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Condition Assessment of Short-line Railroad Bridges in Pennsylvania

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16. Abstract

Current levels of available resources to maintain and preserve the Pennsylvania short-line railroad bridge infrastructure require that important priority decisions be made on an annual basis. The primary objective of this study was to establish a reliable database of Pennsylvania SLRR bridges and to develop a risk-based bridge prioritization algorithm. A bridge survey of Pennsylvania short-line railroad owners and operators was conducted to develop a bridge database that would be as complete and accurate as possible given the available time and resources. The proposed algorithm provides a tool for PennDOT to use in making more effective maintenance and preservation resource allocation decisions for these structures. This study consisted of a literature review, bridge survey, database update, bridge sample, assessment of the current overall SLRR bridge population, and a risk-based prioritization algorithm.

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Executive Summary

Bridges represent a significant proportion of short-line railroad total assets in Pennsylvania. Therefore, bridges must be managed and maintained effectively to ensure that the railroads can safely and economically operate above a minimum desired level of service. Effective infrastructure asset management combines engineering principles with business and economics practices. The basis of management is a centralized, population inventory database. The compartmentalized, dispersed, and diverse nature of Pennsylvania SLRR owners and operators is such that there is a need for a coordinated and centralized effort to evaluate the Pennsylvania SLRR system as a whole to ensure the most effective overall resource allocation. The primary objectives of this study were to examine, through field visits, a statistically significant sample of Pennsylvania SLRR bridges in order to develop a more complete bridge database, to survey all SLRR owners and operators regarding bridge details, and to develop a bridge prioritization algorithm. The proposed algorithm provides a tool for PennDOT to use in making more effective maintenance and preservation resource allocation decisions for these structures. A detailed evaluation of the sample structures was conducted to determine the structural maintenance and preservation status of sub-populations. Using these results, the research team developed methodologies, applicable to the entire population, to determine a ranking of bridge preservation candidates.

A literature review, presented in Chapter 2, was conducted to establish the state of the art for railroad bridge population management and resource allocation decisions. This review includes current practices for railroad bridge evaluation, maintenance, condition assessment, and preservation. In addition, suitable railroad bridge database tools, statistical sampling

methodologies, and resource prioritization methods were reviewed. The Pennsylvania SLRR bridge survey, database update, and bridge sample are discussed in Chapter 3. The current list of SLRR owners and operators provided by PennDOT was contacted with requests for information to facilitate the collection of all available bridge data. Information from returned surveys was reviewed and entered into the SLRR bridge database. Stratification and sampling methodologies were then applied to the SLRR bridge inventory to establish the project evaluation sample of 30 bridges. Following the establishment of the bridge sample, the research team documented each of the sample of bridges through plans, structural capacity analysis, and a field visit to determine bridge general condition. The results of the bridge field visits were synthesized and formed into an assessment of the current, overall SLRR bridge population, as discussed in Chapter 4. This was accomplished by application of data to the relevant bridge population based on the performance associated with the sample. Finally, a risk-based prioritization algorithm is proposed in Chapter 5 based on suitable criteria that define and quantify both the probability and consequences of bridge failure.

A risk-based prioritization algorithm is proposed to assign a relative risk score to each bridge in the population. The bridges are then ranked according to their score. The risk score is the product of the probability of failure and consequence of failure. Both probability and consequence are quantified by the summation of weighted parameters, which were determined from information within the database. Weight factors consistent with literature have been proposed and assigned by the research team for each of the parameters. The algorithm is a modular framework wherein each parameter is formulated as a separate, revisable module that can be easily updated or changed by the user.

Chapter 1: Introduction

1.1 Background

Bridges represent a significant proportion of short-line railroad total assets; therefore, bridges must be managed and maintained effectively to ensure that the railroad can safely and economically operate above a minimum desired level of service. Maintaining and assessing bridge structures is a major task for Pennsylvania short-line railroads (SLRR) due to limited budgets and resources. Challenges in managing a bridge population are increased as a result of demand by Class I railroads and customers for heavy-axle (286 kip and 315 kip) freight cars.

Effective infrastructure asset management combines engineering principles with business and economic practices. With well-defined objectives, effective asset management systems provide the framework in which managers identify maintenance and repair needs, timing of activities, and priorities for these actions when funding is limited. Key to the management plan is a population inventory database. There currently is no central agency that maintains a comparable national inventory of railroad bridges as with highway bridges and the Federal Highway Administration's (FHWA) National Bridge Inventory (NBI). Therefore, it is the responsibility of each railroad to maintain an inventory of the bridge population under its jurisdiction. Many Pennsylvania SLRR bridges, however, have been acquired as the result of abandoned main lines or have changed ownership many times over the last 50 years, resulting in the loss of records. As a result, many SLRR owners and operators do not have complete or current bridge information (Laman et al., 2001) and without mandatory formal management programs and resources, the ability of SLRR owners and operators to assemble detailed engineering bridge records has been very limited.

In the last year, the American Short Line and Regional Railroad Association (ASLRRA) has followed the lead of the Federal Railroad Administration (FRA) with bridge safety initiatives. In November 2007 the ASLRRA created a bridge safety task force to address several maintenance issues with the goal of developing new management programs (Boardman, 2008). However, the Rail Safety Improvement Act of 2008, signed into law on October 16, 2008, will expedite the process by which SLRRs adopt bridge management plans.

Current levels of available resources to maintain and preserve the Pennsylvania SLRR bridge infrastructure require that important priority decisions be made on an annual basis. The compartmentalized, dispersed, and diverse nature of Pennsylvania SLRR owners and operators is such that there is a need for a coordinated and centralized effort to evaluate the Pennsylvania SLRR system as a whole for the most effective overall resource allocation. Currently such a decision cannot be made with a full understanding of the overall network needs.

1.2 Objectives

The primary objective of this study was to statistically evaluate Pennsylvania SLRR bridges through a sampling technique in order to develop a bridge prioritization algorithm. The proposed algorithm provides a tool for PennDOT to use in making more effective maintenance and preservation resource allocation decisions for these structures. Due to the large number of SLRR bridge structures in Pennsylvania and the limited resources of the present study, it was recognized that the evaluation would be significantly enhanced through an examination of a sample population of SLRR bridges currently in service. A detailed evaluation of the sample structures was conducted to determine the structural maintenance and preservation status of sub-

populations. Using these results, the research team developed methodologies applicable to the entire population to determine a ranking of bridge preservation candidates.

A bridge survey of Pennsylvania short-line railroad owners and operators was conducted to develop a bridge database that was as complete and accurate as possible given the available time and resources. This database was used as the source to establish the study sample, record condition assessment information, and define prioritization criteria. Based on this assessment, prioritization decisions can be made to best allocate available resources to ensure that Pennsylvania SLRRs can operate at or above industry standards.

A literature review examining the state-of-the-art for railroad bridge population management and resource allocation decisions was conducted and used as the input basis for the proposed prioritization methodology. Due to limited published literature specific to railroad bridges, the scope of the review was expanded to infrastructure asset management and resource allocation decisions. The intent was to compare infrastructure asset management techniques and methodologies and determine their applicability to railroad bridge management. In addition, the review identified current thinking with regard to bridge condition assessment, bridge condition prediction, asset management systems, risk management and prioritization, and sampling procedure.

1.3 Project Tasks

A literature review, presented in Chapter 2, was conducted to establish the state of the art for railroad bridge population management and resource allocation decisions. This review included current practices for railroad bridge evaluation, maintenance, condition assessment, and preservation. In addition, suitable railroad bridge database tools, statistical sampling

methodologies, and resource prioritization methods were reviewed. The Pennsylvania SLRR bridge survey, database update, and bridge sample is discussed in Chapter 3. The current list of SLRR owners and operators provided by PennDOT was contacted with requests for information to facilitate the collection of all available bridge data. Information from returned surveys was reviewed and entered into the SLRR bridge database. Stratification and sampling methodologies were then applied to the SLRR bridge inventory to establish the project evaluation sample of 30 bridges. Following the establishment of the bridge sample, the research team documented each of the sample bridges through plans, structural capacity analysis, and a field visit to determine bridge general condition. The results of the bridge field visits were synthesized and formed into an assessment of the current, overall SLRR bridge population, as discussed in Chapter 4. This was accomplished by the application of data to the relevant bridge population based on the performance associated with the sample. Finally, a risk-based prioritization algorithm is proposed in Chapter 5 based on suitable criteria that define and quantify both the probability and consequences of bridge failure. The result of the prioritization algorithm is a ranked list of bridges, which PennDOT may use as a decision support tool.

Chapter 2 Literature Review

2.1 Introduction

The primary objective of a successful bridge management system is to ensure the overall safety of a network to guard against catastrophic failures that could result in loss of life, adverse environmental impacts, and disruption to the rail system. Also of primary importance, the management system must provide decision support to preserve the value of the assets by ensuring that bridges can function at required levels of service and ensure that strategic investments are made at optimal times. The basis for network safety assurance and network decision support stems from the collective knowledge of individual bridge condition.

Bridge condition can typically be expressed in two ways: condition appraisal, which is subjective, and analytical load rating. Condition appraisal is most typical of highway bridges. The appraisal is a subjective rating based on established guidelines such as the National Bridge Inspection Standards (NBIS) and the inspector's judgment. Analytical load rating, while used for highway bridges when warranted, is the common practice for the evaluation of railroad bridges. The American Railway Engineering and Maintenance-of-Way Association (AREMA) publishes the *Manual for Railway Engineering*, which provides standards for railroad bridge evaluation (AREMA, 2008a).

2.2 Inspection

The rating of a railroad bridge begins with a detailed field inspection. All physical features of the bridge having an impact on structural integrity or safety should be thoroughly examined and documented. Special attention should be given to members showing deterioration or

distress, as this could be an indication that the member or structural system is under capacity for the load standards. The general behavior of the bridge should be observed during passage of live load where practical, noting unusual vibration, deflection, side sway, opening of cracks, or movement at piers and/or abutments. The *Manual for Railway Engineering* (AREMA, 2008a) includes inspection provisions for wood, concrete, and steel structures that, when followed by a qualified inspector, provide the engineer with the necessary information to analytically rate the bridge according to its load-carrying capacity. In addition to AREMA, the FRA provides provisions for bridge inspection.

The *Essential Elements of Railroad Bridge Management Programs* (FRA, 2008) provides the following organized guideline of requirements for the inspection of railroad bridges:

- Inspector qualifications:
  - Bridge experience or appropriate training
  - Trained on bridge inspection procedures
  - Trained on railroad workplace safety
- Type and frequency of inspection:
  - Periodically (at least annually)
  - Underwater
  - Special
  - Seismic
- Inspection schedule:
  - Documentation
  - Date
  - Name of inspector

  - Reporting format
  - Coherence of information
- Inspection report review process
- Record retention
- Tracking of critical deficiencies to resolution

In July 2008, AREMA published the first-ever *Bridge Inspection Handbook* (AREMA, 2008b). This publication was used as the standard from which the inspections for the current conditional assessment of Pennsylvania SLRR bridges were based.

2.3 Rating

According to AREMA (2008a), rating of existing bridges in terms of carrying capacity should be determined by the computation of stress based on authentic records of the design, details, materials, workmanship, and physical condition, including data obtained by inspection. Stresses are computed for all load-carrying members and components based on combinations of loads as specified by AREMA (2008a). The condition assessment of Pennsylvania SLRR bridges will consider the live loadings listed below and shown in Figures 2.1 and 2.2:

- Cooper E Series Loading
- Alternate Live Load
- 263,000 lb gross car weight (GCW)
- 286,000 lb GCW
- 315,000 lb GCW

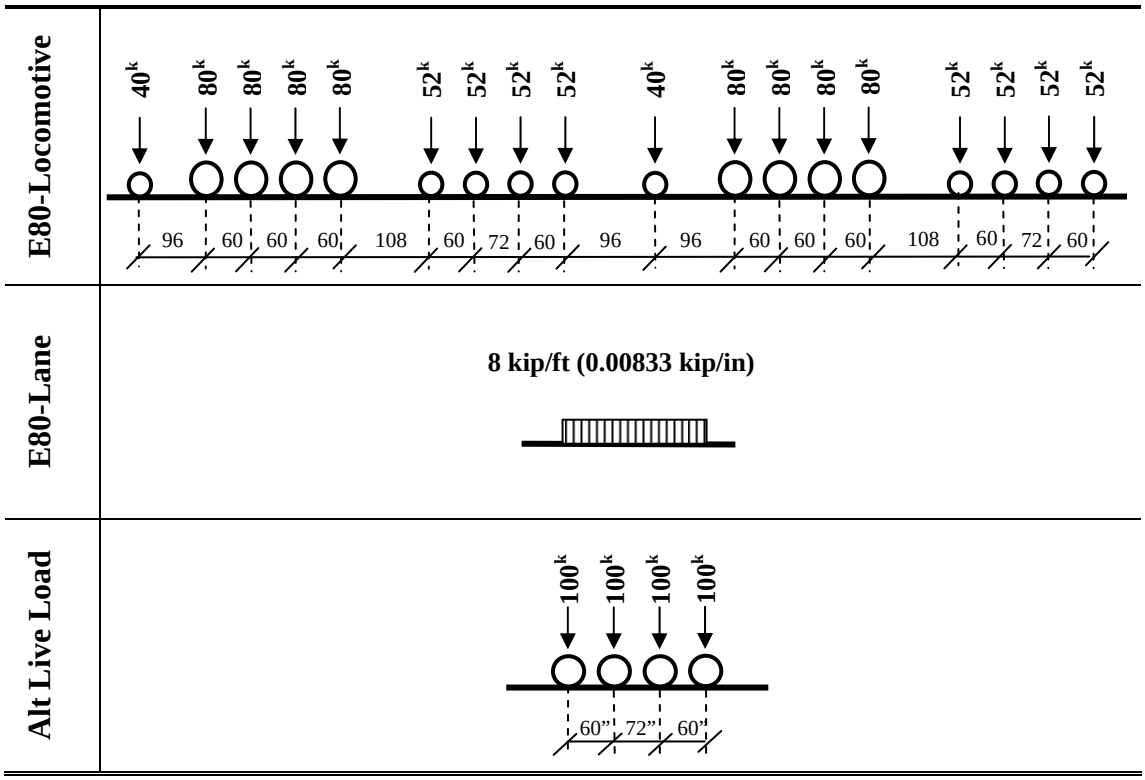


Figure 2.1. Current AREMA Design Live Loads (AREMA, 2008a).

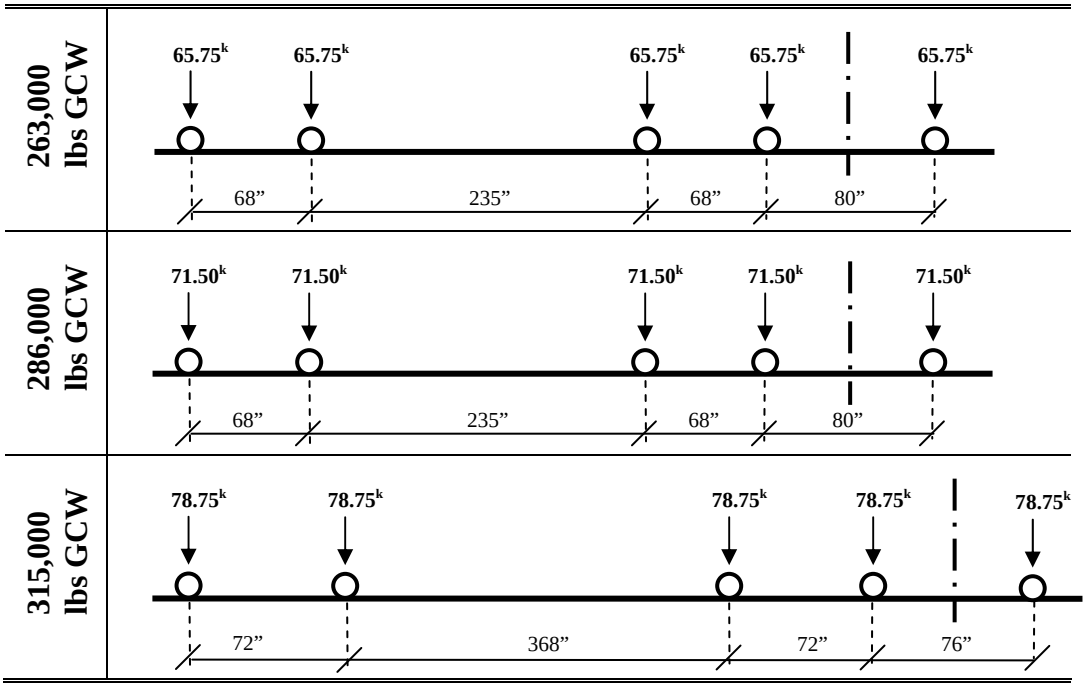


Figure 2.2. Typical Rail Car Loads (provided by Norfolk Southern Railroad, Inc.)

Railroad bridges can be assigned two types of load ratings: normal and maximum. Normal rating is defined by AREMA (2008a) as the load level that can be carried by the existing structure for its expected service life. The normal rating will ensure a consistent factor of safety and prolong the useful life of the structure. The rating is dependent on a specified speed because the effects of impact loading are related to the speed of the rolling stock. In addition to speed, impact loading due to hammer blow must be considered if steam locomotives are in use. Maximum rating is the load level that the structure can support at infrequent intervals, with applicable speed restrictions. If frequent maximum-rating loads are expected or anticipated for steel bridges, it is appropriate that a more detailed inspection be made of fracture-critical members or a fatigue analysis be conducted to predict the remaining useful life of the structure and preclude the continued application of loads beyond the stage where the potential for member failure is high.

2.4 Records Management

An earlier study by Laman et al. (2001) indicated that most Pennsylvania SLRRs do not have complete data for infrastructure under their jurisdiction, primarily due to lack of available resources and lack of original records lost over the life of the bridge. Furthermore, information that is documented by an SLRR such as inventory, condition, and operational and historical data is often in paper format and generally not contained in a master file or database. This is reflected by the results of the Laman et al. (2001) survey and data collection effort where information, with varying completeness, was received for about 70% of the Pennsylvania SLRR bridges.

A network records management system facilitates access to data and allows credible reporting to other agencies for funding. Record management systems are often relatively simple

and simultaneously effective, affording much of the benefits of a more complex system. Commercially available database software is well suited to provide the storage and retrieval capabilities required for the management of railroad bridge records. Laman et al. (2001) assimilated collected SLRR bridge data in a master database using Microsoft Access 2000. The inventory database is organized by SLRR, branch/line, and bridge. Each bridge, with a unique milepost identification number, has 20 different data fields for information such as: bridge number, branch and short line, material, type, deck type, construction date, number of spans, total length, number of tracks, width, what the bridge is over, rating for 315,000-lb GCW, rating for the 286,000-lb GCW, date inspected, condition, replacement cost, history, remarks, owner, and bridge plans. Functions within the Access software allow for easy viewing, manipulation, and reporting of data.

In addition to inventory data stored within an electronic database, there is a need to store historical, non-electronic, paper copies of information such as original construction documents and inspection records. This information is valuable because it serves as an important basis for engineering evaluations. Additionally, original construction documents are a record of original load capacities as well as information that may otherwise be unknown, such as foundation type. A permanent history file that includes this type of information should be created and maintained for each bridge, incorporating additional maintenance and repair documentation. Information contained within the history file should be backed up either by photocopy or, preferably, digitized by electronic scan. The history file, in electronic format, could be linked to an inventory database as described above, providing a complete repository of bridge information.

The *Essential Elements of Railroad Bridge Management Programs* (FRA, 2008) recommends, at a minimum, that a railroad bridge inventory contain the following information:

- Milepost location or other unique identifier
- Location
- What the bridge crosses
- Number of tracks
- Number of spans
- Span length
- Type(s) of construction:
  - substructure
  - superstructure
  - deck
- Dates of:
  - construction
  - major renovation
  - strengthening

In addition to bridge inventory, the need to maintain permanent records of design, construction, modification, and repair is also addressed in the *Essential Elements* (FRA, 2008).

2.5 Bridge Condition Prediction

The ability to accurately assess the condition of bridges is important for bridge management systems to be effective. The condition state reflects current bridge load capacity and also provides an indication of long-term load levels that the bridge can support without sustaining damage. Moreover, the overall bridge condition, as well as individual component condition, provides managers with a relative scale to assess the state of bridges within an inventory. This is

valuable in determining required maintenance activities and prioritization to sustain a minimum network condition level. The assessment of current bridge conditions for all bridges within a network can be a laborious task, particularly for an agency with limited resources; therefore, a reliable prediction method offers a useful alternative. In addition to assessing current bridge condition, managers are also interested in bridge future condition. Deterioration models can be used to forecast bridge condition, which helps managers plan long-term management and preservation decisions. The reliability of prediction models is dependent on the quantity and quality of existing bridge inventory and inspection data (Yanev, 2007). Therefore, an accurate and complete database is important for successful condition modeling.

2.5.1 Predicting Current Condition

Bridges are typically evaluated using either a visual inspection process to provide a condition appraisal or a more time-consuming and costly detailed structural analysis to evaluate the load-carrying capacity of the structure. When bridge evaluation is conducted by visual inspection, a subjective rating is assigned to each bridge component. With analytical evaluation, a rating is computed based on applied loads and resistance of bridge components. Conventional statistical analyses, as well as methods based on fuzzy logic, have not been very successful in providing a reliable relationship between the two rating systems (Cattan and Mohammadi, 1997). However, there has been some success in relating the two.

2.5.1.1 Visual Inspection

Gattulli and Chiaramonte (2005) proposed a reliability-based bridge condition assessment procedure for a bridge management system (BMS) under development for the public railway system in Italy. The approach adopted in a prototype uses an automated condition evaluation procedure consisting of four modules. The first is a comprehensive database, sufficient to

accurately describe any bridge in the inventory. The second is the inspection module that guides inspectors according to standardized inspection procedures for any bridge type. The third is a catalog of the most common defects, failures and deficiencies, each with an associated importance factor, occurring on a railway bridge within the Italian network. The fourth module determines bridge condition rating using a numerical algorithm. It evaluates the general condition of an existing bridge structure based on the knowledge of inventory data and on reported visual inspection data. In order for this condition rating to have meaning, it must be relative to some standard. Additionally, the rating must permit direct comparison among different structure types and systems. Therefore, a condition index with respect to a reference value and based on *effective* component and defect types is used. With the use of a numerical model and Monte Carlo simulations, the results attained have been considered sufficiently accurate. The performance of the condition assessment procedure was field tested through the visual inspections of a sample of bridges. The condition assessments obtained by the visual inspection procedure were confirmed by an analytical engineering evaluation of the same bridge. This procedure, while still in development, not only provides insight into an overall bridge condition but also provides information related to the health of individual bridge components. While the inspection module within this BMS is regimented and, therefore, produces relatively reliable results, other rating methods are more susceptible to the inspector's inherent bias. In order to produce reliable prediction results, methods must be employed to obtain consistent and accurate inspection results from any trained inspector.

2.5.1.2 Neural Network

Cattan and Mohammadi (1997) describe the application of a neural network system in developing a relationship between subjective inspection ratings and analytical ratings as well as

subjective inspection ratings and bridge characteristic data for railroad bridges on the commuter rail system in the Chicago metropolitan area. An artificial neural network (ANN) establishes a relationship based on existing data through a series of logical steps to learn the relation based on a set of output results and given input values. This directly applies to bridge condition ratings in that once the ANN learns the relationships between certain bridge data, it can predict a bridge condition rating based on input bridge parameters. Because neural networks are not programmed but are taught, input data as well as output data must be available. Cattan and Mohammadi (1997) used a database specific to bridges of the Chicago metropolitan area to train an ANN. The study concludes that the ANN approach demonstrated a reasonable performance in establishing a relation between the subjective inspection rating and the bridge parameters and between the subjective rating and analytical rating values.

A significant restriction of neural networks is that they are application specific. The network developed for the Chicago metropolitan area would yield poor results if tested on a different database. However, after significant parameters are identified in one network, new networks can easily be trained on a set of new patterns.

2.5.1.3 Other Methods

The highway bridge management system used in Japan (J-BMS) incorporates a program referred to as Bridge Rating Expert System (BREX) to evaluate the present performance of concrete bridges based on visual inspection data (Bakht and Mutsuyoshi, 2005). The BREX works from a database within J-BMS that stores technical specification data, inspection data, and other data related to bridge maintenance. The output of BREX includes soundness scores for load-carrying capability and durability for main girders and slabs. The expert system utilizes if-then rules constructed from hierarchical neural networks in order to carry out fuzzy inference and

machine learning, which facilitates the refinement of knowledge based on the use of the back-propagation method. The results of BREX present the current state of deterioration as well as characterize the remaining life of the bridge estimated from deterioration prediction curves.

2.5.2 Predicting Future Condition

The accurate prediction of future condition of bridge components is an important part of any bridge management system. In order to optimize limited budgets and estimate life-cycle costs, a reliable prediction model must be developed to provide a relationship between bridge condition and time. This allows managers to plan and schedule maintenance, repair and rehabilitation (MR&R) work such that it is performed at optimal times as well as provide an indication of the remaining service life of the bridge.

2.5.2.1 Weibull Probability Distribution

Grussing et al. (2006) proposed a prediction model for the condition of buildings. The methodology has direct applications in bridge condition prediction and is, therefore, discussed here. The condition of components within a building is quantified according to a Condition Index (CI). This index is evaluated with computer software that uses a condition index metric based on inspection data. The CI is a value ranging from 0 to 100 that provides a standardized measure of the physical condition of a component, with 100 representing new condition. Over time, the CI decreases and experience with building components indicates that the optimal time to perform maintenance is when the CI range is 70-80.

The Weibull cumulative probability distribution function is used to model the condition life-cycle curve and is defined mathematically as:

$$C(t) = a \times e^{-(t/\beta)^{\alpha}} \tag{2.1}$$

where:

$C(t)$ = component condition index as a function of time

t = time in years since component was installed or constructed

e = natural number

a = parameter, initial steady state component section condition index

β = parameter, service life adjustment factor

α = parameter, accelerated deterioration factor

The model is initially seeded with general assumptions in order to determine the described shape parameters. As time passes and the component section ages and degrades, data from routine inspections are input to the model to recalibrate it for current conditions. This self-correcting feature also accounts for uniqueness associated with localized component environment and component abuse. If a repair is performed, the deterioration model will experience a jump by means of a step function. This step increases the CI to an assumed value, representative of the maintenance activity, which extends the service life of the component. A reliable life-cycle condition trend model is a valuable tool for building managers to identify MR&R candidates and plan repair activities with the goal of optimizing life-cycle costs.

2.5.2.2 Markov Process

Stochastic processes are most suited for modeling dynamic systems with uncertainty over time. Moreover, a Markov process, as investigated by Gralund and Puckett (1996) as well as Morcous (2007), is an ideal choice for assessing the deterioration of bridges over time because it effectively models the probability of bridge condition transitioning from one discrete deterioration state to another. This process is most applicable when a historical database exists from which conditional information can be drawn. The historical information is used to establish a probability matrix, with values $P_{i,j}$. That is, the probability that the condition will change from

state *i* to *j* during a given period of time. Condition data from the National Bridge Inventory (NBI) are ideal for a Markov-chain deterioration model because there is sufficient historical data from past inspections to establish a probability matrix and a 2-year transition period is used to coincide with biannual inspections. Also, the probability matrix can be formulated to include the effects of different maintenance alternatives ranging from "do-nothing" to "replacement." Markov models are a popular choice for predicting the future condition of a bridge, but without sufficient data, their reliability is limited.

2.5.2.3 Other Methods

A method to forecast load ratings was proposed by the PennDOT BMS in the late 1980s (Yanev, 2007). PennDOT assumed the following relationship between load capacity, *LC*, design load capacity, LC_D, equivalent age, *EQA*, and equivalent life of bridge, *ESL*, resulting in a convex normalized curve:

$$\frac{LC}{LC_D} = 1 - \left(\frac{EQA}{1.1ESL} \right)^5 \tag{2.2}$$

where: $$CNR = \left(1 - \frac{EQA}{ESL} \right)^{0.7} \tag{2.3}$$

EQA = equivalent age of bridge element (years)

ESL = equivalent life of bridge element (years)

CNR = condition rating at equivalent age

The equivalent age of the bridge element, *EQA*, is defined in terms of the condition rating, while its estimated life, *ESL,* is assumed. If properly implemented, the rating should form a conservative system to predict future load ratings.

