to accommodate necessary railroad traffic during construction is required. The evaluation may identify the need for a shoo-fly, (a temporary bridge to carry train traffic), or require the rerouting of train traffic over a detour during construction.

During critical construction phases, the railroad track may be taken out of service for periods ranging from several hours to several days depending on the type of line and frequency of train operations. A shoo-fly is essentially a “run around” and is commonly used to route train traffic around the underpass construction site. Shoo-flys are usually composed of three or four curves, so train operations over shoo-flys during winter months should be avoided if at all possible. In some situations, the underpass can be constructed on an offset alignment and the track permanently shifted to it.

Shoo-flys are designed for the speed at which trains are to be operated on the temporary alignment. On lines carrying high speed trains it may not be feasible or practicable to design the shoo-fly for maximum authorized speed. Embankment settlement and stabilization during the limited time the shoo-fly will be used should be considered in selecting the design speed. Where space allows, the shoo-fly might be 80-100 feet on center from the permanent alignment adjacent to the structure. The closer the shoo-fly is to construction; the more temporary track support will be required. Following are examples of possible shoo-fly design criteria which may serve as a guide for designers. The actual shoo-fly design is subject to approval of the railroad.

Design Speed (MPH)	Curvature (D_c)	Spiral Length (ft)	Super – (1) Elevation (in)	Min Tangent Between Spiral Points on Reverse Curves (ft)
10	12	0	0	60
25	10	120	4	100
40	4	210	4	100
60	2	310	4	100
80				

(1) Further information can be found in AREMA Manual, Chapter 5, Part 3, Sections 3.1 and 3.3

Grades should preferably be consistent with those on the permanent alignment.

Grading and site work is normally performed by the WisDOT roadway contractors. Some railroads will allow WisDOT to arrange for Shoo-fly track construction to 12-20 feet on center from the permanent track. See Attachment 35.1. The railroad company will normally make the final tie-ins by shifting its track to connect with the shoo-fly track. Either the contractor or the railroad could construct the permanent track across the new underpass, depending on the desires of the railroad.

After construction, the railroad will likewise make the shift from the shoo-fly to the permanent alignment.

35.4 False Work Bridge

In highly developed areas where a shoo-fly is not feasible, a false work bridge can be used to support track on existing railroad alignment. Consideration of this option requires considerable expertise in railroad design, and a full knowledge of railroad operational practices and constraints. Substructure units are constructed under the false work spans. The super structure may be constructed on the side and rolled into place. This type of construction requires extensive planning, railroad coordination and railroad force work. Constructing the false work bridge, driving permanent piling and setting and superstructure must be scheduled in windows between train operations, with much of the work performed by railroad forces.

LIST OF ATTACHMENTS

Attachment 35.1 General Shoo-Fly Case

FDM 17-40-40 Miscellaneous Structure Provisions *June 19, 2013*

40.1 Excessive Clearances

The region needs to review the bridge design before submitting to Railroad and Harbors Section (RHS). Chapter 23 CFR does not allow federal funds to reimburse the project for *excessive clearances*. The minimum clearances are not to exceed 23’-3 1/2“ vertically between top of rail and bottom of structure and 20’-0” horizontally between near track centerline and embankment slope at the rail elevation. Clearances less than 23”-0” may be permitted in some situations with approval of the OCR. Refer to the Bridge Manual Standard Drawing 38.01 for clearance and crash protection requirements. If a service road is to be provided along the track, a horizontal clearance of 28’-0” is permitted along one side only.

Clearances exceeding these dimensions must be well documented as to need and approved by RHS.

40.2 Additional Track Space

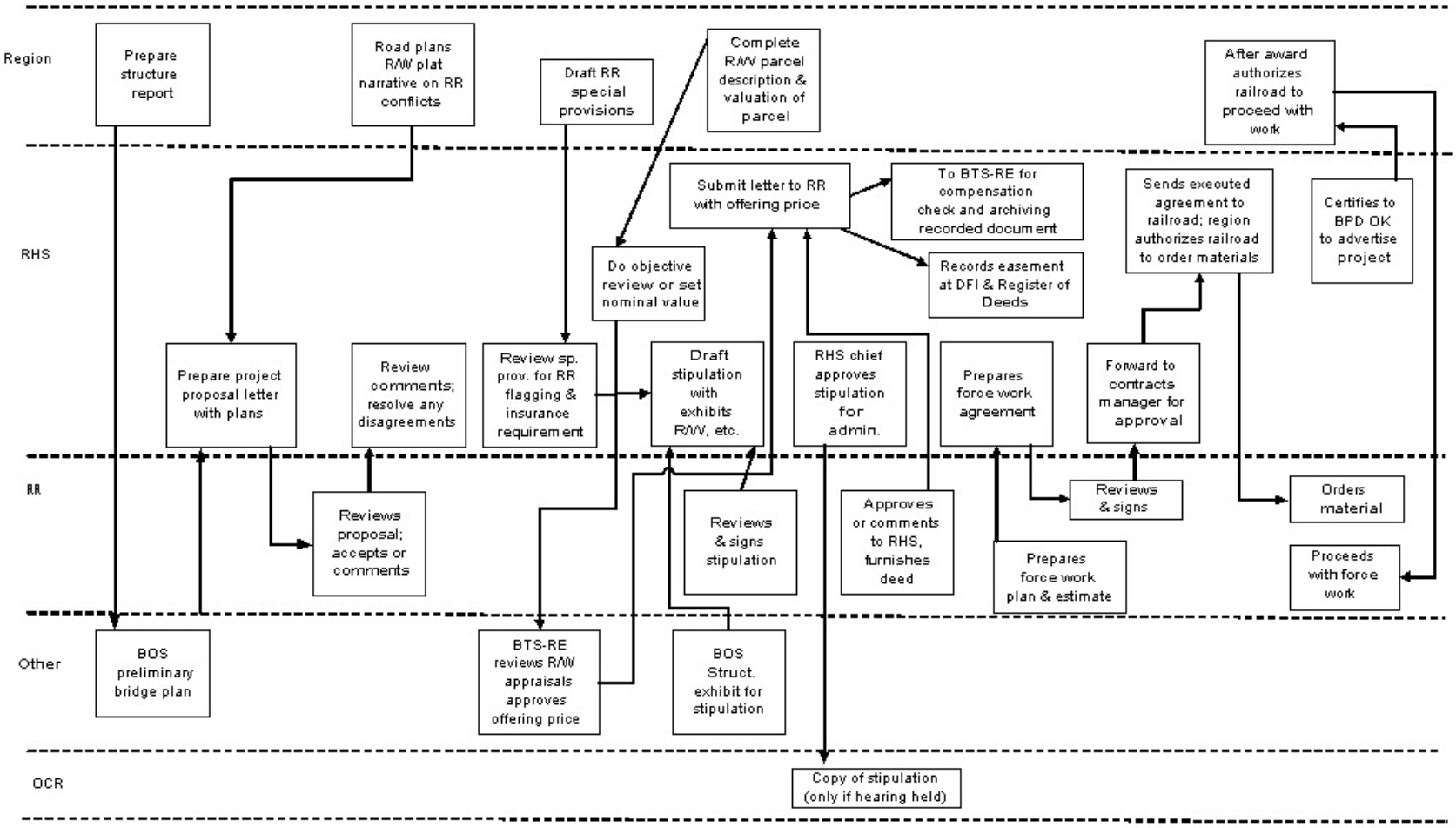
It is possible to provide space for future tracks under highway overpass structures if this is requested by the railroad. 23 CFR Part 646.212(a)(2) permits this additional structure length and cost if the request is approved by WisDOT. Such approvals are based upon the justification furnished by the railroad and subsequent negotiations. The OCR has ruled that it does not have jurisdiction in this matter. If such additional space is requested, the RHS must be contacted before design of the structure begins. This will avoid unnecessary expense to the project and will assure consistency in WisDOT dealings with railroads.

40.3 Crash Protection

Decisions on the need for crash walls or piers of heavy construction adjacent to railroad track and their design should be based on the current AREMA Manual, Chapter 8 Sections 2,1.5 and Chapter 8, Section 2 Commentary, Section C2.1.5. Project Managers should confer with RHS and Bureau of Structures for current interpretations.

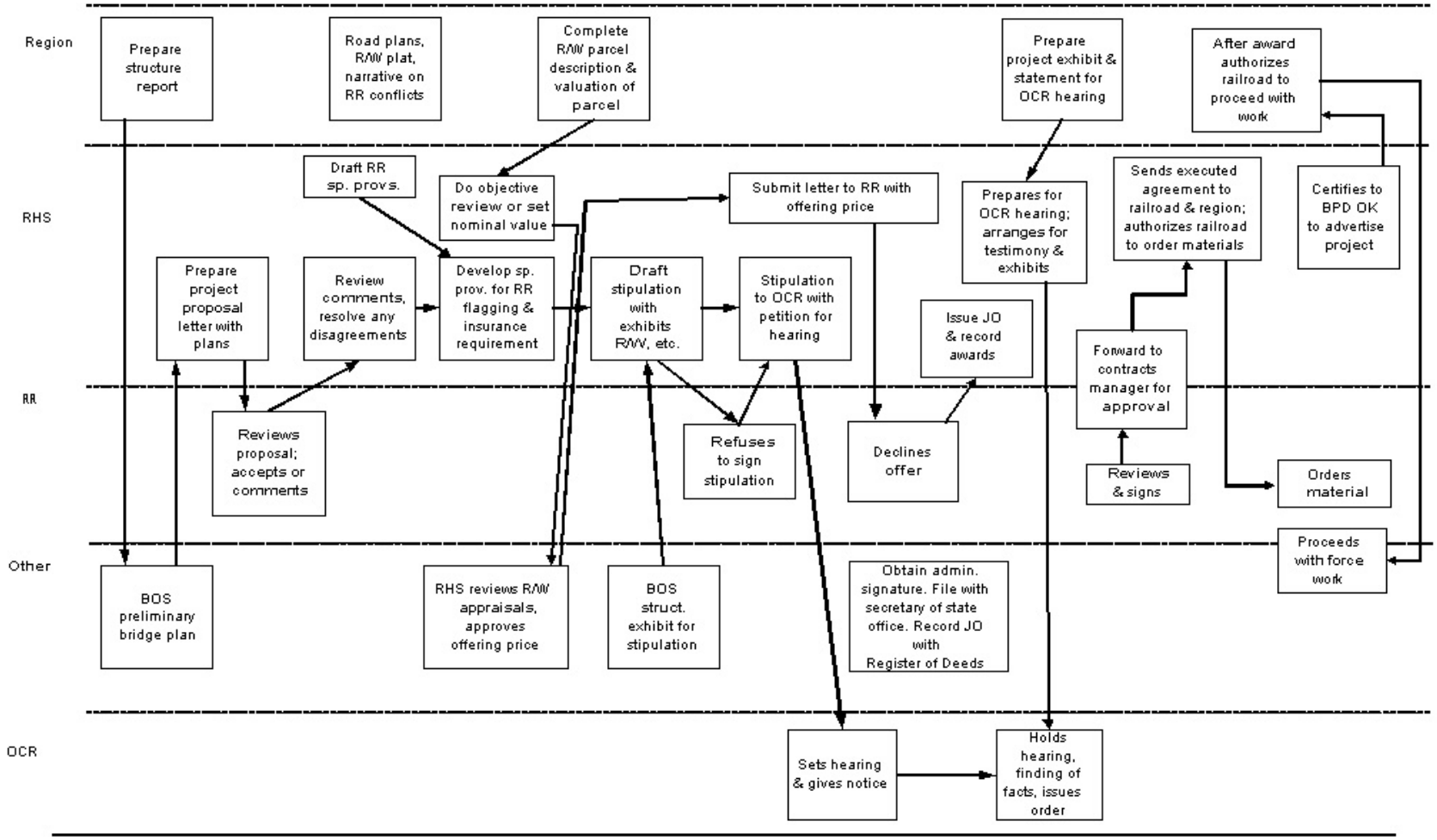
Also refer to the Bridge Manual Standard Drawing 38.01 and Bridge Manual for crash protection requirements for new and rehabilitation projects.

Structure Project at Railroad Crossing Development of Agreements & Acquiring Right of Way from Railroad Process to Be Followed When The Railroad is Willing to Sign The Stipulation



Region	Transportation Region	RR	Railroad
FHWA	Federal Highway Administration	RHS	Railroads and Harbors Section
BOS	Bureau of Structures	BTS-RE	Bureau of Technical Services-Real Estate
BPD	Bureau of Project Development	OCR	Office of the Commissioner of Railroads
DFI	Department of Financial Institutions		

Structure Project at Railroad Crossing Development of Agreements & Acquiring Right of Way from Railroad Process to Be Followed When The Railroad is Unwilling to Sign The Stipulation



