



State and Railroad User Manuals and Training – Best Practices

Community of Interest Webinar for
Railroad-DOT Mitigation Strategies (R16)

September 7, 2017



U.S. Department of Transportation
Federal Highway Administration

AMERICAN ASSOCIATION
OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

AASHIO

**Please use this call-in number:
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Participant Access Code:
468569**



Purpose of Today's Webinar



- **Hear best practices** on developing manuals and training to promote expedited project delivery.
- **Hear from Utah DOT and CSX** on how their efforts are improving coordination between railroads and their respective DOT partners
- **Discuss and share information** with State DOTs and Railroads

Agenda

- Welcome and Round Table Introductions
- Utah DOT's Railroad Coordination Manual
- CSX – One Railroad's Effort to Improve the Process
- Training Staff to Improve Implementation
- Introduction of R16 Strategies document
- Discussion and Comments Throughout



A Few Housekeeping Details

- **Tell us what you think.** We want to hear from all of you on the call during the discussion segments.
- **Do not use your computer's audio;** use the call-in number instead.
- **State your name and organization before speaking.**
- **Download the agenda and PDF of this presentation from the Files section.**
- A recording of this session will be available in AASHTO's [R16 Innovation Library](#).

Utah DOT's Railroad Coordination Manual of Instruction

*Alana Spendlove, Statewide Railroad and Utilities
Director, Utah DOT*

Patty Jones, Associate, DB Consulting





**UDOT RAILROAD COORDINATION
MANUAL OF INSTRUCTION OVERVIEW
SEPTEMBER 7, 2017**

PRESENTATION OBJECTIVE

- ✓ Background and description of what the Manual contains.
- ✓ What the Manual seeks to accomplish, priorities and goals.
- ✓ How the Manual has impacted relationships with the railroads.
- ✓ What training is provided to equip staff to implement the Manual.

MANUAL OF INSTRUCTION BACKGROUND AND OVERVIEW

PURPOSE OF MANUAL

- ✓ Provide technical information and links to federal, state and local laws, regulations, and requirements for railroad related design and reimbursement issues
- ✓ Provide overview of processes, considerations and coordination required for a successful project
- ✓ Identify critical path items and time-line requirements
- ✓ Establish best practices
- ✓ Outline roles and responsibilities of parties

RAILROAD COORDINATION MOI OVERVIEW

- ✓ Manual Organization Chapters
 1. Introduction
 2. Laws, Regulations, Standards & References
 3. Railroad Coordination Process
 4. Railroad Agreements
 5. Railroad Coordination During Construction
 6. Project Billing and Closeout
 7. Utility Encroachments
 8. Maintenance Coordination

CHAPTER 2 - LAWS, REGULATIONS, STANDARDS, AND REFERENCES

- ✓ Federal Laws & Regulations
- ✓ State Laws & Regulations
- ✓ Railroad Company Standards & Guidelines
- ✓ Railroad Industry Standards
- ✓ National Association Standards
- ✓ Horizontal and Vertical Clearance Regulations

Order of Precedence for Highway-Rail Crossing Design Standards		
Rank	Traffic Control Systems	Track/Crossing Design
1	MUTCD	FHWA
2	UDOT	AASHTO
3	RR Standards	AREMA
4		RR Standards

CHAPTER 3 – CROSSING PROJECT COORDINATION PROCESS

Types of Projects

- ✓ Highway Improvement Projects
 - Grade Separated Crossings
 - At Grade Crossings
 - Innovative Contracting Methods
i.e. Design Build, CMGC
 - Federal Aid Local Agency Projects
- ✓ Section 130 Crossing Safety Improvement Projects
- ✓ Rail Transit Projects



LOCAL AGENCY PROJECTS

- ✓ Federal Aid Funding
- ✓ Necessity for early planning and coordination with railroads
- ✓ Agreements and reimbursement requirements
- ✓ Include funds in project funding request
- ✓ Buy America