Bolukbasi et al. (2004) developed two methods to reasonably estimate the future condition of highway bridges using NBI data to model deterioration trends. These methods were applied to

about 2,600 Illinois state highway bridges for which inspection records were available over the period 1976-1998. Both methods are based on the intuitive notion that, unless there is maintenance work performed, condition ratings will decrease with bridge age. The first model filters out any inconsistent condition ratings due to maintenance work or inspection blunders. Next, a scatter plot with NBI condition rating verses bridge age is created. Regression analysis is then conducted to develop a deterioration model. Results of this study indicate that a third-degree polynomial is suitable to represent the deterioration model. In the second method, the expected duration at which the bridge, or its components, stays at a particular rating is used as a baseline for adjusting the bridge inventory data. A simple C++ program was written to calculate the duration during which a component had any one specific rating. The program output provides the corresponding mean and standard deviation for the duration for each condition rating. A deterioration model is then constructed with the condition rating and bridge age oriented along the y and x axis, respectively, and a linear approximation is used to describe the transition from one condition state to the next. An issue that had to be addressed was the fact that most bridges were built before the 22-year data period, or continued to be in service after the period, or both. Therefore, a situation arose in which the actual duration for the first and last condition ratings recorded are unknown. With the assumption that the actual durations are uniformly distributed along the duration period, a relationship between the average and actual duration was computed. This relationship is then used as a realistic estimation for the unknown duration values.

The two methods agree reasonably well in representing bridge component deterioration. The difference between the two models is within the expected margin of error and it is, therefore, noted that both methods offer acceptable deterioration curves that can effectively be used in

estimating the future condition of bridges. However, the relationship between bridge condition and bridge age can be developed with data other than from the NBI.

Tserng and Chung (2007) discuss in detail the health assessment of highway bridges in Taiwan from the viewpoint of analyzing the macro relationship between the age of a bridge and its integrated New Performance Index (NPI). The NPI is a quantitative value representing structural adequacy of a bridge based on the summation of sub-item condition indices. Condition data for this study came from a mass inspection of over 5,000 bridges that was completed in 2002. The bridges were grouped by age in 5-year increments. The relationship between the NPI and bridge age was evaluated by first investigating the distribution of the NPI within each of the age groups. Each distribution provided a trend that was extrapolated to the population, resulting in a model. The model, with the NPI verses bridge age, has an upper bound curve and a lower bound curve by which the "normal zone" is defined as the average value between the two.

2.6 Asset Management Systems

Asset management combines engineering principles with business practices and economic theory. Fundamental to any management plan is an inventory of assets, which includes administrative and characteristic as well as condition information. The primary purpose is to assist managers in establishing systematic, cost-effective strategies to sustain their assets at or above acceptable condition levels. It provides the decision-making tools for planning what maintenance and repair activities should be taken, when such actions should be taken, and how to prioritize these actions when funding is limited. Additionally, asset management systems should provide complete life-cycle coverage starting with planning and continuing until

replacement or reconstruction. There exist a number of commercially available bridge management systems, which are discussed briefly here.

2.6.1 Bridge Management – Highway

Bridge management systems for highway agencies are critical in maintaining their networks of bridges. Fundamentally, a bridge management system includes an inventory of bridges containing the necessary information from which management decisions are based. A management system can provide the basis for the strategic planning and allocation of limited maintenance resources as well as assist in the development of preservation strategies. Additionally, a bridge management system should identify when maintenance activities should be performed on all structures within the network in order to optimize the cost-benefit relationship. In addition to engineering and economic aspects, bridge management systems have become increasingly important to security agencies in their efforts to defend against potential attacks.

2.6.1.1 Pontis

Pontis is a powerful bridge management system developed for the FHWA (Godzwon, 2004) and is the predominant bridge management system employed by state departments of transportation. Pontis is a complete system that stores and analyzes inventory and inspection data to assist transportation agencies in managing bridge inventories and making decisions about preservation and functional improvements for their structures. Pontis has the ability to forecast individual bridge life-cycle and deterioration costs as well as make project recommendations that result in the maximum benefit from limited funds. The FHWA has encouraged the states to move away from a purely engineering-based system to more of an economic system that considers costs and benefits (Godzwon, 2004).

2.6.1.2 BRIDGIT

BRIDGIT (Hawk, 1999) is a bridge management system software package developed under the AASHTO-sponsored National Cooperative Highway Research Program (NCHRP). It is intended to meet the needs of state, local, and other bridge agencies by providing guidance on network- and project-level management decisions. The architecture of BRIDGIT consists of five modules: inventory; inspection; maintenance, rehabilitation, and replacement; analysis; and models.

BRIDGIT is supplied with the FHWA-mandated NBI data items but the inventory module provides the user flexibility to create an unlimited number of data items. The inspection module incorporates the same type of condition rating system used in the Pontis software. The maintenance, rehabilitation, and replacement module provides agencies with the capability to plan, schedule, and monitor work programs. The analysis module is the most sophisticated in that it draws from the inventory and inspection modules to provide optimized work plans. Parameters such as time horizon, level-of-service goals, and available budget are defined to be used in the optimization analysis. Finally, the models module allows modification of the various program modules and tables to be used in the optimization analysis. This permits customization of the management system according to the uniqueness of bridge network and goals.

2.6.1.3 AgileAssets® Bridge Manager

AgileAssets Inc. (n.d.) developed a bridge management system, AgileAssets® Bridge Manager, which provides transportation agencies with the tools to use NBI data to effectively allocate funds to deteriorating, obsolete, or substandard bridges within their inventory. AgileAssets® Bridge Manager stores and processes bridge-related performance and inventory data, allowing analysis of current conditions and expected needs. Analyses are performed based

on user-defined decision trees, treatment alternatives, and performance prediction models to simulate possible outcomes for various available funding levels or desired condition target levels. The system also has the ability to interface with a GIS system. Contrary to Pontis, AgileAssets® Bridge Manager offers the flexibility to configure many system components such as user-defined performance criteria, modeling features, decision trees, analysis scenarios, and extensive reporting capabilities (AgileAssets, n.d.).

2.6.1.4 Other BMSs

A bridge management system software application appropriate for municipal-size inventories is discussed by Kriviak (1999). Database functions are separated into static (inventory) and dynamic (visual inspection) modules that are suitable for bridge and culvert structures. The database modules are structured to include both essential and non-essential categories. Similar to NBIS, a numerical nine-point visual condition rating system is used for inspection data. Data records can be maintained for both representative and worst condition of each inspected element. Analysis routines are provided that (1) compute structure rating values, (2) establish network-wide management strategy options, and (3) facilitate detailed site-based present value computations. The structure rating routines compute ratings for each structure site in each of nine basic rating categories from which an overall site "sufficiency rating" is computed. Present-value-based network analysis routines facilitate the prediction of a least-cost, long-term management strategy for each structure in the inventory. The least-cost strategy prediction is based on an evaluation of estimated whole-life costs associated with managing inventory structures by one of five so-called fundamental strategies. A "what if" analysis feature is provided as a means to address various simplifying factors incorporated into the network

analysis. The detailed site analysis routines facilitate detailed life-cycle cost analysis of management options for user-selected sites.

Gralund and Puckett (1996) developed a highway BMS for local-level, rural agencies in Wyoming with many applications to SLRR bridges. The goal of the BMS is to provide guidance when scheduling limited MR&R funds. The program design is separated into two phases: (1) inventory and (2) prioritization. A primary goal of the inventory program was that it be user friendly and intuitive so that the user can easily edit and review the database as needed. The prioritization scheme is based on a deficiency point model that can be refined to reflect user preferences. Deficiency points for the structure as well as its components are calculated, thereby providing a quantitative measure of the bridge condition. The BMS data are also consistent with WY-DOT data, so there is a direct correlation with existing data. The program can also output a variety of reports that summarize information within the database.

2.6.1.5 Integrated Network Management

A prototype methodology was introduced by Gharaibeh et al. (1999) for managing multiple highway infrastructure assets in a coordinated and cost-effective manner. Pavements, bridges, culverts, intersections, and signs are managed in one integrated management system. A GIS-based infrastructure management software system was developed to include investment trade-offs, coordinating the implementation of highway infrastructure improvement projects, comprehensive evaluation of infrastructure performance, as well as tie together the data and engineering, economic and spatial analytical procedures. This methodology was applied to the state highway system in central Illinois. The sample infrastructure network is comprised of: 620 lane miles of pavement, 128 bridges, 64 culverts, 11 intersections, and 660 signs. The study

concluded that comprehensive management of various infrastructure assets is beneficial to highway users and operating agencies.

2.6.2 Rail Management

Engineered Management Systems (EMSs) are a set of tools that aid in the development and prioritization of infrastructure maintenance and repair (M&R). The goal of the EMS is to maximize the long-term benefits of M&R decisions. The U.S. Army Corps of Engineers has developed several EMS software packages specific to the management of civil infrastructure-type assets. Of interest here is RAILER EMS, the management system developed for railroad management. This is a knowledge-based track management program that gives planners the necessary decision support in the maintenance of their networks. It combines condition assessment, work plan generation, and spatial analysis through a companion Geographic Information System (GIS).

Track network inventory data must be provided to RAILER EMS. Additionally, a detailed inspection of the track must be performed to establish the track condition index that provides a metric for the physical condition of the track. This process is facilitated by a Remote Entry Database (RED) that allows for electronic collection of inventory and inspection information while in the field. Additionally, the RED is a portable database that includes previous inspection findings. With the required input, the EMS creates degradation and future condition models, procedures for identifying current M&R needs and predicting future needs, and procedures for developing annual and long-range work plans based on various constraints. This automated approach can be tailored by the user to better asses a track network based on specific objectives.

2.6.3 Bridge Management – Railroad

Bridges are vital links in nearly every railroad, regardless of their size. Bridges represent a significant investment, and the loss of a bridge could be disastrous to the railroad as well as the customers and communities they serve. Most SLRRs do not retain a staff bridge engineer, but SLRR bridges must carry the same cars and locomotives as any class I railroads. Therefore, managers of SLRRs understand the necessity for an effective bridge management program. However, due to limited budgets, SLRRs are challenged with the task of implementing a bridge management program, but there are effective ways with limited staff and personnel to manage bridges. At the 2001 AREMA annual conference, Gordon A. Davids, P.E., Bridge Engineer, FRA, addressed this issue (Davids, 2001). Davids emphasized that good preparation and planning are paramount for a bridge management program to return the investment many times over whenever a bridge requires maintenance and repairs. Additionally, the effective use of personnel, which extends to the consulting engineer, is a key element in railroad bridge management. Small railroads must have a working relationship with an engineer who is qualified and experienced in railroad bridge engineering. Additionally, railroad personnel should become familiar with bridges and their conditions to improve their understanding of the structures on the network.

2.6.3.1 GIS Application

Bridge inventory and condition assessment is among the most important elements of a management system. Guler et al. (2004) explain how a GIS application can facilitate the management of these data and provide the backbone of an asset management system. Due to incomplete and often unreliable railroad bridge documentation, there is a need for the creation of a consistent and accurate infrastructure location and data collection system. A GIS is an ideal

choice for a computer-based system to capture, store, manipulate, display, and analyze geographic information. However, the functional complexity of GIS makes it more than just a database for spatial information. Software programs can be employed to analyze and manage data and models can be created and executed to assist in making management decisions. In a case study for Turkish Railways, Guler et al. (2004) transferred railway network data into a GIS environment in order to provide a high-quality decision support system. Available information on railway asset condition and performance aids managers in developing short- and long-range management strategies.

2.6.3.2 Other Management Systems

Florida East Coast Industries (FEC) Railway contracted an independent review of track and bridge infrastructure in 2005 to develop an asset management system to enhance budget planning and gauge the level of investment necessary to maintain the network (Bennett et al., 2006). A representative sample of 19 bridges was selected for detailed inspection. An electronic template developed specifically for FEC was used to collect and organize inspection notes as well as generate reports for each bridge. Reported information included load rating, fatigue analysis, and a 10-year maintenance cost model. Costs were adjusted for time using the Railroad Cost Recovery Index published by the Association of American Railroads (Bennett et al., 2006). A financial comparison of maintenance costs verses replacement costs, as well as the engineering data, are included in one electronic format that assists FEC in its decision-making processes.

The methodology used to asses the condition of the bridges was a combination of AREMA standards (AREMA, 2008a) and the Bridge Inspector's Training Manual 90 (BITM 90) developed by the U.S. Department of Transportation (USDOT) and the FHWA (Bennett et al., 2006). A descriptive condition rating was assigned to each component as prescribed by the

BITM 90. Other key parameters were established and defined, such as train activity and member sizes. With all data collected, main member strengths were computed and compared to allowable existing bridge design values defined in the AREMA manual (AREMA, 2008a). This comparison served to identify remaining member service life and the elements subjected to fatigue damage. A relationship between the allowable capacity of a member to carry rail traffic and actual rail traffic crossing the member provides a valuable tool in making structural repair verses replacement decisions. Additionally, bridges experiencing fatigue damage were determined to be more critical and, therefore, assigned a high priority index.

The resulting database provides the FEC with a sustainable process that allows current and future assets to be managed effectively. The electronic database is formatted to display data and projections and allows for the comparison of the existing population of bridges side by side. Other information such as photographs and miscellaneous documents can be linked to the base report, providing a catalog of information.

2.6.3.3 Federal Regulations

When AREMA published the landmark railroad *Bridge Inspection Handbook* in July 2008 (AREMA, 2008b), the following month the FRA purchased and distributed copies to each of the more than 700 railroads in the United States. In September 2008, the FRA Railroad Safety Advisory Committee approved the *Essential Elements of a Railroad Bridge Management Program* (FRA, 2008). This plan outlines nine management provisions that are applicable to freight and passenger railroads, large and small. They are:

- Assign responsibility for decisions affecting the integrity of bridge structures;
- Maintain bridge inventory that indicates the party responsible for management of each bridge;

- Record the capacity of each bridge as rated by a competent engineer or by design documents;
- Establish procedures for safely controlling the movement of high, wide, or heavy loads exceeding the nominal capacity of bridges;
- Maintain permanent records of bridge design, construction, modification, and repair;
- Adhere to railroad-specific procedures for the design and rating of bridges;
- Establish an inspection program for bridges;
- Provide protection for train operations following a bridge inspection noting critical deficiency, repair, modification, or adverse event; and
- Institute bridge management program audit procedures.

These *Essential Elements* were formally incorporated into the 2008 Rail Safety Improvement Act, which was signed into law by President Bush on October 16, 2008. Under section 417, within 1 year the FRA is required to promulgate regulations requiring owners of track running over one or more bridges to adopt a bridge safety management program. The goals of the management program are to prevent the deterioration of railroad bridges and reduce the risk of human casualties, environmental damage and disruption to the railroad transportation system from a catastrophic bridge failure. At a minimum, regulations require:

- Accurate bridge inventory on all railroads
- Determination of bridge capacity for each railroad bridge
- Documentation of repairs, modifications, and inspections maintained on file
- Written procedure to ensure that bridges are not loaded beyond their capacities
- Annual comprehensive inspections of all railroad bridges by a qualified railroad bridge inspector

- FRA review of bridge management plan and periodic review of bridge data

This represents a major step in standardizing information to provide transparency within the industry. With the Act in place, SLRR will have no choice but to comply or be subject to severe penalties by the FRA.

2.7 Risk Management and Prioritization

Resource allocation involves identifying potential candidates and then prioritizing those candidates to receive funds. The level of refinement involved with decision making depends on the objectives of the managing agency and the complexity of the asset system. Prioritization for determination of resources to be allocated to a population of assets requires some level of risk management strategy (GeoPave 2002). The fundamental and standard definition of risk within this context is the product of the probability of failure of an asset times the consequence of the failure, as shown in Equation 2.4:

$$\text{Risk} = \text{Probability} \times \text{Consequence} \tag{2.4}$$

Neither probability nor consequence, in the case of short-line railroad bridges, is necessarily readily calculable; however, a relative assessment of each term can be made. Probability of failure is directly related to train and car loading magnitude, train load frequency, structure age and condition, maintenance and inspection intervals, structure type, and rehabilitations. Consequences of failure are directly related to human safety, environmental safety, and economic loss, including loss of revenue for the short-line railroad, the class one rail road, and customer(s), loss of structure, and loss of rail cars or locomotive. Generally, each of the

probability and consequence factors is identified and related to a pre-established relative scale. Also, each factor is weighted to address the relative importance of each, recognizing that certain factors are more influential than others in the prioritization. All risk for the purposes of the present study, therefore, is relative, and not an absolute measure on a risk scale.

Zayed et al. (2007) studied methods of risk assessment for bridges with unknown foundations. The principles and approach are applied to highway bridges; however, the ideas are directly applicable to the present study, not only as it relates to foundations but other aspects of risk as well. Zayed proposes a methodology leading to a risk index, *R*, that is a function of several factors and permits a prioritization: "This index was developed primarily to transfer the subjectivity of risk parameters into quantitatively determined values using the analytical hierarchy process (AHP) developed by Saaty (1980)." The determination of risk is based on the following formulation:

$$R = \sum_{i=1}^{n} W_i V_i(x_i) \tag{2.5}$$

where *R*=risk index, W_i =weight for each risk factor *i* using the Eigenvalue method; $V_i(x_i)$ = worth score for each risk factor (x_i), x_i=different risk factors. The Zayed proposal identifies, in its fundamental form, a probability of failure but does not consider consequences.

Gralund and Puckett (1996) explain that simplistic systems may be prioritized by a standard ranking formula:

$$rank = \sum \{K_i f_i(a, b, c...)\} \tag{2.6}$$

where K_i = weight factor for each criterion considered; $f(a,b,c \ldots)$ = priority ranking formulas; a, b, c = bridge condition or goal parameters, which is very similar to the formulation presented by GeoPave (2002).

Another prioritization method is the sufficiency rating as discussed by Gralund and Puckett (1996). This rating is computed based on structural condition ratings from inspection reports. The rating index is a number assigned to a bridge to determine its sufficiency for the demands placed on it. A scale from 0 to 100 is used, with 100 corresponding to a new structure. The formula for determining the rating is divided into four parts: structural adequacy and safety, serviceability and functional obsolescence, essentiality for public use, and special reductions. This method has drawbacks in that the bridge sufficiency is determined on the basis of a single load capacity and deck width. Therefore, in the case of a highway bridge, a narrow bridge with a low load capacity is assigned a low sufficiency rating, when in actuality the structure could be in good condition and is adequate for the traffic that it routinely carries. In contrast to the sufficiency rating, a deficiency rating can be used to determine the priority of maintenance, repair and replacement projects as previously proposed by Gralund and Puckett (1996).

A prioritizing method that utilizes trend analysis is the Markov chain deterioration method as described by Gralund and Puckett (1996). This method provides the probability that the bridge condition will change from one deterioration state to another. This is most often applied with FHWA condition ratings, which range from 0-9. A probability matrix is then an indication of the likelihood of the condition changing from state i to state j in a set period of time, denoted as $P_{i,j}$. A drawback in the Markov chain model is that a historical database is necessary to provide

deterioration data, or the alternative is to use engineering judgment to determine the rate at which components deteriorate with time.

A PennDOT report, *Risk Assessment of PennDOT Owned Bridges and Structures – Part A: Risk Assessment* (PennDOT, 2007), was developed to establish "risk" levels for certain PennDOT highway bridge populations and establish mitigation measures. The report recognizes that a complete risk analysis requires a very comprehensive study and would require extensive resources not currently available. The report, therefore, selects several focus areas of most significant influence on risk, those being identified as physical condition, load capacity, scour, impact damage/over height vehicle, and fatigue. Risk levels were established as high, medium, and minor based on BMS ranking values considering two levels of risk: aggregate risk and structurally deficient risk. Details of the PennDOT study are discussed below.

As the risk to bridge structures resulting from scour is very significant, Stein et al. (1999) have studied this issue extensively. Stein proposes a methodology to assess the risk directly resulting from scour of highway bridge foundations in response to a Federal Highway Administration mandate. Recognizing that foundation design and construction, as well as current condition information, can be very limited, the methodology sets priorities for foundation information-gathering that are both objective and subjective. The pertinent aspects of the methodology as it relates to the present study are discussed in the sections that follow.

2.7.1 Probability of Failure

Discussions of probability of failure are normally sensitive to engineers, as the tendency is to deny that failure may occur and believe that proper engineering can eliminate failure. However remote, and despite all efforts, it has been well established that some level of probability of failure will always exist. There are many sources within the broad field of structural reliability

that address probability of failure – all modern structural design specifications and codes are based on the principles of structural reliability theory. Discussed herein are certain sources that more directly address probability of failure in a less fundamental and theoretical way, but in a very practical and relative manner.

Probability of failure, within the context of structural reliability, is defined as:

$$P_f = \mathrm{P}[R - Q > 0] \tag{2.7}$$

where R is the structure resistance and Q is the load effect on the structure. Equation 2.7 can be read as the probability of failure equaling the probability that the resistance is exceeded by the load effect. The precise absolute probability of failure determination calculated from equation 2.7 is complex and requires a rigorous mathematical process that involves detailed knowledge of all parameters of the load statistics and resistance statistics. In the case of short-line railroad bridges, these parameters are known in a general sense, but not in detail. Therefore, a relative approach considering a subjective scale as applied to a family of important factors is appropriate. Typically, this has been the approach where less than perfect information is available to assess the risk and develop a prioritization.

GeoPave Technical Note No. 65 (2002) addresses probability of failure as an accumulation of factors for loading (LF), resistance (SF), condition (CF), inspection (IF), and exposure (XF). The loading factor incorporates live load considering design codes, both present and historical, and the age of the structure. Separate consideration is give to urban structures and rural structures as well as live load frequency. The resistance factor is a function of element strength and material and is formulated on the basis of a code rating. Strength requires a precise

engineering calculation; however, material consideration does not. The consideration of material recognizes that certain structural material properties are more variable than others, for example steel as compared to timber. An element rating is also based on the relative importance to the overall structural integrity. The condition factor is based on the observed loss of strength or stability. The condition factor is applied to the resistance factor. An overall bridge condition factor can be determined by calculating a weighted average based on element-level data, if available. The inspection factor indicates a level of advanced notice of a failure and inspectability of a particular deficiency and is applied to the condition factor. The exposure factor considers environmental conditions and rate of deterioration and reflects one of four conditions – benign, mildly aggressive, aggressive, or most aggressive. As a result, the probability of failure, in relative terms, is determined as:

$$P_f = LF + SF \times CF \times IF \times XF \tag{2.8}$$

Gralund and Puckett (1996) developed a highway bridge management system for local level, rural agencies in Wyoming with many applications to SLRR bridges. The goal of the BMS is to provide guidance when scheduling limited maintenance, rehabilitation, and replacement (MR&R) funds. The program design is broken into two phases: (1) inventory and (2) prioritization. Of interest for the present study was the latter.

The condition of bridges within the system is evaluated based on deficiency points. The structure's total number of deficiency points are determined by summing deficiency points from individual needs functions. Gralund and Puckett (1996) propose the following formula:

$$DP_{structure} = \phi(CP + WP + VP + SP) \quad (2.9)$$

where: ϕ = highway classification factor, *CP*=load capacity function, *VP*=vertical clearance function, *WP*=deck width function, and *SP*=sufficiency points function. While these factors are specific to highway bridges, the principle can be directly applied to rail bridges.

Each of the four needs functions takes into account many parameters such as average daily traffic (ADT) and average annual daily traffic (AADT), level of service, inventory rating, and importance factors. In addition to the deficiency rating for the entire structure, a deficiency equation can be developed in a similar fashion for individual elements of the structure based on their condition rating. The deficiency point rating provides managers with a quantifiable ranking for bridges in order to prioritize maintenance candidates.

In assessing "risk" or probability of failure for highway bridges with unknown foundations, Zayed et al. (2007) identify several potential aspects for evaluation: cost, bridge type, bridge age, bridge substructure system, remaining design life of bridge, different types of bridge foundation, bridge conditions, bridge geometry, potential loss of life, soil characteristics, ADT and AADT, scour, seismic vulnerability, value of lost time, detour length, and what the bridge passes over (water or land or both). Zayed proceeded with a 10-test bridge evaluation considering average worth factors, $V_i(x_i)$, presented in Table 2.1, and the risk factors, presented in Table 2.2.

Table 2.1. Average Worth Factors, $V_i(x_i)$ (Zayed et al. 2007)

	Risk Parameter	Average Worth Score $V_i(x_i)$
Main Parameters	Remaining Life	0.43
	Scour	0.34
	Seismic Vulnerability	0.38
Factors	AADT	0.43
	ADTT	0.26
	Bridge Type	0.36
	Bridge Age	0.43
	Soil Characteristics	0.34
	Substructure System	0.36
	Foundation System	0.36
	Bridge Condition	0.37

Table 2.2. Risk Factors and Associated Weighting Factors, W_i (Zayed et al. 2007)

	Risk Factor	Weight	Decomposed Weight	Total
Remaining Life	AADT	0.22	0.05	0.21
	ADTT	0.37	0.08	
	Bridge Type	0.23	0.05	
	Bridge Age	0.17	0.04	
Scour	Soil Characteristics	0.26	0.15	0.57
	Substructure System	0.26	0.15	
	Foundation System	0.21	0.12	
	Bridge Condition	0.27	0.16	
Seismic Vulnerability	Soil Characteristics	0.26	0.06	0.22
	Substructure System	0.26	0.06	
	Foundation System	0.21	0.05	
	Bridge Condition	0.27	0.06	

Zayed proceeded to test his proposed model on the 10 sample bridges by inviting a number of experts to evaluate the bridge in a subjective manner: "Each expert evaluated the risk parameters and their factors against one another (pairwise comparison) and evaluated the risk of each bridge as a whole, with a number from 0.0 to 1.0 holistic evaluation depending on personal judgment considering the features of the individual bridge. This holistic evaluation was used to validate the developed risk model, *R*. The NBI database and Pontis bridge management system were used to collect information related to these ten bridges." Zayed et al. (2007) were able to

show close agreement between the expert evaluations and the NBI-based evaluations as compared through the risk index, *R*.

The previously cited PennDOT report, *Risk Assessment of PennDOT Owned Bridges and Structures – Part A: Risk Assessment* (PennDOT, 2007), was developed to establish "risk" levels for certain PennDOT highway bridge populations and establish mitigation measures. This PennDOT determination of "risk" effectively establishes the relative *probability of failure* for the bridges under consideration in the context of the current discussion of risk equals probability times consequence established by equation 2.4. The concepts of the report are consistent with other studies discussed above, in that subjective values are assigned to determine a relative level of "risk" for the individual bridges of the population. The study establishes major risk factors and relative risk levels for each of several conditions or situations in order to evaluate the risk hierarchy of a group of bridges. PennDOT (2007) makes no significant attempt to evaluate consequence of failure in a meaningful way. The data from BMS that are used for the "risk" assessment are as follows:

- Superstructure condition
- Substructure condition
- Deck condition
- Load capacity (operating rating loads)
- Scour critical indicator
- Impact damage/over height vehicle
- Fatigue detail
- Structural condition appraisal
- Waterway adequacy appraisal

- Deck expansion joints (type and maintenance activity)
- Bearing area deterioration
- Deck deterioration
- Bearing condition
- Paint condition

Based on BMS coding data, the listed structure item is rated for "risk" (probability of failure) at high, medium, or minor. Within the high-risk category, further refinement of risk assessment is evaluated on the basis of highway category and BMS rating scale value. Tables are provided for each of the above structure items detailing the identification of the risk rating of high, medium, or minor. Risks are then determined using two separate methods: aggregate and structural deficiency. Aggregate risk includes all categories listed above, and structural deficiency risk includes only those items that contribute to the structural deficiency rating of the structure.

Each of the listed items was assigned a weight, or level of importance to the eventual calculated risk. In addition, importance factors are applied to the individual risk condition values to account for local conditions of the bridge. The issues considered when assigning the weighting factors include structure size, ADT, features on or under the bridge, detour length, and others.