Region	Transportation Region	RR	Railroad
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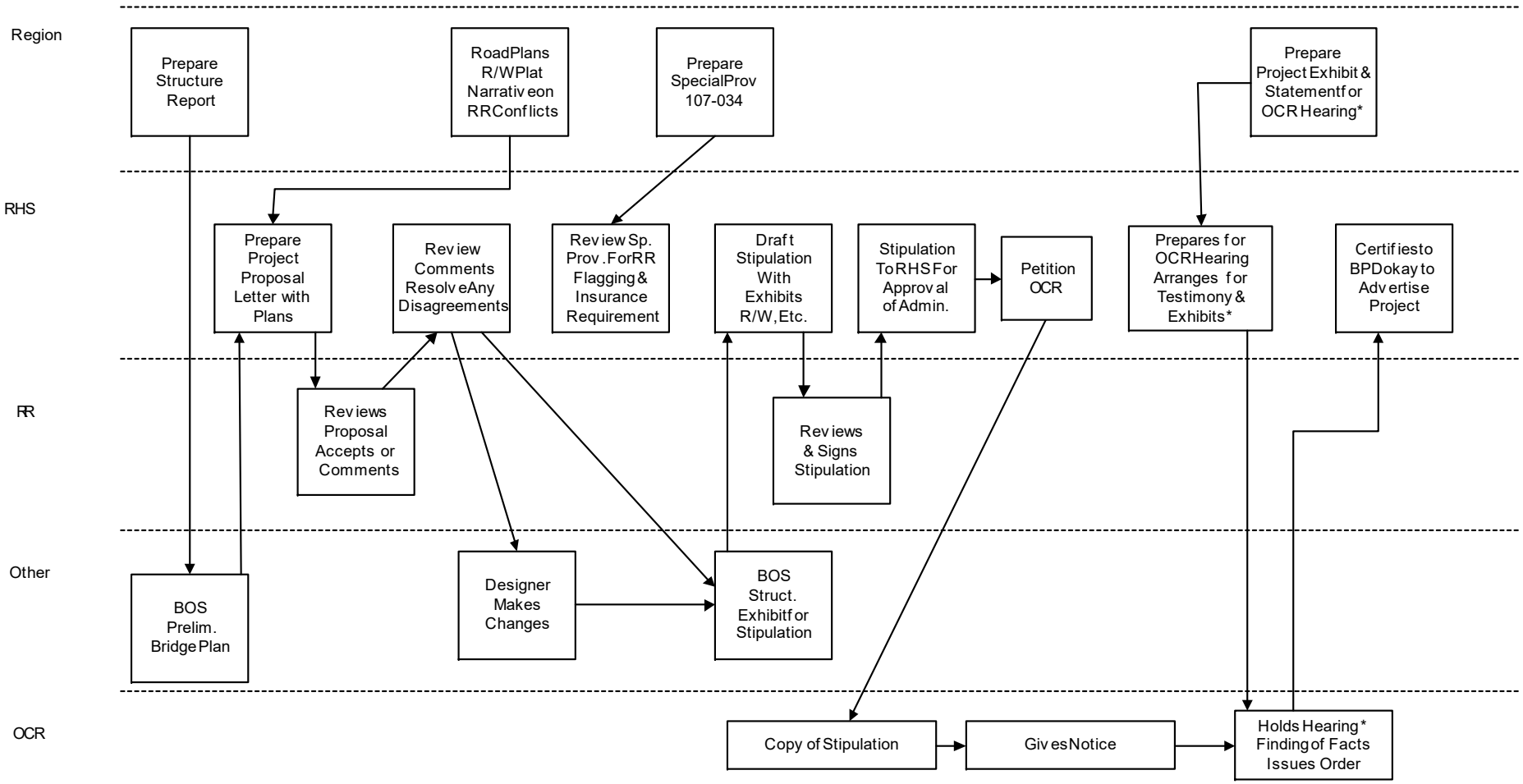
BPD	Bureau of Project Development	OCR	Office of the Commissioner of Railroads
DFI	Department of Financial Institutions		

Structure Overpass Project at Railroad Crossings Process to Be Followed For <23' Vertical Clearance Supplement to the Process to be Followed When the Railroad is Willing to Sign the Stipulation`



Region Transportation Region
FHWA Federal Highway Administration
BOS Bureau of Structures
BPD Bureau of Project Development
DFI Department of Financial Institutions

RR Railroad
RHS Railroads and Harbors Section
BTS-RE Bureau of Technical Services-RealEstate
OCR Officeof the Commissioner of Railroads

*Only if a hearing is required. An OCR hearing is usually not required. OCR may issue an order without hearing if no objections to the proposed reduced vertical clearance are received.

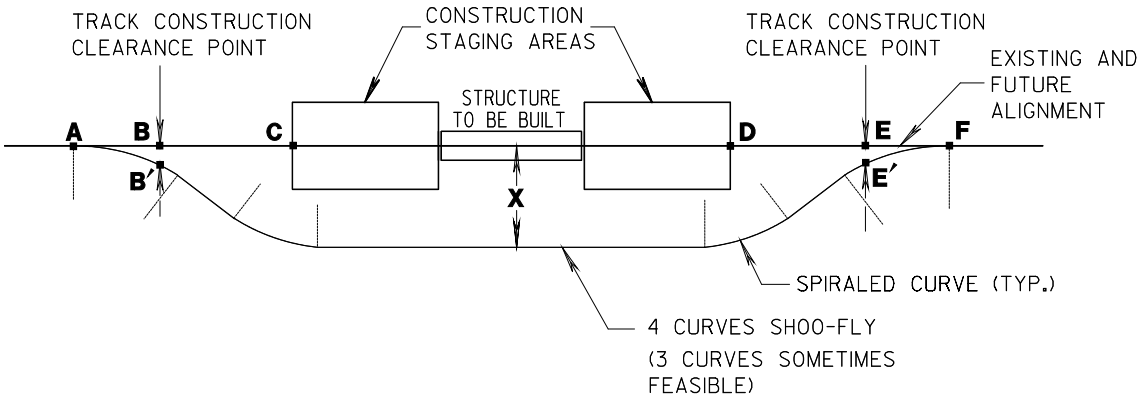
The following structure project submittal package is to be furnished to the Regional Railroad Coordinator (RRC) who will review it and send to the Railroad Project Coordination Engineer in the DTIM Railroads and Harbors Section (RHS):

1. Design ID
2. Construction ID
3. Roadway Name
4. Letting Date
5. Name & Phone number of Project Manager
6. Indicate if structure is located in (City) (Town) or (Village) of _____.
7. Title Sheet or Location Map
8. Plan & Profile (60% showing all existing and proposed utilities)
9. Preliminary Bridge Plans
10. Right-of-Way plat
11. Easement description(s) if needed
12. Photographs of site (with description of direction of view)
13. DSR
14. Drainage impact to railroad statement (if impacting railroad, include rates & volumes).
15. Plan view of site showing drainage flows described above.
16. Cross Sections along track if necessary due to drainage impacts along the RR
17. Railroad force work required (construction crossing required Pole line alteration required?, etc.)
18. If it is a local or county road, provide Name, Title, Address, and Phone # of person to send stipulation to for execution.
19. If there are longitudinal roadway encroachments along the RR, provide cross sections including location of the nearest track, R/W lines, TLE, and/or PLE limits.
20. If railroad lands will be needed for construction access, provide plan showing the required temporary interests.
21. Impacts to crossings within 1000’ of the project (closure, widening, signalization, other)

RRCs will provide the Debris Containment specials, Railroad Requirements and Coordination.

Note the average lead times required to work with a railroad per FDM 17-20-5. Consider railroad coordination as a critical path item. The material listed above should be provided as soon as the design will allow (The right-of–way plat and easement description can be furnished after the initial submittal).

GENERAL SHOO-FLY CASE



Design the Shoo-Fly for a specific maximum train operating speed in consultation with railroad. This may be less than the timetable speed.

Offset = X (Perhaps 24 – 80 ft)

Considerations;

Minimum - Preserve the integrity of railroad operations
Constructability

Desirable - Available room
Site conditions
Economics (trade-off between substructure and excavation shoring costs vs shoo-fly/site work costs)

Track Work Sequencing Before Underpass Construction

1. Construct track B' – E' between the 12-20 ft ± construction clearance points (center line of track to center line of track), (commonly by contractor)
2. Between train operations railroad workers shift track A-B and E-F to A-B' and E'-F
3. Remove track C-D (contractor or railroad)

Track Work Sequencing After Underpass Construction

1. Replace track C-D
2. Between train operations railroad workers shift track A-B' and E'-F to A-B and E-F
3. Remove shoo-fly track B' – E'

FDM 17-45-1 Railroad Stopping Lanes

May 2, 2003

There are advantages to adding an auxiliary lane outside the through traffic lanes for vehicles required to stop at railroad crossings when trains are not present. Such stopping lanes are particularly desirable for two-lane and multi-lane roadways carrying moderate to heavy traffic, high truck volumes, with traffic backups and potential rear-end accidents.

The auxiliary lanes direct buses and trucks which are required to stop at the crossing away from the through traffic lanes, thus minimizing the adverse effects on capacity and safety of the roadway. To allow a smooth transition of these vehicles back into the traffic flow, stopping lanes should be designed with adequate deceleration and acceleration tapers. The lengths of these tapers and the stopping lanes depend upon the operating speed of the roadway, grades and the operating characteristics of the largest motor vehicle.

Stopping lanes also have their disadvantages. They are frequently and wrongly used for high-speed through movements or as right-hand passing lanes. The wide expanse of pavement tends to give the illusion of additional driving lanes. Therefore, marking and signing must be carefully tailored to each location, using the MUTCD as the basis for development.

Stopping lanes are not mandatory in Wisconsin.

FDM 17-45-5 Roadway Treatments at Closures

May 2, 2003

Roadway treatments at closings vary widely.

In view of the desirability of large numbers of crossing closures, WisDOT favors the implementation of minimum treatments, recognizing land use, community values and wishes consistent with public safety and convenience

In many cases, particularly in urban areas where the resulting dead end street is relatively short, conventional, high visibility barricades or beam guard installations are sufficient when preceeded by appropriate signing at the nearest street-to-street intersection. Refer to the MUTCD for appropriate barricade details.

While the close proximity and high value of developed properties limit the options in urban areas, rural areas have often favored large, costly turn-arounds (cul du sac). Such proposals are to be avoided if at all possible. Any cul du sac proposed treatment needs to be minimal reasonable and appropriate. Right of way availability may be a constraint and in such cases some use of the railroad right of way could be considered. Refer to AASHTO design guides for details of cul du sac design.

The actual roadway treatment will be determined by the OCR based on the hearing record.

FDM 17-45-10 Humpback and Sag Crossings

May 2, 2003

Crossings in areas of severe vertical alignments present unique and often unexpected hazards.

There are three primary problems with humped and sag crossings;

- the potential loss of vehicle control due to the violent vehicle movements if vehicle speeds are too great,
- vision problems which occur at night when headlights of the roadway vehicle fail to illuminate the crossing and its crossbuck warning sign.
- vehicles becoming “hung up” on the crossing, endangering people and vehicles near the crossing, property near the crossing and the train itself.

Long wheelbase vehicles, particularly those with low clearances, such as “low-boys” used to transport construction equipment, can get “hung-up” on the tracks of hump back crossings. Similarly, vehicles with long over-hangs, either in front of the front wheels or behind the rear wheels can also become “hung up” on sag crossings. Both situations hold the same risks to safety.

Identification of these crossings must currently rely largely on visual inspection, judgment, or a past incident (crash or near-crash). Research is underway to better quantify the characteristics that define such problem crossings as well as methods to measure and identify them.

As a minimum, the use of “Low Ground Clearance” (W10-5) signs needs to be considered.

See FDM 17-60-1 and FDM 17-60-5 for more design details.

FDM 17-45-15 Track Removals and Modifications

May 2, 2003

On simple crossing and improvement projects, it is normally possible to secure estimates from (and agreements with) the railroad within a six month period. However, when WisDOT or a local government requests that a track be removed from the roadway, the railroad companies have typically asked for at least an additional three months to allow their operating and marketing staffs to review the consequences of the request if honored.

It is important to understand that all track removals require the approval of the railroad. If the track to be removed is an active spur, industrial, team, switching, or sidetrack, or facilities related thereto, an agreement with the railroad is all that is needed. If the railroad does not agree, but the track has been abandoned, contact the RHS who will confer with the OCR to determine what level of authority the OCR may have. If OCR does not have authority, the issue may be appealed to the Surface Transportation Board of the federal government by petition through WisDOT's OGC.

In conferring with the OCR, it is advisable to have a resolution from the local unit of government expressing support for the track removal. This would be important on any removal including those on a state trunk highway or connecting street, but particularity important for those removals on local roadways.

FDM 17-45-20 Enhancement Projects

May 2, 2003

Projects using Federal Aid Enhancement funds and which involve railroads are usually used for recreational trails, bicycle facilities, or historical preservation purposes.

20.1 Historical Preservation

These projects usually involve grants to preserve or refurbish a depot or other buildings for use by museums, chambers or committee, etc. When an enhancement project involves railroad property, the same process used for other public highway projects is followed.

20.2 Bike and Pedestrian Crossings

Detailed guidance for bicycle facilities is available in a 1999 AASHTO Report "Guide for Development of Bicycle Facilities." Also available is a "Wisconsin Bicycle Guide" published in 2003. See FDM 11-45-10.

Bike paths and sidewalks crossing railroad tracks are the most common projects at railroad crossings and need special attention. A slight angle of crossing is desirable for bikes, wheelchairs, baby strollers, etc. so that one wheel crosses at a time. However, large angles are not desirable because these vehicles lose their wheels or tires in the flange way of the track. This can be very dangerous condition for these users, by either throwing a biker or trapping a baby carriage or wheelchair.

Some indirection (curvature) in the path in order to meet the track at a desirable angle must always be a serious consideration.

Other suggestions:

- Consider zigzag approaches to force those using the crossing to look down the track in each direction before crossing.
- On corridors with frequent highspeed operations, and high crossing volumes, a separation structure may be needed.
- Keep debris and vegetation off of, or back from, the edges of the facility for safety.
- Install cross bucks on the path approach to better identify where the track is.

The lead times for these projects must include time to petition the OCR and receive an order, as well as the time required to achieve agreement with the railroad.

FDM 17-45-25 Exempt Crossings

May 2, 2003

25.1 Background

Under Section 346.45, W.S., certain vehicles are required to stop at railroad crossings. These vehicles include buses transporting passengers; school buses conforming to Section 347.44(1), W.S., vehicles marked as carriers of chlorine, explosives, poisons, flammable products, oxidizers, corrosives, compressed gas, and radioactive materials; and transporters of products with flash points below 200° F or of products having a temperature above their flash point when being loaded. However, these vehicles need not stop if there is either (1) a police officer or flagperson directing traffic, (2) the track passes through an intersection with an official

traffic control signal, (3) a sign stating the crossing is abandoned, or (4) a sign stating the crossing is exempt.

The OCR has authority under 195.285 W.S. to declare crossings exempt. The process (See Attachment 25.1) of having a crossing declared exempt is included in W.S. 195.285 and begins with an analysis based on the criteria listed below followed by a petition to the OCR by a railroad, the WisDOT, or the governing body of a city, village, town, or county. School districts, industries, and private citizens are not eligible petitioners. The petition should assert that the stopping of the vehicles listed above is hazardous to human life. The OCR will hold a hearing on the allegation. On crossings involving the State Trunk Highway System, the WisDOT shall be an interested party and attend the hearing. If the OCR determines that it would be in the public interest to exempt such vehicles from stopping at the crossing, it may order the public body having jurisdiction over the roadway to erect suitable signs, signals, markings, or other traffic control devices. The design and installation of signs, signals and markings would be in accordance with the specifications of the WisDOT and the MUTCD.

