

Norfolk Southern Railway Company  
Merchant Street, Pittsburgh, PA

## Project Purpose and Need Statement

June 2019

---

### **INTRODUCTION:**

The Merchant Street Bridge, located in Pittsburgh, Pennsylvania along the Fort Wayne Line, which is owned and operated by Norfolk Southern Railway Company (NSR), provides a grade separation from automobile traffic traveling below the rail line along Merchant Street. Merchant Street connects Ridge Avenue with Martindale Street under the Fort Wayne Line. The Fort Wayne Line serves rail freight traffic in interstate commerce and operates as a primary link through Pittsburgh between Chicago and the New York/New Jersey commercial markets. NSR is a common carrier and the Fort Wayne Line forms a critical component of NSR's route between Chicago and the east coast, carrying a variety of commodities, both hazardous material such as chlorine, anhydrous ammonia, hydrogen fluoride, crude oil, and ethanol, as well as nonhazardous materials like coal, auto parts and finished vehicles, lumber, agricultural products, and intermodal containers and trailers. The line Fort Wayne Line also carries passenger traffic. The Merchant Street Bridge was constructed circa 1905 and consists of two skewed steel spans supported by stone masonry abutments and one intermediate steel bent. The ballast-deck superstructure is comprised of a concrete-filled riveted steel trough system that varies in length and width and carries four active railroad tracks, with capacity to carry up to 70 trains per day. There is extensive steel corrosion within the cross girders and columns comprising the intermediate bent as well as throughout the riveted trough system. These conditions will be considered safety concerns within a few years and may pose a safety hazard to the railroad and the traveling public and a potential liability to other transportation entities (e.g., City of Pittsburgh, Allegheny County) if not addressed. Current and future rail traffic depends upon the ability to utilize the Fort Wayne Line in order to maintain connectivity along a major east-west rail mainline.

This Purpose and Need Statement has been developed in accordance with Pennsylvania Act 120 of 1970. It follows guidance from several sources, including the Pennsylvania Department of Transportation (PennDOT) Publication No. 319: Needs Study Handbook. The appendix hereto provides a location map and photo of the Merchant Street Bridge.

### **PURPOSE:**

The purpose of the Merchant Street Bridge project is to maintain safe freight and passenger rail operations along the Fort Wayne Line to continue the efficient transportation of goods and people between Chicago and the New York/New Jersey commercial markets, as well as within local markets. The bridge structure has reached the end of its useful life and engineering inspections have identified a need to address these problems in order to maintain safe interstate rail transportation along the Fort Wayne Line. The bridge carrying the Fort Wayne Line over Merchant Street has safety deficiencies that have the potential to create risks to current rail traffic and forecasted rail traffic increases throughout the United States and within Pennsylvania and the Pittsburgh region in particular.

**NEED**

The project need for the Merchant Street Bridge project is to address:

- A. Safety and reliability;
- B. Facility deficiencies.

**A. Safety and reliability:**

The Merchant Street Bridge has safety and reliability problems due to its deteriorated condition that need to be addressed. After a routine inspection in 2018, the Merchant Street Bridge was determined to exhibit extensive steel corrosion within the cross girders and columns comprising the intermediate bent as well as throughout the riveted trough system. The superstructure's poor condition poses the potential for shifts or damage that could lead to interruption of interstate transportation within the next few years and potentially could cause injuries or property damage. In addition, the bridge goes over a public roadway and failures may lead to interruption of roadway travel. These conditions are considered safety concerns and may pose the potential for a safety hazard to the railroad and the traveling public if left unaddressed.