GENERAL RAILROAD COORDINATION INFORMATION

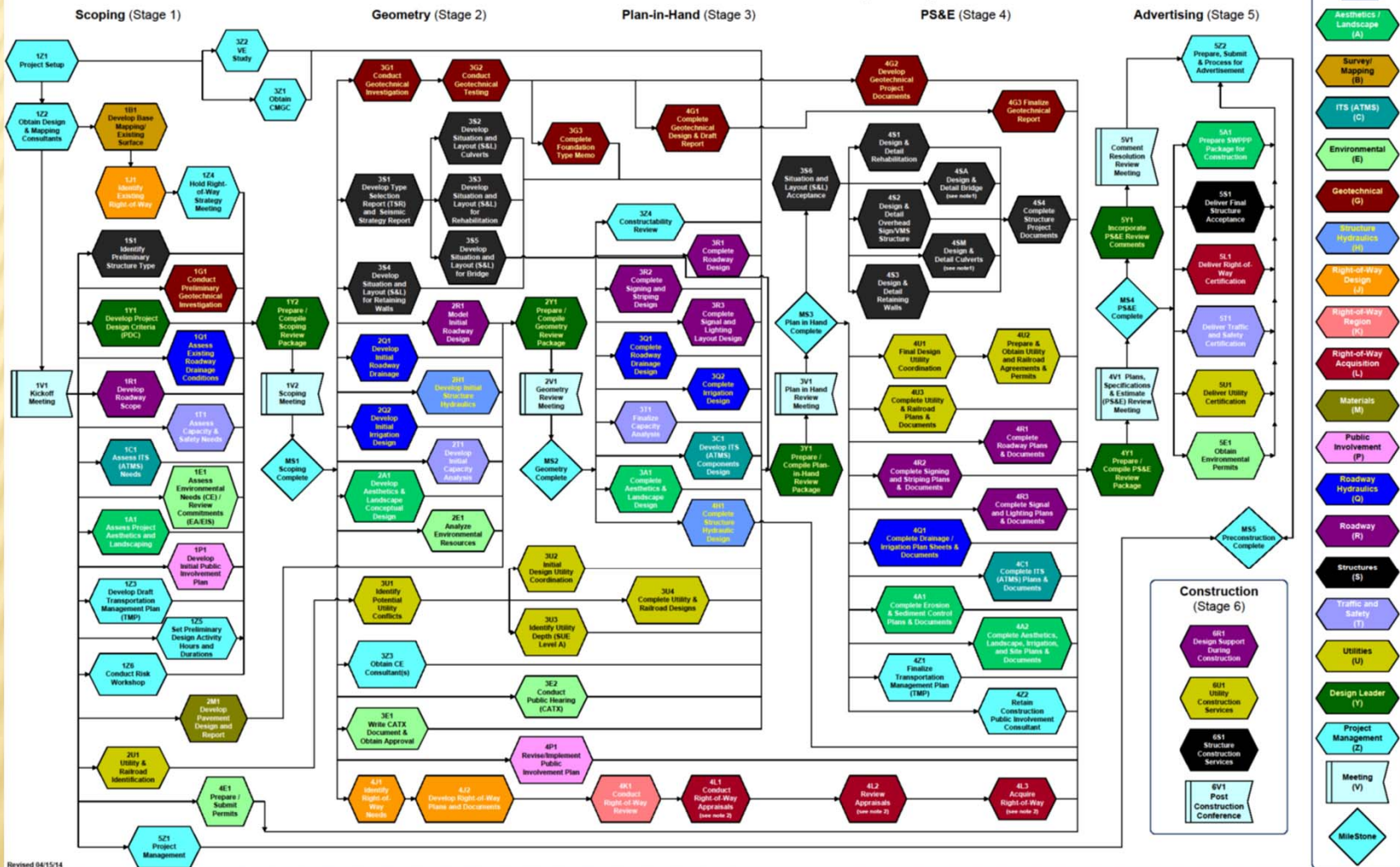
Roles and Responsibilities of the Diagnostic Team

- ✓ Interdisciplinary team
- ✓ Reviews new crossings, modified crossings, crossing closures
- ✓ Recommends type of safety improvements including active and passive devices, pavement markings, crossing surface material. Issues a Review Report.
- ✓ Oversees crossing closures and Public Notice of crossing changes
- ✓ Highway Improvement Project Staffing and 130 Safety Project Staffing

UDOT'S PROJECT DELIVERY NETWORK

[Link to PDN Documentation](#)