25.2 Criteria for Selection

The following criteria have been identified as elements in the investigation and selection of railroad crossings for exempt status. There are no firm or absolute numerical values established for any of the following items:

1. Crash Record: The crash records as well as crash potential at and in the vicinity of highway railway crossings are to be considered. Single and multiple vehicle crashes and vehicle-train crashes are to be included in the evaluation. A summary of crashes at a particular crossing on the state trunk highway system is obtained from Traffic Safety Section of DTID's Bureau of Highway Operations.
2. Frequency of Train Traffic: There should be infrequent train operations at exempt crossings. For instance, an average of six crossings per week or less exclusive of flagging controlled switching moves would be considered infrequent. Normally there should be only a single track and never a possibility of more than one train at the crossing at or about the same time.
3. Volume of Vehicular Traffic: There should be a large volume of vehicular traffic using the crossing, particularly when trains are not normally present. An ADT in excess of 3000 would be desirable, but a lower ADT with > 20 percent trucks and buses could be considered. The number of school buses and trucks required to stop at a crossing are a possible hazard to through traffic. A reduction in vehicle delays is obtained with an exempt crossing.
4. Width of Pavement: Crossings with stopping lanes already in place on the approaches may lessen the need for exempt status. The number of traffic lanes and width of the roadway is not considered significant.
5. Classification of Rail Line: The Federal Railroad Administration has nine classes of track. These are shown on Table 15 in Chapter II of the "Rail-Highway Grade Crossing Handbook." See Table 25.1 for Track Classes 1 through 6. For the purpose of analyzing a railroad line for an exempt crossing, crossings on Track classes 4 through 6 should never be considered for exempt status except as permitted in Section 346.45(3) W.S. Special conditions may allow for consideration of crossings on Track Class 3 lines if crossing gates are in place. Tracks meeting track safety standards above Class 6 are required to be grade separated.
6. Motorists View of Trains: Consideration regarding sighting of trains by motorists would include data on time of train operations over the crossing, adverse climatic conditions expected, obstruction to view and use of artificial light at the crossing. A good view of approaching trains and of rail cars occupying the crossing is essential unless train activated flashing light signals or highway traffic lights are installed.
7. Vehicle Speed: The speed of vehicles is not a primary consideration. Rural highway crossings with few trains and with vehicles stopping as frequently as three or four an hour in each direction of travel could be considered for exempt status.
8. Auxiliary or Vehicle Stopping Lanes: Auxiliary vehicle stopping lanes are not necessary with exempt crossings as vehicles otherwise required to stop at railroad crossings will stop in common with other highway vehicles during the approach and crossing of a railroad train. The removal of existing auxiliary lanes at an exempt crossing should be considered depending on their value due to other factors. At a minimum they should be marked to indicate they are not driving lanes.
9. Warning Devices for Exempt Crossing The volume and speed thresholds for an exempt crossing could be increased where gates and flashing lights are present at a crossing.
10. In limited circumstances, where a crossing is in close proximity to a highway intersection, the crossing may be a good candidate for exemption even if the rail line carries large volumes of trains. The crossing would typically have gates and lights and the roadway intersection would be signalized.

However, a hazard may exist from stopping vehicles such as a school bus blocking the intersection when they stop for a non-exempt crossing. Thus exempting the crossing may be a safer alternative overall.

25.3 Summary

There are no firm or absolute numerical values established for any of the above items. The conditions have variable effects on safety and are closely interrelated. A total evaluation of all items is required, including any changes in the signing, crossing, and traffic controls. In addition to the savings in time and energy realized by the public at an exempt crossing, there should be a high probability of reducing vehicle-vehicle crashes and, to the extent possible, strong assurances that a vehicle-train accident would not occur at the crossing.

Requests for exempt crossings on state trunk highways or in conjunction with a federal-aid project are to be submitted to the RHS with supporting data in the same manner as for improvement projects.

25.4 Exempt Signing

The EXEMPT crossing signs are installed by the agency having jurisdiction for the maintenance of the highway. EXEMPT signs are placed on the same post as the railroad crossing advance warning sign and on the post with the cross buck sign. Detail on signing is contained in Chapter VIII of the MUTCD.

Table 25.1 Maximum Train Speed as a Function of Track Class

Track Class	Passenger	Freight
6	110 mph	110 mph
5	90	80
4	80	60
3	60	40
2	30	25
1	15	10
Excepted	None Allowed	10

Source: Ref. 1

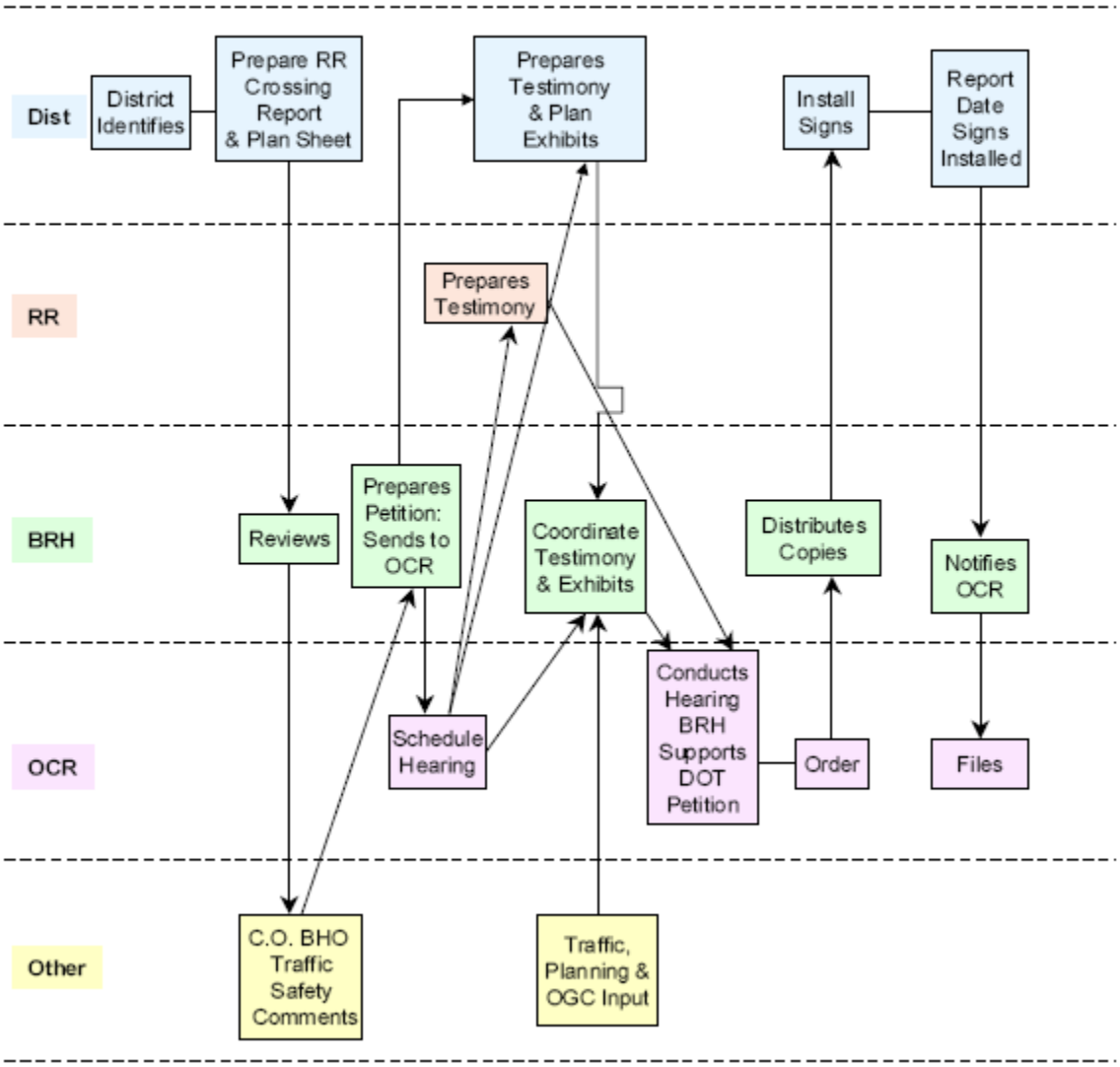
1. Railroad-Highway Grade Crossing Handbook - 2nd Edition, McLean, Virginia, Federal Highway Administration, Report FHWA 75-86-215, September 1986.

LIST OF ATTACHMENTS

Attachment 25.1 Exempt Railroad Crossing Process

Exempt Railroad Crossing

195.285 Wis



FDM 17-50-1 General

November 16, 2004

1.1 Introduction

Contract administration is a region function; and duties and responsibilities within each region may vary.

The region has the responsibility of prosecuting railroad contracts to completion, inspecting the work for compliance with the plans and special provisions, preparing the contract completion certificate (when needed), and obtaining and submitting final invoices. The region also has the responsibility of monitoring the timeliness of final bills.

Regardless of how these activities are handled, the Region Railroad Coordinator (RRC) should be considered a resource with general familiarity with railroad construction. The RRC is also likely to be familiar with the history and concepts of most railroad related projects in the region and is the link to the Railroad and Harbors Section (RHS) for additional technical expertise or assistance as may be required.

Refer to CMM 2-10.7 (Railroad Agreements) for guidance on railroad agreement administration.

1.2 Cost Principles

The Department uses federal cost principles published in 23 CFR Subpart 1 for all contracts with railroads regardless of funding source. The Department has not elected to reimburse railroads for overhead and indirect construction costs under 23 CFR 140.907.

FDM 17-50-5 Railroad Protective Liability Insurance

February 15, 2023

Deleted previously privately-owned rail lines that are now WisDOT-owned on the next page.

5.1 Background

23 CFR 646 Subpart A - Railroad-Highway Insurance Protection requires that the contractor purchase Railroad Protective Liability Insurance (RRPL) on behalf of the railroad when the project is located in whole or in part within railroad right of way. The standard specifications state the coverage to be provided; however, where deemed necessary, increased insurance limits or additional coverage may be provided on a project specific basis after consultation with the Railroad and Harbors Section Supervisor of Railroad Engineering and Safety (608) 267-7349. Factors to consider in deciding whether to approve increased insurance limits include the type of construction to take place near railroad tracks, volume and speed of trains, nature of railroad operations such as switching or yard movements and potential consequences of an event. STSP 107-026 or STSP 107-034 are needed to ensure that the contractor furnishes RRPL. Refer also to FDM 19-15-35 and the designer notes of these special provisions for additional information.

RRPL is also required when the project work is within 50-feet of any railroad property or affects any railroad bridge or trestle, tracks, roadbed, tunnel, underpass or crossing.

5.2 When to Provide Insurance

Train operations are not a consideration in determining whether to provide RRPL. RRPL is required because contractors' general liability insurance policies normally have an exclusion for work on railroad right of way or work within 50 feet of railroad property.

Some examples of highway construction activity that would require the contractor to obtain RRPL include:

- Milling, removing or paving any roadway surface or otherwise disturbing the existing roadway surface or ground within 25 feet of the center line of an operating railroad track,
- Grading partly or wholly on railroad property,
- Constructing new public highway at-grade crossings,
- Constructing a highway-railroad overpass or underpass structure,
- Bridge deck replacements or full depth deck repair on highway overpasses,
- Extending or constructing surface or underground drains or sewers on railroad right of way,
- Constructing curb and gutter, sidewalks or pull boxes within 25 feet of the track centerline,
- Construction of a haul road across a railroad track.

- Long line pavement markings within 50 feet of railroad right of way.
- Railroad crossing special marking within 50 feet of railroad right of way.

RRPL is required when a county acts as a contractor on Local Force Account (LFA) contracts if the work is funded in part with federal funds. If the LFA work is funded with 100% state or local funds, RRPL may be omitted if deemed appropriate by the RHS section supervisor.

5.3 Leased Lines

Train operations on some railroad lines are conducted under a lease arrangement with the owner of the line. In such situations, the insurance must provide coverage for both the operating company and the owning company. The coverage may be provided by naming the lessor (owner) as an additional insured under the lessee's (operator's) policy, or by providing separate policies for each company. Since naming both companies on one policy dilutes the available limits to each, judgment should be used in deciding whether to name both companies on the same policy, increase the limits or provide separate policies for each company. The level of risk and the amount of potential exposure to claims should be considered in making this decision.

Lease arrangements are known to exist as follows:

Line	Operator	Owner
Norma – Cameron	Wisconsin Northern	UP
Cameron-Rice Lake	Wisconsin Northern	WCL
Cameron – Barron	Wisconsin Northern	WCL

The state or DOT does not need to be insured under a RRPL policy where a highway contractor is doing work over a line the state leases to an operator such as WSOR or Wisconsin Great Northern.

5.4 Operating Rights

Some railroads have the right to operate on another railroad's lines along with the owning company. In such situations, the RRPL insurance only needs to name the owner of the line. RRPL language includes provisions that also extend coverage to companies that operate on another railroad under a trackage rights agreement.

Examples are:

Line	Operator	Owner
Chicago – LaCrosse	AMTRAK	Soo Line
Tunnel City – La Crosse	UP	Soo Line
New Lisbon – Weston	Soo Line	WCL
Necedah – Junction City	UP	WCL
Junction City – Superior	UP	WCL
Twin Cities – Superior	Soo Line	BNSF
Green Bay - Cormier	E&LS	WCL
I-90 – Beloit	UP	IC&E

5.5 Special Provisions

See FDM 19-15-35 for more information on railroad special provisions 107-026 and 107-034.

FDM 17-55-1 General

August 15, 2019

1.1 Background

Highway improvement proposals that require work on the railroad right of way either in crossing or closely paralleling a railroad require negotiations with the railroad. Like negotiations for railroad force account work, most WisDOT negotiations with railroads on property matters are handled by the Railroad and Harbors Section (RHS).

The area where roadways cross railroads should be viewed as “common areas” because, as a practical matter, public use and necessity require that both be there. Since both occupy the area, both have rights and obligations. When one party undertakes activities that affect (or damage) the other, that party is obligated to coordinate, protect, and perhaps reimburse the other.

The basic operating right of way for railroad main tracks is generally 50 feet or 25 feet each side of a single track, or 25 feet outside of multiple tracks. Railroad right of way is often 100 feet wide, plus extra widths are often needed for cuts and fills.

Unless evidence exists to the contrary, roadway right of way is assumed to be 66 feet wide per s.80.01(2) WS.

1.2 Entering Railroad Lands

Entry onto railroad lands is frequently necessary early in the project development process. WisDOT and its authorized representatives have legal authority to enter private railroad property to make surveys and inspections pursuant to 84.01(10) W.S. The railroad has no right to bar entry of WisDOT or its contractors to make surveys, inspections, measurements or take photographs, however they often seek to require WisDOT and its contractors to obtain a right of entry permit. **Any such permit is not required.** However, it is necessary to respect railroad operations. Refer to FDM 9-10-6 for details on how to proceed and for a sample letter.