Table 2.3. Weighting Factors for Structural Items (PennDOT, 2007)

Super-structure Condition	Sub-structure Condition	Deck Condition	Load Capacity	Scour	Fatigue	Imp. Damage/ Overheight Vehicle	Total
35%	25%	5%	5%	20%	5%	5%	100%

Bridge risk values, or relative probability of failure as defined here, are computed on a

relative basis using a weighted calculation of the assigned values for BMS condition of each item, between 0 and 100.

Aggregate Risk Score =

$$\sum\left[\left(\text{Risk Value}\right)_i \times \left(\text{Risk Weighting}\right)_i \times \left(\text{ImportanceFactor}\right)_i\right] \tag{2.10}$$

where *i* refers to the series of listed items.

Structurally Deficient Risk Score =

$$\sum\left[\left(\text{Risk Value}\right)_i \times \left(\text{Risk Weighting}\right)_i \times \left(\text{ImportanceFactor}\right)_i\right] \tag{2.11}$$

where *i* refers to those items that contribute to the structural deficiency rating of the structure.

There are a number of studies that focus on specific items associated with probability of failure; however, of greatest significance is scour, particularly due to the fact that details of a large percentage of older bridge foundations are unknown. Scour is one of the major contributors to bridge failure and is the most difficult to predict. Stein et al. (1999) present a methodology that follows the established fundamental approach for risk previously discussed here; that is, risk equals probability of failure times consequence. Items important to scour potential are type of span (simple or continuous), type of foundation (piles, floating spread, or unknown), NBI condition ratings (adequacy of water, channel protection, and substructure condition), and scour evaluations done in the field. Detailed calculations are possible provided NBI channel information is available; however, this information is not available from SLRR owners and operators at the present time. Of particular interest is the application of a risk adjustment factor to the probability of failure, essentially recognizing foundation influences on

the probability of failure given a particular flood event. The risk adjustment factor, *K,* is taken as K_1K_2 where:

K_1 is the bridge type factor:

1.0 for simple spans

0.8 for continuous spans with lengths < 30 m

0.67 for rigid continuous spans with lengths > 30 m

K_2 is the bridge type factor:

1.0 for unknown foundations or spread footings on erodible soil above scour depth, pier footing visible or 0.3 to 0.6 m below stream bed

0.8 for pile foundations of unknown length or when length is known and < 6 m for all wood pile foundations

0.5 for pile foundations with lengths > 6m below present stream bed

0.2 for foundations on massive rock

Stein et al. (1999) stress that these factors are subjective and not based on a statistical analysis. The magnitudes may require adjustment for local conditions and experience.

2.7.2 Consequence of Failure

GeoPave Technical Note No. 65 (2002) addresses consequences of failure as a combination of separate factors: human factor HF, environmental factor EF, traffic access factor, TF, economic factor NF, and road class RF. As with the probability of failure determination discussed above, the determination of the consequence of failure employs a relative approach, considering a subjective scale as applied to a family of important factors. Typically this relative measure is the approach used for a prioritization where a detailed cost-magnitude calculation would not be feasible and a relative ranking is the objective.

The five factors discussed in the GeoPave Technical Note No. 65 (2002) are broad and may be applied to SLRR bridges as well as other structures. The human factor addresses the impact of failure on human safety as a result of the failure of the structure. This may be reflected in terms of ADT for a highway bridge and whether the structure is in a urban (highly populated) or rural setting. The environmental factor considers the effect of a structural failure on the local environment. This may involve an evaluation of hazardous material transport over the structure, urban or rural setting, and presence of sensitive environment of waterway in the local vicinity. Delays or detours as a result of a bridge closing are accounted for by the traffic access factor. The length of the detour only is considered, as the ADT is accounted for by the human factor. The economic factor provides a measure of the potential economic loss, determined as the cost of not expending any resources as compared to the cost of the remedy. It is suggested that, due to the highly subjective nature of economic considerations, the replacement value of the structure be used, as this cost is more objective and calculable. Finally, road class is considered to account for the road importance and consequences to operations given a bridge closing.

A discussion of consequences as a result of scour failure is presented by Stein et al. (1999); however, the discussion applies to any failure cause. The determination of consequence is fundamentally based on economics or the expected value of the loss. This includes the cost to replace the bridge, the cost to maintain traffic flow without the bridge, and the value of time lost utilizing alternate routes. Not considered, but potentially significant consequences are collateral property damage, injury, and death. Stein et al. (1999) determined that the probability and concomitant risks associated with these consequences are negligible as compared to other costs.

The formulated evaluation, then, is (Stein et al., 1999):

$$\text{risk} = KP([\text{Rebuild Cost}] + [\text{Running Cost}] + [\text{Time Cost}]) \quad (2.12)$$

where risk is the risk of scour failure, K is the risk adjustment factor based on foundation type and type of span, and P is the probability of failure for one year.

2.8 Sampling Procedure

The present study drew a sample of bridges from the bridge population for detailed review in order to establish a statistical basis for assigning condition levels to certain bridge categories. The sample consisted of 30 bridges of various types, determined by an established sampling methodology to ensure an unbiased and representative sample. As in an earlier study (Laman et al., 2001), a stratified random sample was drawn for evaluation due to the prohibitively large resources required to investigate every bridge in the population. Following is a discussion of the methodology and principles used to draw an unbiased, stratified random sample from a given population.

2.8.1 Sampling Philosophies and Approach

There are a number of possible sampling approaches that may be used to accommodate the difficulty of evaluating an extremely large population; however, the general statistical philosophy behind the various sampling approaches is based on the same principles. The philosophy of random sample evaluation assumes that, through the investigation of a statistically significant and randomly selected, or unbiased, subset of the population, the entire population can be represented. Because the economic advantages of investigating a population subset of the

entire population are so great, this philosophy is used by many disciplines. Sampling is required for the present study due to resource and time constraints. Careful evaluation of the statewide short-line railroad bridge population would require that approximately 2,000 structures be individually evaluated, which clearly is not feasible; thus the design of a sampling methodology has been undertaken.

It is desirable to establish a bridge sample that is as representative a cross section of the total population as possible and yet eliminate any bias from the sampling methodology. Several methods exist to develop a randomly selected, unbiased, statistically significant sample of a population. The simplest method randomly selects a subpopulation from the population to be investigated. This method may fall short of the needs of the present study, as it may not establish a sample that is a representative cross section of the population. A more powerful sampling method is known as stratified random sampling, which requires a data set from which the population can be divided into groups, or strata. This method causes the sample to better represent the population if the stratifying data set directly affects the evaluation of interest. This method seeks a matching of the proportion of each stratum in the population to the proportion of that stratum in the sample. Equation 2.13 determines the number of data points that must be taken from each stratum, n_h:

$$n_h = \frac{n * N_h}{\sum_{h=1}^{L} N_h} \tag{2.13}$$

where n is the sample size, N_h is the number of bridges in the h stratum, and L is the number of strata. A variation of this method employs a third data set that is related to information of

interest. This approach can better represent the population by drawing a sample that is proportional to the population as a result of selecting the stratum, which is then weighted by the third data set. Equation 2.14 illustrates the use of a third data set to select the number of data points from each stratum, n_h:

$$n_h = \frac{n * N_h * \sigma_h}{\sum_{h=1}^{L} N_h \sigma_h} \tag{2.14}$$

where n is the sample size, N_h is the number of bridges in the h stratum, σ_h is the standard deviation of the third data set within the h stratum, and L is the number of strata.

2.8.2 Project Sampling Procedure

The project sampling procedure consists of establishing strata, establishing a weighting variable, and then pulling a statistically significant, random, unbiased bridge sample from the short-line bridge population in order to evaluate each sample bridge for capacity. The present project will employ the method described above, utilizing equation 2.14 to establish a representative sample. The stratifications, which divide the population into 11 strata, are the bridge types listed in Table 2.4. The third data set, or weighting data set, is the bridge length. The bridge length data set was chosen because the length strongly affects the cost of upgrade, as shorter spans may require less extensive reinforcement than longer spans.

Two levels of stratification are identified for the present study. The first level of stratification category is the bridge material, consisting of steel, timber, concrete, and masonry. The second stratification is the bridge type, which consists of arch, girder, truss, and stringer. The third data set, as a weighting factor, is bridge length. The distribution of the strata in the

2001 database population is shown in Table 2.4. As survey information was received, the bridge database was updated and expanded, which enables the development of a summary table of distribution strata for the 2009 bridge population, similar to the 2001 summary of Table 2.4. Column 6 is the standard deviation of the length for each stratum.

Table 2.4 Distribution of Strata in 2001 Bridge Population (Laman et al. 2001).

Material (1)	**Type (2)**	**Legend (3)**	**Quantity (4)**	**Percent (5)**	**σ_h (ft) (6)**
Steel	Deck Plate Girder	DPG	467	40%	163.27
	Through Plate Girder	TPG	140	12%	126.4
	Deck Truss	DTR	34	3%	227.1
	Through Truss	TTR	36	3%	242.1
	Stringer	SST	126	11%	51.7
	Railtop	TOP	10	1%	23.01
Masonry	Arch	MAR	91	8%	93.51
Concrete	Arch	CAR	98	8%	21.79
	Stringer	CST	7	1%	25.9
	Slab	CSB	129	11%	16.86
Timber	Stringer	TST	36	3%	180.1
Population Total			1,174	100%	145.88

Chapter 3: Bridge Survey, Database and Sample

A primary goal of this study was to collect complete bridge inventory and operating information for all short-line and regional freight railroad bridges in Pennsylvania. The completeness of this information is directly related to the confidence in the eventual prioritization and was therefore important to the study. A 5-month data collection effort was undertaken in the form of a written survey effort in which bridge information was requested from short-line and regional railroads across the Commonwealth. Collected bridge survey information was organized and entered into a master database formatted in Microsoft Access. Upon conclusion of the survey effort, a weighted, stratified, random sample of 30 bridges was drawn from the bridge population. These 30 sample bridges were visited by the research team for the purpose of condition assessment, measurements, photographs, and documentation. This chapter details the procedure and outcomes of the documentation effort as well as the database and the bridge sample in detail.

3.1 Bridge Survey

An accounting of "Railroads in Pennsylvania" dated January 2007 was provided by the PennDOT Bureau of Rail Freight, Ports, and Waterways at the beginning of this study (PennDOT, 2007). This list contained the names and contact information for operating railroads as well as non-operating owners of railroads. An additional source of railroad information was the database created in 2001 as part of a PennDOT research report, *Heavy Axle Study* (Laman et al., 2001). From these two sources, 77 railroads, listed in Appendix A, were identified and a survey packet, found in Appendix B, requesting general railroad profile information, customer

profile information, and bridge inventory information was forwarded to each SLRR owner and operator.

The “Railroad Profile” form requested general contact information, bridge engineer contact information, and information regarding past ownership. This provided historical information regarding the railroad ownership and operations. Because several SLRRs had changed ownership and names over the previous 10 years, this history was useful in linking past information to the present.

The “Customer Profile and Annual Operating Statistics” form was included in the survey to provide total carloads and millions of gross tons (MGT) data for freight by standard transportation commodity codes (STCC), which indicate commodity type. This form was modeled after the American Short Line and Regional Railroad Association (ASLRRA) Annual Data Profile Survey.

The “Bridge Data Inventory” form and the accompanying “Inventory Item Guide” requested bridge data that included bridge milepost, bridge type, bridge length, feature crossed, and bridge load rating in addition to other information. All applicable existing bridge information from the 2001 database was included on this form before forwarding to the owners and operators.

Survey packets containing cover letters from both PennDOT and Penn State as well as survey forms and a postmarked, returned envelope were sent to 77 railroads between October 28 and November 11, 2008. By January 2009, approximately 20% of the surveys had been returned. From mid January to the end of March 2009, a persistent second effort was undertaken to increase the survey yield. Phone calls were placed to all railroads to verify survey receipt and encourage participation in the survey. Through phone conversations, several SLRRs indicated that they do not operate over any bridges or are no longer in service. The survey effort

concluded April 1, 2009 with a final response rate of about 75%. A summary of responses is shown in Table 3.1.

Table 3.1. Summary of SLRR Owner/Operator Survey Responses.

No. of SLRR	Response
25	provided at least minimum requested bridge information
20	did not respond to the survey
12	do not operate over any bridges
7	are no longer in service or have changed ownership
6	non-operating owners indicated that bridges are the responsibility of operating railroad
3	do not haul freight
2	did not provided the minimum required information
2	declined to participate

The degree of returned survey completeness varied widely. As indicated in Table 3.1, 25 SLRRs provided at least the minimum requested bridge information of milepost, bridge type, and length. This minimum information is necessary to define the stratum and weight factor as part of the random sampling procedure. All collected bridge information was reviewed and entered into the database.

3.2 Bridge Database

A records management system can be simple and simultaneously effective. In 2001, Laman et al. assimilated SLRR bridge data into a master Microsoft Access database (Laman et al., 2001). Access is an ideal format because, while it has advanced capabilities, it lends itself well

to beginning users. Additionally, Access is a widely available database that is functional on any standard computer. The 2009 SLRR database is a modified and completely updated version of the 2001 database. The organization of the database is tier style, as presented in Figure 3.1.

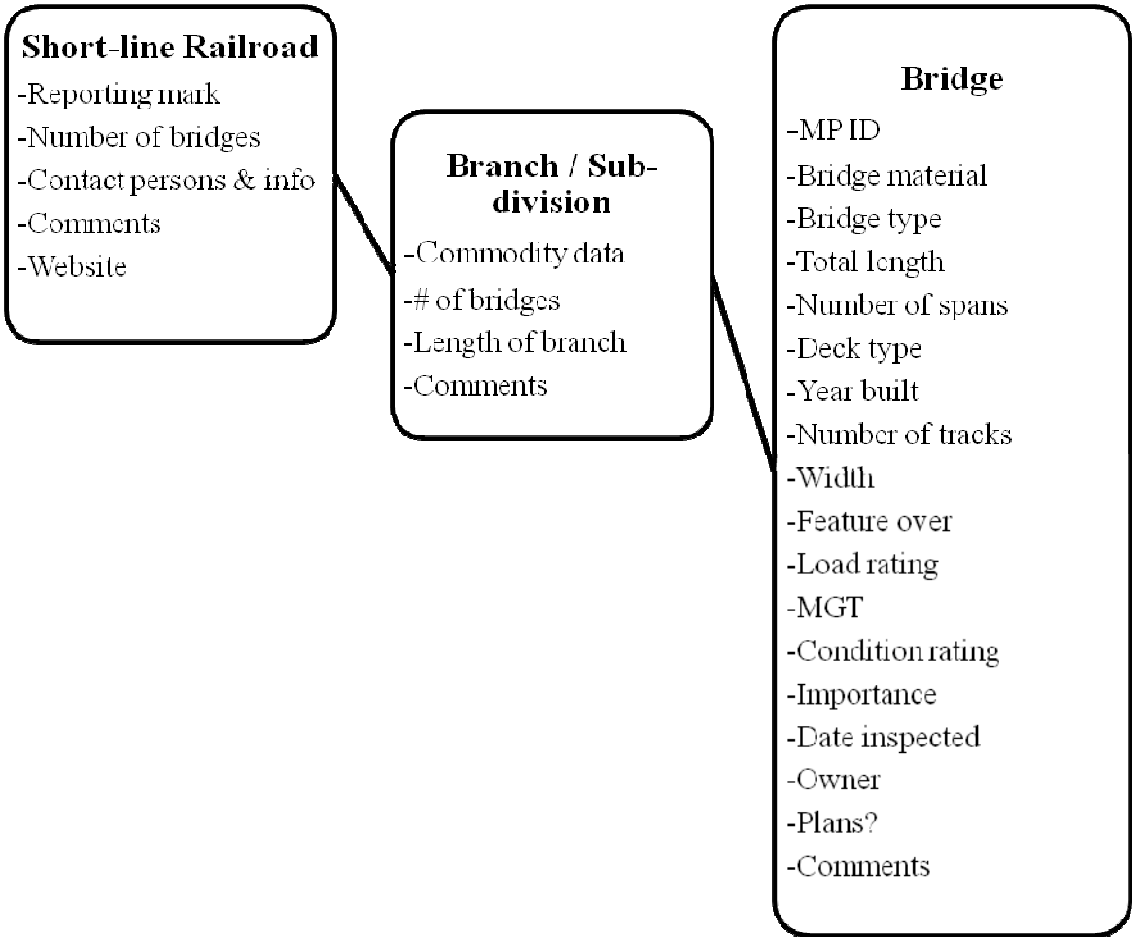


Figure 3.1. Organization of 2009 SLRR Database

To be included in the database, a bridge had to satisfy the following criteria:

- Located in Pennsylvania
- Other than a Class 1 Railroad
- Handles freight traffic
- Is not a culvert, has two abutments, and has a superstructure greater than 10 ft in length

Two database files were created for the present study. The first database was the complete database containing all bridge information collected as a result of the survey effort that satisfies the above criteria. A summary of the bridge population for the complete database is presented in Table 3.2.

Table 3.2. Summary of Complete Bridge Database Population

Material	Type		Quantity	Percent
Steel	Deck Plate Girder	DPG	345	29%
	Through Plate Girder	TPG	179	15%
	Deck Truss	DTR	26	2.2%
	Through Truss	TTR	51	4.3%
	Stringer	SST	149	13%
	Railtop	TOP	3	0.3%
	Unknown Steel		3	0.3%
Masonry	Arch	MAR	43	3.6%
Concrete	Arch	CAR	67	5.7%
	Stringer	CST	25	2.1%
	Slab	CSB	156	13%
	Unknown Concrete		14	1.2%
Timber	Stringer	TST	29	2.5%
	Unknown Timber		2	0.2%
Unknown			92	7.8%
Population Total			1,184	100%

The second database is a subset of the complete database. This database is a filtered version of the complete database to include only bridges with at least the minimum information as previously defined: length, type, number of spans. A summary of the sampling database is presented in Table 3.3.

Table 3.3. Summary of Sampling Bridge Population Database

Material	Type		Quantity	Percent
Steel	Deck Plate Girder	DPG	330	33%
	Through Plate Girder	TPG	173	17%
	Deck Truss	DTR	25	2.5%
	Through Truss	TTR	50	5.0%
	Stringer	SST	149	15%
	Railtop	TOP	3	0.3%
Masonry	Arch	MAR	18	1.8%
Concrete	Arch	CAR	49	4.9%
	Stringer	CST	22	2.2%
	Slab	CSB	147	15%
Timber	Stringer	TST	28	2.8%
Population Total			994	100%

3.3 Bridge Sample

A sample of 30 bridges was drawn from the Sampling Bridge Population Database in order to document and evaluate each sample bridge. The project sampling procedure consisted of establishing strata, establishing a weighting variable, and drawing a statistically significant, random, unbiased, bridge sample. Two levels of stratification were identified for the present

study: bridge material, consisting of steel, timber, concrete, and masonry; and bridge type, consisting of arch, girder, truss, and stringer. The weighting factor used to draw the sample is bridge length, chosen because length strongly affects the eventual prioritization. Equation 3.1 selects the number of data points from each stratum, n_h:

$$n_h = \frac{n * N_h * \sigma_h}{\sum_{h=1}^{L} N_h \sigma_h} \tag{3.1}$$

where n is the sample size, N_h is the number of bridges in the h stratum, σ_h is the standard deviation of the third data set within the h stratum, and L is the number of strata. The distribution of the strata in the 2009 Sample Bridge Population Database is shown in Table 3.4.

Table 3.4. Sample Size by Stratum

Material	Type		Quantity (N_h)	σ_h (ft)	n_h	No. of bridges
Steel	Deck Plate Girder	DPG	330	270	13.2	13
	Through Plate Girder	TPG	173	128	3.3	3
	Deck Truss	DTR	25	583	2.2	2
	Through Truss	TTR	50	983	7.3	7
	Stringer	SST	149	28	0.6	1
	Railtop	TOP	3	2	0.0	0
Masonry	Arch	MAR	18	298	0.8	1
Concrete	Arch	CAR	49	179	1.3	1
	Stringer	CST	22	31	0.1	0
	Slab	CSB	147	19	0.4	1
Timber	Stringer	TST	28	192	0.8	1
Total			994		30	30

Minitab software was used to randomly generate a sample for each stratum from the bridges in the sampling database.

3.3.1 Sample Bridge Field Visits

Owners and operating railroads of the 30 sample bridges were contacted beginning in April 2009 to obtain permission to enter railroad property for the purpose of a bridge site visit and documentation. Obtaining permission to enter railroad property resulted in unforeseen legal issues related to hold-harmless clauses that could be acceptable to both the SLRR and Penn State; this delayed scheduling of some field visits by several months and others indefinitely. Approximately one-half of the original sample bridges were replaced either by different bridges on the same SLRR or by bridges on a different SLRR altogether. An effort was made to select

replacement bridges without bias in order to preserve the randomness of the sample. Field visits to sample bridges began in June 2009 and concluded in late August 2009.

The 2008 AREMA *Bridge Inspection Handbook* provided the basis for collecting and recording bridge information. Typical bridge field visits included gathering and documenting general site conditions as well as measuring and observing super- and sub-structure components for the purpose of condition assessment and subsequent analysis for load rating determination. In order to obtain all necessary information for the condition assessment, all components of the bridge must be able to be observable and accessible. This permits accurate measurement of structural members as well as complete visual assessment of condition. Due to time, equipment, and safety limitations, many bridge components were not completely observable and accessible; therefore, estimates were made regarding member sizes and condition of components. An effort was made to collect as accurate and as complete information as possible while maintaining compliance with FRA Bridge Worker Safety regulations in 49 CFR 214 and any additional safety rules imposed by the SLRR. A summary for each sample bridge is presented in the following section. Condition assignment values are defined and discussed in Chapter 5. The range of values is summarized in Table 3.5, with the high number indicating better condition.

Table 3.5. Range of Bridge Condition Assignment Values

Condition Parameter	Range
Superstructure, *Sp* :	1 to 10
Substructure, *Sb* :	1 to 4
Scour, *Sc* :	1 to 4
Fatigue Category Value:	1 to 10

3.4 Bridge Sample Summary Sheets

Each of the 30 visited bridge data summary sheets is presented in this section.

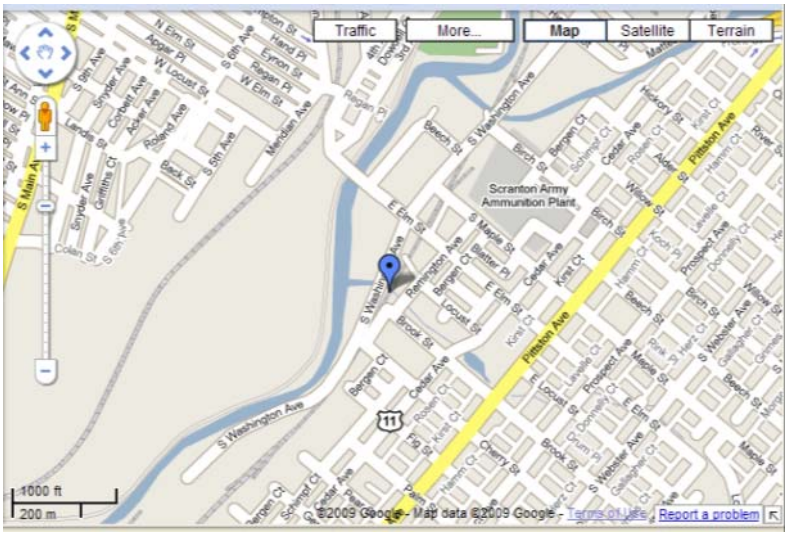
Bridge #1 (Delaware-Lackawanna RR - MP 2.35)

a) MP Ahead

b) MP Back

c) Under

d) Deck Girder (right side)



e) Location Map

Figure 3.2 Site Pictures and Map: DL 2.35

Table 3.6 Bridge Inventory & Condition Data: DL 2.35

Railroad:	Delaware – Lackawanna Railroad (DL)
Branch – Milepost:	Carbondale – 2.35
Location:	Lackawanna Co. (41.396196N, 75.675341W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete & Stone Masonry
Feature Crossed:	Concrete Lined Channel
Build Date:	Unknown
Total Length:	28’-6”
Number of Spans:	1
Annual Freight:	1455 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (08/04/2009)	
Superstructure Condition, *Sp*:	7
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	2.56
Scour Condition, *Sc*:	4
Fatigue Category Value:	4
Risk Score:	0.05

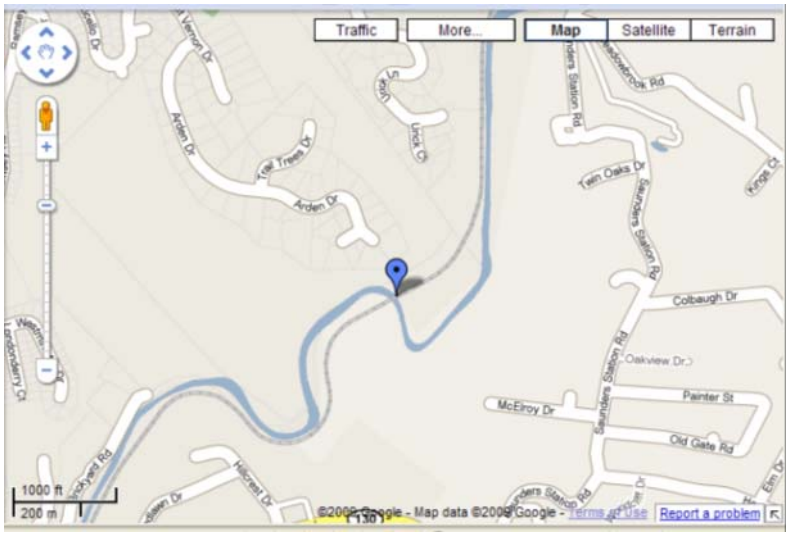
Bridge #2 (Turtle Creek Industrial RR- MP 2.52)

a) View from downstream (left side)

b) Right side (MP ahead)

c) Deck

d) Under



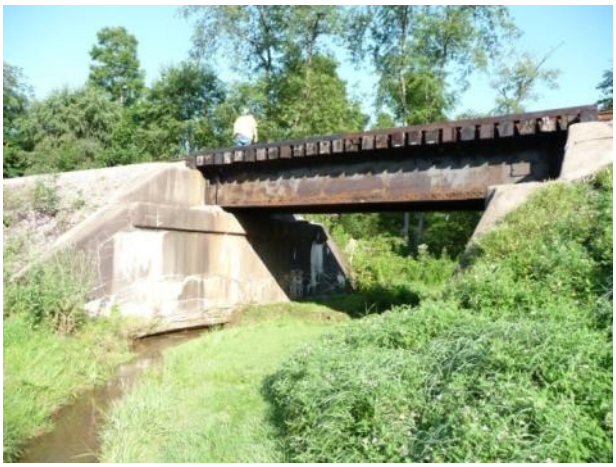
e) Location Map

Figure 3.3. Site Pictures and Map: TCKR 2.52

Table 3.7. Bridge Inventory & Condition Data: TCKR 2.52

Railroad:	Turtle Creek Industrial Railroad (TCKR)
Branch – Milepost:	Mainline – 2.52
Location:	Westmoreland Co. (40.39925N, 79.735317W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Turtle Creek
Build Date:	1891
Total Length:	108’
Number of Spans:	2
Annual Freight:	150 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (06/04/2009)	
Superstructure Condition, *Sp*:	4
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	1.33
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.18

Bridge #3 (Buffalo & Pittsburgh RR – MP 4.68)