UDOT PROJECT DELIVERY NETWORK (PDN) DIAGRAM



Revised 04/15/14

DETAILED DESIGN STANDARDS AND LINKS

At Grade Crossing Design References

[FHWA Railroad Highway Grade Crossing Handbook](#)

[Manual on Uniform Traffic Control Devices 2009 Edition](#)

[Utah Manual on Uniform Traffic Control Devices \(MUTCD\)](#)

[Standard Drawing ST 7 Pavement Marking and Signs at Railroad Crossings](#)

UPRR [Active Warning Devices](#) – Flashing Lights with Gates, Signal Preemption Projects

UPRR [At-Grade Roadway \(Crossing\) Improvement Projects](#)

UPRR [Road Crossing Checklist](#)

UPRR [Industrial Track Specifications](#)

UPRR [Interim Guidelines for Horizontal Directional Drilling under UPRR Right-of-Way](#)

UTA [Design Information](#)

[ITE Grade Crossing Materials](#), Institute of Traffic Engineers (ITE)

Manual for Railway Engineering, Communications and Signals Manual, [American Railway Engineering and Maintenance-of-Way Association](#) (AREMA)

- Submit Railroad Crossing Sheets and Forms for Railroad Company Review

BNSF RAILWAY - UNION PACIFIC RAILROAD

GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS



REVISIONS		
DATE	BY	DESCRIPTION

	
BRIDGE STANDARDS	
BRIDGE STANDARDS FOR RAILROAD GRADE SEPARATION PROJECTS	
COVER PAGE	
FILE NUMBER: UPRR	DATE: 10/2011
APPROVED BY: J. ALLEN / CHECKED BY: K. JOHNSON	

CRITICAL ITEMS AND PROCESSES

- ✓ Right of Way Processes and Acquisitions
- ✓ Buy America Requirements
- ✓ Early Coordination and Engineering Submittals
- ✓ Federal Requirements for Railroad Company Participation in Grade Separation Structure Costs
- ✓ Environmental Considerations

CHAPTER 4 – RAILROAD AGREEMENTS

- ✓ Federal Railroad Agreement Requirements
- ✓ State Railroad Agreement Requirements
 - UPRR Master Agreement for At Grade Crossing Safety Improvement Projects
 - Summary of UPRR Agreements
 - Summary of UTA Agreements
- ✓ Design Submittals
- ✓ Cost Estimates and Reimbursement
- ✓ Agreement Preparation and Implementation

CHAPTER 5 – RAILROAD COORDINATION DURING CONSTRUCTION

Subsections:

- ✓ Preconstruction Conference, Notification to Railroad
- ✓ Contractor Right of Entry
- ✓ Insurance Requirements
- ✓ Flagging and Protective Services
- ✓ Safety Training Requirements
- ✓ Minimum Safety Requirements for Contractors
- ✓ Construction Submittals
- ✓ UDOT Construction Forms
- ✓ Railroad Responsibilities During Construction
- ✓ Railroad Performed Work
- ✓ UDOT Resident Engineer Responsibilities

CHAPTER 6 – PROJECT BILLING AND CLOSEOUT

Topics:

- ✓ Billing Submittals
- ✓ Daily Force Account Records
- ✓ Flagging, Inspection and Cleanup Cost Recovery
- ✓ Scope Changes and Cost Overruns
- ✓ Audits

CHAPTER 7 – UTILITY ENCROACHMENTS IN RAILROAD RIGHTS OF WAY

Topics include:

- ✓ UTA Property Management Website
- ✓ UPRR Utilities Installations Website
- ✓ Wireline and Pipeline Engineering Specifications
- ✓ UPRR Interim Guidelines for Horizontal Directional Drilling (HDD) Under UPRR ROW

CHAPTER 8 – MAINTENANCE COORDINATION

Covers:

- ✓ Utah Administrative Rule R930-5
- ✓ Contact Information
- ✓ Emergency Management



IMPROVING RELATIONSHIPS WITH RAILROAD COMPANIES

SHRP 2 REPORT S2-R16-RR-1

Strategies

- ✓ Coordinate Early
- ✓ Predicate all Design on Railroads' Unique Standards
- ✓ Use Standard Designs and Legal Agreements
- ✓ Provide Accurate and Complete Engineering Submittals
- ✓ Anticipate Time Frames for Review