1.3 Indemnification

Railroads often want the WisDOT to indemnify them (assume their risk) if WisDOT enters onto their lands. The state cannot indemnify the railroads, but may indemnify WisDOT employees subject to statutory limitation. To do this, WisDOT has used the following language:

“The Department agrees, as required by Wisconsin law, to pay any liabilities arising out of the exercise of its rights of entry whenever those liabilities result from an act or omission of a State of Wisconsin officer, employee or agent acting within the scope of his or her State of Wisconsin authority.”

There are several reasons why WisDOT cannot agree to “hold harmless” or to indemnify third parties;

1. Such agreements conflict with Wisconsin’s Constitution, Article VIII, Sections 2, 3 and 4. WisDOT cannot pledge the credit of the state or contract state debt for payment of indemnification agreements.
2. The State of Wisconsin enjoys sovereign immunity, except as specified by the State Legislature, and no employee or officer may waive sovereign immunity without specific statutory authority to do so.
3. No state agency, without express legislative authority, can enter into a contractual indemnification agreement. State agencies must find any authority in the four corners of the statute book; if there is any doubt, the authority does not exist.

Bottom Line: Neither WisDOT, nor its employees, have authority to sign an agreement of any kind to indemnify a railroad no matter how qualified or restricted or conditional. Signing indemnification agreements for WisDOT without authority would be outside the scope of an employee’s or agent’s authority.

FDM 17-55-5 Acquisitions

August 15, 2019

5.1 Background

Railroads have typically claimed to have ownership, (or at least superior title) of lands they occupy. As such, they seek compensation when highway improvements or other non-rail activities result in requests to use a portion of their property. In some instances, it may be found that the roadway occupied the area first and thus

has superior title.

Prior to determining compensation that is due a railroad, first evaluate the ownership claimed to be held by the railroad. A title search back to the original conveyance or patent may be required in some situations.

Since title search work is expensive and time consuming, the approximate value and overall significance of the proposed right of way taking should first be evaluated. If the taking is small, the value modest, and its significance or value to the railroad is small, it may be possible to negotiate acceptable compensation without a title search.

The Region first provides the RHS with a description of the parcel, the area of taking and the unit value. RHS will then arrange for acquisition of the appropriate interest. See the RHS Railroad Coordination Handbook for more detailed information.

5.2 Acquisition

Interests in railroad property are usually acquired in easement through negotiation. Railroad facilities will usually remain on the highway parcel to be acquired. RHS will follow the procedures outlined in the Real Estate Program Manual and Railroad Coordination Handbook in negotiating for the parcel and shall furnish the railroad with a copy of the “The Rights of Landowners Under Wisconsin Eminent Domain Law”, and a copy of “Property Owner Appraisal Guidelines.”

5.3 Administrative Revisions

This is a term used to describe a mutually acceptable payment for land and interests usually as the result of a counter offer from the railroad. It will typically be after the railroad's rejection of the WisDOT's latest offering price and will usually be a value exceeding the appraisal. In proposing an administrative revision, several factors must be considered as noted in the Real Estate Program Manual. These include:

- uncertainty of compensability for damage/benefits,
- adequacy of appraisal,
- divergence of opinion among appraisals,
- serious doubts as to highest and best use,
- complex valuation problems, and
- recent court or jury awards.

5.4 Eminent Domain and Condemnation

WisDOT has the right to condemn railroad property in cases where the public good is served. The right is used sparingly, as a negotiated settlement is the preferred option. If, after extensive negotiation, the easement for the crossing cannot be obtained, a Jurisdictional Offer and a “Notice of Lis Pendens” would be made. The interest in the railroad is then acquired by the Award of Damages conveyance. The award is often based on an amount established as just compensation by the appraisal.

Note: As noted earlier, in order preserve WisDOT’s rights under eminent domain, required land interests must be shown on a plat. Refer to FDM 12-1-15 *and* FDM 12-5-1 *for a description of types of acquisition and determining right-of-way needs.*

FDM 17-55-10 Responsibilities for Acquisitions

August 15, 2019

10.1 Railroads and Harbors Section (RHS)

RHS will acquire railroad land interests. WisDOT must handle acquisition whenever state or federal funds are used either for acquiring highway right of way for project construction under any of the following conditions:

1. A land right is required for joint use of railroad lands for transportation purposes on a state trunk highway such as for an at-grade crossing, a grade separation, a culvert installation, lateral encroachments, etc.
2. There is an agreement with the local highway agency for WisDOT to acquire right-of-way for the local road project.

10.2 Region

Region’s early identification of any possible need for railroad property is imperative. Without early identification and subsequent notice to RHS, the project may not meet the desired schedule.

In the case of stipulated agreements for structures, RHS will define in the stipulation the land interest to be acquired from plat information provided by the Region. The Region will arrange for the appraisal if necessary.

The Region or project manager will provide RHS with the following information to proceed with negotiation:

- a schedule of highway interests and a legal description
- a Transportation Project Plat
- portions of the plan with cross sections, where appropriate
- an opinion of value via an appraisal, sales study or Project Data Book

Where long reaches of road embankments or slopes are located on railroad right of way, a permanent limited easement may be required. Before agreeing to such occupancy on mainline right of way, the railroad may want assurance that the highway occupancy will not preclude future track construction. Cross sections need to be developed up to at least the near rail of existing track.

10.3 Local Agencies

Normally, RHS will deal directly with railroads when it is necessary to make arrangements for adjustment of railroad facilities by railroad forces when state or federal funds are used on a highway project. However, agencies of a local unit of government may negotiate directly with the railroad in cases where it is financially responsible for acquiring the right-of-way on a local road or street project. If federal highway funds are to be used in financing the right of way or subsequent phases of the project, the acquisition of the right of way and any other project arrangements must be in compliance with federal and state regulations and procedures and the local agency must review the proposed offer with the Region and RHS prior to submitting it to the railroad.

FDM 17-55-15 Determining Compensation

August 15, 2019

15.1 Procedure for Determining Compensation

Compensation for right-of-way damages is generally determined to be minimal for most railroad crossing projects but may be significant in other situations. However, railroads often have minimum acceptable levels of compensation, and legal and processing fees. Because railroad property is unique, it is highly recommended that every railroad parcel be appraised to substantiate the compensation being offered. A procedure has been developed to determine reasonable and just compensation for acquiring highway easements, temporary limited easements, and permanent limited easements for projects.

15.2 Easement Valuation

The following procedure is provided as a means of determining the amount of compensation for state trunk highway easements across railroad right of way without the necessity of a full appraisal of the parcel. If this method results in a value exceeding $5,000, then a full appraisal is required, and a determination should be made that the railroad has good title to the property.

The procedure as outlined below is based on the principle that the new or revised crossing area will be used for the mutual but not necessarily equal benefit of the public and the railroad company.

15.3 Region, in Consultation with RHS if necessary

1. Determines whether the area of the existing highway right-of-way over and across the railroad right of way was acquired, dedicated or presumed according to Section 80.01(2) Wisconsin Statutes. This area is to be shown on the right of way plat as existing highway right-of-way.
2. Determines the area required for the new or additional highway easement.
3. Estimates the unit value of the land adjacent to the railroad property. This should be done by a Region real estate agent knowledgeable of land values in the area of the crossing. This amount will be the basic unit value where the railroad lands are comparable and could be similarly used by the abutting landowner. Where the railroad lands are not readily suitable for use with adjacent lands without substantial alterations, this condition should be reflected in an adjustment of the basic unit value of the railroad lands. (Examples of unsuitable land are locations where the land is too high or too low, contains a drainage ditch, is under water, is in close proximity to public highway, etc.).

15.4 Railroads and Harbors Section

1. Based on the adjusted unit values determined, compute the land value for the highway easement. If the value exceeds $5,000, a full appraisal should be obtained, and a determination made that the railroad has good title to the property as a basis for an offer to the railroad, and as a basis for considering an administrative revision later if necessary.
2. An offering price report is prepared for approval by the Administrator.

   This valuation procedure does not necessarily preclude the desirability of an appraisal.

FDM 17-60-1 Locating New Highway - Railroad Grade Crossings

May 2, 2003

1.1 Introduction

A highway railroad grade crossing is a point of conflict, and thus a safety concern. Because of this and the costs associated with providing appropriate warning, and of continuing maintenance, the number of crossings should be kept to a minimum.

The FRA has set a national goal of reducing the number of existing crossings by 25 percent. Therefore, whenever a project involves improving a crossing or its warning devices, designers should review nearby crossings to determine if they are candidates for consolidation. Where possible in urbanized areas, space crossings of main tracks one-half mile apart measured along the track. In rural areas, space crossings one or more miles apart.

1.2 Location Considerations

Locate crossings on tangent sections of highway and railroad track when reasonably possible. This avoids the profile problems induced by super elevation, assures maximum sight distances on approaches, and minimizes crossing length. The roadway and track should intersect as close to 90 degrees as possible. Large skew angles should be avoided since they restrict vision particularly for buses and trucks when the skew is left hand forward. Large skews are also problem for bicyclists and motorcyclists since tires may be caught in the flangeway. It may also be necessary to provide additional warning devices at crossings with large skew angles.

A small skew angle is desirable for sidewalks, since vehicles with small wheels (baby carriages wheel chairs, etc) traverse the crossing better when only one wheel at a time crosses the flangeway.

1.3 Roadways Paralleling Railroads

Distances between roadways and railroads that parallel each other should be consistent with existing or planned land use. Rules of thumb offered by the American Railway Engineering and Maintenance of Way Association (AREMA) for desirable distances are 2,000 feet for large industrial plants, 500 to 800 feet for small and medium plants, and 200 feet for residential, retail and commercial areas. This provides for expansion that allows rail service along both sides of the track(s).

1.4 Roadways Near Railroads

Special design or traffic control arrangements are required at crossings where the perpendicular distance between track centerline and the stop bar at the intersection of the paralleling roadway is less than 80 feet. The ideal minimum perpendicular distance between track centerline and the highway intersection STOP bar is between 100 and 125 feet.

FDM 17-60-5 Grade Crossing Design

November 16, 2004

5.1 Surveys and Plans

Survey operation and plan development should provide information on all roadway features along the highway and all railroad features along the railroad within 500 feet of a grade crossing. This includes:

1. Characteristics of the crossing (including type of surface, location and length of existing crossing material).
2. Crossing angle
3. Curve radii of railroad
4. Location of curves and spirals
5. Stationing along both railroad and roadway
6. Location of switches, frogs, track-side sign and signal masts, and other track features.
7. Profiles for both railroad (on each rail through grade crossings and where the track is superelevated) and roadway.
8. Cross sections (at least 100 feet along the railroad each side of the crossing).

9. Warning devices and systems in place.
10. Utilities
11. Existing roadway conditions (such as pavement, drainage structures, shoulder width and sidewalk and terrace dimensions).
12. Significant physical features (such as buildings, trees, brush, rock outcrops).
13. Sight distances. (See Form DT1589, FDM 17-25, Attachment 1.2)
14. Railroad drainage structures
15. Typical sections of highway and railroad (existing and proposed).
16. Right-of-way lines
17. Slope intercept lines
18. Highway intersection locations and intersection traffic control.

5.2 Visibility and Sight Distances

Avoid locating a grade crossing on or near a horizontal curve of either a track or highway. Where feasible remove obstructions that prevent the crossing from being visible to approaching motorists, Section 195.29(6) of the Wisconsin Statues requires;

1. the railroad to clear brush and trees from its right-of-way within at least 330 feet of a public crossing,
2. the highway authority to clear brush and trim trees within its right-of-way within 330 feet of a public crossing.

There are three sight distances critical to a well designed grade crossing. The first involves the distance required to stop a motor vehicle if a train is blocking the crossing. This distance is measured along the roadway and is referred to as distance [1] on page 2 of Form DT 1589, "Railroad Crossing Report" (see FDM 17-25, Attachment 1.2).

The second sight distance is the lateral visibility across the quadrants. After a driver realizes that a crossing is being approached, that driver must be able to look to the left and right, observe the approach of a train, proceed over the crossing or make a safe stop. This distance is referred to as [3] in page 2 of FDM 17-25, Attachment 1.2.

The third sight distance comes into effect when a vehicle has stopped at a crossing and is about to proceed. Before proceeding over the crossing, the driver must decide whether to wait or to advance based on vision along the track. This sight distance is measured along the track and depends on the train's approach speed and the time required for the motor vehicle to accelerate and clear the crossing. (Refer to AASHTO "Policy on Geometric Design of Highways and Streets," 2001, page 739, Exhibit 9-103, plus accompanying text.)

When any of these three sight distances are insufficient at a crossing, it is necessary to either:

- take measures to increase available sight distances (corner, stopping or clearing) by clearing, re-orientation of the crossing vertically or horizontally, or other means;
- establish a posted approach speed for the highway vehicle that provides adequate sight time and thus permits the safe passage over the crossing given the maximum speed of trains at the crossing;
- install automatic flashing light signals (with or without gates).

5.3 Profile

In order to avoid drivers losing control of their vehicles through "bottoming" or "vaulting", and to avoid low profile vehicles from hanging up on the crossing, the grade or profile of the roadway approaches must match the grade along and across the track. To match the grade along or parallel to the rails, it is necessary to remove the pavement crown. It may also be necessary to tilt or warp the pavement cross sections if there is a grade along the track, or if the roadway is on horizontal curve.

The grade along the center line of the roadway must match the grade across the rails. Thus, where the railroad is on tangent, the roadway grade would be flat. On horizontal railroad curves, the roadway grade would match the superelevation of the track.

WisDOT uses a 2’6” minimum approach section from the field side of the rails in the same plane as the rails, with a maximum deviation from the plane of 3-inches at distances 30-feet from the near rail as shown in Attachment 5.1.

Attachment 5.1 illustrates this allowable grade variation for the roadway approach to a grade crossing. At multiple track crossings, particularly on higher speed roads, it is highly desirable that all rails be in the same plane. To avoid a rough riding crossing and possible loss of vehicle control, the stair step effect of tracks in different planes must be avoided. Consider negotiating with the railroad to raise tracks in order to achieve this. Lowering tracks is usually not feasible. Also refer to the SDD 13B1 entitled "Pavement Details for Railroad Approach".

This 3-inch deviation from the plane is derived from an empirically developed “comfort factor” formula for the driver that has been an AASHTO and AREMA standard for many years. This maximum 3” deviation avoids “vaulting “ or “bottoming” that divert a drivers attention, or worse, cause a loss of vehicle control.