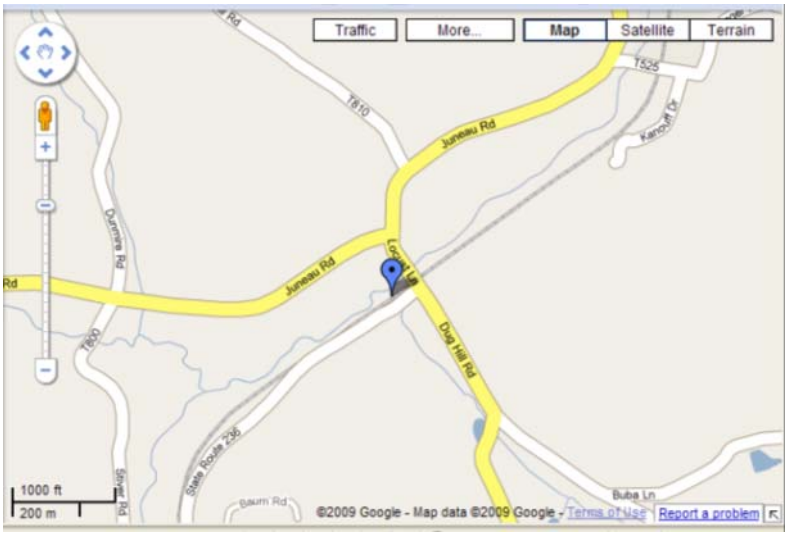


a) View from upstream (left side)

b) Bridge Deck (MP ahead)

c) Under

d) Plate Girder / Bridge Seat



e) Location Map

Figure 3.4. Site Pictures and Map: BPRR 4.68

Table 3.8. Bridge Inventory & Condition Data: BPRR 4.68

Railroad:	Buffalo & Pittsburgh Railroad (BPRR)
Branch – Milepost:	Indiana – 4.68
Location:	Indiana Co. (40.888063N, 78.963866W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	Smiths Run
Build Date:	1902
Total Length:	30’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (08/06/2009)	
Superstructure Condition, *Sp*:	7
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.23
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.16

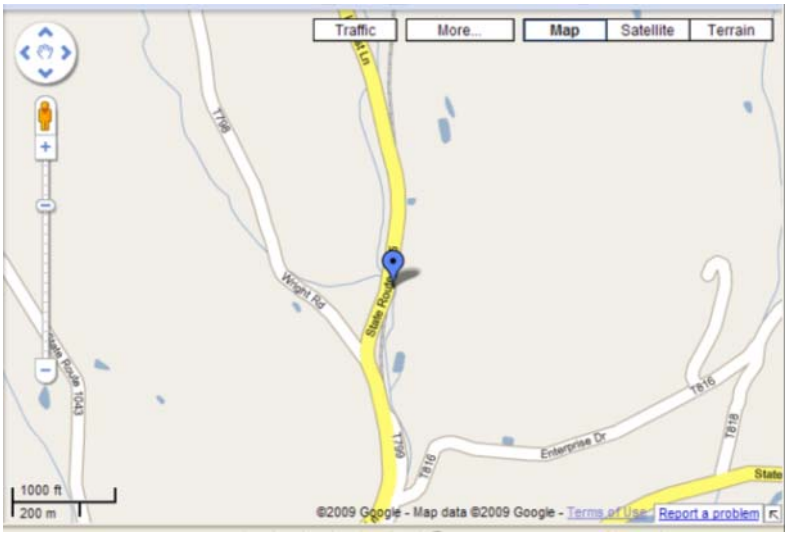
Bridge #4 (Buffalo & Pittsburgh RR - MP 8.71)

a) View from downstream (left side)

b) Bridge Deck (MP ahead)

c) Under

d) Plate Girder



e) Location Map

Figure 3.5. Site Pictures and Map: BPRR 8.71

Table 3.9. Bridge Inventory & Condition Data: BPRR 8.71

Railroad:	Buffalo & Pittsburgh Railroad (BPRR)
Branch – Milepost:	Indiana – 8.71
Location:	Indiana Co. (40.833741N, 78.975896W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	Broadhead Run
Build Date:	1903
Total Length:	30’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (08/06/2009)	
Superstructure Condition, *Sp*:	5
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	1.43
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.18

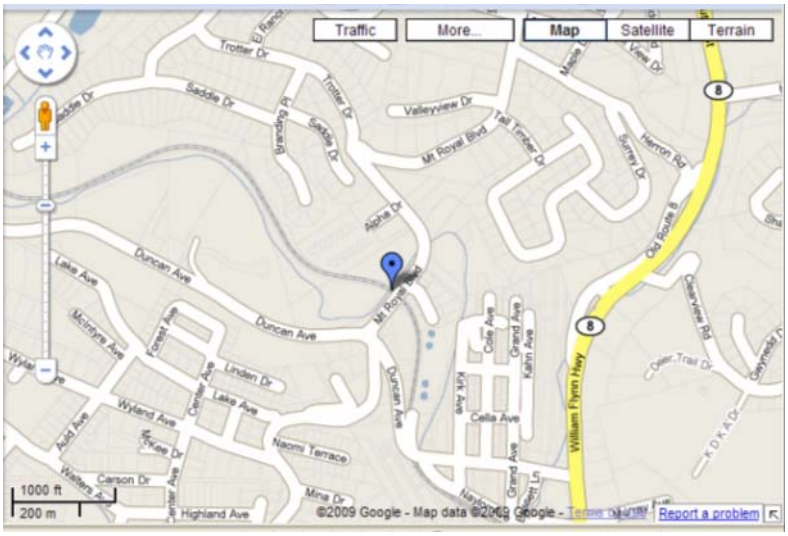
Bridge #5 (Allegheny Valley RR - MP 10.55)

a) View from downstream (right side)

b) Bridge Deck (MP ahead)

c) Under

d) Abutment / Bearings (typical)



e) Location Map

Figure 3.6. Site Pictures and Map: AVR 10.55

Table 3.10. Bridge Inventory & Condition Data: AVR 10.55

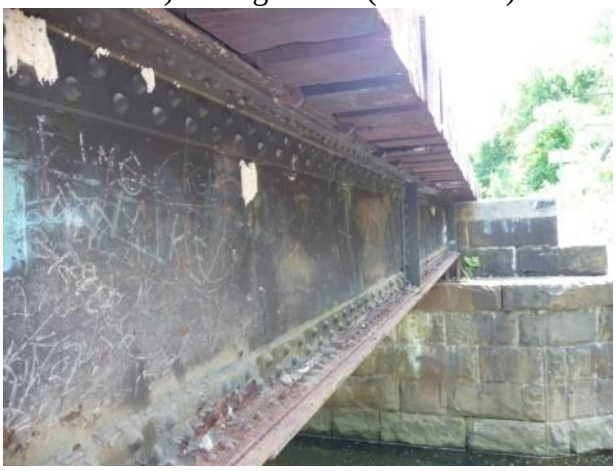
Railroad:	Allegheny Valley Railroad (AVR)
Branch – Milepost:	P&W – 10.55
Location:	Allegheny Co. (40.564416N, 79.965706W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete / Stone Masonry
Feature Crossed:	Pine Creek
Build Date:	1922
Total Length:	77’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (07/14/2009)	
Superstructure Condition, *Sp*:	3
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	1.59
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.19

Bridge #6 (Allegheny Valley RR - MP 12.14)

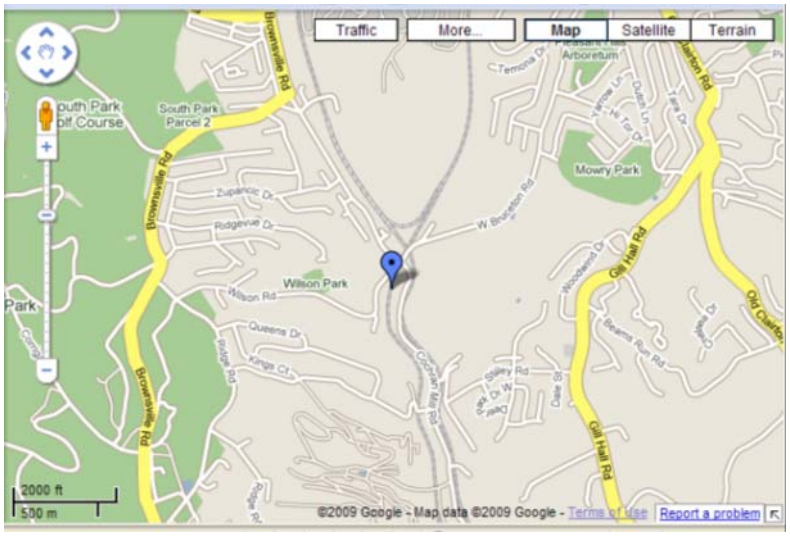
a) View from downstream (right side)

b) Bridge Deck (MP ahead)

c) Under



d) Plate Girder



e) Location Map

Figure 3.7. Site Pictures and Map: AVR 12.14

Table 3.11. Bridge Inventory & Condition Data: AVR 12.14

Railroad:	Allegheny Valley Railroad (AVR)
Branch – Milepost:	W&P – 12.14
Location:	Allegheny Co. (40.315452N, 79.979104W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Creek
Build Date:	1923
Total Length:	34’-6”
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (07/14/2009)	
Superstructure Condition, *Sp*:	7
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.53
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.09

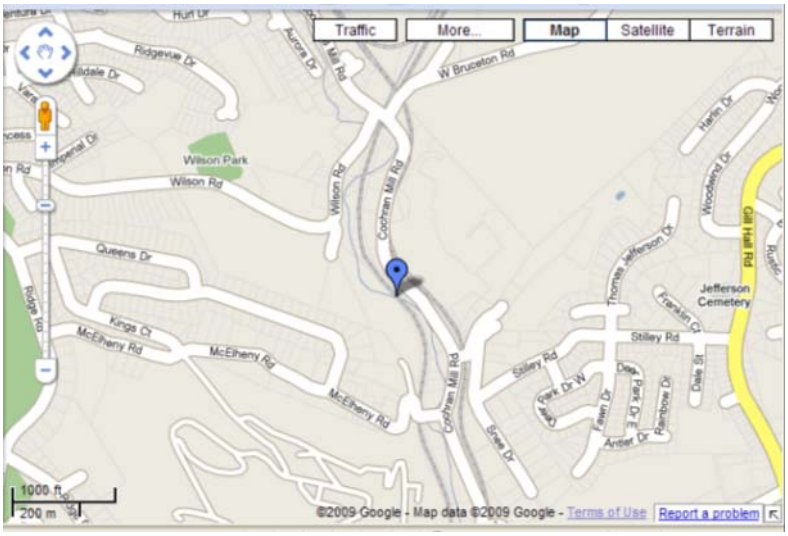
Bridge #7 (Allegheny Valley RR - MP 12.39)

a) View from upstream (right side)

b) Bridge Deck (MP back)

c) Under

d) Plate Girder



e) Location Map

Figure 3.8. Site Pictures and Map: AVR 12.39

Table 3.12. Bridge Inventory & Condition Data: AVR 12.39

Railroad:	Allegheny Valley Railroad (AVR)
Branch – Milepost:	W&P – 12.39
Location:	Allegheny Co. (40.312131N, 79.978028W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	Creek
Build Date:	1930
Total Length:	41’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (07/14/2009)	
Superstructure Condition, *Sp*:	8
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.63
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.08

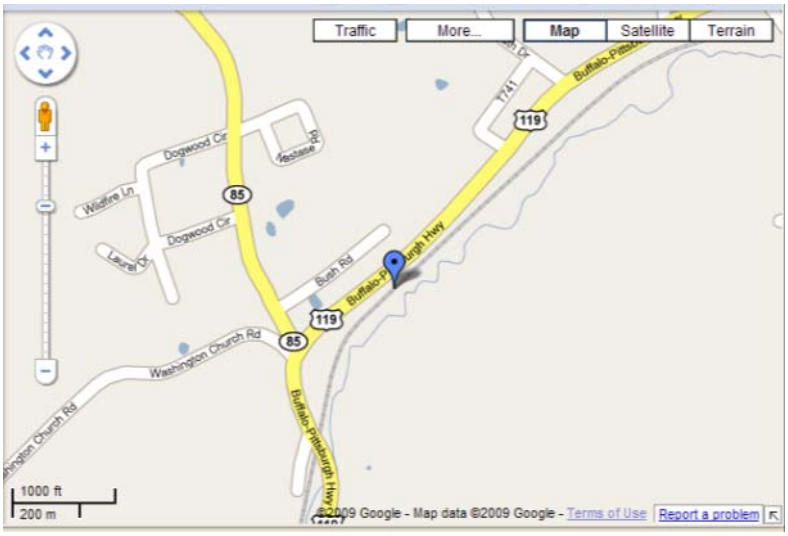
Bridge #8 (Buffalo & Pittsburgh RR - MP 20.04)

a) View from downstream (left side)

b) Bridge Deck (MP ahead)

c) Under

d) Plate Girder



e) Location Map

Figure 3.9. Site Pictures and Map: BPRR 20.04

Table 3.13. Bridge Inventory & Condition Data: BPRR 20.04

Railroad:	Buffalo & Pittsburgh Railroad (BPRR)
Branch – Milepost:	Indiana – 20.04
Location:	Indiana Co. (40.740665N, 79.10204W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	Steam
Build Date:	1902
Total Length:	20’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (08/06/2009)	
Superstructure Condition, *Sp*:	4
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	1.07
Scour Condition, *Sc*:	3
Fatigue Category Value:	4
Risk Score:	0.16

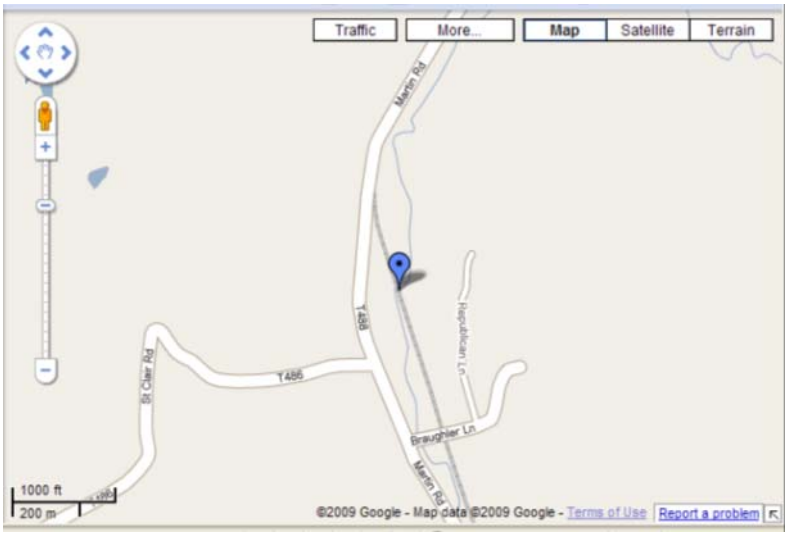
Bridge #9 (Buffalo & Pittsburgh RR - MP 29.73)

a) View from downstream (right side)

b) Bridge Deck (MP ahead)

c) Under

d) Far Abutment / Backwall



e) Location Map

Figure 3.10. Site Pictures and Map: BPRR 29.73

Table 3.14. Bridge Inventory & Condition Data: BPRR 29.73

Railroad:	Buffalo & Pittsburgh Railroad (BPRR)
Branch – Milepost:	Indiana – 29.73
Location:	Indiana Co. (40.664681N, 79.158868W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	McKees Run
Build Date:	1903
Total Length:	40’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (08/06/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	1
Load Capacity (based on 286k adequacy), *C/L*:	1.22
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.21

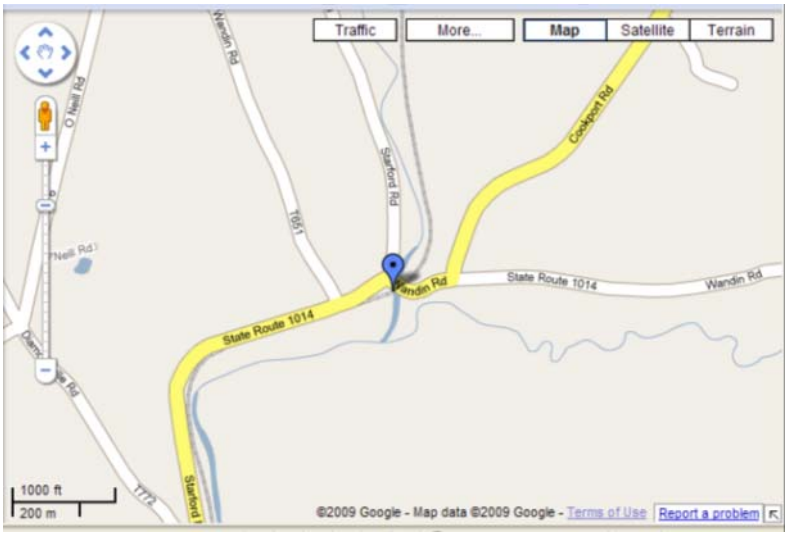
Bridge #10 (RJ Corman - MP 49.50)

a) View from downstream (left side)

b) Bridge Deck (MP ahead)

c) Under

d) Plate Girder / Abutment



e) Location Map

Figure 3.11. Site Pictures and Map: RJCP 49.50

Table 3.15. Bridge Inventory & Condition Data: RJCP 49.50

Railroad:	RJ Corman Railroad (PA Lines) (RJCP)
Branch – Milepost:	Cherry Tree – 49.50
Location:	Indiana Co. (40.675048N, 78.963268W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Creek
Build Date:	Unknown
Total Length:	40’
Number of Spans:	1
Annual Freight:	5300 cars
Class of Approach Track:	Class 2
Condition Assignment Values Based on Field View (07/31/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.15
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.15

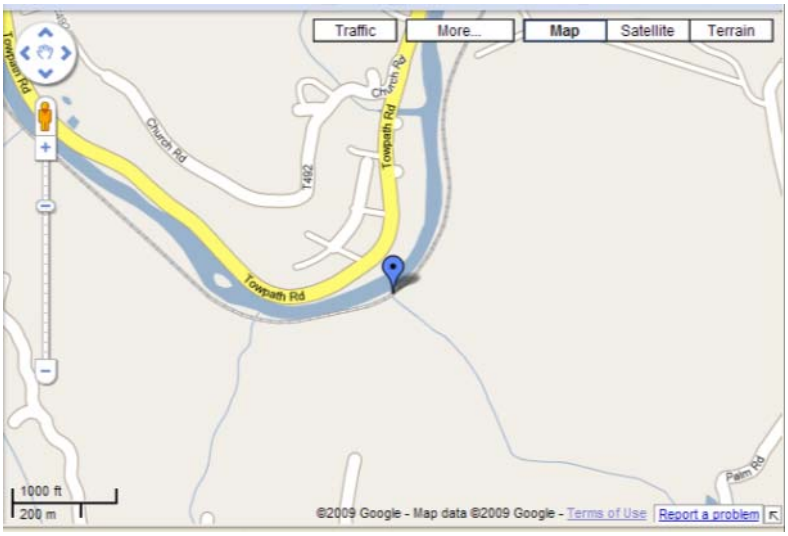
Bridge #11 (Stourbridge RR - MP 115.36)

a) View from downstream (right side)

b) Bridge Deck (MP back)

c) Under

d) View from upstream (left side)



e) Location Map

Figure 3.12. Site Pictures and Map: SBR 115.36

Table 3.16. Bridge Inventory & Condition Data: SBR 115.36

Railroad:	Stourbridge Railway (SBR)
Branch – Milepost:	Mainline – 115.36
Location:	Pike Co. (41.458025N, 75.048584W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete / Stone Masonry
Feature Crossed:	Kirkham Creek
Build Date:	1915
Total Length:	24’-6”
Number of Spans:	1
Annual Freight:	2 MGT
Class of Approach Track:	Class 2
Condition Assignment Values Based on Field View (07/06/2009)	
Superstructure Condition, *Sp*:	7
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.27
Scour Condition, *Sc*:	3
Fatigue Category Value:	4
Risk Score:	0.10

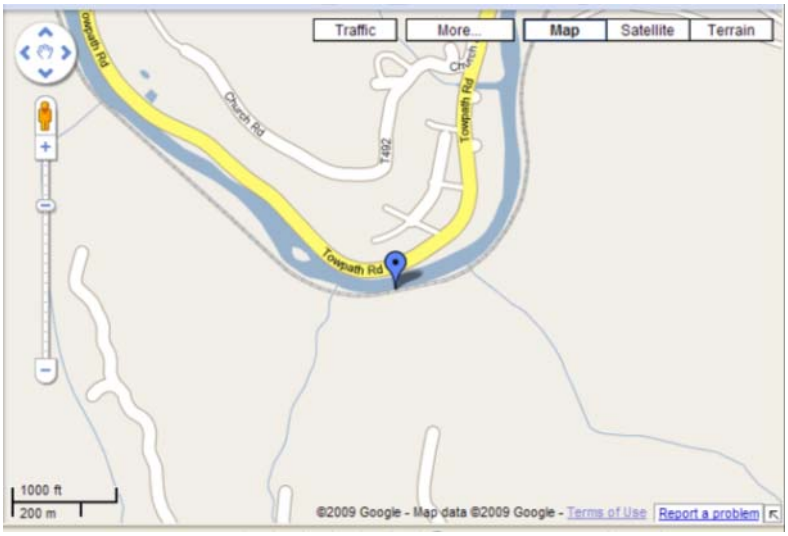
Bridge #12 (Stourbridge RR - MP 115.62)

a) View from upstream (left side)

b) View from downstream (right side)

c) Under

d) Bridge Deck (MP back)



e) Location Map

Figure 3.13. Site Pictures and Map: SBR 115.62

Table 3.17. Bridge Inventory & Condition Data: SBR 115.62

Railroad:	Stourbridge Railway (SBR)
Branch – Milepost:	Mainline – 115.62
Location:	Pike Co. (41.457445N, 75.05129W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Concrete / Stone Masonry
Feature Crossed:	Grass Island Creek
Build Date:	1915
Total Length:	29’
Number of Spans:	1
Annual Freight:	2 MGT
Class of Approach Track:	Class 2
Condition Assignment Values Based on Field View (07/06/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.28
Scour Condition, *Sc*:	3
Fatigue Category Value:	4
Risk Score:	0.11

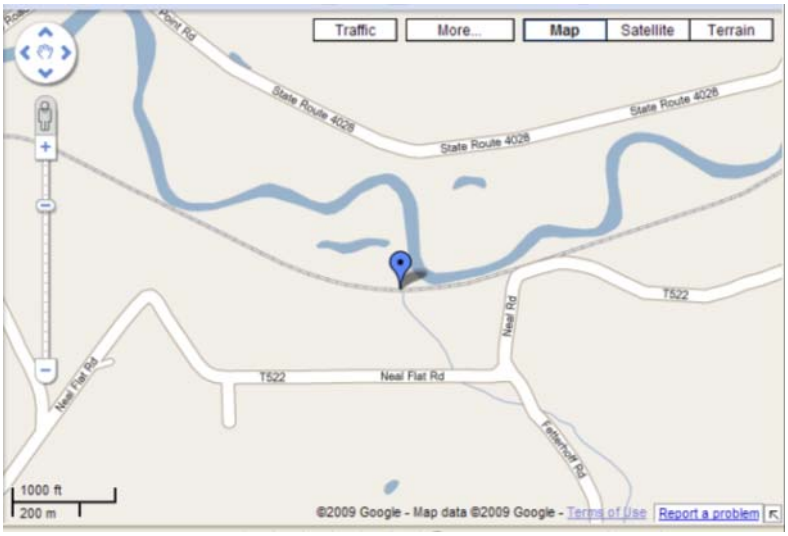
Bridge #13 (Buffalo & Pittsburgh RR - MP 234.65)

a) View from upstream (left side)

b) View from downstream (right side)

c) Under

d) Bridge Deck (MP ahead)



e) Location Map

Figure 3.14. Site Pictures and Map: BPRR 234.65

Table 3.18. Bridge Inventory & Condition Data: BPRR 234.65

Railroad:	Buffalo & Pittsburgh Railroad (BPRR)
Branch – Milepost:	Mainline – 234.65
Location:	Indiana Co. (40.904342N, 79.101058W)
Bridge Type (Superstructure):	Steel, Riveted Deck Plate Girder (DPG)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Gamble Run
Build Date:	1899
Total Length:	24’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (08/05/2009)	
Superstructure Condition, *Sp*:	7
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.23
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.19

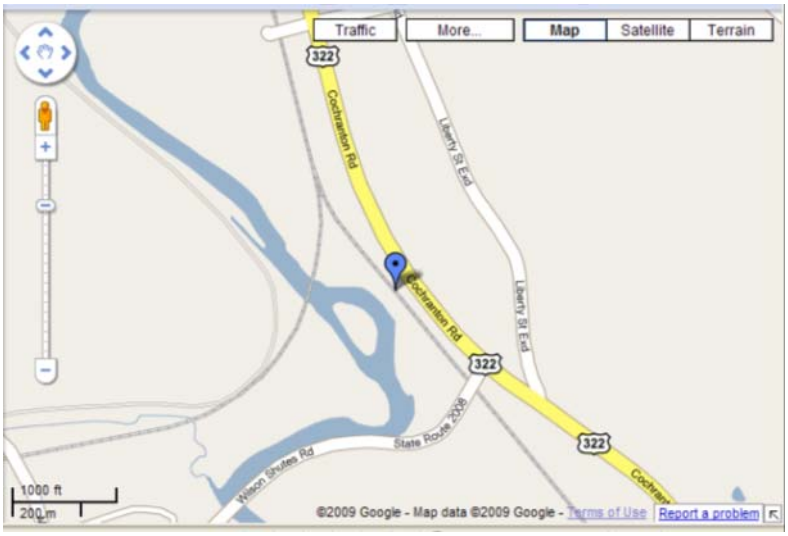
Bridge #14 (Western New York & Pennsylvania RR - MP 0.33)

a) Bridge Deck (MP ahead)

b) Bridge Deck (MP back)

c) Right side (Span 1)

d) Left side (span 2)



e) Location Map

Figure 3.15. Site Pictures and Map: WNYP 0.33

Table 3.19. Bridge Inventory & Condition Data: WNYP 0.33

Railroad:	Western New York & Pennsylvania (WNYP)
Branch – Milepost:	Oil City – 0.33
Location:	Crawford Co. (41.594977N, 80.144743W)
Bridge Type (Superstructure):	Steel, Riveted Through Plate Girder (TPG)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	Swamp Tributary to French Creek
Build Date:	1924
Total Length:	92’ (span 1 @ 30’, span 2 @ 62’)
Number of Spans:	2
Annual Freight:	0.05 MGT
Class of Approach Track:	Class 2
Condition Assignment Values Based on Field View (08/12/2009)	
Superstructure Condition, *Sp*:	5
Substructure Condition, *Sb*:	1
Load Capacity (based on 286k adequacy), *C/L*:	0.84
Scour Condition, *Sc*:	2
Fatigue Category Value:	3
Risk Score:	0.19

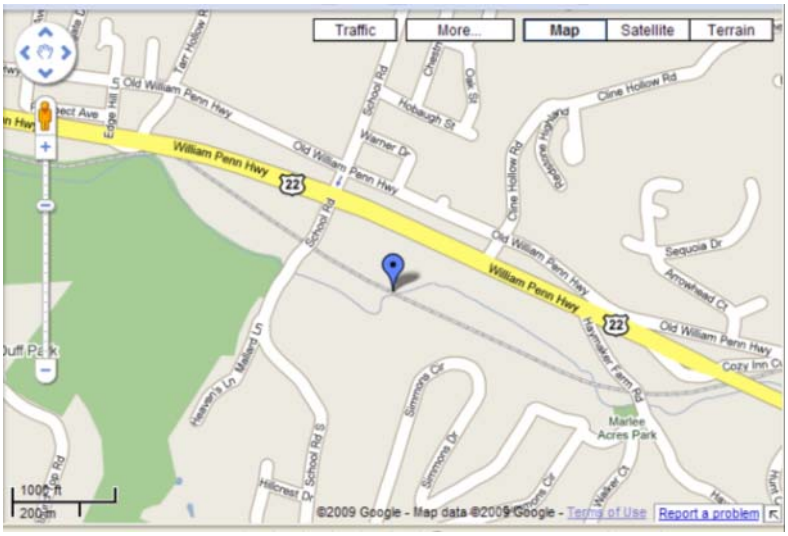
Bridge #15 (Turtle Creek Industrial RR - MP 7.76)

a) View from downstream (right side)

b) Bridge Deck (MP back)

c) Under

d) Far Abutment



e) Location Map

Figure 3.16. Site Pictures and Map: TCKR 7.76

Table 3.20. Bridge Inventory & Condition Data: TCKR 7.76

Railroad:	Turtle Creek Industrial Railroad
Branch – Milepost:	Mainline – 7.76
Location:	Westmoreland Co. (40.421803N, 79.66490W)
Bridge Type (Superstructure):	Steel, Riveted Through Plate Girder (TPG)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Turtle Creek
Build Date:	1898
Total Length:	75’
Number of Spans:	1
Annual Freight:	150 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (07/13/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	0.93
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.18