PARTNERING AND ISSUE RESOLUTION

- ✓ Each party designates a Point of Contact/Agency Liaison by title
- ✓ Issue Resolution Process
- ✓ Partnering Practices
 - Assemble Information
 - Understand the Other Party's Perspective
 - Act with Appropriate Diligence
 - Don't hold hostages
 - Put it in writing
 - Resolve Issues Fairly
- ✓ Annual Meeting, Performance Evaluation

STAFF TRAINING

CONCLUSION

*Accept the things you can't
change,
change the things you can,
and know the difference.*



Discussion – Q & A

- To facilitate a robust discussion, all audience lines will be unmuted.
- If you have significant background noise in your environment, we ask that you consider putting your own phone on mute when you are not speaking.
- Please give your name and organization prior to asking your question.

CSX's Process for Public Project Participation

Troy Creasy, Public Projects

CSX





Rail and DOT Project Coordination

CSX Public Projects Manual Overview

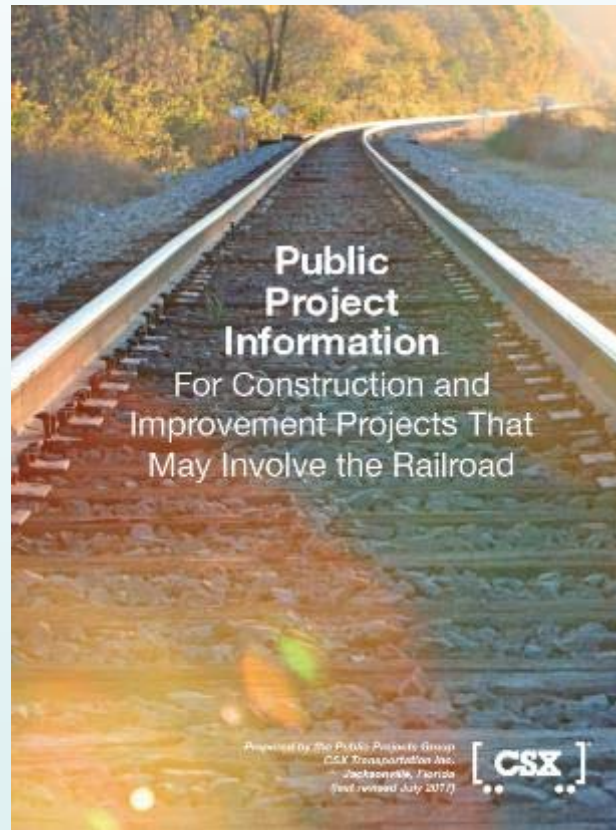


September 7, 2017

Presentation Overview

- Information covered in the CSX Public Projects Manual.
- Priorities and goals of the Manual.
- How the Manual fosters relationships with the DOTs.
- What training is provided to equip staff to implement the Manual.

CSX Public Projects Manual



Multiple DOTs... One Goal

- CSXT operates in 22 States, 1 Province, and the District of Columbia
- Five CSXT Project Managers cover all Public Projects in those areas
- CSXT requirements apply to all areas equally.



Information Covered in This Manual

- Highway-Rail Grade Crossings
- Bridges Over CSXT
- Bridges Carrying CSXT
- Parallel Roads/Facilities
- U.S. Army Corps of Engineers Projects
- Entry Onto CSXT Property
- Other Projects Involving CSXT Rail Corridors



Priorities and Goals of the Manual

- Establish best practices between CSXT and DOTs
- Detail the important steps project sponsor must follow, with an emphasis on accurate and timely communication.
- Provide general information regarding CSXT's handling of various project types.
- Provide CSXT's overhead, undergrade, and drainage criteria
- Provide CSX standard agreements
- Provide additional contacts and resources within CSX

Additional CSXT Resources and Contacts

- Emergencies
- Industrial Development
- Quiet Zones
- Real Estate Lease or Purchase
- Rails to Trails
- Non Emergency Issues
- CSX Real Estate and Facilities Management (REFM)



Requirements for Preliminary Engineering Review

- Starting CSXT Preliminary Engineering (PE) early by providing conceptual plans lowers project costs and shortens the time required for CSXT review and approval
- Using standard agreements lowers costs and saves time
- If the proposal requires easement on CSXT Property Right, the project sponsor should provide the proper submittals to the CSXT GEC when beginning PE.
- PE typically costs \$8,000 to \$25,000

Payment of CSXT's Costs and Expenses

- Preliminary Engineering (PE) costs are paid prior to construction.
- CSXT construction expenses will be estimated during PE and the estimate will be incorporated into the construction agreement.
- All funding sources must be identified up front, and anytime funding sources change, CSXT must be immediately informed. CSXT requires the completion of a “New Project Funding Form” at the beginning of each project. By completion of this form, the project sponsor agrees to reimburse CSXT for project related costs.