The formula is: $L = \frac{AV^2}{46.5}$ or $k = \frac{V^2}{46.5}$

Where:

L_c = length of crest
L_s = length of sag
D = total length
A = algebraic difference in grades
V = posted speed
$k = \frac{\text{length}}{\text{algebraic difference in grades}}$

With the deviation of 3-inches in 27.5-feet[1], this results in a minimum “K” value of 15.13 for both sag and crest vertical curves. A greater value may be required based on the design speed of the highway.

If these minimum conditions do not provide adequate head light sight distance, consider providing fixed source lighting at the crossing.

5.4 Track Raises

5.4.1 Initiated By Railroad

The railroad may desire to raise, undercut or otherwise adjust its track when rehabilitating the line or reballasting the track. When this is done, the railroad must meet the existing roadway alignment in a manner which will assure a smooth ride across the track. Track raise work by the railroad is usually coordinated with the roadway authority. Indeed the AREMA Manual recommends the railroad obtain approval of the highway authority for any grade changes. However, when rail/roadway work cannot be coordinated, the condition created by a track raise is typically a temporary one.

When tracks are raised, construction of reverse vertical curves is typically required. Attachment 5.2 provides information on the profile transition required and is consistent with Attachment 5.1. To use Attachment 5.2, first determine the roadway posted speed and the vertical distance “H” between the original existing roadway elevation and the top of rail after the track raise. The total distance D is the required transition distance on each side of the outside rails of a crossing. Note that the sag portion of the transition requires the longer length to provide desirable driver comfort and safety.

5.4.2 Initiated by WisDOT

Sometimes a highway improvement project may call for changing the highway profile at a grade crossing or raising the railroad track profile where a new grade crossing is established. At other times a railroad may want to raise the track through a grade crossing for its own purposes. Unless there are extenuating circumstances, a track raise may be built into the design.

The following table may serve as a guide for planning purposes during preliminary design. Contact the region railroad coordinator (RRC) and the railroad early in the design process to decide on the amount of track raise before detailed design is undertaken.

[1] 30-feet from the rail minus 2.5 feet of tangent required outside of the rail.

Track Raise (inches)	Use When
0	No track raise can be tolerated by highway or railroad design or physical considerations.
1	Size of rail through the crossing will not be increased and only a skin lift of ballast is needed for track surfacing
2 - 3	Size of rail through the crossing will be increased and only a skin lift of ballast is needed for track surfacing
4 - 6	Site conditions such as a sag in the track profile, improved highway profile or increased track stability (with or without an increase in rail size) make a more substantial track raise desirable.
> 6	Although not common, this may be required for adjusting the highway profile or to rehabilitate the railroad track.

The greater the raise, the longer the track runoff and thus the greater the costs for track work. The cost of track raises that are provided solely for the benefit of the railroad is to be borne by the railroad.

5.5 Approaches

When designing concrete pavement approaches to a crossing, keep in mind that the railroad company requires room to work when the track structure or crossing surface need repair. For this reason provide an asphaltic surfacing approach between the end of the concrete and the beginning of the crossing material. Pavement structure in the “devils strip” area between multiple tracks requires special consideration for adequate asphalt compaction; avoid using concrete in the area. Refer to SDD 13B1.

In order to discourage motorists from passing around crossing gates, consider providing at least 100 feet of vertical face median curb at the following approaches:

- to rail lines with speeds exceeding 35 mph
- to crossings which have gates included in the active crossing warning devices.

Begin the vertical face curb at a point 12 feet from the track centerline.

5.6 Welded Rails

Welded rail shall be used through the crossing area, including shoulders and sidewalks, in order to reduce maintenance and to maintain a smooth crossing. On railroad lines with light weight rails, use heavier rail (minimum of 115 lbs./yd.) through the crossing. If guard or flange rails are used in the crossing, they also need to be continuous through the crossing. Rail joints shall be not less than 25 feet outside or beyond the ends of the crossing.

5.7 Drainage and Crossing Stability

Poor drainage is recognized as one of the leading causes of rapid crossing deterioration and early failure. Take all reasonable measures to channel water away from a grade crossing and to prevent it from flowing into the track structure. These measures may include raising the grade line of the track, lowering the grade line of the roadway approaches, special ditching along roadway and railroad, trench drains at the crossing quadrants, underdrains, curb and gutter, storm sewer systems, sealing of the flangeways with a railroad approved filler, etc. Cutting under the highway approaches at the same time the railroad is cutting out its subgrade at the crossing eliminates the frost shear zone at the limits of the ballast.

Hardpan refers to the subsoils below the ballast which at most locations have been compacted by many years of train operations. Avoid work that would disturb the hardpan. This is particularly important where poorly drained parent soils such as clays, silts and loams are present in the subgrade.

LIST OF ATTACHMENTS

Attachment 5.1 Examples of Allowable Roadway Grade Variation

Attachment 5.2 Runout Distance D on Approach to Track

FDM 17-60-10 Railroad Design Considerations

May 2, 2003

10.1 General

Railroad design practices are generally based on those recommended by the American Railway Engineering and Maintenance of Way Association (AREMA). The AREMA manual is available online to WisDOT employees.

The individual railroad companies have also developed standards and design practices of their own. These include construction of railroad track, structures, highway-railroad grade crossings and grade crossing signals. Subject to concurrence by the RHS, facilities which are the responsibility of the railroad for maintenance and operation shall conform to the specifications and design standards used by the railroad in its normal practice.

Railroad design standards for a particular line or location will affect the percent of grade, length of vertical curves, amount of superelevation between rails on curves, length of tangent between curves and length of spirals on curves. Also generally specified are the shape and cross section of the railroad roadbed, the depth of ballast under the ties, the size and type of ties, and type and weight of rail.

In the construction of an at-grade crossing, for instance, the railroad will generally require a minimum of 115-lb. rail, but may be heavier depending on the existing weight of the approach rails. There are to be no rail joints in the crossing; welded rail is required. These design features are advantageous to the highway user by eliminating weak spots through the crossing and are generally accepted for reimbursement by the WisDOT for distances up to 39 feet beyond the crossing limits where a public participation in crossing costs is authorized.

10.2 Clearance Considerations

The minimum statutory horizontal clearance to the centerline of tangent track is 8’-6”. Railroads prefer a minimal twelve feet to provide working space for train crews. Section 192.31(3) of the Wisconsin Statues requires 23 foot minimum vertical clearance unless a lesser distance is approved by the Commissioner of Railroads. Lesser clearances may be approved for a number of reasons, such as existing structures on the line of track with lesser clearances, financial hardship if street intersections or driveways would require major reconstruction, or a structure is on a line with little prospect of double-stacked container cars being hauled.

Title 23 Code of Federal Regulations appendix to Part 646, Subpart B, Paragraph 646.212(a)(3) limits federal funding on highway overhead structures to horizontal clearances of 20 feet between the track centerline and the face of the abutment embankment slope at rail elevation, and to vertical clearances of 23 feet unless greater clearances are more cost effective. See FDM 17-40-40 for more details.

Industry practice is to reference horizontal clearances from the centerline of track and vertical clearances above the top of rail (the high rail on super elevated track).

10.3 Statutory Clearances

Wisconsin statutory clearance requirements are found in 192.31 WS (vertical), and 192.53 WS (horizontal), and are interpreted in OCR administration rules OCR 3.14, 3.15, and 3.16. Horizontal clearances are to be compensated 1 inch per degree of curve. Exemptions for lesser clearances may be approved by the OCR after petition and a finding that a reduced clearances will not endanger safety and is in the public interest.

10.4 Clearances Desired by Railroad

Railroads generally prefer minimum horizontal clearances of 18 to 25 feet and minimum vertical clearances of 23 feet.

10.5 Temporary Clearances

During construction it is sometimes necessary to encroach on desirable clearances. In such cases 12 feet 0 inches horizontal and 21 feet 0 inches vertical may be permitted. In tight situations, lesser horizontal clearance may be permitted since the maximum rail car and engine width used in unrestricted interchange service is 10 feet 8 inches. (5’-4” each side of the track centerline)

In order to consider a railroad’s design practices and WisDOT policy, planners and designers must discuss any highway design proposals affecting railroad facilities with RHS staff. As a general policy in adjusting railroad facilities, it is the intent of the WisDOT to keep the railroad whole.

The adjustment of railroad facilities is generally performed by railroad personnel or a continuing contractor retained by the railroad at actual cost without profit to the railroad. Railroad work performed in conjunction with highway improvements is to be performed in essentially the same manner and with the same materials as if the work were performed by the railroad company for railroad company purposes.

FDM 17-60-15 Signing at Crossings

May 2, 2003

15.1 Introduction

Warning devices at grade crossings may consist of any or all the following:

1. Crossbuck signs
2. Advance warning signs
3. Pavement markings
4. Stop signs/yield signs
5. Flashing light signals - side of road
6. Flashing light signals - elevated cantilevers
7. Highway traffic signals

In general, items 1, 2 and 3 above are required at every public crossing. However, advanced warning signs and pavement markings may be omitted at certain crossings in urban areas and at minor crossings where they would not be appropriate. See Chapter VIII of the MUTCD.

Marking and signing of the highway is the responsibility of the maintaining highway authority, except that the railroad is responsible for the railroad crossing signs (cross bucks) and may also be responsible for furnishing the advance warning signs for county and town roads covered under 1 and 2 above.

15.2 Railroad Crossing Signs

Signing refers to Items 1 thru 4 above

1. Railroad Crossing Crossbuck Sign - A railroad crossing sign is required at each approach to a railroad-highway grade crossing. The placement and maintenance of the railroad crossing sign, commonly referred to as the crossbuck, is the responsibility of the railroad (Section 192.29(5) of the Wisconsin Statutes). Standards for the signs are found in the MUTCD Section 8B.02. The crossbuck is post mounted and placed in conformance with the MUTCD on each approach roadway. The backside of the cross-buck and both sides of the post are also reflectorized to increase its visibility to the motorist. Where there are automatic train activated railroad crossing signals, the cross-buck is fastened to the signal mast.
2. Railroad Advance Warning Sign - A railroad advance warning is required on each approach to a railroad-highway grade crossing. Standards for the signs are found in the MUTCD Section 8B.03. The railroad company is to furnish to the county the signs for crossings on local roads outside of the corporate limits of a city or village [Section 195.286(1) of the Wisconsin Statutes]. The county is responsible for installing the signs on its highway system and delivering the signs intended for town road crossings to the towns for the towns to install on their highway systems. The WisDOT, cities, and villages are responsible for furnishing and installing the signs on their respective systems. Standards for sign and the sign installation are found in the MUTCD. Signs are to be placed on both sides of the roadway when part of a divided or one-way facility, or when the roadway curve to the right restricts the view of the right-hand sign at night.

Exceptions to installing the signs follow:

1. If the distance between the railroad tracks and the parallel highway, from the edge of the track to the edge of the highway, is less than 100 ft (30m), the W10-2, W10-3, or W10-4 signs shall be used on the parallel highway to warn road users making a turn that they will encounter a highway-rail grade crossing soon after making the turn.
2. On low-volume, low-speed highways crossing minor spurs or other tracks that are infrequently used and are flagged by train crews.
3. In business districts where active highway-rail grade crossing traffic control devices are in use.
4. Where physical conditions do not permit even a partially effective display of the sign.

Placement of the highway-rail grade crossing advance warning signs (W10 series may be based on prevailing speeds rather than the posted speed limits. The following criteria may be used to further define the conditions under which the highway-rail grade crossing advance warning signs (W10 series) may be omitted:

1. The crossing is in a business district of a city or village, and

2. Active warning devices are in use, and
3. The highway speed limit is 25 mph or less

15.3 Pavement Markings

Projects involving the installation of railroad crossing signals or crossing surfaces are not acceptable to FHWA until the highway approaches to the crossing are properly striped and marked with the railroad crossing symbol and the highway advance grade crossing railroad warning signs are installed, if required by the MUTCD. Exceptions to this requirement are to be approved at the time the Agreement work is authorized.

Information on marking and signing is located in the MUTCD 8(b)16.

Pavement markings shall be placed in each approach lane on all paved approaches to highway-rail grade crossings where signals or automatic gates are located, and at all other highway-rail grade crossings where the posted or statutory highway speed is 40 mph (60 km/h) or greater.

Pavement markings shall not be required at highway-rail grade crossings where the posted or statutory highway speed is less than 40 mph (60 km/h), or in urban areas, if an engineering study indicates that other installed devices provide suitable warning and control.

Exceptions to the placement of pavement markings include the following.

1. Crossings of rail lines which are subject to abandonment within three years.
2. Crossings of minor spur tracks which average fewer than two trains a day over a 30-day period and which have train speeds of 15 mph or less.
3. Crossings in urban areas where vehicular traffic at the crossing is controlled by traffic control signals due to an adjacent roadway intersection.
4. Crossings where the approach distance is less than 250 feet in rural areas and less than 100 feet in urban areas.
5. Active warning devices are not present, and the highway speed limit or prevailing speeds are 35 mph or less, or
6. The track is a minor spur and trains operate at 15 mph or less.

The pavement markings may be placed under one of the following arrangements:

1. By state forces.
2. By separate contract, usually including other signing and marking locations.
3. By the local highway authority.
4. By the railroad by sub-contract to the Agreement
5. As part of the Traffic Control Plan on companion highway improvement projects.

Special consideration needs to be made for placement of the stop bar at highway -highway intersections when the intersections are so close to a rail-highway crossing that storage space between the track and intersection is limited. Placement should be as close to the near intersecting lane as safely possible.

15.4 Stop Signs and Yield Signs

The use of stop signs or yield signs at crossings with only passive warning (ie: crossbucks) is permitted. For roadways with normal highway traffic volumes, refer to the MUTCD 8B.07. For low volume roadways see MUTCD 5F.04. The OCR may order the installation of stop signs. However, Wis. Statues, do not give highway jurisdictions the authority to install YIELD signs. At this time only the OCR may order the installation of YIELD signs.

Railroads encourage local roadway authorities to erect stop or yield signs at passive crossings on roadways in their jurisdictions. This has been done on the premise of increasing safety at the crossing and to lessen the liability of both the railroad and the local unit in the event of an accident. DOT and OCR are attempting to change Wis. Statues to install “yield” signs on all passive crossings that do not have “stop” signs. So, while such signing is not yet widespread, it is expected that many additional crossings will be so signed in coming years.

15.5 “Tracks Out of Service” Signs

The ABANDONED railroad crossing sign is being phased out in favor of the “TRACKS OUT OF SERVICE” sign. However this sign should be used with caution. Occasionally railroads operate trains over an abandoned line or a work train may be used to remove rail materials. Before such signs are installed the highway authority should

confer with the railroad owning the tracks. The WisDOT policy identifies an abandoned crossing when all three of the following conditions are met:

1. Track is abandoned in accordance with Section 85.09(3)W.S.
2. No state or local interests exist in retaining rail service on the line.
3. Tracks are physically removed so a train cannot enter the crossing from the feeder track.

