

Using *Railroad-DOT Mitigation Strategies* Case Study



Best Practices for Flagging Coordination

Flaggers play an integral role in ensuring the safety of the nation's railroads. They are necessary whenever the railroad right of way is entered, either by maintenance or construction workers or from other encroachments.

Coordinating flagging during construction and maintenance projects where railroads and highways intersect poses an important challenge to ensure everyone's safety and that work schedules are met.

In general, each railroad and DOT has their own processes when it comes to flagging or protective services, but some are common to all.

In March 2019, the Community of Interest (COI) of the SHRP2 implementation effort, *Railroad-DOT Mitigation Strategies* (R16), sponsored a [webinar](#) on best practices on flagging. This case study briefly outlines some of the best processes identified during the webinar with additional information provided by various state departments of transportation (DOTs) and Class 1 railroads.

The Important Role of Flaggers

Railroads require flaggers for any work done in their rights of way that could affect the safety of railroad employees, track stability or alignment, train or on-track equipment operations, communications, signaling, or warning device systems.

This could include any work on roadway approaches to a railroad property if it is within 25 feet of the track, such as

What are *Railroad-DOT Mitigation Strategies* (R16)?

Thousands of highway projects intersect with railroad crossings. By using the tools included in *Railroad-DOT Mitigation Strategies* (R16), public agencies and railroads can identify and work through possible sources of conflict and develop agreements to advance these projects in a timely manner.

This product was developed through the second Strategic Highway Research Program (SHRP2) and takes a collaborative approach to identifying strategies to improve performance. It includes case studies of best practices in developing master agreements, Section 130 program implementation, and working with railroads on design-build projects. An online [Innovation Library](#) houses examples from state departments of transportation and several Class 1 railroads. It includes manuals, agreements, contract specifications, and other materials.

A Community of Interest was formed with 20 states and several railroads and short lines, as well as relevant federal agencies, to share best practices and identify common problem areas.

removing excess asphalt, grinding or milling asphalt, and paving, or any work on over/underpasses that cross railroad space.

Generally, flaggers play a variety of onsite roles. They conduct job safety briefings as well as communicate with and provide notice of approaching trains or on-track equipment, making sure all contract work is stopped and moved clear of the track. Then once they receive notice that the track is clear, they signal to the contractor to resume work.

The budget for flagging is typically included in the construction contract and is paid for by the DOT, often in amounts exceeding \$1,000 a day per flagger; many projects require more than one flagger. As a result, DOTs want to ensure that their schedule and budgets are adhered to as much as possible.

Washington State DOT's Magic "Bullets"

The Washington State Department of Transportation (WSDOT) has two Class 1 railroads that operate in its borders: BNSF and UPRR. When working with BNSF, WSDOT pays the railroad directly for flagging or protective services. When working with UPRR, it pays RailPros, a subcontractor, for these services.

In both cases, the process is similar and is based on hard-won experience. At the initial design stage for any project, Connie Raezer, WSDOT's Railroad Liaison, works with the respective railroad to determine an estimate of costs for flagging or other protective services. A Construction and Maintenance (C&M) agreement with the railroad is developed for the project. This information is included in the bid package for contractors. Once WSDOT awards the contract, the contractor must obtain a separate right-of-entry agreement with the railroad. The contractor's responsibility is to schedule its flagging needs directly with the railroad. The state pays the railroad or flagging subcontractor directly for providing these services.

"Ten years ago, we experienced problems where a contractor would work beyond the set schedule or schedule flagging and cancel without proper notification. WSDOT flagging budgets would suffer," said Raezer. "In addition, the railroads found it difficult to follow up with the contractors for payment and preferred to work directly with the road authority."

To reduce payment "surprises," WSDOT now includes the following specific language with three key requirements in all project advertisements and agreements with its contractors, which have almost eliminated any overruns.

"The contractor will not be reimbursed for any railroad protective services if:

- *"Such services result from the Contractor's failure to comply with the terms and conditions of its contract with the Contracting Agency or with its Contractor's Right of Entry Agreements with the Railroad Company.*
- *"The Contractor fails to obtain authorization from the Project Engineer prior to coordinating with the Railroad Company for any flagging requiring overtime payments.*
- *"The Contractor arranges for assignment of a railroad flagger and alters Project work so that a flagger is no longer needed, and adequate advance notice is not provided to the Railroad Company*

of such change in the need for a flagger (i.e. causing the Railroad Company to dispatch a flagger billable to the Project when one is not required).” (The entire agreement can be found [here](#).)

UPRR recently changed its structure and now a third party, RailPros, is responsible for flagging. Raezer said WSDOT now enters into a separate agreement with RailPros and pays them directly. RailPros is new to working in Washington State and with the DOT and the parties are still experiencing a learning curve. Raezer said her agency continues to use its “three bullets” noted above in all advertisements and contracts for state construction projects to ensure the flagging is conducted on time and in budget.

Contact: Connie Raezer, Rail Liaison, Washington State DOT, RaezerC@wsdot.wa.gov

BNSF's Flagging Process

BNSF operates the largest freight railroad network in North America, with 32,500 miles of rail across the western two-thirds of the United States. BNSF uses its own employees or contracts with flaggers in some areas and requires a flagger if any work is done within 25 feet of its track.

Any master agreement entered into by BNSF must include flagging requirements when on BNSF property. BNSF's Public Projects section oversees right-of-entry (ROE) agreements for flagging and has specific requirements that must be provided by the contractor. The process to obtain the ROE agreement usually takes 30 days minimum; 15 to 30 days for scheduling. The contractor must also schedule an onsite job safety briefing with the railroad flagger and BNSF representative.