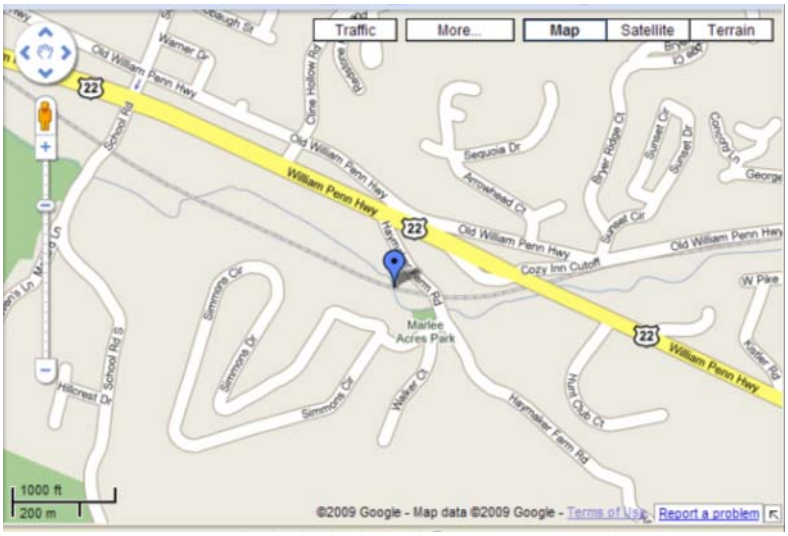
Bridge #16 (Turtle Creek Industrial RR - MP 8.19)

a) View from upstream (right side)

b) Bridge Deck (MP ahead)

c) Under

d) Deck



e) Location Map

Figure 3.17. Site Pictures and Map: TCKR 8.19

Table 3.21. Bridge Inventory & Condition Data: TCKR 8.19

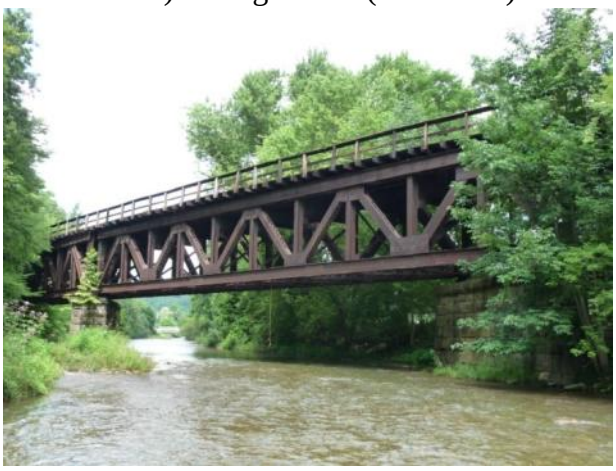
Railroad:	Turtle Creek Industrial Railroad
Branch – Milepost:	Mainline – 8.19
Location:	Westmoreland Co. (40.419247N, 79.65779W)
Bridge Type (Superstructure):	Steel, Riveted Through Plate Girder (TPG)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Turtle Creek
Build Date:	1898
Total Length:	55’-4”
Number of Spans:	1
Annual Freight:	150 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (07/13/2009)	
Superstructure Condition, *Sp*:	4
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	1.00
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.17

Bridge #17 (RJ Corman RR - MP 18.27)

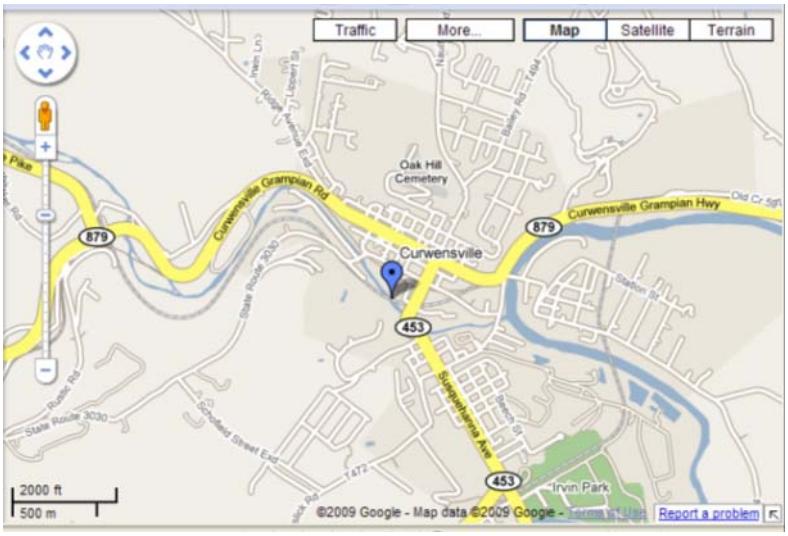
a) View from upstream (left side)

b) Bridge Deck (MP ahead)

c) Under



d) View from downstream (span 2)



e) Location Map

Figure 3.18. Site Pictures and Map: RJCP 18.27

Table 3.22. Bridge Inventory & Condition Data: RJCP 18.27

Railroad:	RJ Corman Railroad (PA Lines) (RJCP)
Branch – Milepost:	C&M – 18.27
Location:	Clearfield Co. (40.973224N, 78.528514W)
Bridge Type (Superstructure):	Steel, Riveted Deck Truss (DTR)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Anderson Creek
Build Date:	1909
Total Length:	260’ (2 spans @ 130’)
Number of Spans:	2
Annual Freight:	0 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (08/03/2009)	
Superstructure Condition, *Sp*:	5
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.64
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.20

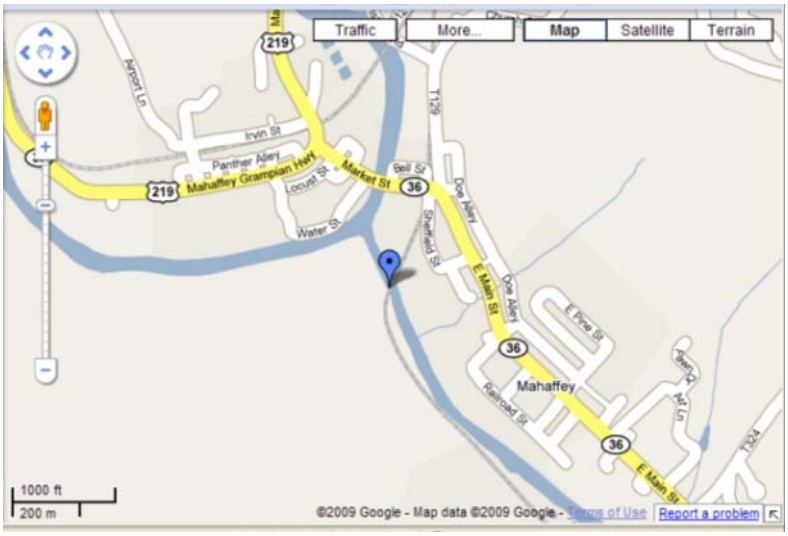
Bridge #18 (RJ Corman RR - MP 39.00)

a) View from downstream (left side)

b) View from upstream (right side)

c) Under

d) Near Approach (MP ahead)



e) Location Map

Figure 3.19. Site Pictures and Map: RJCP 39.00

Table 3.23. Bridge Inventory & Condition Data: RJCP 39.00

Railroad:	RJ Corman Railroad (PA Lines) (RJCP)
Branch – Milepost:	Cresson – 39.00
Location:	Clearfield Co. (40.87545N, 78.729736W)
Bridge Type (Superstructure):	Steel, Riveted Deck Truss (DTR)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Chest Creek
Build Date:	Unknown
Total Length:	130’
Number of Spans:	1
Annual Freight:	2623 cars
Class of Approach Track:	Class 2
Condition Assignment Values Based on Field View (07/30/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.0
Scour Condition, *Sc*:	1
Fatigue Category Value:	4
Risk Score:	0.20

Bridge #19 (Allegheny Valley RR - MP 0.68)

a) View from downstream (left side)

b) View from upstream (right side)

c) Near approach

d) Through Truss

e) Location Map

Figure 3.20. Site Pictures and Map: AVR 0.68

Table 3.24. Bridge Inventory & Condition Data: AVR 0.68

Railroad:	Allegheny Valley Railroad
Branch – Milepost:	Brilliant Ind. – 0.68
Location:	Allegheny Co. (40.485955N, 79.905903W)
Bridge Type (Superstructure):	Through Pinned Truss (TTR)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Allegheny River
Build Date:	1908
Total Length:	1838’ (main truss span: #5=407’)
Number of Spans:	14
Annual Freight:	
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (07/14/2009)	
Superstructure Condition, *Sp*:	5
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.42
Scour Condition, *Sc*:	2
Fatigue Category Value:	3
Risk Score:	0.37

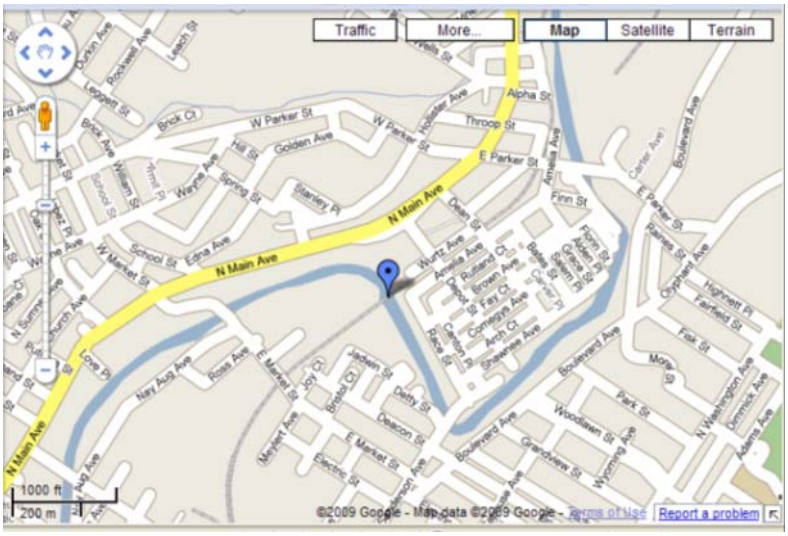
Bridge #20 (Delaware – Lackawanna RR - MP 5.70)

a) View from downstream (left side)

b) Bridge Approach (MP ahead)

c) Under

d) Through Truss



e) Location Map

Figure 3.21. Site Pictures and Map: DL 5.70

Table 3.25. Bridge Inventory & Condition Data: DL 5.70

Railroad:	Delaware – Lackawanna Railroad
Branch – Milepost:	Carbondale – 5.70
Location:	Lackawanna Co. (41.437852N, 75.648876W)
Bridge Type (Superstructure):	Through Riveted Truss (TTR)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	Lackawanna River
Build Date:	1904
Total Length:	168’
Number of Spans:	1
Annual Freight:	1455 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (08/04/2009)	
Superstructure Condition, *Sp*:	5
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	1.01
Scour Condition, *Sc*:	2
Fatigue Category Value:	4
Risk Score:	0.24

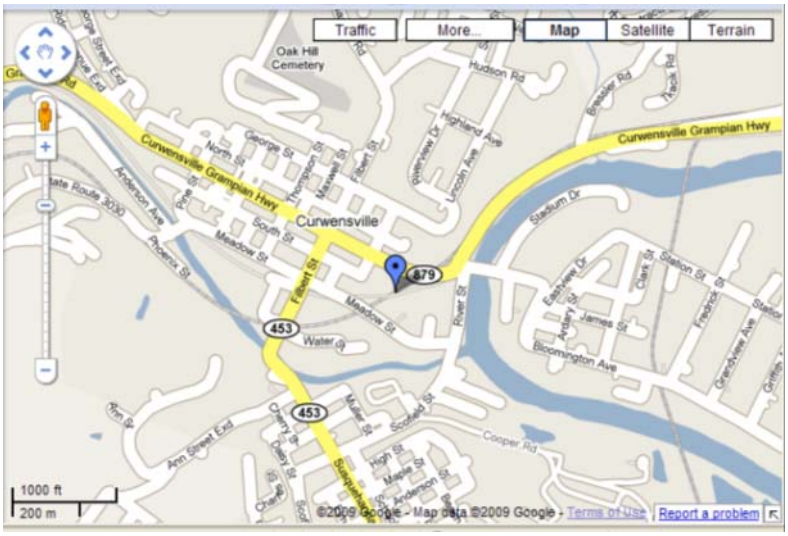
Bridge #21 (RJ Corman RR - MP 18.57)

a) View from left side

b) View from right side

c) Bridge Approach (MP ahead)

d) Under / Abutment



e) Location Map

Figure 3.22. Site Pictures and Map: RJCP 18.57

Table 3.26. Bridge Inventory & Condition Data: RJCP 18.57

Railroad:	RJ Corman Railroad (PA Lines)
Branch – Milepost:	C&M – 18.57
Location:	Clearfield Co. (40.973847N, 78.522939W)
Bridge Type (Superstructure):	Through Riveted Truss (TTR)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Rails to Trails (old railroad grade)
Build Date:	1909
Total Length:	140’
Number of Spans:	1
Annual Freight:	0 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (08/03/2009)	
Superstructure Condition, *Sp*:	5
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.02
Scour Condition, *Sc*:	4
Fatigue Category Value:	4
Risk Score:	0.11

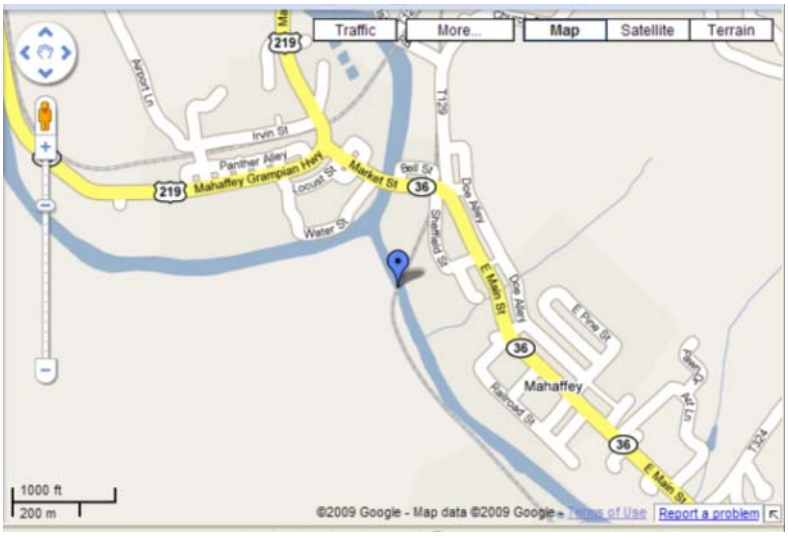
Bridge #22 (RJ Corman RR - MP 39.10)

a) View from left side

b) View from right side

c) Bridge Approach (MP ahead)

d) Under / Abutment



e) Location Map

Figure 3.23. Site Pictures and Map: RJCP 39.10

Table 3.27. Bridge Inventory & Condition Data: RJCP 39.10

Railroad:	RJ Corman Railroad (PA Lines)
Branch – Milepost:	Cresson – 39.10
Location:	Clearfield Co. (40.87545N, 78.729736W)
Bridge Type (Superstructure):	Through Pony Truss (TTR)
Abutment / Pier Type (Substructure):	Stone Masonry / Steel Trestle
Feature Crossed:	Gravel access road
Build Date:	1892
Total Length:	98’
Number of Spans:	1
Annual Freight:	2623 cars
Class of Approach Track:	Class 2
Condition Assignment Values Based on Field View (07/30/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	0.85
Scour Condition, *Sc*:	4
Fatigue Category Value:	4
Risk Score:	0.11

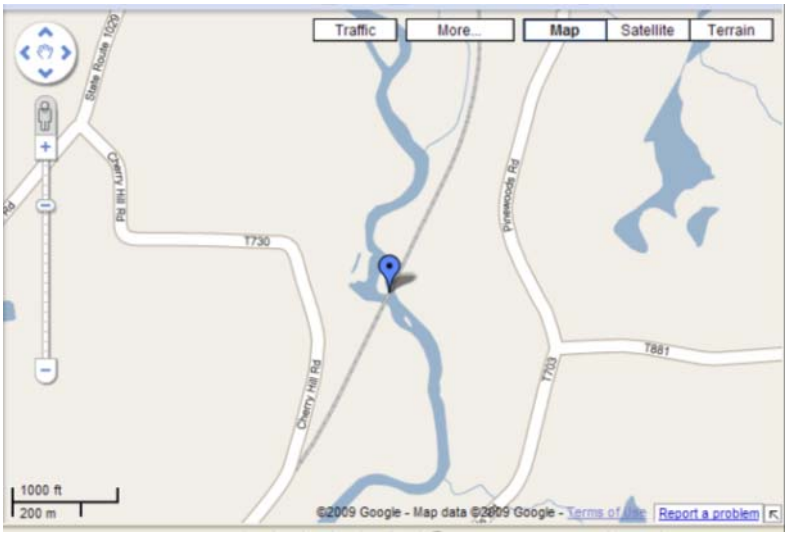
Bridge #23 (Western New York & Pennsylvania RR - MP 83.06)

a) Bridge Approach (MP ahead)

b) Bridge Deck

c) Under

d) Left side (span 1)



e) Location Map

Figure 3.24. Site Pictures and Map: WNYP 83.06

Table 3.28. Bridge Inventory & Condition Data: WNYP 83.06

Railroad:	Western New York & Pennsylvania (WNYP)
Branch – Milepost:	Mainline – 83.06
Location:	Crawford Co. (41.832371N, 79.977803W)
Bridge Type (Superstructure):	Through Riveted Truss (TTR)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	French Creek
Build Date:	Unknown
Total Length:	295’ (span 1@155’, span 2 @140’)
Number of Spans:	2
Annual Freight:	4 MGT
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (08/12/2009)	
Superstructure Condition, *Sp*:	2
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	0.92
Scour Condition, *Sc*:	2
Fatigue Category Value:	3
Risk Score:	0.36

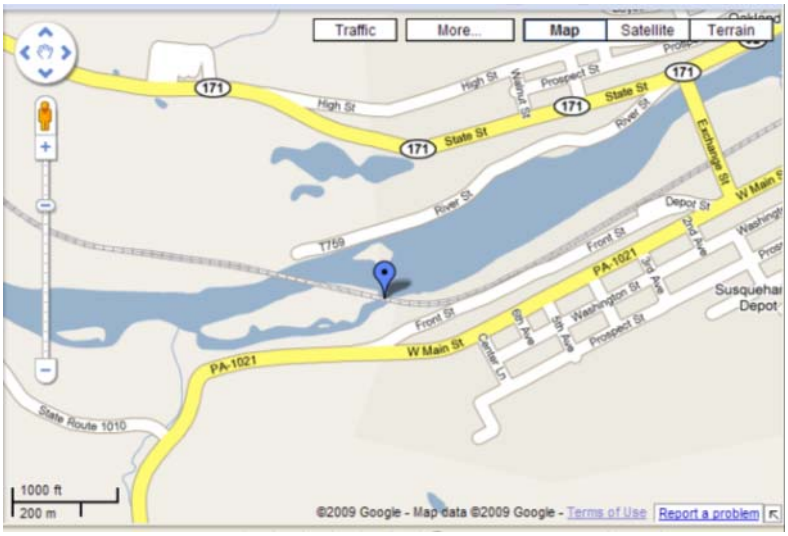
Bridge #24 (New York, Susquehanna & Western RR - MP 191.99)

a) View from downstream (left side)

b) Bridge Approach (MP ahead)

c) Under / Abutment

d) Bridge Deck



e) Location Map

Figure 3.25. Site Pictures and Map: NYSW 191.99

Table 3.29. Bridge Inventory & Condition Data: NYSW 191.99

Railroad:	New York, Susquehanna & Western (NYSW)
Branch – Milepost:	Central New York – 191.99
Location:	Susquehanna Co. (41.942667N, 75.617861W)
Bridge Type (Superstructure):	Through Pinned Truss (TTR)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Jug handle of Susquehanna River
Build Date:	1907
Total Length:	195’
Number of Spans:	1
Annual Freight:	2 MGT (6800cars)
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (07/06/2009)	
Superstructure Condition, *Sp*:	5
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	0.94
Scour Condition, *Sc*:	1
Fatigue Category Value:	3
Risk Score:	0.35

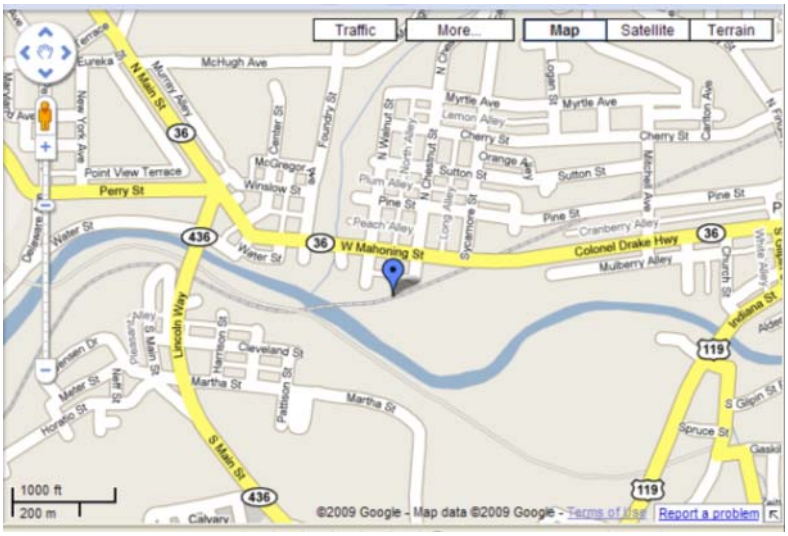
Bridge #25 (Buffalo & Pittsburgh RR - MP 226.08)

a) View from left side

b) Bridge Approach (MP ahead)

c) Under

d) Under / Abutment



e) Location Map

Figure 3.26. Site Pictures and Map: BPRR 226.08

Table 3.30. Bridge Inventory & Condition Data: BPRR 226.08

Railroad:	Buffalo & Pittsburgh Railroad
Branch – Milepost:	Mainline – 226.08
Location:	Jefferson Co. (40.941331N, 78.985876W)
Bridge Type (Superstructure):	Through Pinned Truss (TTR)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Flood Plain (normally dry)
Build Date:	1898
Total Length:	190’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (08/05/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	0.85
Scour Condition, *Sc*:	4
Fatigue Category Value:	3
Risk Score:	0.21

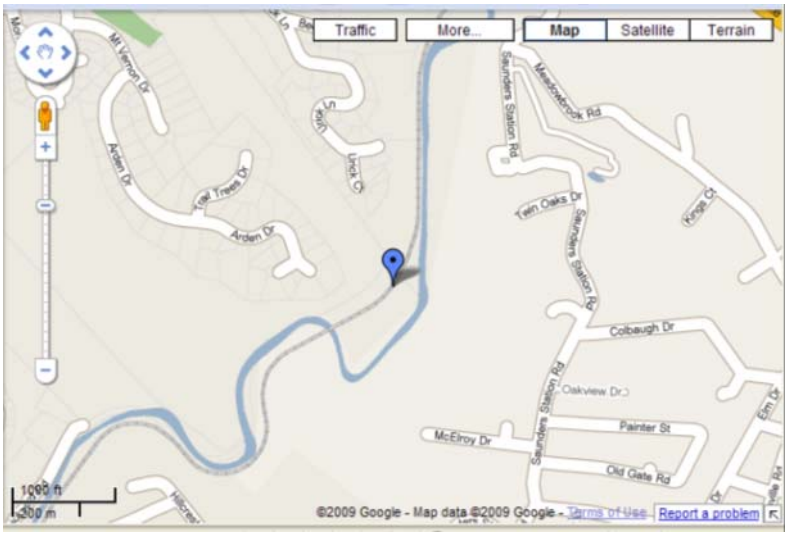
Bridge #26 (Turtle Creek Industrial RR - MP 3.00)

a) View from downstream (right side)

b) Bridge (MP back)

c) Under

d) Abutment (near)



e) Location Map

Figure 3.27. Site Pictures and Map: TCKR 3.00

Table 3.31. Bridge Inventory & Condition Data: TCKR 3.00

Railroad:	Turtle Creek Industrial Railroad (TCKR)
Branch – Milepost:	Mainline – 3.00
Location:	Westmoreland Co. (40.400483N, 79.73313W)
Bridge Type (Superstructure):	Steel Beams (rolled section) (SST)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	Tributary channel to Turtle Creek
Build Date:	Unknown
Total Length:	24’
Number of Spans:	1
Annual Freight:	150 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (06/04/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.23
Scour Condition, *Sc*:	1
Fatigue Category Value:	7
Risk Score:	0.07

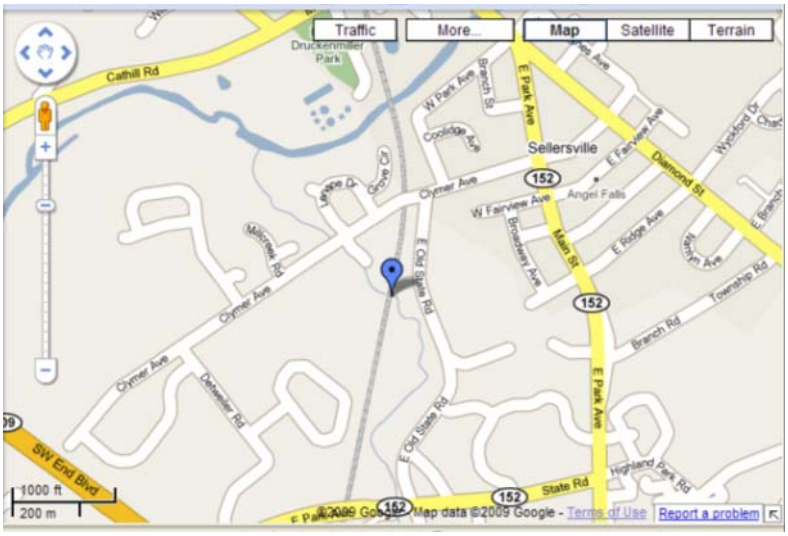
Bridge #27 (East Penn RR - MP 32.93)

a) View from downstream (left side)

b) View from upstream (right side)

c) Under

d) Track over (MP ahead)



e) Location Map

Figure 3.28. Site Pictures and Map: EPRR 32.93

Table 3.32. Bridge Inventory & Condition Data: EPRR 32.93

Railroad:	East Penn Railroad (EPRR)
Branch – Milepost:	Quakertown – 32.93
Location:	Bucks Co. (40.350064N, 75.310931W)
Bridge Type (Superstructure):	Stone Masonry Arch (MAR)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Creek
Build Date:	Unknown
Total Length:	20’
Number of Spans:	1
Annual Freight:	760 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (07/29/2009)	
Superstructure Condition, *Sp*:	3
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	1.0
Scour Condition, *Sc*:	2
Fatigue Category Value:	10
Risk Score:	0.14