Entry onto CSXT Property

- Construction Agreements authorize entry onto CSXT property.
- Temporary right-of-entry agreements can also be used for limited purposes.
- CSX Real Estate and Facilities Management (REFM) handles temporary rights of entry for non-construction activities.
- CSXT Public Projects handles temporary rights of entry for construction activities.
- All parties must adhere to CSXT Safety procedures.
- Appropriate insurance is required.

Construction Monitoring Requirements

- Construction work affecting CSXT will be monitored by CSXT and its consultants at the project sponsor's expense.
- Construction monitoring is in addition to flagging and other protective services.



Railroad Flagging for Activities On or Near CSXT Property and Tracks

- Flagging services are required when projects are within close proximity to active rail lines, as required by federal law.
- Flagging services can only be performed by personnel qualified by CSXT.
- Arrangements for flagging services may take up to **90 days** to schedule.

Highway-Rail Grade Crossing Surface Maintenance and Replacement

- Report issues with crossing surfaces to TellCSX (TellCSX@csx.com)
- Coordination is required for work near crossings.
- Highways must be closed to vehicular traffic for crossing replacement or maintenance work.
- Agreements with CSXT are required for crossing work and work near crossings.



Overhead and Undergrade Bridge Projects

- Overhead and undergrade bridge projects must comply with CSXT's policies and standards, which are available in the appendices of this manual.
- All work on overhead and undergrade bridges must be reviewed and approved by CSXT.
- CSXT should be involved early in the project development phases to allow required bridge standards to be incorporated into the design of the project.



Parallel Road Construction

- Proposed parallel public roads shall be located off CSXT property.
- Safety at existing highway-rail grade crossings must be considered and not adversely impacted.
- No additional drainage may be directed onto railroad property.
- CSXT's access to its property must not be impeded.
- Construction may result in the need for alterations to crossing warning systems or facilities.



Cleaning and Painting of Bridges over CSXT

- An agreement is required to accommodate engineering, review of plans, flagging, right-of-entry, and payment of CSXT incurred costs.
- CSXT understands that maintenance of bridges over CSXT may include cleaning and painting. The safety of CSXT employees, the general public, and the project sponsor's contractors is of paramount importance to CSXT.
- A written request should be submitted to CSXT's Public Projects Group to initiate this type of project. The request will be reviewed for safety considerations and compliance with CSXT engineering and environmental standards.

CSX Standard Agreements

- Preliminary Engineering
- Construction
- Temporary Right of Entry
- Right of Entry and Indemnity for Bridge Painting
- CSXT Special Provisions

CSX Transportation, Inc. Temporary Right of Entry Agreement

THIS AGREEMENT, made as of _____, 20____, by and between CSX TRANSPORTATION, INC., a Virginia corporation, whose mailing address is 500 Water Street, Jacksonville, Florida 32202, hereinafter called "CSXT," and (*****), whose mailing address is (*****), (*****), hereinafter called "Licensee," WITNESSETH:

WHEREAS, Licensee has submitted a written application to CSXT requesting permission to enter CSXT's property located within the (*****) Division, (*****) Subdivision, at DOT#: (****) MP (****), ("Street") in ("City"), (**) County, (**) State (the "Property"), (description of scope of work), beginning (**) feet from the (****) and (**) right of way, (the "Project").

WHEREAS, CSXT is willing to grant to Licensee the limited right and permission to enter upon the Property for the limited purpose of performing the Project.