15.6 "Exempt" Signs

The EXEMPT crossing signs are installed by the agency having jurisdiction for the maintenance of the highway. EXEMPT signs are placed on the same post as the railroad crossing advance warning sign and on the post with the cross buck sign. Detail on signing is contained in Chapter VIII of the MUTCD.

For the legal basis of the above, refer to Sections 195.285, 196.26, and 346.45, Wisconsin Statutes.

See FDM 17-45-25 for more guidance on establishing an exempt crossing.

FDM 17-60-20 Warning Devices and Systems

May 16, 2006

20.1 Introduction:

Active Warning Devices consist of :

- Wig Wags (only a few remain in service)
- Flashing Light Signals: (Including wig wags)
  - Side of the Road (See Attachment 20.1)
  - Cantilever – extending out over the roadway above the approach traffic lanes.
- Gates, which extend over the approach roadway.
- Highway Traffic Control Signals

There are, however many components which enhance the operation of these active warning devices, and that, primarily, is the purpose of this section.

20.2 Train Activated Signals

Train activated signals are installed to warn the motorist of the presence or approach of a train where passive signing is determined to be inadequate for safety and the convenience of the public.

1. Flashing Lights - The current standard for railroad flashing light signals is a 12-inch diameter red light emitting diode (LED) lamp unit. The lamps are mounted in pairs. For a two-lane roadway, the signals are mounted back to back on a mast located on each side of the road. There are front lights (on the right) and back lights (on the left) of each approach roadway. For multi-lane roadways, including authorized parking lanes within the vehicle stopping sight distance of the crossing, additional flashing light units cantilevered over the traffic lanes are required. The arrangement of flashing-light signals is based on the concept of having a minimum of two sets of flashing-light signals visible to all lanes of approaching traffic.

   On roadways of divided highways and on one-way streets, either a single cantilevered signal or a side-of-road signal installed on each side of the roadway are acceptable for two-lane approaches. One or two cantilevered signals are required when there are more than two approach lanes, and when a shoulder width exceeds eight feet.

2. A single cantilevered signal These may also be employed under certain conditions.
3. Roadway Gates - Where train activated warning devices are required, automatic gates with flashing light signals may also be installed under certain conditions.

20.3 Control Equipment

In combination with the warning devices it is necessary to supply equipment that sends out a signal upon the approach of a train to activate the warning devices. The railroad normally selects this equipment consistent with its standard designs and practices, the WisDOT reviews for adequacy, and the OCR approves the design and electrical circuit plan.

See the RHS Railroad Coordination Handbook for more detailed information.

20.4 Placement of Signs and Signals

In the interest of public safety, railroad signal supports should be placed as far as practicable from the edge of

the traveled way without adversely affecting the effectiveness of the sign or signal faces.

Normally the outside edge of signs, including both the advance warning signs and the cross-bucks, should not be closer than six feet from the edge of the shoulder, or, if no shoulder exists, 12 feet from the edge of the traveled way. In urban areas, a distance of two feet between the face of curb and the edge of the sign is appropriate.

Curb heads and other highway appurtenances shall not extend above the gutter pan or natural ground elevation within 12 feet of the track centerline.

Flashing lights are to be mounted on a post (or mast) or cantilever. On through highways and streets there should be a minimum of two signal units facing each direction of traffic approaching the crossing.

When cantilevers are used, the flashing lights should be mounted over the center of the right traveled lane for two lane roadways. As noted earlier, cantilevers should be used if the side of the road signal is more than 12'-3" from the edge of the travel lane. On four-lane roadways, the flashing lights should be mounted as close as practical to the middle or the inside or left lane. If cost or space are an issue with placement, then the flashing lights need only enter the inside or left lane. This also applies to the placement of flashing light signals in areas with parking lanes, the flashing lights should be mounted in the center of the travel lane but are only required to be somewhere over the lane. Cantilevered signals are to ensure that traffic in travel lanes can view the flashing lights without obstruction from high profile vehicles in adjoining lanes. The bottom of the flashing lights on cantilevers is to be a minimum of 17 feet and not more than 19 feet above the crown point of the roadway. On divided highways, consider installing side or road signals in the median rather than cantilevers, unless there are reasons to keep the median clear (such as the median being on the outside of the horizontal curve) or there are space problems (such as utilities) occupying the normal or effective signal location.

Signal supports along a street with curbs should be placed a minimum of 4'-3" from the face of the curb to the center of the signal support post. Where there is no curb, the center of the signal support post should be placed a minimum of 4'-3" from the shoulder line or a minimum of 8'-3" from the edge of the traveled way, whichever is greater, but no less than 20'-3" from the centerline of roadway in either case (See Attachment 20.1).

When new signals are installed, or existing signals are repositioned, sidewalks should be constructed or reconstructed around and outside the signal base. When sidewalk space is limited, a standard sidewalk width of five feet may be attained by adjusting the signal support location one-foot in either direction. In rare instances, a sidewalk width reduced to four feet within the area of the signal may be necessary. The inside edge of the sidewalk is to be constructed no closer than 2'-6" from the center of a side-of-road signal support or cantilevered signal support, and no closer than 3'-0" from the center of a gated signal support. See Attachment 20.1. Adjustment is also necessary when utility poles interfere with a motorist's sight line to a signal.

For the general location of railroad signals other than the lateral clearance provided above, refer to Part 8 of the MUTCD.

20.5 Protection of Signals

Breakaway bases for cantilevered flashing-light signals are not allowed. Energy-attenuating devices may be placed ahead of the signal supports for the protection of an out-of-control vehicle. However, beam guard in front of signal supports has the undesirable effect of channelizing an out-of-control vehicle into the path of a train. For this reason, beam guard should normally not be installed at signal supports unless required for other reasons. One such reason is to protect the signal from damage due to turning trucks if the signal location is adjacent to a commercial driveway. Beam guard placed in front or around signal posts is the responsibility of the highway authorities or may be ordered by the Commissioner of Railroads as a part of the signal installation.

Traffic guard posts made from rails and set in concrete are prohibited.

LIST OF ATTACHMENTS

Attachment 20.1 Flashing Light Signals, Side of Road - Rural and Urban Roadway

FDM 17-60-25 Pre-emption/Interconnects *May 2, 2003*

25.1 Preemption/Interconnection of Traffic Control Signals

Preemption of traffic control signals involves the coordinated operation of highway traffic signal equipment and railroad grade crossing warning systems so that the approach of a train will cause the traffic signals to permit roadway traffic to clear the crossing before the arrival of a train, or other appropriate phasing. Preemption generally is used when a signalized intersection exists within 200 feet of a grade crossing or traffic queues routinely back up over the crossing during at least a portion of the day. Information from the crossing warning

system as to the approach of a train always takes precedence over the normal operation of the traffic signal. Preemption is accomplished by interconnecting the control equipment of the two systems. The objective of preemption is, first, to permit all roadway traffic to clear the crossing before the train arrives and, second, to allow non conflicting roadway traffic to flow while the train is occupying the crossing. "No Turn" signs, blank out signs, and signal indications may be necessary to prevent motorists from turning toward the track during the train movement. Where feasible, the location, normal phasing, and timing of traffic signals in addition to traffic control signing near a railroad crossing should be designed so that vehicles are not caused to stop on the tracks even though no trains are present in the area. When a train has cleared the crossing, the traffic signals operate in a preset manner before resuming their normal operation.

The railroad installs a relay terminal for the highway authority at the railroad signal bungalow. The highway authority attaches the interconnect cable from the railroad terminal and connects the cable to the highway traffic signal controller.

An agreement similar to one for crossing warning devices is prepared for execution by the WisDOT, railroad and, when involving a local road, the local jurisdiction. A signal plan and sequence of operations is provided to the RHS by the region.

There are two types of preemptions, simultaneous preemption and advance pre-emption. See the MUTCD for definitions, descriptions and additional details. Also, the US DOT Report entitled “Guidance on Traffic Control Devices at Highway – Rail Grade Crossings “ provides additional guidance on traffic control devices at highway/railroad grade crossings. In many instances, a crossing gate may be required at the crossing to prevent vehicles from entering the track zone during the clear-out sequence.

There are two additional suggestions:

- Annual joint inspections involving all responsible parties. These are necessary to ensure satisfactory operation
- A cooperative process for making any changes in traffic or railroad signal timing. Changes shall involve all parities – no changes shall be made unilaterally.

FDM 17-60-30 Crossing Surface Types

July 5, 2005

30.1 General

Both railroad companies and highway authorities have a vested interest in railroad-highway grade crossings and their physical characteristics. For highway users, the railroad grade crossing creates a potential for delay and congestion. There is also a discontinuity in the roadway surface that may result in a rough ride which may increase the "wear and tear" to the highway vehicles. For railroads, the highway grade crossing creates a change in the normal track structure. Track maintenance at highway crossings, crossing signs and signals are all additional costs to the railroad.

For these reasons, it is important that each grade crossing be provided with the most suitable surface for the particular location and characteristics of railroad and highway traffic and with due consideration for the cost of construction and maintenance.

30.2 Current Standard Crossing Surface

The concrete-panel crossing is the standard crossing surface for rural State Trunk Highways and rural local roads when design speed equals or exceeds 35 miles per hour and when the design traffic volume exceeds 4,000 vehicles per day. In urban areas, the concrete-panel crossing is the standard crossing surface when the design traffic volume exceeds 7,000 vehicles per day or the exposure factor exceeds 20,000. Concrete panels may be installed at crossings where design traffic volumes are below these thresholds if the highway maintaining authority and the railroad agree to the upgrade, and the additional cost does not exceed the funds allocated for the project. The highway maintaining authority or railroad may also agree to fund the additional cost if project funds are unavailable.

Concrete panels may be installed at sidewalk, path, and trail crossings if the maintaining authority and railroad agree to their use and the additional cost does not exceed the funds allocated for the project. The maintaining authority or railroad may agree to fund the additional cost if project funds are unavailable. If sidewalks, paths, and trails are within one panel length of the concrete-paneled roadway crossing they are to have the concrete material extended through the facility.

30.3 Selecting A Crossing Surface

The Railroads & Harbors Section will consider the following items when selecting or approving the type of crossing surface:

1. The functional classification of the roadway and the normal operating speed of vehicles at the crossing.
2. The general classification of the rail line, maximum train speed, average daily number of trains, and annual gross tonnage over the crossing.
3. The volume, weight and speed of the various types of vehicular traffic, particularly as related to trucks and buses.
4. The nature of the subgrade.
5. Climatic conditions.
6. Costs to construct, maintain, and replace.
7. Desired riding quality of the surface.
8. Detour arrangements/routes.

WisDOT staff should see the Railroad Coordination Handbook for more detailed information.

FDM 17-60-35 Miscellaneous

May 2, 2003

35.1 Controlled Train Movements

The number of train-vehicle conflicts at highway rail grade crossings can sometimes be reduced by controlling or restricting train movements to times when roadway traffic volumes are low. This can be especially beneficial for crossings where the street has peak traffic during certain hours. In some situations, it may be possible to make arrangements with railroad officials to have their switching operations scheduled at such crossings during times of off-peak traffic. There are usually no public costs for such arrangements. The railroad benefits through fewer crossing crashes and through fulfilling its social responsibility and good will.

It is not realistic to expect railroads to restrict through train movements to off peak hours in all communities and at the same time properly serve the state's economy.

35.2 Lighting Crossings

Providing street lighting at a railroad crossing is another alternative to increase motorist awareness at railroad crossings with trains operating in darkness. Lighting can be effective where trains operate at night over a crossing that is obscured in some manner or the motorist is unaware of the presence of a train on the crossing. Trains switching across highways where lights of oncoming cars and trucks are visible over or under the rail cars due to adverse highway approach grades can be particularly hazardous. Preference should be given to locations where automatic warning devices are not present. Each railroad crossing shall be properly signed.

In areas of street lighting, the illumination should extend beyond the immediate crossing area. Care should also be taken so that the street lighting does not detract from the railroad crossing warning system due to over intensity of the lighting or the location of lighting supports. Street lighting units, if installed, should be placed on both sides of a crossing over the near right driving lanes.

Projects for lighting railroad crossings are eligible for Federal-Aid Safety funds. The responsibility of paying for the ten percent matching funds and cost of maintenance and electric service is usually borne by the local highway authority.

Background lights on property adjacent to the highway and streets can be particularly bothersome and confusing to motorists. This can sometimes be corrected to some extent through the help and assistance of local government zoning officials.

35.3 Other Safety Devices

There are a variety of other safety devices. Some are being developed and refined, some are in experimental use, but none are in wide use. In most cases there are several types or varieties of the devices, and any proposal for their use must be fully explored and evaluated by RHS, and probably the OCR and FHWA (for funding eligibility).

Some examples of such safety devices follow, although there are more and new ideas periodically proposed;

- Barrier gates, which require median barriers
    - Permanent (Curb and Gutter Medians)
    - Bolt Down (Rubber Curb with Delineators)

- Wayside Horns (horns at the crossing, oriented along the roadway)
- Remote Monitoring
- Vehicle Barriers/Arrestors
- Second Train Coming Systems
- Track Zone Detection
- Video/Photo Enforcement
- In-Vehicle Warning Devices
- “Active Crossbucks”

Any proposal to use federal funds on a warning device that does not conform to the MUTCD must first receive a waiver from the FHWA. Such a waiver requires an evaluation of the device to determine its effectiveness.

FDM 17-60-40 High-Speed Passenger Rail

May 2, 2003

Wisconsin is a partner in a nine-state effort to create a high-speed passenger rail network linking major Midwest population centers to a hub in Chicago. This project is known as the Midwest Regional Rail Initiative.

Wisconsin’s portion of this network (See Attachment 40.1) includes the Canadian Pacific Railroad Line from La Crosse to the Illinois State line linking the cities of Portage, Madison, Watertown and Milwaukee; and the Canadian National Railroad Line from Green Bay to Milwaukee, passing through Oshkosh.

Any and all crossings of these future high-speed passengers rail lines require special attention. Most crossings will require either closure, gates (or perhaps barrier gates) or will be grade separated. Any roadway improvement along this corridor must consider the future impacts of high-speed rail development. For example, if a project crosses the rail line on curve, the roadway plan should anticipate the probability of a flatter railroad curvature and probably changes in track super elevation. Vertical alignment may also change with future high-speed rail.

With the probable near-future development of high-speed rail, the goal in roadway design should be to preserve options for high-speed railroad development on these lines.