Example of work requiring a flagger

- ***Photo courtesy BNSF***

At a recent [webinar on flagging best practices](#), Tim Huya, BNSF manager of public projects for Alabama, Oklahoma, and Texas, said that BNSF puts its flaggers through the same training that all other BNSF railroad employees follow so they are familiar with all procedures and requirements. The flagging vendors (contractors) must be approved by BNSF in order to work in its space.

BNSF has the flagging contractor provide a schedule and daily report of what was done to ensure proper billing and keep track of the work. BNSF can prorate the cost for the exact number of days. The purpose is to incentivize the contractor to have a well-thought-out plan. From an operational standpoint, it helps the railroad use its resources as efficiently as possible.

Contact: Tim Huya, BNSF Manager, Public Projects, tim.huya@bnsf.com; French Thompson, BNSF Director, Public Projects and System Design, french.thompson@bnsf.com

Texas's Streamlined Agreements

The Texas Department of Transportation (TxDOT) manages 300 construction and maintenance projects a year – about two-thirds involve the Class 1 railroads. TxDOT is structured into 25 different districts overseeing this work.

To bring some order to the process, TxDOT uses a simple two-page agreement for flagging with railroads that will bill directly for flagging, while a simple maintenance notices is used when a railroad allows for an approved flagging vendor. Standard language covers insurance, payments, and other issues. It is a condition of each contract that the contractor has to engage a flagging vendor approved by the railroad.

“This allows all parties to understand the process,” said Robert Travis, TxDOT’s Rail Highway Section Director. “We have a [website](#) with information and samples as reference, and we use simplified maintenance letters so we can concentrate our time on larger projects.”

“With UPRR, for example, we send a notice to them and have gotten a response back as quickly as one hour. We have determined an escalation ladder within each of the railroads, so, if we have a problem, I have a name and contact. Knowing who you are talking to at each railroad – this is one of the tenets of R16 project – communication – and it works,” Travis concluded.

Currently, TxDOT is working with one flagging vendor for all three Class 1 railroads. The scope of work sheet determines where and when to use a vendor or a railroad employee and reimbursement methods. Through the standard provisions and work sheet, the state’s construction contractor engages directly with the flagging vendor and the contractor is reimbursed as part of the normal payment process. No additional agreement is needed; a standard letter is signed by TxDOT and sent electronically to the railroad notifying them of the project.

The contractor will hire the flagger directly and the railroad will email TxDOT with its concurrence, providing the agency with a folder number or real estate management system number that can be used by the contractor when applying for a ROE and related insurance, thereby significantly reducing the time needed in the schedule. Also, because of this process, no direct payments are made from the state of Texas to the railroad for flagging and the construction contractor has control of the flagging schedule, reducing delay claims related to flagging.

The state has also about 60 other railroads operating within its borders. For these short lines, TxDOT has several options to improve efficiency. For example, a single corporation may own several short lines. In this case, the agency works directly with the corporation and uses the standard two-page flagging agreement; for individual short lines, a two-page flagging agreement is used.



Onsite Flagger
- Photo courtesy BNSF

“The flagging contractor must provide some type of certification showing they are approved to flag for the affected railroad. We then develop a blanket purchase order for the District leading the project to use for payment,” Travis said.

Contact: Robert Travis, TxDOT Rail Highway Section Director, robert.travis@txdot.gov

Other Railroad Practices

CN is the Class 1 railroad that serves the southern and midwestern states as well as Canada. On bridge projects, CN is now engaging with the state DOT design teams when they are developing their bid packages.

According to John Dinning, CN Manager of Public Works, this works well to get feedback on projected costs and flagging needs. Other approaches cited by Dinning include:

- Suggesting a reasonable timeframe; if the work is not completed, the contractor is responsible for the additional costs; and,
- Providing an at-risk allowance if the contractor completes the work within the given timeframe. This incentivizes the contractor to work as efficiently as possible.

Contact: John Dinning, CN Manager Public Works, john.dinning@cn.ca

CSX is a Class I railroad operating in the eastern United States and the Canadian provinces of Ontario and Quebec. The railroad operates approximately 21,000 route miles of track. For flagging coordination, it has consolidated its territories into four single points of contact. That way, regardless of the type of work, all the information is easily accessible to the project engineer or state DOT through the Public Projects team.

Contact: Troy Creasy, CSX Manager of Public Projects, troy_creasy@csx.com

Other Strategies to Improve Flagging

Throughout the R16 implementation effort, several other practices have been identified. They include:

- Charting out the annual need for flagging by project and schedule and sharing it with the railroad six months in advance of the need to eliminate the review time and expedite project work.
- Writing (or rewriting) general flagging provisions to be consistent with certain railroad union requirements.
- Consider paying for dedicated flaggers at the railroad to ensure quicker project completion.

Other Flagging Resources Available in the Innovation Library

- [Illinois DOT Flagger Agreement](#)
- [Iowa DOT Specs for Construction Flaggers with UPRR](#)
- [Texas DOT Flagging Agreement](#)
- [Texas DOT Flagging Maintenance Notification letter](#)
- [Texas DOT Flagging Scope of Work](#)

For more Information

To learn more about Railroad-DOT Mitigation Strategies (R16), contact Julie Johnston at the Federal Highway Administration (FHWA), julie.johnston@dot.gov.

[AASHTO SHRP2 Railroad-DOT Mitigation Strategies \(R16\) Webpage:](#)

AASHTO's product page offers case studies, training modules, presentations, factsheets, reference documents, and innovation library, and a list of other states implementing the R16 product.

Beginning September 2019, this information can also be found at AASHTO's [Rail Resource Center](#) webpage.