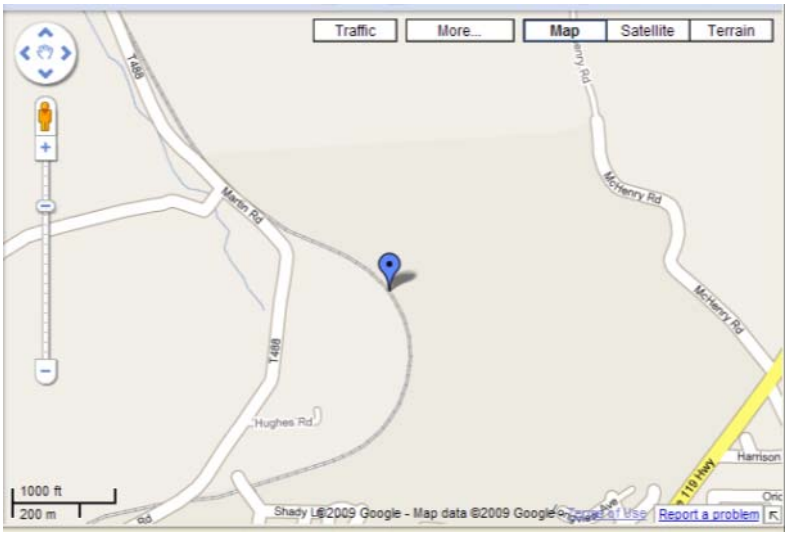
Bridge #28 (Buffalo & Pittsburgh RR - MP 31.13)

a) View from upstream (left side)

b) View from downstream (right side)

c) Under

d) Track over (MP ahead)



e) Location Map

Figure 3.29. Site Pictures and Map: BPRR 31.13

Table 3.33. Bridge Inventory & Condition Data: BPRR 31.13

Railroad:	Buffalo & Pittsburgh Railroad (BPRR)
Branch – Milepost:	Indiana – 31.13
Location:	Indiana Co. (40.648325N, 79.145017W)
Bridge Type (Superstructure):	Concrete Arch (CAR)
Abutment / Pier Type (Substructure):	Concrete
Feature Crossed:	Stream
Build Date:	1903
Total Length:	12’
Number of Spans:	1
Annual Freight:	
Class of Approach Track:	Class 3
Condition Assignment Values Based on Field View (08/06/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	2
Load Capacity (based on 286k adequacy), *C/L*:	2.0
Scour Condition, *Sc*:	1
Fatigue Category Value:	10
Risk Score:	0.14

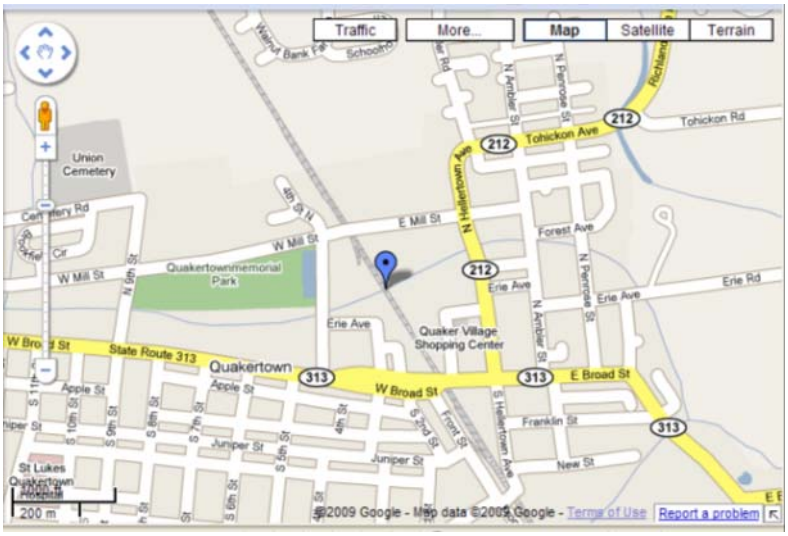
Bridge #29 (East Penn RR – MP 40.47)

a) View from upstream (left side)

b) View from downstream (right side)

c) Under

d) Track over (MP ahead)



e) Location Map

Figure 3.30. Site Pictures and Map: EPRR 40.47

Table 3.34. Bridge Inventory & Condition Data: EPRR 40.47

Railroad:	East Penn Railroad (EPRR)
Branch – Milepost:	Quakertown – 40.47
Location:	Bucks Co. (40.444006N, 75.336833W)
Bridge Type (Superstructure):	Concrete Slab (CSB)
Abutment / Pier Type (Substructure):	Stone Masonry
Feature Crossed:	Channel
Build Date:	1917
Total Length:	25’-6”
Number of Spans:	1
Annual Freight:	760 cars
Class of Approach Track:	Class 1
Condition Assignment Values Based on Field View (07/31/2009)	
Superstructure Condition, *Sp*:	6
Substructure Condition, *Sb*:	3
Load Capacity (based on 286k adequacy), *C/L*:	1.0
Scour Condition, *Sc*:	3
Fatigue Category Value:	10
Risk Score:	0.08

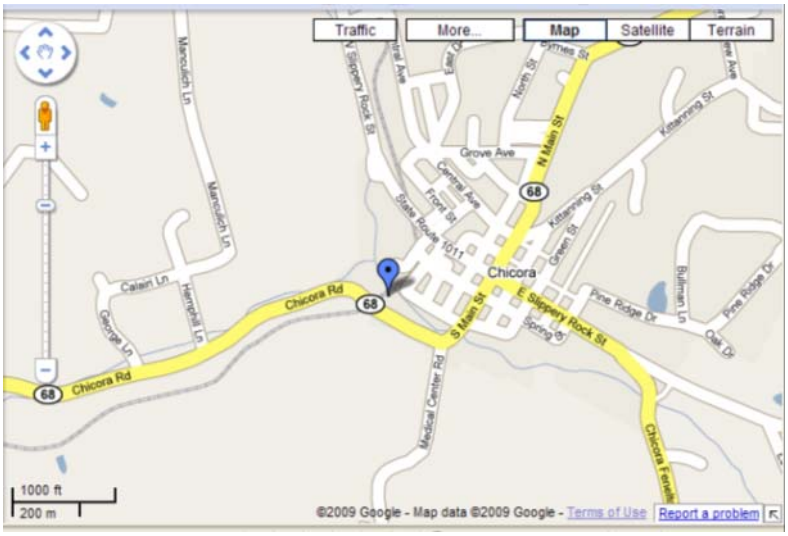
Bridge #30 (Buffalo & Pittsburgh RR - MP 431)

a) View from left side

b) View along left side

c) Under

d) Bridge Deck (MP back)



e) Location Map

Figure 3.31. Site Pictures and Map: BPRR 431

Table 3.35. Bridge Inventory & Condition Data: BPRR 431

Railroad:	Buffalo & Pittsburgh Railroad (BPRR)
Branch – Milepost:	Northern Sub - 431
Location:	Butler Co. (40.947688N, 79.747178W)
Bridge Type (Superstructure):	Timber (TST)
Abutment / Pier Type (Substructure):	Timber Trestle
Feature Crossed:	SR 68, stream & flood plain
Build Date:	Unknown
Total Length:	482’ (30 spans total, typ timber span = 14’)
Number of Spans:	30
Annual Freight:	
Class of Approach Track:	Class 3 (?)
Condition Assignment Values Based on Field View (08/11/2009)	
Superstructure Condition, *Sp*:	5
Substructure Condition, *Sb*:	1
Load Capacity (based on 286k adequacy), *C/L*:	1.06
Scour Condition, *Sc*:	3
Fatigue Category Value:	10
Risk Score:	0.21

Chapter 4: Discussion of Prioritization Issues

4.1 Introduction

Complete and accurate data are directly related to the level of confidence that can be established for a prioritization. As discussed in Chapter 3, a 5-month data collection effort followed by field visits to 30 sample bridges was completed to obtain Pennsylvania SLRR bridge information and significantly increase the final level of confidence. Twenty-seven active freight SLRRs representing 1,184 bridges responded to the survey with a range of completeness. Table 4.1 summarizes the completeness of the responses by number of bridges.

Table 4.1. Summary of Survey Completeness

No. of Bridges	Completeness of Response
141	Complete information
853	Provided at least minimum info (milepost, type, length) but less than complete.
190	Provided less than minimum information
1,184	Total Bridges Covered by Survey

Presumably, the incomplete bridge data for the current study is a reflection of the limited record keeping of many SLRRs that do not maintain complete and current bridge data as recognized by Laman et al. (2001). As discussed in detail in Chapter 2, SLRR bridge inventory and condition information will likely become more complete and up-to-date in the near future due to the 2008 Rail Safety Improvement Act and the publication of AREMA's *Bridge Inspection Handbook*

(AREMA, 2008b), as well as provisions and recommendations from the FRA's *Essential Elements of Railroad Bridge Management Programs* (FRA, 2008) and the ASLRRA bridge safety task force. Mandatory bridge inspections and guidelines for record management systems will facilitate more complete responses for subsequent requests for SLRR bridge information to update the current database developed under this study. The present study needed to proceed with the best information available in order to execute the proposed risk-based prioritization methodology. To execute the prioritization, parameters important to the prioritization must either be known or estimated. This chapter discusses the reasoning and procedures by which incomplete bridge data were assigned values so that the prioritization could be carried out with the highest degree of confidence.

4.2 Bridge Inventory Data

Table 4.1 indicates that complete data exist for approximately 12% of the SLRR bridges in the present database; therefore, a significant portion of the data had to be extrapolated from existing bridge data or assigned presumptively by the research team. The level of confidence in certain assumed parameter values can range from high to low; therefore, the intent was not to fill every data field in the database with a value, as this could introduce unnecessary uncertainty. The objective was to identify the parameters necessary to implement the prioritization methodology and assign only those parameters a value. From the Bridge Data Inventory sheets found in Appendix B, the following data were reviewed and considered for the prioritization methodology:

- Material
- Bridge type
- Year built
- Number of spans

- Length
- Over
- Load rating
- Condition
- Mgt
- Importance
- Distance to Class 1

4.2.1. Material

Bridge construction material is defined as the primary superstructure material type: steel, concrete, masonry, or timber. This information is necessary for the determination of impact load as well as whether fatigue is applicable, as fatigue is only considered for steel structures. In the absence of construction material information, there is no basis for making certain material-dependent assumptions for a particular bridge. Construction material type was known for 1,092 bridges; therefore, to preserve the integrity of the database, material type remained unknown for the remaining 92 bridges.

4.2.2. Bridge Type

Bridge type is a sub-classification of bridge material (e.g., steel-deck plate girder or concrete slab). A complete bridge type listing is presented in Appendix B. Similar to material, bridge type may be necessary for impact load, but more importantly, for fatigue category. Due to the long service lives of many SLRR railroad bridges, fatigue is a parameter that should be considered in prioritization. Fatigue category was not included as part of the survey; however, it can readily be determined for the majority of bridges if bridge type is known. For example, all existing plate girders can be assumed to be riveted construction and, therefore, have a fatigue category D. Pin-connected trusses contain eyebars that are category E, and steel stringers are assumed plain rolled sections and category A. Bridge type was known for 1,073 bridges and, as

with material, there is no basis for a bridge type assumption; therefore, this data field remains blank in the database.

4.2.3. Year Built

The year built corresponds to bridge age, which is important in calculating certain prioritization parameters. Age, in the absence of other information, can be assumed to be proportional to the overall bridge condition as well as load cycles for the context of fatigue evaluation. Age is a variable for the proposed risk parameters; therefore, a value must be assigned to every bridge in order to calculate a risk score. The construction year was known for 567 bridges; therefore, this parameter must be assumed for approximately half of the bridge population in the database. All bridge age assumptions were made so as to result in a conservative, lower final risk score, reflecting the lower level of confidence associated with those values. This approach prevents a bridge, for which the risk evaluation is based on low-confidence information, from ranking at a higher priority than similar bridges calculated with high-confidence values. The mean construction year of the SLRR bridge population was 1919, corresponding to an age of 91 years. Bridges of unknown age were conservatively taken as 100 years old. 100 years is programmed as the default within the Access Query if the construction year is not greater than zero in the Access Bridge Table. This approach permits the "year built" data cell to remain empty within the database so that a user can identify what further information is required to increase the prioritization confidence.

4.2.4. Number of Spans

The "number of spans" is the total spans in the bridge structure's overall length. This is an important variable in determining the consequence of bridge failure. The number of spans indicates how many abutments and piers are part of the bridge. Additionally, "number of spans"

in combination with bridge length is a parameter affecting the bridge length factor prioritization, discussed further in Chapter 5. The number of spans was known for 1,106 bridges. The remaining bridges with unknown "number of spans" were conservatively assigned one span. Several bridges with unknown "number of spans" were of known bridge length. These bridge lengths were observed to be within the practical range for a single span bridge, confirming that a single-span assumption was valid.

4.2.5. Bridge Length

Bridge replacement costs are directly related to bridge length; therefore, bridge length is an important parameter in a relative evaluation of consequence of failure. Bridge length was known for 1,097 bridges in the database. As with material and bridge type, there was no justification for assuming any particular bridge length if the length was not reported by the SLRR. A bridge length of 10′- 0″ was assigned in the database if bridge length was unknown. This length is the minimum length structure considered in the SLRR bridge database.

4.2.6. Bridge Over Feature

Bridge over feature, or "over," refers to the roadway, creek, river, or other physical barrier that the bridge crosses. This is important to assess human and environmental consequences, which are dependent on whether the bridge crosses a dry ravine, a watercourse, and/or a roadway. The magnitude of the consequence is directly related to the significance of the feature bridged. All other factors being equal, the environmental impact of a bridge failure over a large river would be much more significant than failure over a dry ravine or small run. Similarly, a bridge failure over an interstate highway would have a more significant impact on humans than a bridge failure over a private drive. The "over" data can also be used in a probability of failure determination to assess the potential for scour. If the crossing is dry, there is no scour potential;

if the crossing is over a watercourse, then scour may occur in proportion to the size of the flow. If information is known regarding flow rate, velocity, site condition and foundation type, then scour potential can be refined. The "over" parameter was known for 1,054 bridges in the database. Approximately 100 of the "over" data were determined by locating the bridge geographically with aid from Google Earth (http://earth.google.com/) and identifying the crossing by waterway or roadway as applicable. There was not enough information available to locate and determine the feature crossed by the remaining 130 bridges and, therefore, the data field for those was left blank.

4.2.7. Load Rating

Load rating is the bridge capacity and is used in the determination of the probability of bridge failure. The rationale is that the higher the bridge capacity, the lower the probability of failure or, conversely, the lower the capacity, the higher the probability of failure. Load ratings were known for 488 bridges in the database; therefore, load rating values had to be determined presumptively for the remaining 696 bridges in order to execute the prioritization. Initially, the 488 bridges with known load ratings were grouped by bridge type with the intent of establishing a subgroup trend in order to facilitate assignment of load ratings to the 696 brides. No such pattern was present. The 488 bridges with a known load rating were also grouped by age; however, no pattern, trend, or correlation was observable. The maximum standard equipment load used successfully on many SLRRs is the 286,000 CGW. On this basis, and in order to proceed with a rational, minimum load rating assignment, all unrated bridges are assumed adequate for 286,000-lb GCW loading. This approach is conservative in that a load rating less than 286,000-lb CGW leads to a higher probability of failure, thus raising the risk score of the bridge and moving that particular bridge higher in the prioritization ranking.

4.2.8. Condition

Condition rating is the parameter assigned to a bridge based on an inspection and engineering evaluation. Bridge condition data provide a direct indication of the overall state of the bridge, and therefore are used in the determination of probability of bridge failure. Bridge condition can only be determined during a bridge visit and observing the physical condition. A bridge condition parameter is known for 144 bridges in the database, which includes the 30 bridges visited by the research team. The very low rate of responses with condition data confirms that many SLRRs either do not have a bridge inspection program in place or do not assign a condition rating. The limited condition data that was provided by SLRRs is based on rating criteria unique to the particular SLRR inspection program. Because no standard rating scheme exits in the railroad industry, these provided rating schemes range from "New, Good, Satisfactory, Fair, Poor" to "A,B,C,D,F", to a more rational numerical condition assessment with scales ranging from 1 to 4 or 1 to 10. In order to implement a bridge prioritization routine, all condition data must be based on a common standard. Additionally, in order to more accurately assess the overall condition of a bridge, major bridge components must be assessed and assigned separate ratings. It is proposed that superstructure and substructure condition be assessed separately. Proposed superstructure condition will range from 1 to 10, with 10 corresponding to new condition. Proposed substructure condition will range from 1 to 4, with 4 corresponding to new condition. Existing general bridge condition data have been transformed to the proposed scales for superstructure and substructure condition.

Condition data must also be predicted for the balance of the bridges in the population in order to calculate probability of bridge failure. The rationale used to assign unknown condition ratings to bridges considers bridge type as well as year built. General trends in condition ratings were

observed when bridges of known condition were grouped by type. Observations include the following:

- Steel deck plate girder bridges typically rate high;
- Steel through-truss bridges generally rate low;
- Timber bridges generally rate low;
- Masonry structures rate lowest; and
- All other bridge types rate about equally and at an average.

Therefore, unknown condition for bridges was assigned as follows:

- Superstructure Condition (scale 1-10)
  - Steel deck plate girder – 7
  - Through truss, timber, and masonry – 5
  - All other bridge types – 6
- Substructure Condition (scale 1-4)
  - All bridges of unknown condition – 3

Also, it was expected that older bridges exist at a lower condition rating than newer bridges. Age was taken into account on a bridge-by-bridge basis and used to modify the presumptive values listed above. These presumed ratings were conservatively skewed high on the rating scale because, similar to load rating, a higher condition rating results in a lower probability of failure and, consequently, a lower risk score for bridges with unconfirmed information.

4.2.9. MGT

Annual freight tonnage is expressed in millions of gross tons (MGT), which provides an indirect measure of the economic consequence of bridge failure. The economic consequence of a bridge failure on an SLRR with a high MGT was assumed to be more significant than a bridge failure on a low MGT SLRR. Annual MGT survey data were provided for 353 bridges in the database. An MGT must be estimated for the remaining bridges in the database, however, an estimate with high confidence is difficult. In order to populate the unknown MGT data fields in the database, SLRRs were grouped by size. SLRRs of a similar size were presumed to transport similar MGT. Grouping by SLRR size considered length, number of customers served, geographic area served, freight commodity type, and classification of track. On the basis of this information, a reasonably accurate assignment of MGT, without bias, was made.

4.2.10. Bridge Importance

The bridge importance category provides a relative measure of importance for bridges located on the same line. Rating criteria and importance values are listed in Appendix B. The importance parameter provides a focused, localized criterion for bridge prioritization. All previously discussed bridge data apply to the overall population, allowing for direct comparison between all bridges within the population. The importance is only valid when comparing bridges on the same line. This information can be used to justify or influence engineering and management decisions; however, few SLRRs indicated bridge importance data. Importance data was provided for 177 bridges; however, most SLRRs consider all of their bridges very important to the financial and operational viability of the line. This may or may not be accurate based on the importance rating criteria provided in the survey. Therefore, based on the few data values

and suspect validity, “importance” was not considered in the proposed prioritization methodology.

4.2.11. Distance to Class 1 Route

The proximity factor, directly related to distance of a bridge from a Class 1 line, accounts for the location of a bridge on its respective branch. Most SLRRs provided the starting point or terminus of rail freight and indicated that their connecting route, often a Class 1 railroad, provides the “long haul” service. Additionally, many SLRRs do not provide a through-way for freight. That is, the SLRR connects with a Class 1 railroad at one end of the branch and dead ends at the origination. Therefore, an SLRR bridge closest to the connecting Class 1 line is of higher value to continuing operations than a bridge nearer the dead end because a bridge failure at a given location results in stoppage of service to all customers upstream of that bridge. In order to determine the proximity parameter for a given bridge, certain assumptions must be made: bridges and customers on the SLRR are approximately uniformly distributed along the branch; and each customer on the line ships or receives on average approximately equal freight in terms of tonnage, volume, and value. These assumptions define an SLRR, as illustrated in Figure 4.1.

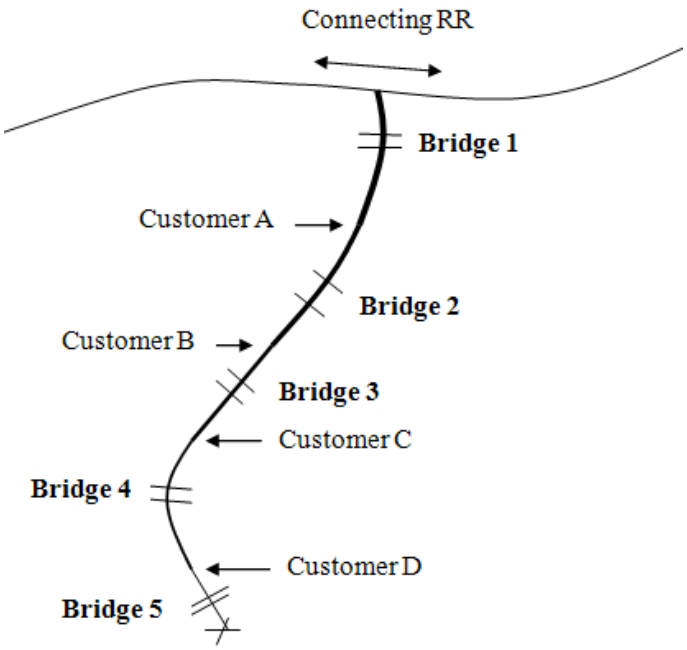


Figure 4.1. Bridge and Customer Distribution for Proximity Factor

The normalized proximity factor, *PF*, for each bridge on this idealized SLRR can be computed by:

$$PF_i = 1 - \frac{l_i}{L_{BR}} \tag{4.1}$$

where l_i is the distance to bridge *i* measured from the connecting line and L_{BR} is the total length of the SLRR branch, which acts as a normalizing factor. This definition assumes a linear relationship and results in a higher value for bridges closest to the connecting line.

A more detailed investigation into the proximity factor revealed that the idealized SLRR, based on the above-mentioned assumptions, rarely exists. Figure 4.2 illustrates a more realistic situation where the SLRR provides a rail freight link to a single customer at the end of a branch. In this situation, each bridge on the branch is of equal importance with respect to providing rail

service to the customer, and therefore a general proximity factor would provide a false measure of bridge value.

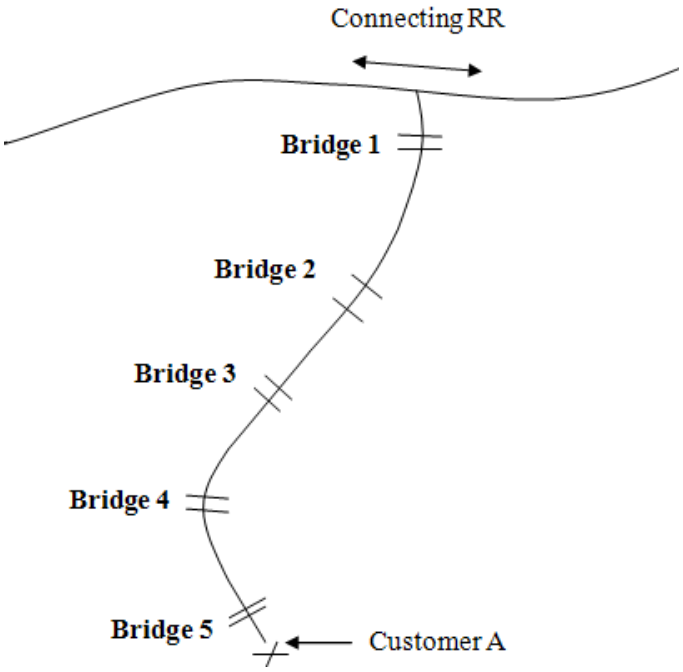


Figure 4.2. Common SLRR Configuration and Operation

Another possible situation that invalidates a general proximity factor on the basis of distance to Class 1 is illustrated in Figure 4.3. This represents the possibility of inter-line freight movement where, for example, Customer B, located on a spur branch, produces a commodity used by Customer A. The SLRR provides service between B and A in addition to providing a link to the connecting route. Alternately, a SLRR could exclusively provide inter-line service and never connect with another rail freight route.

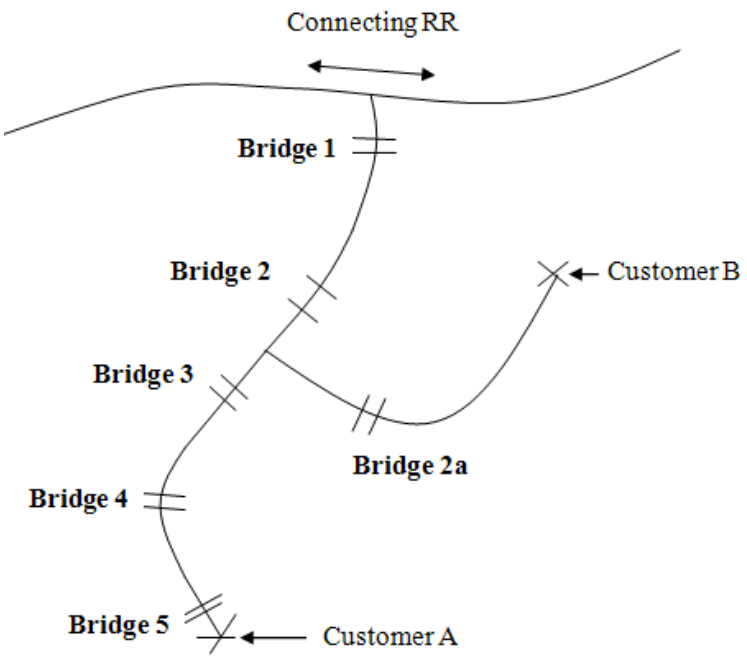


Figure 4.3. Possible SLRR Operation

The reasons discussed above represent only a few possible SLRR operating scenarios that invalidate a general proximity sub-factor as proposed by Equation 4.1. Therefore, it was recognized that for the present study, the proximity factor was not an applicable contributing factor for the consequence of failure parameters and was not considered in the proposed methodology.

4.3 Other Parameters for Risk Evaluation

4.3.1. Urban/Rural Classification

An urban/rural parameter was identified in preliminary formulation of the proposed consequence of failure methodology. This parameter incorporates the added consequence of population density by providing an indication of structure accessibility if failure occurred.

Remote structures may not be either accessible or immediately discovered as compared to structures in urban/suburban areas with major surrounding infrastructures and immediate access. Due to the very limited SLRR bridge information, local site conditions, unknown access provisions, and the difficulty in estimating these conditions, a distinction between urban and rural may not be clear or justified at the present time.

4.3.2. Freight Commodity Type

As previously discussed, the freight MGT transported by SLRRs provides an important measure in determining the economic consequences of bridge failure. However, freight quantified by MGT alone does not provide a complete indication of economic consequence. High-volume, low-density commodities may result in a low MGT as compared to low-volume and high-density commodities. Freight commodity type is intended to account for commodity value as well as volume, which may not necessarily be reflected by MGT alone. The *Customer Profile Survey* form found in Appendix B was included in the original survey packet sent to SLRRs to provide a breakdown of commodity data. The majority of these forms were returned blank or incomplete and several SLRRs indicated that they either could not afford the time or were not willing to provide freight commodity information. Freight commodity type is therefore not considered in the proposed prioritization.

4.3.3. Railroad Track Classification

Railroad track classification, as define by the Code of Federal Regulations (CRF) Title 49-Part 312.9, was not requested in the SLRR survey. As preliminary prioritization schemes were developed, it was recognized that track classification, which defines legal operating speeds, could provide a measure of rail line efficiency. Track classification was determined for about

half of the bridges in the population by contacting railroads directly. Bridges with unknown track classification were conservatively assumed to be Class 1.

4.4 Concluding Remarks

The proposed risk-based prioritization scheme detailed in Chapter 5 is dependent on reliable SLRR bridge data. The fidelity of the information obtained as a result of the survey and data collection effort is good, but somewhat limited; therefore, the evaluation and risk-based prioritization of the population of SLRR bridges includes a particular level of confidence. In addition to data fidelity, the execution of the proposed prioritization algorithm, detailed in Chapter 5, requires a parameter value in each of the considered categories for every bridge. The present chapter discusses the process and rationale by which approximations were made to expand the known, high-confidence data to populate the data fields of the entire database in order to implement the proposed risk-based prioritization methodology. The research team recognizes that, while the approximations made are as accurate as possible, the process has certain limitations. In order to preserve the integrity of the database, two prioritization database files have been created. The first database contains only data known with high confidence that were either reported by the SLRR or collected or observable by the research team through field visits and other means. This first database is intended to be continuously updated as additional, high-confidence information becomes available. The second database is populated with both the high-confidence data and data derived from the careful assumptions discussed in this chapter. This second database was created and populated in order to permit the execution of the proposed bridge population prioritization methodology, with the limitations and assumptions associated with it.