LIST OF ATTACHMENTS

Attachment 40.1 Midwest Regional Rail Initiative, Wisconsin's Portion

FDM 17-60-45 Transverse Facility Crossings

March 21, 2007

45.1 General

This procedure describes the railroad coordination activities that are needed during the development of a highway improvement project that requires constructing a transverse facility. A transverse facility is a feature that is built across railroad land. Examples of a transverse facility include:

- Sanitary sewer lines
- Storm sewer lines
- Water lines
- Electrical or communication cable (either above or below the tracks)

See Attachment 45.1 for decision tree matrix.

45.2 Public Utilities vs. Highway Appurtenances

It must first be determined whether the proposed installation is considered a public utility or a highway appurtenance.

45.2.1 Public Utility

The term “public utility” is defined in Administrative Rule PSC 132 (http://www.legis.state.wi.us/rsb/code/psc/psc132.pdf). In the context of this procedure this definition is applied to only those public utilities that construct their facilities under a WisDOT contract as a non-participating item.

Administrative rule PSC 132 allows public utility installations to cross railroad right-of-way and sets forth the procedures, conditions, requirements, responsibilities, and compensations to be paid for the construction of new facilities or the maintenance of existing facilities within a railroad right-of-way.

PSC 132 applies to utilities, storm sewers that are not part of the highway storm drainage system (such as

interceptor sewers), to water mains and to sanitary sewers. These and other facilities may occupy highway right of way per s. 86.16, stats but, per PSC 132, the railroad has the authority to charge a fixed $500 fee when crossing railroad right-of-way.

45.2.2 Highway Appurtenances

Highway appurtenances are not considered public utilities and therefore are exempt from the rules and fees set forth in PSC 132. Highway appurtenances include highway storm sewer systems, conduits for buried electrical cable for highway traffic signals or street lighting, or for overhead power wires required for street lighting or highway traffic signals.

Facilities such as these are considered to be part of the highway and are allowed to cross the railroad pursuant to the highway easement without a permit and without payment of a fee to the railroad. The railroad, however, will be reimbursed for flagging costs and for railroad force work if required, such as pole line alterations and removal and replacement of track if open trenching is used for the facility installation.

45.3 State vs Private Railroad Corridors

To determine applicable installation rules it is necessary to determine whether the railroad corridor being crossed is owned by a private railroad company or by the State of Wisconsin.

45.3.1 State Owned Railroad Corridors

Public Utilities - All new and modifications to existing public utility installations on WisDOT-owned railroad property must follow the rules and procedures prescribed in Administrative Rule, Trans 29 (http://www.legis.state.wi.us/rsb/code/trans/trans029.pdf). This rule requires a permit issued by WisDOT Railroads & Harbors Section (RHS) for all public and private utility installations including: public and cooperative utilities, cable television companies and individuals desiring to install or maintain a utility facility on department railroad property. A fee is charged for the permit.

Highway Appurtenances - Highway projects that cross WisDOT owned railroad property are subject to the rules and procedures set forth in TRANS 29, but are not required to obtain a permit or pay a fee. Highway project managers must closely coordinate installations with RHS and the railroad operating on the corridor to ensure that train operations are not disrupted.

45.3.2 Privately Owned Railroad Corridors

Public Utilities - PSC 132.03 states “Unless otherwise agreed to by the parties and subject to sub. (2), a public utility which locates its facilities within the right-of-way of a railroad shall compensate the railroad $500 for each crossing. The payment shall be a one-time payment, in lieu of any license fees, to reimburse the railroad for expenses incurred by the railroad as a result of the construction of the facilities and, in the case of a private crossing, to compensate the railroad for the locating of the facilities within the right-of-way.”

PSC 132 applies on WisDOT projects where a public utility facility such as a sanitary sewer or a water main is to be constructed under a WisDOT contract as a non-participating item. In such situations, the Region Railroad Coordinator must confirm with the Region Utility Coordinator or the local utility that the utility has complied with PSC 132 before signing off on the PS&E submittal to central office.

Highway Appurtenances - Permission to cross is not required from a railroad for highway projects with installations crossing privately owned railroad corridors within a highway right of way. Each railroad has published standards for under-track and overhead crossings. The installation should be designed in accordance with reasonable standards set by the railroad or AREMA. Designers should obtain these standards and be guided by them in preparing the plan and specifications before submitting to the railroad. A copy of the plan and specifications for construction should be sent to the railroad with an opportunity to return comment.

See Attachment 45.2 for a sample letter notifying the railroad of the intended work and request for plan review.

If the railroad requests reasonable changes, it is the policy of the department that they be made; if the changes appear questionable, review with RHS.

45.4 Installation

45.4.1 Under-track crossings

Under-track crossings may be made by open trenching, directional boring, tunneling, auguring or jacking. The particular method to use depends on soil conditions, type of conduit material, size of conduit, depth of burial and requirements of the railroad. Working headers need to be placed far enough from the track to provide lateral support and temporary shoring is often required. Each railroad has its own specifications for installation. Open trenching is usually not permitted at heavily used mainline tracks.

45.4.2 Culvert installations

Culverts are a special case of under-track crossings. Occasionally a highway project alters drainage courses such that a new culvert is needed under a railroad line. The culvert location may be outside of a highway easement area. Wisconsin statutes S. 88.87 and S 88.88 require railroads to pass drainage through their embankments. WisDOT may design and pay for the necessary installation provided the railroad will grant a right of entry for the work and will maintain the new facility. OCR has jurisdiction in these matters and resolves disputes after petition and hearing. RHS will negotiate culvert crossing arrangements after receipt of plans, cross sections and supporting hydrological and hydraulic design data.

45.4.3 Aerial track crossings

In the rare instance that WisDOT would require aerial highway appurtenances such as highway lighting connections, typical aerial installation methods shall be used. The space between the track zone and the railroad property boundary lines shall be kept as free from obstructions as practicable. If an above-ground utility facility is permitted by the Railroad, it shall be located so as not to interfere with railroad operations or maintenance and may not be concealed by vegetation. It should be placed as close as practicable to an existing fence or to a railroad property boundary line.

The minimum vertical clearance for overhead electric power and communication lines above railroad property and the minimum horizontal and vertical clearances from bridges or from other railroad facilities shall conform to the Wisconsin state electrical code found in Ch PSC 114 , Wis. Adm. Code, and to s. RR 2.14 , Wis. Adm. Code.

45.4.4 Flagging

In addition to complying with reasonable railroad design standards, WisDOT will require the construction contractor to provide insurance and arrange and pay for a railroad flagger. The “Relations with Railroad Company” special provision is to be used.

45.5 References

Visit the following Internet sites for installation specifications:

Union Pacific Railroad (http://www.uprr.com/reus/pipeline/install.shtml)

Canadian National Railway (http://www.cn.ca/en/safety-crossing-utility-us.htm)

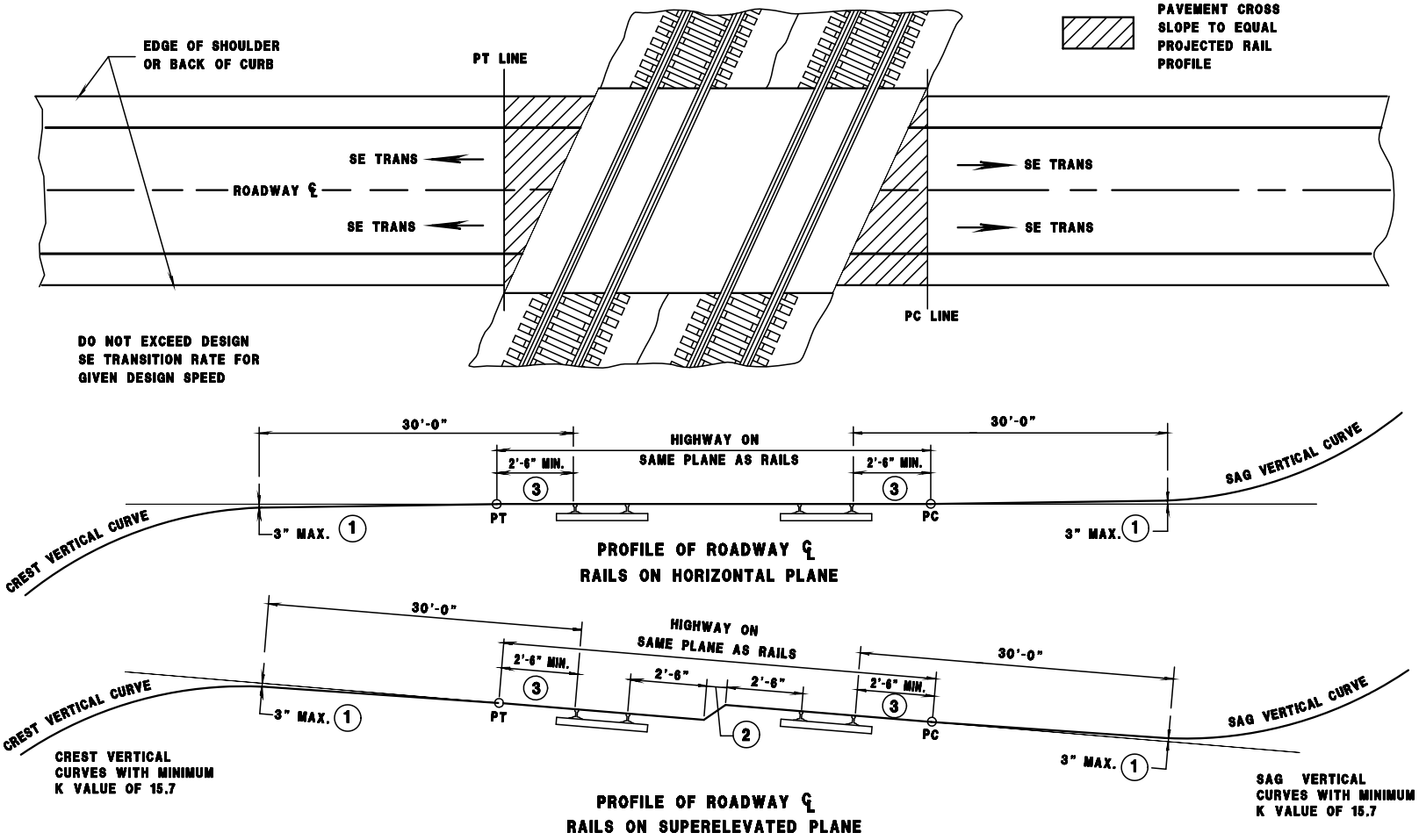
Burlington Northern and Santa Fe Railway (http://www.bnsf.com/markets/services/realestate/permitslicenses.html)

Canadian Pacific Railway, call 612-904-5994 for installation specs.

AREMA Practical Guide to Railway Engineering – Chapter 3.5

LIST OF ATTACHMENTS

Attachment 45.1	Transverse Facility Decision Process Flow Chart
Attachment 45.2	Sample Railroad Notification Letter

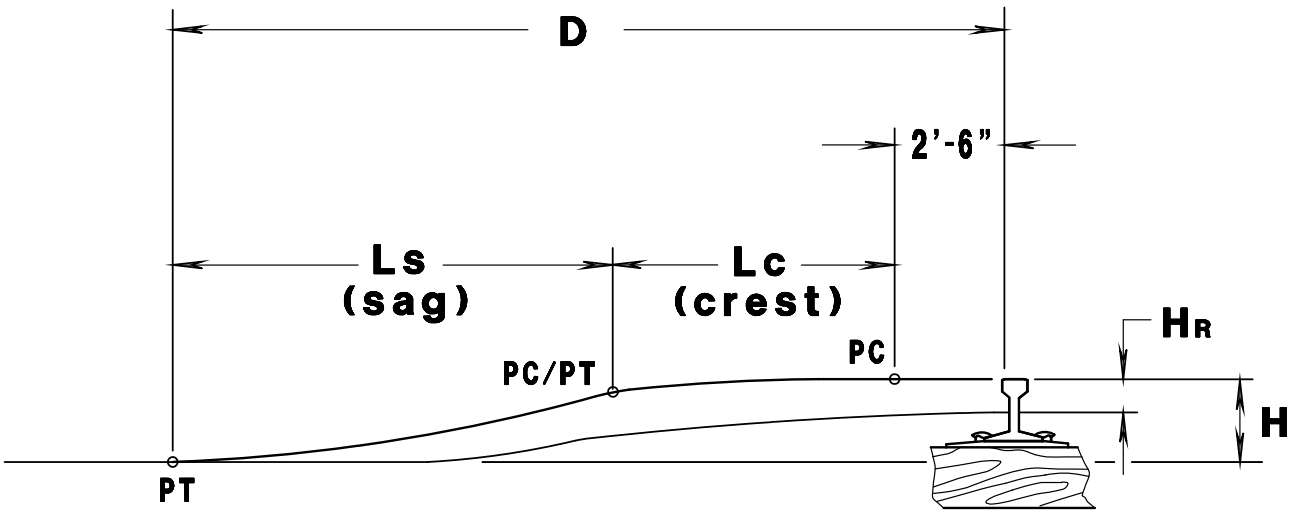


EXAMPLE PROFILES ILLUSTRATING ALLOWABLE GRADE VARIATION OF ROADWAY SURFACE RELATIVE TO NEAREST RAIL AT POINT 30 FEET FROM RAIL

(1) PROVIDE A GREATER K VALUE IF REQUIRED BY THE ROADWAY DESIGN SPEED.

(2) RAILROAD TRACKS TYPICALLY NOT IN THE SAME PLANE AS SUPER ELEVATION OF RAILROAD TRACKS. USE 2'-6" ON INSIDE OF TRACKS BEFORE BREAKING POINT. CONFER WITH CENTRAL OFFICE RAIL AND HARBOR FOR GUIDANCE.

