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Crossing Consolidation Guidelines

SUMMARY

The development of highway-rail grade crossing consolidation guidelines provides federal endorsement for the closure and consolidation of unneeded highway-rail grade crossings. The USDOT Federal Railroad Administration (FRA) Office of Research and Development tasked the Research and Innovative Technology Administration John A. Volpe National Transportation Systems Center (Volpe Center) with supporting FRA Office of Safety in the update of the 1994 Grade Crossing Consolidation manual [1].

The Volpe Center conducted literature and regulation reviews and solicited information from states about their crossing consolidation programs. The information and experiences were compiled into key subject areas. These subject areas are topics for state and local officials to consider during the crossing consolidation process. Best practices and lessons learned are provided as examples.

Crossing consolidation is crucial to public safety and economic development. Consolidating crossings ensures the ability of the railroads to play a constructive role in the national transportation system and to reduce congestion. The best practices, success stories, and tools offered in this document are a means to provide support and technical assistance in developing a successful program.



Figure 1: A closed crossing on the Southeast High Speed Rail Corridor in North Carolina

BACKGROUND

In 1991, the Federal Railroad Administration (FRA) set a goal to close 25 percent of all crossings nationwide within a ten-year period. This goal made crossing consolidation a priority. Many crossings are good candidates for consolidation. Over the last decade, guidelines, handbooks, and reports have been published to offer assistance in consolidating unneeded crossings. The U.S. Department of Transportation (USDOT) 2004 Secretary's Action Plan on Highway-Rail Crossing Safety and Trespass Prevention [2] identified, "Closing Unneeded Crossings", as one of its nine key initiatives. The plan tasked FRA with updating its 1994 crossing consolidation manual. The Volpe Center supported FRA with an update of that guidance. The FRA Office of Safety was responsible for the update and FRA Office of Research and Development funded the Volpe Center's support.

OBJECTIVES

The objective of this project was to develop national standards and guidelines for crossing consolidation. The guidance and tools contained in the document offer suggestions on the best approaches for successful consolidation projects and will facilitate the crossing consolidation process for state and local officials.

METHODS

The approach to this project was to gather pertinent information about crossing consolidation. Many states and railroads have experience with crossing consolidation projects and negotiating with communities. These experiences form the basis of the guidelines.

The FRA Office of Railroad Safety created a working group that consisted of state officials, railroad personnel, federal employees, and safety consultants. The working group used their expertise and insight to develop the main subject areas and review the document.

The Volpe Center conducted a literature and regulation review. Evaluations, studies, and legislative information formed the basis for the recommendations.

The Volpe Center and FRA also asked states to share information regarding their crossing consolidation practices. Success stories and lessons learned provide anecdotal guidance on the successful management of a consolidation project. These experiences were used throughout the guidelines document to provide case study examples. In particular, North Carolina developed a very successful crossing consolidation program. The goal is to have other states build on the successful efforts of North Carolina.

FINDINGS

The 1994 crossing consolidation manual was used as a baseline for this project. The FRA Office of Railroad Safety working group supplied input on the document subject areas. The areas selected facilitate the success of consolidation projects.

Jurisdictional Authority

States differ on who holds the governing authority to open and close highway-rail grade crossings. States where the authority falls within the state department of transportation or a regulatory agency have the benefit of a uniform crossing selection process. The crossing consolidation projects will likely be distributed to areas of greatest need and not localized where the issue has gained momentum. State agencies can also override opposition and help negotiate cooperation. State agencies often have more funding and resources available than local governments.

When the authority to consolidate crossings lies within the local government jurisdiction, those who have first hand experience with the crossing and its surroundings conduct the crossing selection process. The community may also trust the recommendations for consolidation because they feel the local government represents their best interests.

Crossing Selection

The selection process for a crossing consolidation project usually begins with a suggestion or nomination. The governing agency may develop a list of potential project sites or they may accept nominations from other stakeholders.

When considering crossing consolidation, a more comprehensive method is to use a corridor approach. This approach evaluates multiple crossings along a rail line and works to optimize both safety and mobility. The corridor approach involves the community and can be advantageous for negotiating crossing consolidation projects. The corridor approach can also reduce overall project costs by reducing the administrative burden on all involved parties.