Chapter 5: SLRR Bridge Prioritization

5.1 Introduction

Short-line and regional railroad owners and operators in the Commonwealth of Pennsylvania are a diverse group managing a wide range of infrastructure, including approximately 1,184 bridges, collectively. Unlike publicly owned highway bridges, railroad bridges are, for the most part, privately owned. However, the rail system in Pennsylvania is a major transportation network that supports a significant portion of the Commonwealth economy, benefitting all Pennsylvanians. Therefore, the health and condition of this transportation network is extremely important to the Pennsylvania Department of Transportation. In order to assess the condition of these bridges and effectively target resources for maintenance, rehabilitation, and replacement, a rational method of prioritization is needed. This chapter details the prioritization scheme and develops a broad framework for data as more information becomes available with respect to freight carried (volume and value), bridge type and geometry, and bridge condition.

Effective and rational resource allocation to a population of assets requires the identification of highest to lowest priority candidates on the basis of multiple criteria. The level of refinement required for decision making depends on the objectives of the managing agency and the complexity of the asset system. At issue for the present population of short-line and regional railroad bridges is both the quality and completeness of information available. Because railroads are private, an equivalent to the highway bridge BMS does not exist; therefore, the previously discussed survey was conducted to update and improve the existing database. Participation in the survey was not complete or uniform across owners and operators; therefore, certain

assumptions must be made to proceed with implementation of the proposed method of prioritization. These assumptions will be discussed in detail below.

Prioritization for determination of resource allocated to a population of assets requires some level of risk management strategy, as discussed in GeoPave (2002). Recalling the fundamental and standard definition of risk from Chapter 2, risk is, in a very broad and general sense, the product of the probability of failure of an asset times the consequence of the failure:

$$\text{Risk} = \text{Probability} \times \text{Consequence} \tag{5.1}$$

where $0 \leq$ Probablility ≤ 1.0 and $0 \leq$ Consequence ≤ 1.0 and as defined in subsequent sections of this chapter.

$$\text{Risk} = \left\{1 - \sum_{i=1}^{n}\left[W_i \frac{(PP)_i}{N_i}\right]\right\} \times \sum_{i=1}^{n}\left[W_i \frac{(CP)_i}{N_i}\right] \tag{5.2}$$

where $(PP)_i$ is a probability parameter defined in subsequent sections of this report, $(CP)_i$ is a consequence parameter, also defined in subsequent sections of this report, N_i is a normalizing value, and W_i is an assigned weighting factor corresponding to the particular probability or consequence parameter that reflects the relative importance of the associated parameter in the risk evaluation.

Neither probability nor consequence is readily calculable in absolute terms; however, a relative assessment can be made. Probability of failure is directly related to locomotive and/or car loading magnitudes, train load frequency, structure age and condition, maintenance and inspection intervals, structure type, and rehabilitations. Consequences of failure are directly related to human safety, environmental safety, and economic loss, including loss of revenue for

the short-line railroad, the class one railroad, and customer(s); loss of structure; and loss of rail cars or locomotive. Each of the probability and consequence factors relevant to the prioritization is ranked using a pre-established, relative scale. In addition, a weighting for each factor addresses relative importance.

A complete risk analysis requires an extensive and comprehensive study, including a detailed analysis of every bridge in the population, and would require resources not currently available. Therefore, the present study selected several focus areas of most significant influence on risk, those being identified as superstructure condition, substructure condition, load capacity, scour potential, fatigue susceptibility, and bearing condition to assess probability of failure and human factors, environmental factor, economic factor, and railroad class factor to assess consequences of failure. Associated numerical levels for each were established to be consistent with previously published studies discussed in Chapter 2 and consistent with the fidelity of available information as it corresponds to the parameter.

5.2 Probability of Failure

Probability of failure is evaluated as an accumulation of factors, including loading, resistance, condition, inspection, and exposure (GeoPave Technical Note No. 65, 2002), in addition to scour or scour potential, material, and fatigue. Loading considers AREMA design load models, both present and historical. Resistance is a function of element strength and material and is formulated on the basis of a design specification rating, if known. Condition is a result of a qualitative engineering evaluation based on a site visit and inspection. Scour is of course dependent on the presence, or potential for the presence, of flowing water below the bridge and the magnitude of potential high-flow events. Material type identifies the

superstructure as one of steel, concrete, or timber. Fatigue considers material (steel), average loading, structure age, and loading frequency. Structural parameters, $(PP)_i$, to be considered in the evaluation of probability of failure are:

- Age of bridge, *A*;
- Locomotive or car loading, *L*;
- Superstructure capacity, *C*;
- Superstructure condition, *Sp*;
- Substructure condition, *Sb*;
- Scour, *Sc*; and
- Fatigue, F.

where the structural parameters are defined in the following sections. Therefore, the probability parameter sum is defined as follows:

$$\sum_{i=1}^{n}\left[\frac{W_i(PP)_i}{N_i}\right] = \frac{W_R R}{1} + \frac{W_{Sb} Sb}{4} + \frac{W_{Sc}(K_1 K_2) Sc}{4} + \frac{W_F F}{10} \tag{5.3}$$

where *R* is the reserve defined in the following section as a function of *L*, *C*, *A*, and *Sp*.

Because the SLRR bridge prioritization is a relative measure between all structures in the Pennsylvania short-line bridge population rather than an absolute measure, the proposed scheme will identify and assign relative magnitudes for each bridge for each factor to be considered as described in each section addressing these parameters.

5.2.1 Bridge Reserve, *R*

The bridge reserve is a function of four interrelated parameters: capacity (*C*), loading (*L*),

superstructure condition (*Sp*), and age of bridge (*A*). Because these four parameters are interrelated and all influence the reserve strength of the bridge, it is necessary to define this interrelationship as it affects the probability of failure. For the purposes of this study, the bridge reserve strength is the difference between the bridge load carrying capacity, *C*, and the reported loading, *L*, which is then multiplied by the superstructure condition assessment, *Sp*, and the bridge age, *A*, factors. Superstructure condition and age both influence the reserve in that the uncertainty of the capacity minus loading is larger (probability of failure increases) as the bridge superstructure condition deteriorates and the bridge ages. The bridge reserve, *R*, is therefore defined as:

$$R = \left\{ \left[\frac{C}{L} \right] \times \left[\frac{Sp}{10} \right] \times \left[\frac{40}{A} \right] \right\} \tag{5.4}$$

where the determination of the variables *C*, *L*, *Sp*, and *A* is discussed in detail below.

5.2.1.1 Bridge Capacity, *C*

The capacity of every short-line bridge structure identified in the database is not known at the time of this report writing. However, the capacity of bridges visited as a part of this study and certain structures whose capacity has been provided by the owner/operator is known and has been included in the bridge database. For the purposes of proceeding with the prioritization of Pennsylvania SLRR bridges in the database and pilot testing the proposed methodology, the remaining bridge structures lacking an engineering capacity determination have been evaluated presumptively. This presumptive determination is the result of conclusions drawn from like structures in the database that are of similar construction, age, and known capacity. Before a final prioritization with high confidence can be completed, all bridges in the database should be associated with an engineering capacity evaluation.

5.2.1.2 Locomotive/Car Loading, *L*

Bridge loading, on the basis of equipment actually permitted to operate, is directly related to the prioritization formulation. The loading at each bridge, based either on Cooper E loads or rail car loads, is determined based on the SLRR reported maximum equipment being utilized on the railroad line. Additionally, the loading is dependent on operating speed because the dynamic effect of rolling stock is amplified at higher speeds. The operating speed, for this study, is defined as the maximum speed permitted for the class of approach track as defined in the Code of Federal Regulation (CFR) Title 49-Part 312.9. Because bridge length affects the critical load definition, the bridge and /or railroad line will either be limited by the Cooper E load or the rail car load. Cooper E loading will be reported as E80, E70, E60, etc., and is defined in Chapter 2. Alternatively, car loading is often reported by the owner/operator as the equipment limit in the form of 315,000-lb, 286,000-lb, or 263,000-lb GCW. The locomotive/car loading, *L*, must correspond directly with the capacity, *C*, with respect to load type – locomotive or car.

5.2.1.3 Bridge Rating, *(C/L)*

The ratio of capacity, *C*, to load, *L*, defines the bridge adequacy rating and as discussed above, both must be with respect to common basis. Bridge rating can be presented as either a Cooper E series load or in terms of specific equipment that corresponds to the actual equipment operated by the SLRR. The Cooper E series is normally used as the loading standard because of its historical use in design. However, the present GCW and axle configuration can, in many circumstances, produce controlling load effects, especially in bridges less than 50 ft in length. Therefore, in certain cases it is more appropriate to report bridge rating in terms of GCW rather than Cooper E series. This is consistent with many Pennsylvania SLRRs, as nearly three-fourths of the bridge ratings were provided to the research team in terms of GCW when surveyed. It is

proposed that the 286,000-lb GCW, as shown in Figure 2.2, be the standard for bridge capacity evaluation for the purposes of prioritization. Therefore, a bridge rating less than 1.00 indicates that the bridge is not adequate for the 286,000-lb GCW and a rating greater than 1.00 indicates that the bridge is adequate for the 286,000-lb GCW. When interpreting the load rating value it must be recognized that it is based on the maximum allowable operating speed permitted for the classification of track as defined in CFR Title 49-Part 312.9. Therefore, a bridge rating less than 1.00 may be able to safely carry the 286,000-lb GCW load at a reduced speed.

5.2.1.4 Superstructure Condition, *Sp*

Superstructure condition directly relates to the bridge reserve and is a critical factor in the overall objective of prioritization. The *Bridge Inspection Handbook* published by AREMA (2008b) suggests the use of a condition rating system as part of the inspection procedure; however, a specific format is not provided. Rather, it is recommended that the rating system be clearly defined and be tailored to the needs of the individual railroads. The objective of the present study is to evaluate SLRR bridge condition on a system-wide basis; therefore, a uniform condition rating system is proposed. The qualitative, numerical rating system is based on a 10-point scale, similar to that used by the NBIS for highway bridge evaluation. Overall superstructure condition is evaluated on a 10-point scale, with 10 corresponding to new or like-new construction and 1 corresponding to extremely deteriorated condition.

Table 5.1. Assigned Values of Superstructure Condition, *Sp*

Description	Extremely Deteriorated	Very Heavy Deterioration	Heavy Deterioration	Significant Deterioration	Moderate Deterioration	Very Moderate Deterioration	Slight Deterioration	Very Slight Deterioration	Recent Construction	New Construction
Assigned Value	1	2	3	4	5	6	7	8	9	10

The bridge superstructure condition of every short-line bridge structure was not known at the time of this report writing. However, the superstructure condition of bridges visited as a part of this study and a very limited number of structures whose condition was provided by the owner/operator is known and has been included in the bridge database. For the purposes of proceeding with the prioritization of Pennsylvania SLRR bridges in the database and pilot testing the proposed methodology, the remaining bridge structures lacking an engineering condition determination have been evaluated presumptively. This presumptive determination is the result of conclusions drawn from like structures in the database that are of similar construction, age, and known superstructure condition. Before a final prioritization with high confidence can be completed, all bridges in the database should be associated with an engineering superstructure condition evaluation based on a site visit.

5.2.1.5 Bridge Age, *A*

Bridge age, *A*, is also an important parameter in evaluating the relative prioritization of the bridge population in the database, in particular, the reserve, *R*. Bridge age directly influences the overall reserve capacity and the ultimate prioritization ranking as compared to other bridges, assuming a similar maintenance program over the life of the bridge. The age of bridge structures in the database ranges from 1 year to 162 years, as best as can be determined from available

information; therefore, it is recognized that a bridge constructed in the most recent 40 years is of relatively modern construction. The age, *A*, is reported in the SLRR database in terms of years.

5.2.2 Substructure Condition, S*b*

Of the many parameters involved in a risk calculation and the necessary probability evaluation under discussion here, the condition of the substructure holds the highest uncertainty. Due to the nature of substructures and the unobservable, buried elements, a visual inspection may not reveal significant information about the original construction or status of the existing substructure. Typically, original or reproduced substructure drawings are not available; therefore, any substructure condition rating can only be broadly estimated at best and must be largely presumptive. Certain aspects of deterioration may be readily observable such as abutment wall spalling or evidence of settlement; however, much of the structural assessment desired is not possible. With this background in mind, it is not justifiable to narrow the condition categories to a level of refinement similar to that of the superstructure (Table 5.1), where magnitudes of 1 through 10 are assigned values. Therefore, four categories have been identified for the assigned value of substructure condition, *Sb*, as presented in Table 5.2, which is consistent with the fidelity of the information that can be obtained.

Table 5.2. Assigned Values for Substructure Condition, *Sb*

Description	**Poor** Significant Spalling, Large Cracks	**Fair** Significant Cracks, Some Spalling	**Good** Minor Deterioration	**Excellent** Like New Condition
Assigned Value	1	2	3	4

5.2.3 Scour, *Sc*

The proposed methodology to include the probability parameter of scour recognizes that foundation design and construction, as well as current scour condition information, is very limited for short-line railroad bridges. Scour potential requires detailed, local hydrologic studies at the bridge site, normally with numerical simulations of the waterway flow and with predictions of mean recurrence intervals for flood events. The parameters that most influence scour and its influence on probability of failure are the current and observable level of scour and the presence and magnitude of water flow at the foundations. Therefore, a four-level, subjective evaluation is proposed, as presented in Table 5.3, making use of readily observable features at each bridge that directly influence scour potential. Assigned values range from "No Water and Scour not Observed" to "Scour Present."

Table 5.3. Assigned Values for Scour Condition, *Sc*

Description	Scour Probable or Present	Scour Not Observed, Large River	Scour Not Observed Small Stream	Scour Not Observed No Water
Assigned Value	1	2	3	4

Bridge failure as caused by scour is dependent on certain physical characteristics of the bridge itself. The four-level assigned values presented in Table 5.3 are proposed to be adjusted by other parameters important to scour potential: type of span (simple or continuous), type of foundation (piles, floating spread, or unknown), adequacy of water channel protection and substructure condition, and scour evaluations done in the field (Stein et al., 1999). An

adjustment to the probability of scour failure recognizes foundation influences on the probability of scour failure, given a particular flood event. The risk adjustment factors are (K_1K_2) where:

K_1 is the bridge type factor:

1.0 for simple spans

0.8 for continuous spans with lengths < 100 ft

0.67 for rigid, continuous spans with lengths > 100 ft

K_2 is the bridge foundation type factor:

1.0 for unknown foundations or spread footings on erodible soil above scour depth, pier footing visible or 0.3 to 0.6 m below streambed

0.8 for pile foundation of unknown length or when length is known and < 20 ft for all wood pile foundations

0.5 for pile foundations with lengths > 20 ft below present stream bed

0.2 for foundations on massive rock

At the time of this report writing, the above-described K_2 information was not available; however, as short-line bridge inspections are completed and the compiling of information in the database increases, a more reliable forecast of scour will be possible. It is expected that values of K_1 can be determined for the majority of bridges in the current short-line bridge database. For this reason, these adjustment factors are incorporated here; however, without exception, the magnitude of K_2 will be defaulted to 1.0 as no other value is justified at this time.

5.2.4 Fatigue, *F*

Fatigue is a cumulative effect that grows more significant with time, assuming that the structure continues to be cyclically loaded over time. Each bridge may contain one or more

fatigue-prone details with the potential to develop a fatigue crack, resulting in failure or collapse of the bridge. Fatigue detail categories are defined by AREMA (AREMA, 2008a) and listed in Table 5.4 with detail category A corresponding to the least fatigue susceptible and category F corresponding to the most fatigue susceptible. For the purposes of the present study prioritization, the most severe AREMA fatigue detail category on the bridge will be assigned to that bridge.

A complete fatigue evaluation depends on both the fatigue susceptibility of bridge details and the loading history – both magnitude and frequency, or number of cycles. If load history is not known or retrievable for any of the SLRR bridge structures, the prioritization cannot base the fatigue parameter on loading and is therefore not included.

Table 5.4. Fatigue Category and Corresponding Assigned Value.

Description	F	E'	E	D	C''	C'	C	B'	B	A
Assigned Value	1	2	3	4	5	6	7	8	9	10

$$F = \text{Assigned Value} \times \frac{A}{100} \tag{5.5}$$

where the assigned value is taken from Table 5.4 and A is the bridge age in years as defined above. The underlying principle of number of cycles is incorporated indirectly here by assuming that cycles are directly related to structure age and that the relationship is linear. A normalizing value of 100 years has been adopted due to the range of bridge ages in the population.

5.2.5 Assigned Weights for Probability of Failure

Assigned weights, or levels of importance, for each structural item that relates to probability of failure discussed above are presented in Table 5.5. The relative magnitudes of the weighting factors are fundamentally policy decisions to be made by the Department; however, the weighting shown below reflects the results of the literature review for the present study.

Table 5.5. Weighting Factors for Probability Parameters

Reserve, W_R	Sub-structure Condition, W_{Sb}	Scour, W_{Sc}	Fatigue, W_F	Total
45%	30%	20%	5%	100%

Bridge risk values, or relative probability of failure, as defined here, are computed on a relative basis using a weighted calculation of the assigned values between 0% and 100%.

5.3 Consequence of Failure

The failure of any bridge may have significant consequences, ranging from loss of life to the disruption of freight traffic to the costs associated with environmental clean-up to repair or reconstruct the structure. In order to quantify consequences of bridge failure for the proposed risk-based prioritization, focus areas of significant influence must be identified. GeoPave Technical Note No. 65 (2002) addresses consequences of failure as a combination of separate factors: human factor, *HF*, environmental factor, *EF*, traffic access factor, *TF*, economic factor, *NF*, and road class, *RF*. *HF* incorporates the impact of failure on human safety as a result of the failure of the structure. *EF* incorporates the effect of a structural failure on the local environment. This may involve an evaluation of hazardous material transport over the structure,

urban or rural setting, and/or the presence of a sensitive environment or waterway in the vicinity. *NF* provides a measure of the potential economic loss, determined as the cost of not expending any resources as compared to the cost of the remedy. It is suggested that, due to the highly subjective nature of economic considerations, the structure replacement value be used because this cost is more objective and calculable. The determination of consequence is fundamentally based on economics or the expected value of the loss. This includes the cost to replace the bridge, the cost to maintain traffic flow without the bridge, and the value of time lost utilizing alternate routes. The proposed consequence parameters, $(CP)_i$, to be considered in the evaluation and prioritization for Pennsylvania SLRR bridges are:

- Human, *Hu*;
- Environmental, *En*;
- Economic, *Ec*; and
- Railroad Classification, *Rc*;

where the structural parameters are defined and discussed in the following sections. Therefore, the consequence parameter sum is defined as follows:

$$\sum_{i=1}^{n}\left[\frac{W_i(CP)_i}{N_i}\right]=\frac{W_{Hu}(Hu)}{10}+\frac{W_{En}(En)}{10}+\frac{W_{Ec}(Ec)}{1}+\frac{W_{Rc}(Rc)}{1.2} \tag{5.6}$$

5.3.1 Human, *Hu*

The consequence of a failure on human safety is addressed by the human parameter, *Hu*. It is extremely difficult to assign an appropriate *Hu* with confidence because there are many contributing issues that depend on information that is either not known or is known with little confidence. However, because the prioritization of bridges is a relative comparison, the absolute

value of human safety consequence is not needed. The question to be addressed through *Hu* is a comparison between potential consequence scenarios that might be presented at any given bridge. *Hu* is investigated by considering the immediate and direct effect of bridge collapse and the secondary or indirect effect of bridge collapse on human safety.

The immediate consequence of a failure on human safety accounts for the safety of individuals on board the train as well as individuals within close proximity to the bridge at collapse. Because the present study examines freight SLRRs, it is expected that the only individuals on board are train personnel. Additionally, it is assumed that all trains have the same crew size and that any bridge failure would affect their safety equally. This component of the human factor then becomes a constant and has no relative influence, and thus does not need to be considered. However, the safety of individuals that may potentially be in close proximity to the bridge, such as pedestrians and traffic under the bridge, must be considered. The proposed approach to quantifying the human consequence of individuals in proximity to a bridge is based on highway classification. A five-level scale is proposed, as presented in Table 5.6, consisting of a numerical value assigned to each bridge on the basis of highway or railroad classification passing under an SLRR bridge. The magnitude for each classification is based on proportions of individuals in the vicinity at an arbitrary point in time based on the average daily traffic, number of lanes, and/or likelihood of pedestrians present. *Hu* values provided in Table 5.6 are applicable to all SLRR bridges. A bridge that does not cross over a roadway is categorized as “Other” and receives an assigned value of 1 to represent collateral human safety consequence.

Table 5.6. Assigned Values for Human Consequence Parameter, *Hu*

Description	Principal Arterial	Minor Arterial / Passenger Railroad	Collector Road / Class I Railroad	Local Road / SLRR	Private Road / Other
Assigned Value	10	8	6	3	1

The secondary, or indirect, effect of bridge failure on human safety would account for the potential human consequences associated with a train incident and exposure to transported contents. These effects are highly dependent on the hazard level and type of commodity transported and the potential magnitude of human exposure if a bridge failure occurred. A rational quantification of the potential relative human consequence from this secondary effect requires knowledge of shipped commodity hazards, shipped commodity quantity in any given shipment, frequency of shipping, and population density within some critical radius of the structure. This information is not known for any of the Pennsylvania SLRRs at present; therefore, it is assumed that the consequence for all bridges is the same.

5.3.2 Environmental, *En*

Bridge failure can result in negative, permanent consequences on the environment. Similar to *Hu*, discussed in the previous section, it is not possible to predict environmental consequence with high certainty. Based on the available information for Pennsylvania SLRR bridges, the factor that most influences the environmental consequence potential is the nature of the bridge crossing – bridges crossing large bodies of water hold the greatest potential for negative environmental outcomes and bridges crossing a dry land mass hold a very low potential. A five-

level scale is proposed, as presented in Table 5.7, consisting of a numerical value assigned to each bridge on the basis of water features passing under an SLRR bridge. The magnitude for each value is based on a qualitative review and is assumed to represent the gross environmental impact of bridge failure over that feature.

Table 5.7. Assigned Values for Environmental, *En*

Description	Major River	Minor River	Creek	Run	Normally Dry / Other
Assigned Value	10	8	6	3	1

Values of *En* presented in Table 5.7 are applicable to all SLRR bridges. A bridge that does not cross over a watercourse is categorized as "Other" and receives a value of 1 to represent the potential collateral environmental consequence.

5.3.3 Economic, *Ec*

The previously discussed consequence parameters have been identified as highly uncertain. The economic, *Ec*, factor differs in that, while it is variable, the failure of an in-service SLRR bridge will have relatively clear economic consequences. *Ec* represents the cost of bridge failure on not only the bridge owner and operating railroad, but also the customers and consumers served. *Ec* can also include direct and indirect costs to other private, local, and state agencies.

Economic consequences associated with bridge failure include loss of exiting bridge value, loss of equipment and freight value, cost associated with alternate freight transportation mode,

cost of cleanup, cost of reconstruction, legal costs, and loss of revenue opportunity. These costs could be further refined to identify the effect each has on all parties involved; however, the quality and completeness of existing data does not facilitate a focused economic analysis. Instead, it is recognized that a relationship exists between the above-listed costs, a function of bridge length, *Lb*, and annual gross freight tonnage, *Tgf*. Therefore, *Ec* is defined as:

$$Ec = \frac{W_{Lb}(Lb)}{500} + \frac{W_{Tgf}(Tgf)}{5} \tag{5.7}$$

where *Lb* and *Tgf* are a function of bridge length and gross freight tonnage, respectively. These parameters are defined and discussed below. The weight factors, W_{Lb} and W_{Tgf}, are defined in Table 5.8.

Table 5.8. Weighting Factors for *Lb* and *Tgf*

Length Function, W_{Lb}	Gross Freight Tonnage, W_{Tgf}	Total
75%	25%	100%

5.3.3.1 Length, *Lb*

Ec is a function of *Lb* based on the understanding that the consequences of a long bridge failing are more substantial that of a short bridge failing. The proposed, general relationship between *Lb* and total bridge length is presented in equation 5.8:

$$Lb = \sqrt{\frac{L_T^2}{n_s}} \leq 500 \tag{5.8}$$

where L_T is the total bridge length (feet) and n_s is the number of spans contained in the bridge. Equation 5.8 was developed to account for the range of span lengths and construction types in long, multi-span, multi-superstructure type bridges. Total bridge length, independent of other factors, is not a complete measure of economic consequence because, for example, the cost consequences associated with a single-span, 300-ft-long bridge are much different than the cost consequences associated with a six-span, simple supported, 300-ft-long bridge. *Lb*, as a function of both L_T and n_s, is a self-normalizing parameter; however, if L_T is divided by n_s, a uniform span length is assumed. Many multi-span bridges in the SLRR population are comprised of spans of different lengths and are also comprised of multiple superstructure types. A common SLRR bridge configuration is multiple, short, plate girder approach spans leading to a long, central truss span. Because individual span configuration is not known for many SLRR bridges, *Lb* as a function of total length and number of spans is the most accurate possible. It is apparent that a non-linear relationship exists between L_T and n_s when examining correlation to economic consequence. Limited replacement SLRR bridge cost data from Laman et al. (2001) were examined as a function of length and number of spans. There is a satisfactory correlation between replacement cost and *Lb* when *Lb* is defined by Equation 5.8 that is a function of the square root. Additionally, an upper bound value of 500 is placed on Equation 5.8 to prevent unrealistic *Lb* values from non-typical structures.

5.3.3.2 Gross Freight Tonnage, *Tgf*

The gross tonnage factor, *Tgf*, is included to account for the proportional increase in economic consequence anticipated due to the loss of a bridge supporting higher total commodity quantity and therefore, revenue defined by:

$$Tgf = MGT \leq 5 \tag{5.9}$$

where *MGT* is the annual millions of gross tons of freight transported over the bridge. A limiting value of 5 *MGT* has been established to prevent high-tonnage bridges from completely dominating all other parameters and bridges. Also, neither unit weight nor value per unit weight is constant for all commodities, and a good correlation between tonnage, volume, and value does not exist. It is assumed that no single SLRR exclusively transports bulky, lightweight commodities and that they typically "weigh out" before they "box out." Therefore, *Tgf* provides a basis for a relative bridge comparison.

5.3.4 Railroad Classification, *Rc*

Railroad classification, *Rc*, quantifies consequence as an indication of freight transportation efficiency – the higher the efficiency of an SLRR, the greater the consequence of a loss. The maximum operating speed limit, shown in parenthesis in Table 5.9, is determined by the class of track; therefore, a higher-class track operating at a higher speed results in more efficient movement of freight. The class of track is defined by the Code of Federal Regulation (CFR) Title 49-Part 312.9 and the respective assigned values are given in Table 5.9.

Table 5.9. Assigned Values for Railroad Classification, *Rc*

Description	Class 3 Track (40mph)	Class 2 Track (25 mph)	Class 1 Track (10 mph)
Assigned Value	1.2	1.1	1

The assigned values for the respective track classification were chosen based on engineering judgment. The magnitudes of the values were selected in order to recognize SLRRs that have the ability to operate at higher efficiency while understanding that many SLRRs do not need to operate above class 1 and, therefore, should not be unduly penalized.

5.3.5 Assigned Weights for Consequence of Failure

Assigned weights, or levels of importance, for each consequence parameter that relates to consequence of failure discussed above, are presented in Table 5.10. The relative magnitudes of the weighting factors are fundamentally policy decisions to be made by the Department; however, the weighting shown in Table 5.10 reflects the results of the literature review for the present study.

Table 5.10, Weighting Factors for Consequence Parameters

Human, W_{Hu}	Environmental, W_{En}	Economic, W_{Ec}	Railroad Class, W_{Rc}	Total
15%	15%	60%	10%	100%

Bridge risk values, or relative probability of failure as defined here, are computed on a relative basis using a weighted calculation of the assigned values between 0% and 100%.

5.4 Concluding Remarks

The primary objective of this study was to develop a rational methodology to prioritize Pennsylvania SLRR bridges in order to best allocate resources for maintenance, rehabilitation,

and replacement. A risk-based, modular framework is proposed where each influence, or parameter, is formulated as a separate, revisable module that can be easily updated or changed. The proposed framework is not intended to act as a stand-alone bridge management system. Rather, the intent is to provide a decision support system, leaving room for engineering judgment, for bridge managers to use as a tool when making difficult administrative decisions. Consideration was given to the current Pennsylvania SLRR bridge database during the development of the individual modules, and some assumptions were made to account for the significant fraction of unknown bridge information across all categories. It is expected that SLRRs will provide information in the future in order to expand and increase the fidelity of the information within the current database and therefore improve the reliability and level of confidence provided by the proposed framework. Additionally, the modular design facilitates future refinement of the framework if warranted by the improved fidelity of bridge data.