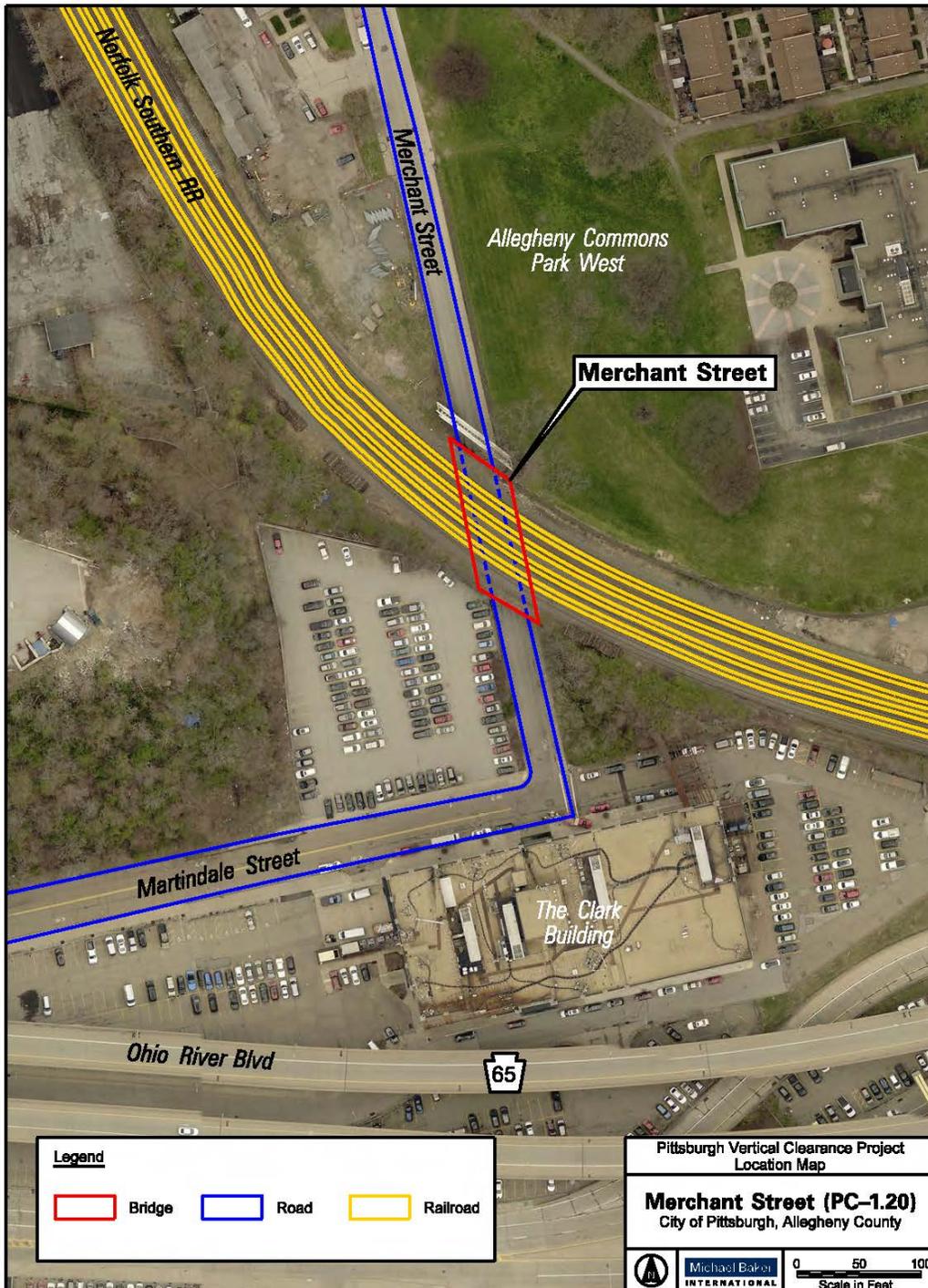
Further, the Merchant Street Bridge in its current condition could not accommodate the expected substantial increase in freight demand through 2045 predicted by federal and state freight rail transportation studies. (See <https://www.bts.gov/newsroom/dot-releases-30-year-freight-projections> ; [https://www.penndot.gov/Doing-Business/Transit/InformationandReports/Documents/2015%20Pennsylvania%20State%20Rail%20Plan%20\(low\).pdf](https://www.penndot.gov/Doing-Business/Transit/InformationandReports/Documents/2015%20Pennsylvania%20State%20Rail%20Plan%20(low).pdf) ). It is infeasible to accommodate these anticipated increases in freight requirements by merely maintaining the current national rail infrastructure, and commensurate congestion would result. Due to the poor condition of the Merchant Street Bridge, freight capacity would not be accommodated.

**B. Facility Deficiencies:**

The existing structure is in poor condition based on recent bridge inspections. Structurally deficient structures become less effective and more expensive to maintain or repair as their conditions worsen. Facility deficiencies must be addressed for this key component of the rail network in order to help to minimize future maintenance and address existing structural deficiencies and traffic demands. The current poor condition of the Merchant Street Bridge has led to increased maintenance actions with additional substantial maintenance necessary if the structure remains active and in service. These maintenance activities eventually would require more frequent interruptions on the Fort Wayne Line to allow for more extensive maintenance repairs, thus causing significant disruption to interstate commerce on the busiest corridor between the Midwest and the East Coast. If the structural conditions are not addressed, the poor condition of this bridge may pose a threat to transportation connectivity. The condition of this bridge would need to be addressed to ensure the continued safe and efficient transportation of goods by rail in accordance with maintenance obligations to address facility deficiencies.

**APPENDIX 1  
PROJECT LOCATION**

**Project Location Map:  
NS Bridge over Merchant Street (PC-1.20), City of Pittsburgh, Allegheny County**



# Merchant Street, PC-1.20

Looking North