An important factor to consider when selecting a crossing for consolidation is whether it is public or private. Private crossings are commonly unregulated by state and local governments. The consolidation of a private crossing often involves negotiation between the railroad and the landowner. The lack of authority and responsibility for safety at private crossings can impede progress for consolidation projects.

Once a highway-rail grade crossing is selected as a candidate for consolidation, a diagnostic review team should be organized to evaluate the characteristics of the crossing. The team is ideally comprised of all stakeholders in the consolidation program. The diagnostic review team gathers information such as the number of road lanes, the number of tracks, average daily traffic, accident history, and proximity and access to other crossings. The governing agency should use this information to determine if the candidate crossing is appropriate for consolidation.

Prioritization of crossing improvement projects is essential to optimize the use of limited funding. A successful approach to evaluate potential consolidation projects is to determine whether strong justifications can be made based on safety, redundancy and cost.

Project Funding



Figure 2. Ebenezer Road, Kannapolis, before closure.

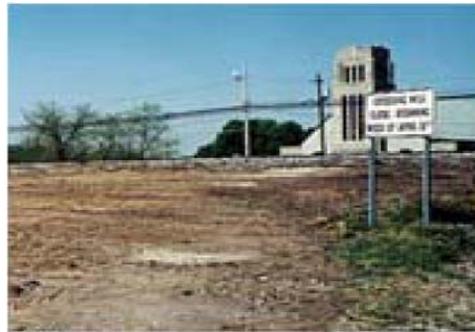


Figure 3. Ebenezer Road after closure.

Funding issues continue to be a challenge for crossing consolidation projects. The federal government offers two main sources of funding for crossing consolidations. Section 148 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for User's (SAFETEA-LU) sets aside \$220 million annually for grade crossing safety improvements. States can use a portion of these funds for consolidation projects or as an incentive for local communities to close a crossing. States may make cash payments so long as an equal amount is provided by the railroad.

Section 1103(f) of SAFETEA-LU allows federal monies to be used for hazard elimination along designated high-speed rail corridors. There are currently 11 designated high-speed rail corridors in the United States. In 2008, funding under this program, \$15 million, was made available to states.

Because programs often face competition for resources and funding, some states have developed their own financing strategies. Some states derive funds from the locomotive or motor vehicle fuel taxes. Other states set aside funds in their annual budget for consolidation projects.

The railroads are another avenue for funding. Railroads are an integral part of the cash incentive program for local communities. They also have dedicated teams responsible for crossing consolidation projects. Railroads have greater flexibility and at times more resources to achieve crossing consolidation success.

Ensuring Success

The strongest impediment to crossing consolidation is local opposition [3]. The key to overcoming resistance is to involve the public early in the process. By involving the community in planning sessions and public meetings, it opens a dialogue between the state, railroad and local community. This approach can help the community positively receive the project.

The North Carolina Department of Transportation has implemented a very successful crossing consolidation program. This program serves as a model program for other states. They achieve success with three key elements: coordination, communication and consistency. To focus on coordination, the state, local community and the railroad draft clear agreements. The communication element is essential in keeping the community informed and to achieve consistency, criteria are established for evaluating safety and providing incentives [4].

Project Completion

The final steps in the crossing consolidation process are to remove the crossing from use. The physical removal of the roadway approach to the crossing is the responsibility of the governing roadway authority.

Roadway barricades and signage are often necessary to alert the public to the traffic pattern change. Finally, to complete the crossing consolidation project, it is necessary to make the former crossing site aesthetically pleasing. The community will appreciate this effort and may think favorably of crossing consolidation.

REFERENCES

[1] Federal Railroad Administration and Federal Highway Administration, "Highway-Rail Grade Crossings – A Guide to Crossing Consolidation and Closure," Washington, DC: U.S. DOT/FRA, July 1994.

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[4] Saks, J. and Carroll, A.A., "North Carolina DOT Traffic Separation Studies, Volumes I and II", prepared for Federal Railroad Administration, Cambridge, MA: U.S. DOT/FRA, September 2004.

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