



RESEARCH PROJECT CAPSULE [21-1SS]

October 2020

TECHNOLOGY TRANSFER PROGRAM

The Impact of the Louisiana Grade Crossings: A Synthesis and System Analysis

JUST THE FACTS:

Start Date:
May 14, 2020

Duration:
12 months

End Date:
May 13, 2021

Funding:
Planning

Principal Investigator:
Guang Tian
Assistant Professor
UNO Transportation Institute
University of New Orleans

Administrative Contact:
Tyson Rupnow, Ph.D., P.E.
Associate Director, Research
225-767-9124

Technical Contact:
Julius Codjoe, Ph.D., P.E.
Special Studies Research Administrator
Louisiana Transportation Research Center
225-767-9761

Louisiana Transportation
Research Center
4101 Gourrier Ave
Baton Rouge, LA 70808

Sponsored jointly by the Louisiana
Department of Transportation and
Development and Louisiana State
University

POINTS OF INTEREST:

Problem Addressed / Objective of
Research / Methodology Used /
Implementation Potential

WWW.LTRC.LSU.EDU

PROBLEM

Louisiana has over 3,000 at-grade crossings of public roads with railroads. The number of private road/driveway crossings is unknown but likely exceeds the number of public crossings. In 2018, the overall number of collisions and the number of grade crossing fatalities across the nation was 2,220 and 273, respectively (Bureau of Transportation Statistics). Simultaneously in Louisiana, 91 grade crossing collisions were recorded, including six fatalities. Although Louisiana has witnessed a decline in highway-rail crossing accidents in recent years, which mirrors national trends, Louisiana is one of the 10 states that have the highest number of grade crossing collisions on average.

At-grade crossings of public and private roads with railroads create a unique intersection where trains and vehicles and other users meet. These are different modes of transportation with distinct physical and operational characteristics. In addition to highlighted safety concerns, at-grade crossings also hamper railroad operations and efficiency. The 2015 Louisiana Statewide Transportation Plan includes an element that calls for research into incentive programs that can be used to entice voluntary closure of public and/or private crossings.

OBJECTIVE

The primary objective of this study is to investigate the effectiveness of existing incentive programs for closures of public and private grade crossings in the state of Louisiana. The research will review and summarize the current knowledge and practice as well as outline the funding sources (such as FHWA and FRA) and programs for improving grade crossing safety. A state-wide survey and interview of stakeholders will be conducted to better understand the concerns, barriers, and solutions particularly in Louisiana. Incentive programs that are already being used will be identified as well as potential new programs that offer promise in reducing the number of crossings in Louisiana. A model will then be developed that can predict the priority rating of individual crossings for closure or other decision making.

METHODOLOGY

To achieve the objectives of this study, the research team will employ the following methods. First, the team will meet with stakeholders to receive comments, review the goals and proposed products of the project, and finalize the research objectives and design. The team will then investigate the crossing statuses of both publicly and privately owned crossings in Louisiana. A literature review will be conducted to determine incentive programs for closures of grade crossings. The research team will work with DOTD to make sure all currently available data and relevant

information is reviewed and included as appropriate. Based on the literature review, the project team will then design a survey to be sent to the broad stakeholders across the state. Personal interviews will be conducted when needed. Next, funding sources will be identified. All data will then be analyzed and a model developed that will predict the priority rating of individual crossings for closure or other actions of decision making. Lastly, a final report will be prepared.

IMPLEMENTATION POTENTIAL

This project will provide a list of incentive programs that could be employed directly by DOTD, local governments, railroad companies, and industries that rely on rail service. It will help encourage different public and private sectors and local communities to be more engaged in issues related to grade crossings. Ultimately, the study will help improve the safety of all transportation users, enhance the efficiency of Louisiana's transportation system and make it better to serve the needs of the economy, reduce the environmental impacts related to transportation, and raise public health in general.