NOW THEREFORE, CSXT hereby grants to Licensee the right and permission to enter upon the Property for the purpose of performing said Project, subject to the terms and conditions set forth below:

- 1. PROJECT:** The Project shall be performed at the entire cost and expense of Licensee, in accordance with good and sound engineering practices, to the satisfaction of CSXT's Division Engineer or his or her duly authorized representative ("Division Engineer") and in a manner to avoid accidents, damages, unnecessary delays to or interference with train traffic of CSXT. Prior to entry, Licensee shall notify the Division Engineer's representative and arrange for flagging protection in accordance to Sections 5 and 6 of this Agreement. Licensee shall not dig in the ballast line or within the tracks loading influence area, or otherwise disturb the track structure. Licensee and Licensee's employees, agents, contractors and other representatives (collectively, "Agents") shall maintain in their possession a copy of this Agreement at all times during their occupation of the Property.

2. INDEMNITY:

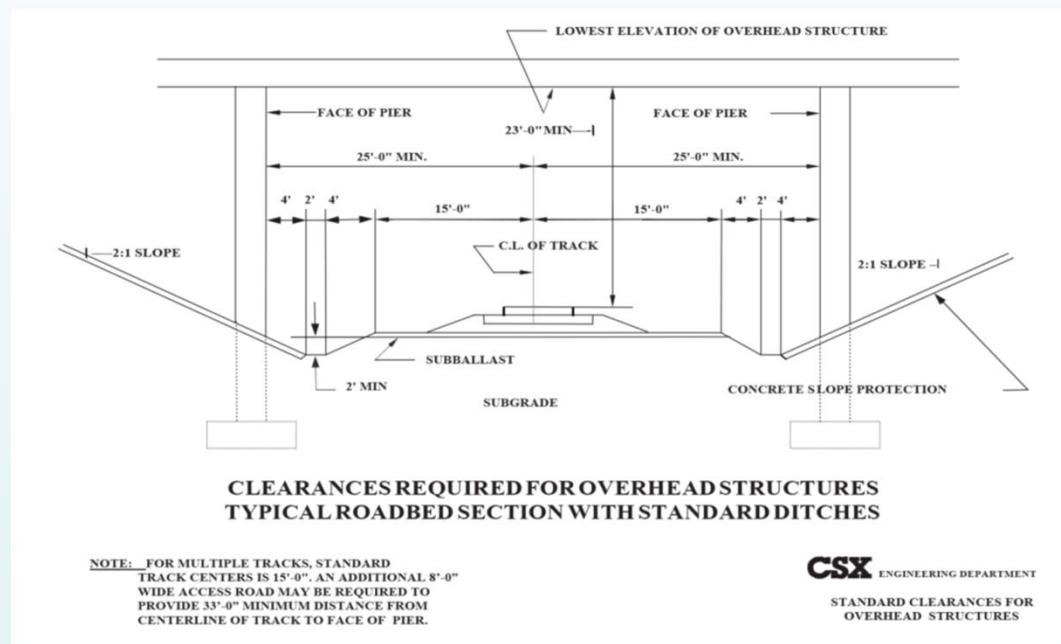
2.1 Licensee hereby assumes risk of and agrees to indemnify, defend, protect and save CSXT and CSXT's Affiliates harmless with respect to any and all attorneys' fees, liability, claims, demands, payments, suits, actions, recoveries, penalties, costs, legal expenses, judgments, settlements, and damages of every nature, degree, and kind (including direct, indirect, consequential, incidental, and punitive damages) for:

- 2.1.1** personal injury, including, but not limited to bodily injury to or death of any person or persons whomsoever, including the agents, servants, Affiliates or employees of the parties;
- 2.1.2** the loss or damage to any property whatsoever, including property owned or in the care, custody or control of the parties hereto or their respective Affiliates;
- 2.1.3** any environmental damage and any related remediation brought or recovered against CSXT or any of its Affiliates; and
- 2.1.4** any and all other losses or damages; arising directly or indirectly from the presence of Licensee or its Agents on or about the Property, whether or not attributable in whole or part to the negligence, gross negligence, or intentional misconduct of CSXT or its Affiliates.