(3) SKEW WILL RESULT IN GREATER DISTANCE

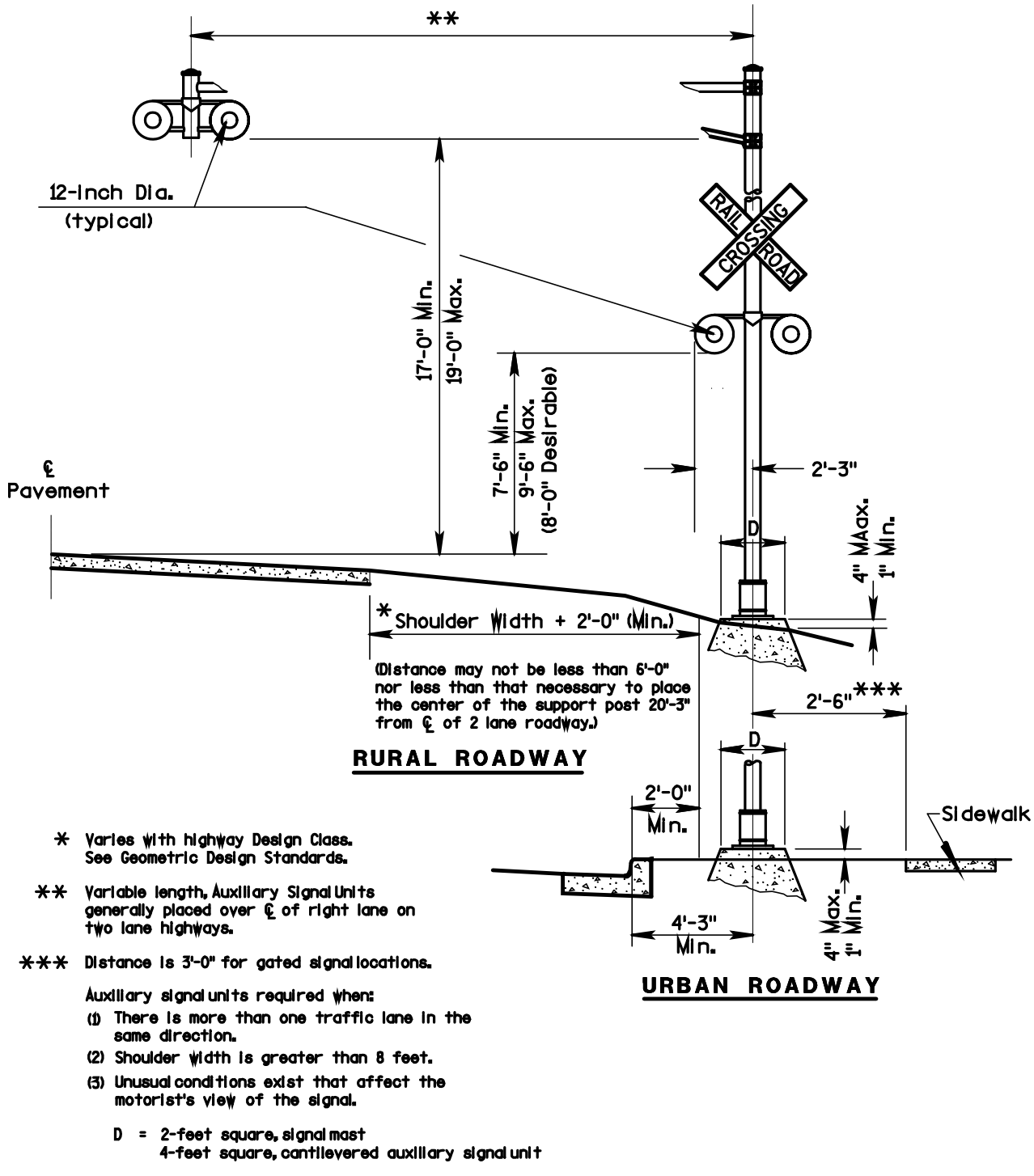


Runout Distance D on Approach to Track assuming contiguous reverse vertical curves

Kc= 15.13 **H** is the Height of track raise. It is the vertical distance (in inches) between the original roadway elevation and the top of rail after the track raise.

V (posted)	Ks	H	1	2	3	4	5	6	7	8	9	10	11	12
30 mph	19.4	Ls	13	19	23	27	30	33	36	38	40	43	45	47
		Lc	11	15	18	21	24	26	28	30	32	33	35	36
		D	**26.5**	**36.5**	**43.5**	**50.5**	**56.5**	**61.5**	**66.5**	**70.5**	**74.5**	**78.5**	**82.5**	**85.5**
40 mph	34.4	Ls	20	28	35	40	45	49	53	56	60	63	66	69
		Lc	9	12	15	18	20	21	23	25	26	28	29	30
		D	**31.5**	**42.5**	**52.5**	**60.5**	**67.5**	**72.5**	**78.5**	**83.5**	**88.5**	**93.5**	**97.5**	**101.5**
50 mph	53.8	Ls	26	37	46	53	59	65	70	75	79	84	88	92
		Lc	7	11	13	15	17	18	20	21	22	24	25	26
		D	**35.5**	**50.5**	**61.5**	**70.5**	**78.5**	**85.5**	**92.5**	**98.5**	**103.5**	**110.5**	**115.5**	**120.5**
60 mph	77.4	Ls	33	46	57	66	73	80	87	93	99	104	109	114
		Lc	6	9	11	13	14	16	17	18	19	20	21	22
		D	**41.5**	**57.5**	**70.5**	**81.5**	**89.5**	**98.5**	**106.5**	**113.5**	**120.5**	**126.5**	**132.5**	**138.5**

L_S = Length of sag vertical curve
L_C = Length of crest vertical curve
D = Runout Distance on Approach to Track Raise (in Feet)
H_R = Confer with Regional Railroad Coordinator for Typical Track Raise.



* Varies with highway Design Class.
See Geometric Design Standards.

** Variable length, Auxiliary Signal Units generally placed over ℄ of right lane on two lane highways.

*** Distance is 3'-0" for gated signal locations.

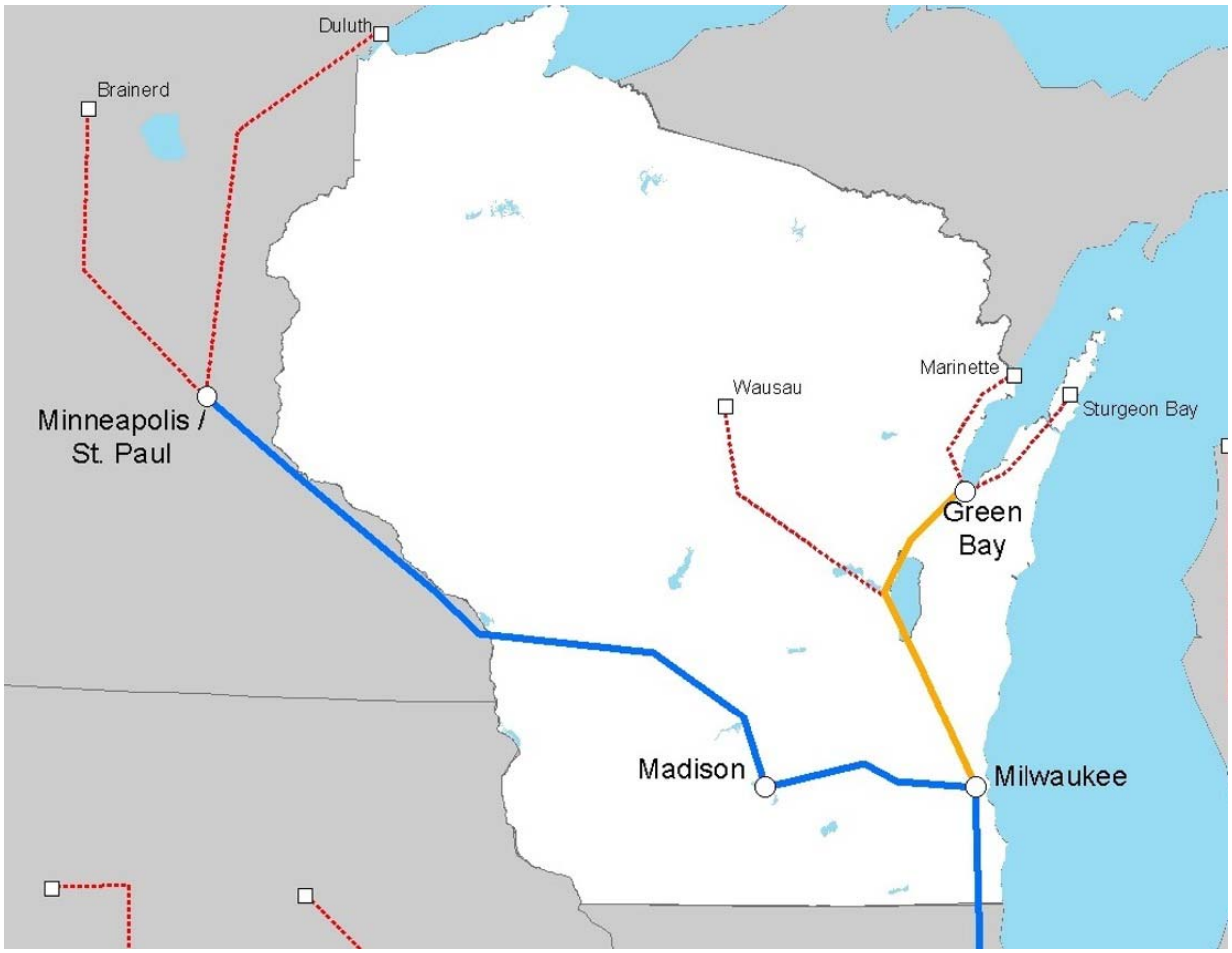
Auxiliary signal units required when:

(1) There is more than one traffic lane in the same direction.

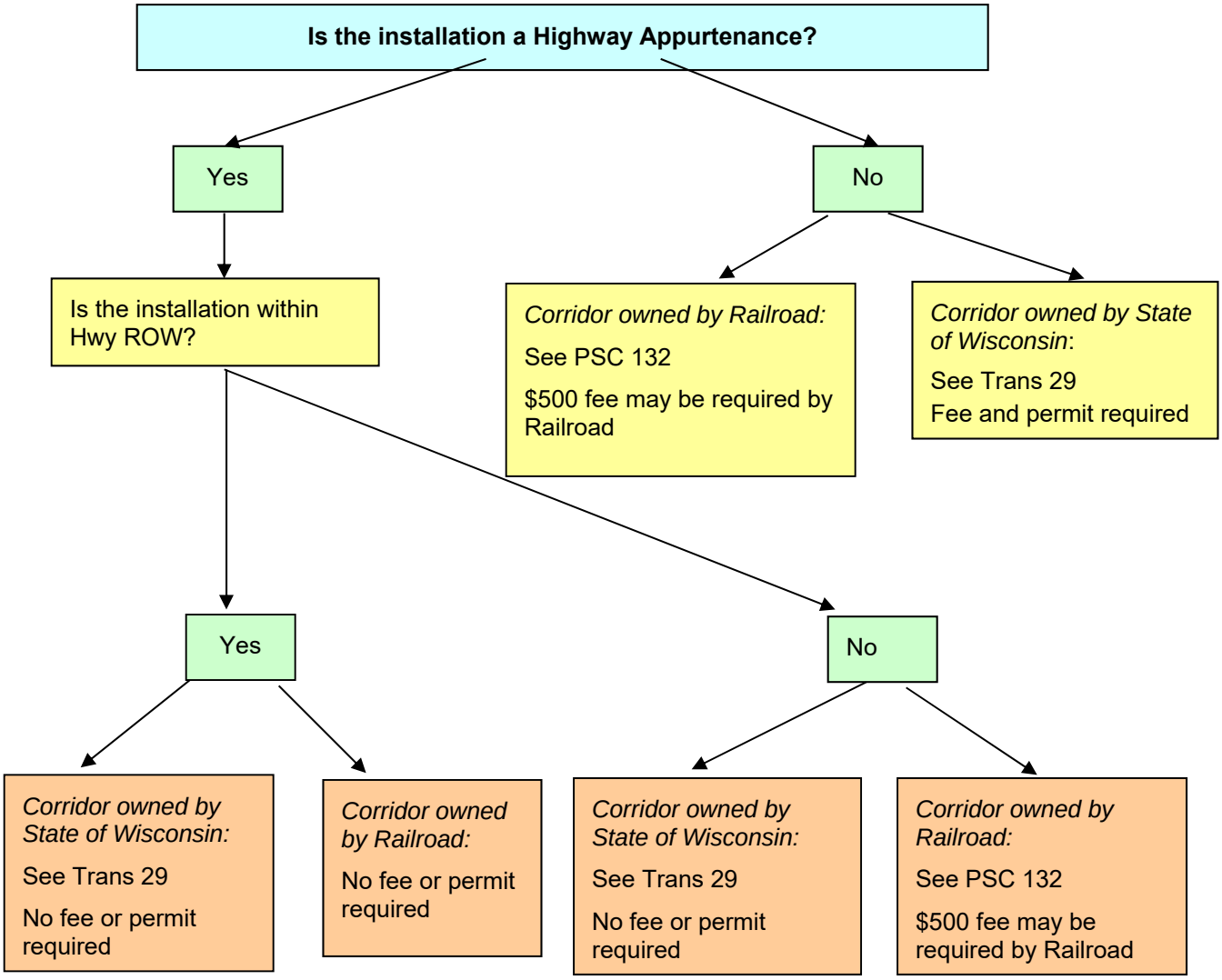
(2) Shoulder width is greater than 8 feet.

(3) Unusual conditions exist that affect the motorist's view of the signal.

D = 2-feet square, signal mast
4-feet square, cantilevered auxiliary signal unit


Duluth
Brainerd
Minneapolis /
St. Paul
Wausau
Marinette
Sturgeon Bay
Green
Bay
Madison
Milwaukee

Installation of Transverse Appurtenances on Railroad Corridors



Wisconsin Department of Transportation

TRANSPORTATION REGION 3
944 Vanderperren Way • P.O. Box 28080
Green Bay, WI 54324-0080
Telephone .....(920) 492-5643
FAX .....(920) 492-5640
greenbay.dtd@dot.state.wi.us

_____ __, ____

M_. _____
_____ (Railroad) (Railway)
_____
_____

Project I.D. ____-__-__
_____ To _____ Road
(USH) ((STH) ___
_____ County

We are in the process of preparing the final plans and specifications for the above-mentioned project. This project is for the rehabilitation of STH __, which crosses your railroad track in the _____of _____ as shown in the attachments. In the vicinity of the railroad crossing we propose to
_____
_____.

As part of the project, we will construct a _____ line that will cross under your railroad track(s). The attached documents show our design for the _____ crossing. We ask that you review the design and provide us with your concurrence or
comments by _____ __, ____. In the absence of comments we will construct the _____ crossing in accordance with our design as shown. Since the _____ line is a highway appurtenance, a railroad utility crossing permit is not required.

If you have any questions about this work please feel free to contact me at ____ - _____. E-Mail _____. The highway project is scheduled for letting on _____ __, ____.
Thank you.

_____
Project Manager.

cc: _____, Region Railroad Coordinator

Attach: Exhibits A to E