2.2 The parties waive any and all right or opportunity to contest the enforceability of this Section and agree that, in the event this Section, or any part of this Section, is found unenforceable by the final, unappealable judgment of a court of competent jurisdiction, this Section shall be construed so as to be enforceable to the maximum extent permitted by applicable law. In the event that such court of competent jurisdiction finds that Florida statutory construction contract indemnity monetary limits apply to this Agreement with respect to Licensee's indemnification of CSXT and its Affiliates for liability caused in whole or in part by any act, omission or default by CSXT or its Affiliates, the parties hereto agree that such limit shall be equal to the limits (exclusive of deductibles) of the applicable insurance required by Sections 3 and 4 of this Agreement. The parties acknowledge and agree that this monetary limit, if required, bears a commercially reasonable relationship to this Agreement, in so far as, among other factors, the parties have taken into account the availability and cost of insurance and other risk transference devices, the scope of the Project, the risks associated with the Project, and the compensation and any other benefits exchanged between the parties in connection with this Agreement.

CSX Design & Construction Criteria

- Overhead Bridge
- Undergrade Bridge
- Construction Submission
- Drainage
- Trail Construction under CSXT Bridges



Internal and External Training

How tomorrow moves





Conclusion

Right Way – Right Results



Discussion – Q & A

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- Please give your name and organization prior to asking your question.

Training Staff to Better Implement Your Strategies

*Mike Loehr, Rail & Transit Global Practice
Leader*

CH2M



Discussion – Q & A

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- Please give your name and organization prior to asking your question.

Manuals and Other Resources

- BNSF Plan Review Checklist
- BNSF-UPRR Joint Guidelines for Railroad Grade Separation Projects, 2016
- CSX Manual for Public Projects
- Norfolk Southern Public Projects Manual
- Ohio DOT Railroad Coordination Policy and Procedures Manual
- Texas DOT Rail-Highway Operations Manual
- Utah DOT Railroad Coordination Manual
- Washington State DOT Utilities Manual 2016
- **Others at Innovation Library:**
http://shrp2.transportation.org/Pages/R16_InnovationLibrary_Topic.aspx

Strategies to Improve Railroad-DOT Cooperation and Accelerate Project Delivery



Strategies Document



Strategies to Improve Railroad-DOT Cooperation and Accelerate Project Delivery

A project of SHRP2, Railroad-DOT Mitigation Strategies (R16)

During the research phase of the SHRP2 program, several specific strategies were identified that if used consistently by transportation agencies and railroads would improve coordination and speed project delivery. The following is a summary of these strategies taken from two documents, *Strategies for Improving the Project Agreement Process between Highway Agencies and Railroads*, SHRP2 Report S2-R16-RR-1, The National Academies of Science, 2010; and *Communicating Railroad-DOT Mitigation Strategies*, The National Academies of Science, 2015. Links to these documents with more detailed information can be found at http://shrp2.transportation.org/Pages/R16_RailroadDOTMitigationStrategies.aspx. Note that some duplication occurs since some of these strategies pertain to more than one overall category.

I. Strategies to Improve Coordination

- Coordination at the project concept or early planning stages is recommended, particularly for any project that may create horizontal or vertical constraints on the railroad right-of-way or that may be contemplated to interfere even briefly with train operations. Initial coordination at the 30% plan-development stage may be too late.
- Identify the format and sequencing needed for internal reviews by the railroad to reduce the time needed for coordinated, fully considered comments. This review period may extend beyond 60 days unless carefully negotiated and clear processes are in place both within a DOT and a railroad.
- Have one department of transportation (DOT) and railroad central point of contact, empowered to coordinate highway and railroad project issues. With them, establish ongoing formal communication channels between the highway agency and the railroad.
- Schedule regular meetings. Have standing monthly or quarterly meetings—in person or via phone or video to address project schedules with the railroads.
- Have formal points of concurrence that includes a formal escalation process to expedite agreement processing and project delivery, agreed-upon regular points of coordination, review, and concurrence between the DOT and the railroad on projects.
- Provide dedicated personnel to focus on reviews and agreements.

II. Strategies to Improve the Project Delivery Process

- Use standard designs and legal agreements whenever possible.

For More Information

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Kate Kurgan

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kkurgan@ashto.org

Additional Resources:

GoSHRP2

Website:

fhwa.dot.gov/GoSHRP2

AASHTO SHRP2

Website:

<http://shrp2.transportation.org>

R16 Product

Page:

http://shrp2.transportation.org/Pages/R16_RailroadDOTMitigationStrategies.aspx

Thanks for joining us!