5.5 Sample Risk Evaluation

This evaluation demonstrates the implementation of the proposed risk score framework for a bridge visited as part of the field condition assessment. The bridge used for this example is located on the Delaware-Lackawanna Railroad at mile post (MP) 5.70. A summary of information from the field visit can be found in Figure 3.21 and Table 3.24. All relevant information for the proposed methodology is including in Tables 5.11 and 5.12.

5.5.1 Probability of Failure Calculation

Table 5.11 Values for Probability of Failure

Description	Value	Defined By
Bridge Rating, *C/L*	1.01	Structure evaluation (based on 286k GCW)
Superstructure Condition, *Sp*	5	Table 5.1
Substructure Condition, *Sb*	2	Table 5.2
Scour, *Sc*	2	Table 5.3
Fatigue Category Value	4	Table 5.4
Build Year	1904	Provided by SLRR

$$A = (\text{Current year - Build year}) = 2010 - 1904 = 106 \text{ years}$$

from equation 5.4:

$$R = \left[\left(\frac{C}{L}\right)\times\left(\frac{Sp}{10}\right)\times\left(\frac{40}{A}\right)\right] = \left[1.01\times\left(\frac{5}{10}\right)\times\left(\frac{40}{106}\right)\right] = 0.191$$

from equation 5.5:

$$F = \text{Assigned Value}\times\left(\frac{A}{100}\right) = 4\times\left(\frac{106}{100}\right) = 4.24$$

from equation 5.2 and 5.3 using weighting factors from Table 5.5:

$$\textbf{Probability of Failure} = 1 - \sum_{i=1}^{n}\left[\frac{W_i (PP)_i}{N_i}\right] = 1 - \left[\frac{W_R R}{1} + \frac{W_{Sb} Sb}{4} + \frac{W_{Sc}(K_1 K_2) Sc}{4} + \frac{W_F F}{10}\right]$$

$$= 1 - \left[\frac{0.45 \times 0.191}{1} + \frac{0.30 \times 2}{4} + \frac{0.20 \times (1.0 \times 1.0) \times 2}{4} + \frac{0.05 \times 4.24}{10}\right] = \mathbf{0.643}$$

5.5.2 Consequence of Failure Calculation

Table 5.12 Values for Consequence of Failure

Description	Value	Defined By
Human, *Hu*	1	Table 5.6
Environmental, *En*	8	Table 5.7
Railroad Class, *Rc*	1	Table 5.9
Total Bridge Length, L_T (ft)	168	Field Measurement
Number of Spans, n_s	1	Field Observation
MGT	0.05	Provided by SLRR

from equation 5.8:

$$Lb = \sqrt{\frac{L_T^2}{n_s}} = \sqrt{\frac{(168\,ft)^2}{1}} = 168 \le ?\, 500 \quad \text{OK, use } 168$$

from equation 5.9:

$$Tgf = MGT = 0.05 \le ?\, 5 \quad \text{OK, use } 0.05$$

from equation 5.7 using weight factors from Table 5.8:

$$Ec = \frac{W_{Lb}(Lb)}{500} + \frac{W_{Tgf}(Tgf)}{5} = \frac{0.75 \times 168}{500} + \frac{0.25 \times 0.05}{5} = 0.255$$

from equation 5.6 using weighting factors from Table 5.10:

$$\textbf{Consequence of Failure} = \sum_{i=1}^{n}\left[\frac{W_i(CP)_i}{N_i}\right] = \frac{W_{Hu}(Hu)}{10} + \frac{W_{En}(En)}{10} + \frac{W_{Ec}(Ec)}{1} + \frac{W_{Rc}(Rc)}{1.2}$$

$$= \frac{0.15 \times 1}{10} + \frac{0.15 \times 8}{10} + \frac{0.60 \times 0.255}{1} + \frac{0.10 \times 1}{1.2} = \mathbf{0.371}$$

5.5.3 Risk Calculation

from equation 5.1:

Risk = Probability × Consequence = 0.643 x 0.371 = **0.24**

The preceding sections demonstrate how to execute the proposed risk-based ranking methodology. The user must remember that the calculated values are not an absolute measure of probability of failure, consequence of failure, or overall risk score. The values only provide a relative measure and must only be considered in the context of relative comparison with other Pennsylvania SLRR bridges.

Chapter 6: Summary and Conclusions

6.1 Summary

The present study has been conducted by the Larson Institute at Penn State for the Pennsylvania Department of Transportation, Bureau of Rail Freight, Ports, and Waterways. Current levels of available resources to maintain and preserve the Pennsylvania SLRR bridge infrastructure require that important priority decisions be made on an annual basis. The compartmentalized, dispersed, and diverse nature of Pennsylvania SLRR owners and operators is such that there is a need for a coordinated and centralized effort to evaluate the Pennsylvania SLRR system as a whole to ensure the most effective overall resource allocation. The primary objective of the study was to evaluate Pennsylvania short-line railroad bridges through a sampling technique in order to develop a bridge prioritization algorithm. The algorithm, which can be used as a tool for PennDOT in making more effective maintenance and preservation resource allocation decisions, provides a relative ranking of all bridges in the population based on established risk-based criteria.

A literature review was conducted at the beginning of the study to establish the state of the art for a number of issues related to the study, including current thinking with regard to bridge population management, bridge condition assessment and prediction, asset management systems, risk management and prioritization, and sampling procedures. Major project decisions resulting from the literature review include using Microsoft Access for bridge data management and using a weighted, stratified random sampling technique to establish a representative bridge sample for field evaluation. Additionally, the emerging theme: risk = probability of failure × consequence of failure, forms the underlying principle for SLRR bridge prioritization.

A statewide bridge survey of SLRR owners and operators followed in order to establish a bridge population inventory database with the most complete information available. The survey effort resulted in a population database containing 1,184 bridges. The completeness of bridge information across SLRRs varies considerably; therefore, in order to generate the weighted, stratified random bridge sample, the population was filtered to include only bridges with at least known bridge type and bridge length, which resulted in a population of 994 bridges. A 30-bridge sample was then generated and subsequently visited by the research team to perform a field condition assessment.

Results from the field evaluation for the 30 sample bridges, including general bridge inventory data, site and structure condition, as well as engineered load rating evaluation were entered into the database. The research team used this high-confidence sample data in addition to other existing bridge data to extrapolate or presumptively establish parameter values in order to populate database cells of unknown data for the remaining bridge population. Once parameter values were assigned to the entire bridge population, the proposed prioritization algorithm could be executed.

A risk-based prioritization algorithm was proposed to assign a relative risk score to each bridge in the population. The bridges were then ranked according to their score. The risk score was the product of the probability of failure and consequence of failure. Both probability and consequence are quantified by the summation of weighted parameters, which are determined from information within the database. Weight factors consistent with literature were proposed and assigned by the research team for each of the parameters. The algorithm is a modular framework wherein each parameter is formulated as a separate, revisable module that can be easily updated or changed by the user.

6.2 Conclusions

Pennsylvania SLRR bridge prioritization results are presented as a ranked list in Appendix F and Appendix G. The ranked risk scores for the bridges in Appendix F were calculated with known parameters only – no extrapolated or presumptive values were used. The majority of bridges in this prioritization have empty data cells and therefore no risk score was calculated. This prioritization demonstrates the implication of lack of completeness of high-confidence information within the current database. A need exists to obtain additional, high-confidence information for SLRR bridges in order to update and populate the database with reliable data. It is expected that SLRRs will provide information in the future in order to expand and increase the fidelity of the information within the current database and therefore improve the level of confidence provided by the proposed framework.

Appendix G contains ranked risk scores for all SLRR bridges in the database with risk scores based on known and extrapolated/approximated parameter values. The research team applied rational methods to determine data. The intent of Appendix G is to provide PennDOT with a best available, highest possible confidence prioritization of all SLRR bridges in the Pennsylvania population.

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Appendix A

SLRR Owner/Operator Contacts and Bridge Survey Summary

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
AORR Aliquippa & Ohio River Railroad **Genesse & Wyoming Industries**	SEE: GW				
ASR Allegheny Southern Railroad, Inc.	Mr. Charles Erickson 7246760565			Blairsville, PA	
AVR Allegheny Valley Railroad Company	Mr. Russell A. Peterson 4124266600	Leon (Sandy) Perkins 4124264400 SandyPerkins@carloadexpres	Wayne Duffett TEC Associates 2077676068 wayne@tecassoc.com	Oakmont, PA	www.carloadexpress.com
BLRV Belvidere & Lehigh River Railway Co.	Mr. Kean Burenga 9087821611			Ringoes, NJ	
BLE Bessemer & Lake Erie Railroad Company	Mr. Tracy Miller 2487406002			Troy, MI	

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
BPRR Buffalo & Pittsburgh Railroad, Inc. **Genesse & Wyoming Industries**	Mr. Dave Baer 8149381519 dbaer@gwrr.com		Wayne Duffett TEC Associates 2077676068 wayne@tecassoc.com	Punxsutawney, PA	
[CD] Can Do, Inc.	Mr. Kevin O'Donnell 5704551508			Hazleton, PA	http://www.hazletoncando.com/
CHR Chestnut Ridge Railway Company	Mr. Tom Johnston 7247732239			Monaca, PA	
CM Cumberland Mine Railroad	Mr. John Bristor 7246277084			Waynesburg, PA	
DL Delaware Lackawanna RR Company Inc. **Pennsylvania Northeast Regional Railroad Authority**	Mr. David Monte Verde 5853432973 dmvgvt@earthlink.net	Lorie Ransom 5703434580 dl_yard@icontech.com	Jeff Marshall marshalljk@aol.com	Batavia, NY	http://www.gvtrail.com/

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
EEC East Erie Commercial Railroad					
	Mr. Doug Roberts 8148752393			Erie, PA	
EPRR East Penn Railroad, LLC					
	Mr. Robert Parker 6109250131 bparker@regional-rail.com		Wayne Duffett TEC Associates 2077676068 wayne@tecassoc.com	Kennett Square, PA	
EV Everett Railroad Company					
	Mr. Alan Maples 3016709305			Gaithersburg, PA	http://www.everettrailroad.com/intro.html
[GW] Genesses & Wyoming Railroad **Genesse & Wyoming Industries**					
	Mr. Dave Collins 5854633304		Wayne Duffett TEC Associates 2077676068 wayne@tecassoc.com	Rochester, NY	
GET Gettysburg and Northern Railroad Co.					
	Mr. Jacon Lehman 7173341597			Gettysburg, PA	http://www.pioneer-railcorp.com/Subsidiaries/GET/get.html

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
HRS Hollidaysburg & Roaring Spring Railroad					
	Mr. Alan Maples 3016709305			Duncannsville, PA	http://www.everettrailroad.com/intro.html
JTFS Juniata Terminal Company					
	Mr. Bennett Levin 2156347911			Washington's Crossing	
JVRR Juniata Valley Railroad Company **Seda Cog Joint Rail Authority**					
	Mr. Pete Simcox 5703271988 psimcox@nshr.com			Northumberland, PA	http://www.nshr.com/
KRL KASGRO Rail Corp					
	Mr. Joseph S. Crawford 7246589061			New Castle, PA	
KJR Kiski Junction Railroad					
	Mr. Charles E. Bowyer 7242955577			New Castle, PA	http://www.kiskijunction.com/

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
KKRR Knox & Kane Railroad Company					
	NOT IN SERVICE			Marienville, PA	
LNTV Landisville Railroad, LLC					
	Mr. Mike Kennedy 7179208722	Robert R. Long 7174435870		Landisville, PA	http://landisvillerailroad.com/
LBCX Lewisburg & Buffalo Creek Railroad					
	SEE: UCIR			Lewisburg, PA	
LS Luzerne & Susquehanna Railway Corporation **Luzerne County Rail Corporation(Authority)**					
	Mr. Steve May 6076876883			Owego, NY	http://lsry.net/
[LUCR Luzerne County Rail Corporation(Authority)					
	Mr. H. Allen Bellas 5706553329			West Pittston, PA	

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
LVRB LVRB/Bethlehem **Lehigh Valley Rail Management, LLC**	Mr. J. Michael Zaia 6106945930			Bethlehem, PA	http://www.bethintermodal.com/latestnews.shtml
LVRC LVRC/Cambria & Indiana **Lehigh Valley Rail Management, LLC**	Mr. J. Michael Zaia 6106945930			Bethlehem, PA	http://www.bethintermodal.com/latestnews.shtml
LVRJ LVRJ/Johnstown **Lehigh Valley Rail Management, LLC**	Mr. J. Michael Zaia 6106945930			Bethlehem, PA	http://www.bethintermodal.com/latestnews.shtml
LVRR Lycoming Valley Railroad Company **Seda Cog Joint Rail Authority**	Mr. Pete Simcox 5703271988 psimcox@nshr.com			Northumberland, PA	http://www.nshr.com/
MMID Maryland Midland Railway **Genesse & Wyoming Industries**	Mr. Dave Bordner 4107757718			Union Bridge, MD	http://www.gwrr.com/operations/railroads/north_america/mar

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
MKC Mckeesport Connecting Railroad					
	Mr. John Pranaitis 4124334640	Larry Diersen		Monroeville, PA	
MCLR Mclaughlin Line Railroad					
	Ms. Sheila Martin 7246974956			Apollo, PA	
MIDH Middletown & Hummelstown Railroad Company					
	Mr. John Pullman 7179444435			Middletown, PA	http://www.mhrailroad.com/
MSUB Mittal Steel USA Railways, Inc (BVRY) **Arcelor Mittal Plate, LLC.**					
	Mr. Brian K. McComsey 6103832669 brian.mccomsey@arcelor	John Hayes 6103833327 jonathan.hayes@arcelormittal		Coatesville, PA	
MSUS Mittal Steel USA Railways, Inc (SH) **Arcelor Mittal Plate, LLC.**					
	Mr. Jesse Hartman 7179862586	Charles W Good 7179862880 charles.good@arcelormittal.c	Quentin Rissler Rettrew Associates 7173943721 grissler@rettew.com	Steelton, PA	

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
MSUU Mittal Steel USA Railways, Inc (UPM) Arcelor Mittal Plate, LLC.	Mr. Brian K. McComsey 6103832669 brian.mccomsey@arcelor	John Hayes 6103833327 jonathan.hayes@arcelormittal		Coatesville, PA	
[MC] Morrisons Cove Railroad Co.	SEE: EV 8147932137			Martinsburg, PA	
MTC Mount Union Connecting R.R. Co.	Mr. Allen J. Levin 7172473577			Lewiston, PA	
NDCR N.D.C. Railroad Company	Mr. Mike Horwith 6102612220			Northhampton, PA	
NCIR New Castle Industrial Railroad	Mr. Dale K. Berkley 7246544449			New Castle, PA	

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
NHRR New Hope & Ivyland Railroad					
	Mr. Paul Nichini 2158625240			New Hope, PA	http://www.newhoperailroad.com/
NYSW New York, Susquehanna & Western Railroad					
	Mr. Richard Hensel 6075472555			Cooperstown, NY	http://www.nysw.com/
NBER Nittany & Bald Eagle Railroad Company **Seda Cog Joint Rail Authority**					
	Mr. Pete Simcox 5703271988 psimcox@nshr.com			Northumberland, PA	http://www.nshr.com/
NSHR North Shore Railroad **Seda Cog Joint Rail Authority**					
	Mr. Pete Simcox 5703271988 psimcox@nshr.com			Northumberland, PA	http://www.nshr.com/
Ohio & Pennsylvania RR **Genesse & Wyoming Industries**					
	SEE: GW				

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
OCTL Oil Creek and Titusville Lines, Inc.	Mr. R. O. Dingman, Jr. 7165325242	Steve Patterson 7165329128 spatterson@nylerr.com		Gowanda, NY	
PSCC Pennsylvania & Southern Railway, LLC	Mr. Eyal Shapira 6172430137				
PSWR Pennsylvania Southwestern Railroad, Inc.	Mr. John Snow 7247732627			Midland, PA	
[PBL] Philadelphia Belt Line Railroad Company	Mr. James T. Turcich 2155927775			Philadelphia, PA	
POHC Pittsburgh & Ohio Central Railroad. **Genesse & Wyoming Industries**	SEE: GW				

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
PAM Pittsburgh, Allegheny & Mckees Rocks Railroad Co.					
	Mr. Roger L. Duerksen 4123316200	Jim Lind 4125512398		McKees Rocks, PA	
RJCN R.J. Corman Railroad Company/Allentown Lines, Inc.					
	Mr. Brian Szczepanski 6104395048 bsszczpanski@rjcorman.c			Allentown, PA	http://www.rjcorman.com/allentown.htm
RJCP R.J. Corman Railroad Company/PA Lines, Inc.					
	Mr. Timonthy Potts 8147687555 txpotts@rjcorman.com			Clearfield, PA	http://www.rjcorman.com/pennsylvania.htm
RBMN Reading Blue Mountain and Northern Railroad Compan					
	Mr. Wesley Westenhoefer 6105620352 wwestenhoefer@readingno			Port Clinton, PA	
[SEDA] Seda Cog Joint Rail Authority **Seda Cog Joint Rail Authority**					
	Mr. Jeff Stover 5705244491	George Fury gfury@seda-cog.org		Lewisburg, PA	http://www.sedacograil.org/jra/site/default.asp

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
SVRR Shamokin Valley Railroad Company **Seda Cog Joint Rail Authority**	Mr. Pete Simcox 5703271988 psimcox@nshr.com			Northumberland, PA	http://www.nshr.com/
SLRS SMS/Penn Jersey Rail Lines, Inc.	Mr. Jeffrey L. Sutch 8564674800			Bridgeport, PA	
SEPTA Southeastern Pennsylvania Transportation Authority	Mr. Joseph Brattelli 2155808400			Philadelphia, PA	
SWP Southwestern Pennsylvania Railroad Company	Mr. Russell A. Peterson 4124264400	Leon (Sandy) Perkins 4124264400 SandyPerkins@carloadexpres	Wayne Duffet TEC Associates 2077676068 wayne@tecassoc.com	Oakmont, PA	www.carloadexpress.com
STRT Stewartstown Railroad Company	Mr. Eric Bickleman 3018481707			Stewartstown, PA	http://www.stewartstownrailroad.com/

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
SBR Stourbridge Railway, Inc **Morristown & Erie Railway, Inc.**	Mr. Alvin R. Siebold 5702517770 asiebold@merail.com			Honesdale, PA	
SRC Strasburg Railroad Company	Mr. Linn Moedinger 7176877522			Strasburg, PA	http://www.strasburgrailroad.com/
TMSS Towanda-Monroeton Shippers Lifeline, Inc. **Shaffers Feed Service, Inc.**	Mr. Joseph T. Zadrusky 5703425894	Mr. Joseph T. Zadrusky		Monroeton, PA	http://www.geocities.com/chrischamberlain1/TMSL.html
TCKR Turtle Creek Industrial Railroad Co.	Mr. Wayne Norris 7243270280 wnorris@dura-bond.com			Export, PA	http://www.dura-bond.com/railroad.html
TYBR Tyburn Railroad Co.	Mr. Gerald McHugh 2154289290			Morrisville, PA	

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
UCIR Union County Industrial Railroad					
	Mr. Pete Simcox 5703271988 psimcox@nshr.com		Uni-Tec Consulting	Northumberland, PA	http://www.nshr.com/
URR Union Railroad Company					
	Mr. John Pranaitis 4124334640	Larry Diersen 4124337317 ldiersen@uss.com		Pittsburgh, PA	http://www.tstarinc.com/union/index.html
WCOR Wellsboro & Corning Railroad Company					
	Mr. Alfred Myles 6104580600			Exton, PA	http://www.mylesgroup.net/
WCRL West Chester Railroad Co.					
	Mr. Joseph Giacchino 3023231660				
[WES] West Erie Shortline, Inc.					
	Mr. Gerald Lauer 8147455394 glauer@eriepress.com			Erie, PA	

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
[WSRC West Shore Railroad Corp.					
	Mr. Robert Yawnaccone 5705684244			Lewisburg, PA	
WNYP Western New York & Pennsylvania Railroad					
	Mr. Carl Belke 9086257776 cbelke@embarqmail.com			Olean, NY	http://www.wnyprr.com/
WE Wheeling & Lake Erie Railroad					
	Mr. Kasey S. O'Connor 3307677279 koconnor@wlerwy.com	Rod Krotky 3307677212		Brewster, OH	http://www.wlerwy.com/
WDRR White Deer & Reading Railroad					
	Mr. Richard Robey 5704737979				
[YC] York County Rail Trail Authority					
	Mr. Tim Fulton 7178522387			York, PA	

SLRR Contacts

Short-line Railroad (SLRR) (Non-Operating Owner/Parent Co if applicable)	Primary Contact	Secondary Contact	Bridge Engineer	SLRR Location	Web Page
YRC York Railway Co. **Genesse & Wyoming Industries**	Mr. Andrew T. Chunko 7177711726	2077676068	Wayne Duffet 2077676068	York, PA	http://www.gwrr.com/operations/railroads/north_america/york
YSE Youngstown & Southeastern Railroad	Mr. Bud Gaines 3304823981	Chris Jacobs 3044912725 jacobsc4@asme.org		Columbiana, OH	

SLRR Owner/Operator Bridge Survey Summary

SLRR	Reporting Mark	Bridges in Database	Notes
Aliquippa & Ohio River Railroad	AORR	0	bought by G&W in 2008
Allegheny Southern Railroad, Inc.	ASR	0	Did not respond to survey
Allegheny Valley Railroad Company	AVR	88	7 bridges lacked complete info
Belvidere & Lehigh River Railway Co.	BLRV	0	Did not respond to survey
Bessemer & Lake Erie Railroad Company	BLE	0	Did not respond to survey
Buffalo & Pittsburgh Railroad, Inc.	BPRR	291	All G&W bridges are under BPRR (except York Railway)
Can Do, Inc.	[CD]	0	NO BRIDGES, non-operator
Chestnut Ridge Railway Company	CHR	0	Did not respond to survey
Cumberland Mine Railroad	CM	0	Did not respond to survey (isolated railroad)
Delaware Lackawanna RR Company Inc.	DL	37	PNRRA is non-oper owner
East Erie Commercial Railroad	EEC	0	Track used to test locos, no freight. Bridge info not part of DB
East Penn Railroad, LLC	EPRR	83	bridges listed are confirmed in PA
Everett Railroad Company	EV	0	declined to participate in study
Genesses & Wyoming Railroad	[GW]	0	See Buffalo & Pittsburgh / York Railway Co.
Gettysburg and Northern Railroad Co.	GET	0	Did not respond to survey
Hollidaysburg & Roaring Spring Railroad	HRS	0	part of Everett RR, declined to participate in study
Juniata Terminal Company	JTFS	0	switching and storage facility, no bridges
Juniata Valley Railroad Company	JVRR	8	master bridge list proved by email
KASGRO Rail Corp	KRL	0	NO BRIDGES
Kiski Junction Railroad	KJR	0	1 bridge per phone conversation, but did not respond to survey
Knox & Kane Railroad Company	KKRR	0	NOT IN SERVICE
Landisville Railroad, LLC	LNTV	0	NO BRIDGES

SLRR Owner/Operator Bridge Survey Summary

SLRR	Reporting Mark	Bridges in Database	Notes
Lewisburg & Buffalo Creek Railroad	LBCX	0	non-oper owner of UCIR, not sure of current status
Luzerne & Susquehanna Railway Corporation	LS	0	Bridges are responsibility of Luz. Co. Rail Auth.
Luzerne County Rail Corporation(Authority)	[LUCRA]	0	First survey response was incomplete, did not respond to 2nd request
LVRB/Bethlehem	LVRB	0	Did not respond: formerly Phila, Bethlehem, & New England RR
LVRC/Cambria & Indiana	LVRC	0	Did not respond
LVRJ/Johnstown	LVRJ	0	Did not respond: formerly Conemaugh & Black Lick RR
Lycoming Valley Railroad Company	LVRR	26	master bridge list proved by email
Maryland Midland Railway	MMID	0	bought by G&W in 2007, only .4mi in PA
Mckeesport Connecting Railroad	MKC	0	NO BRIDGES
Mclaughlin Line Railroad	MCLR	0	NOT IN SERVICE
Middletown & Hummelstown Railroad Company	MIDH	0	Did not respond to survey: freight and tourist (at least one bridge)
Mittal Steel USA Railways, Inc (BVRY)	MSUB	3	formerly ISG Railway, BVRY
Mittal Steel USA Railways, Inc (SH)	MSUS	1	formerly ISG Railway, Steelton Highspire
Mittal Steel USA Railways, Inc (UPM)	MSUU	1	formerly ISG Railway, UMP
Morrisons Cove Railroad Co.	[MC]	0	Operated by Everett RR. Ph# is to feed mill.
Mount Union Connecting R.R. Co.	MTC	1	no service in 2008. Scheduled to resume operation in 2009.
N.D.C. Railroad Company	NDCR	0	NO BRIDGES
New Castle Industrial Railroad	NCIR	0	Did not respond to survey
New Hope & Ivyland Railroad	NHRR	0	Did not respond to survey: primarily excursion train
New York, Susquehanna & Western Railroad	NYSW	22	bridges listed are confirmed in PA
Nittany & Bald Eagle Railroad Company	NBER	56	master bridge list proved by email
North Shore Railroad	NSHR	12	master bridge list proved by email

SLRR Owner/Operator Bridge Survey Summary

SLRR	Reporting Mark	Bridges in Database	Notes
Ohio & Pennsylvania RR		0	bought by G&W in 2008
Oil Creek and Titusville Lines, Inc.	OCTL	0	Did not respond to survey
Pennsylvania & Southern Railway, LLC	PSCC	0	NO BRIDGES
Pennsylvania Southwestern Railroad, Inc.	PSWR	0	NO BRIDGES per phone conversation
Philadelphia Belt Line Railroad Company	[PBL]	0	track leased to Conrail. 1 bridge-responsibility of city of Philadelphia
Pittsburgh & Ohio Central Railroad.	POHC	0	bought by G&W in 2008
Pittsburgh, Allegheny & Mckees Rocks Railroad Co.	PAM	0	Did not respond to survey: switching operation
R.J. Corman Railroad Company/Allentown Lines, Inc.	RJCN	0	Did not respond to survey: 1 bridge per phone conversation
R.J. Corman Railroad Company/PA Lines, Inc.	RJCP	97	Pennsylvania Line
Reading Blue Mountain and Northern Railroad Compan	RBMN	114	all bridge info is incomplete
Seda Cog Joint Rail Authority	[SEDA]	0	operating RR's have bridge info
Shamokin Valley Railroad Company	SVRR	11	master bridge list proved by email
SMS/Penn Jersey Rail Lines, Inc.	SLRS	0	NO BRIDGES
Southeastern Pennsylvania Transportation Authority	SEPTA	0	PASSENGER SERVICE ONLY
Southwestern Pennsylvania Railroad Company	SWP	54	7 bridges lack complete information
Stewartstown Railroad Company	STRT	0	OUT OF SERVICE SINCE 2004, no freight service since 1992.
Stourbridge Railway, Inc	SBR	7	ME is parent co., see hard file for own/op relationship
Strasburg Railroad Company	SRC	0	Excursion Train
Towanda-Monroeton Shippers Lifeline, Inc.	TMSS	2	ok
Turtle Creek Industrial Railroad Co.	TCKR	7	one bad bridge would cease all rail activity
Tyburn Railroad Co.	TYBR	0	NO BRIDGES
Union County Industrial Railroad	UCIR	10	master bridge list proved by email

SLRR Owner/Operator Bridge Survey Summary

SLRR	Reporting Mark	Bridges in Database	Notes
Union Railroad Company	URR	35	315K capable
Wellsboro & Corning Railroad Company	WCOR	0	Did not respond to survey. Recently purchased by Myles Group
West Chester Railroad Co.	WCRL	0	Did not respond to survey: phone out of service
West Erie Shortline, Inc.	[WES]	0	NO BRIDGES
West Shore Railroad Corp.	[WSRC]	0	Did not respond to survey: (non-oper owner of part of UCIR?)
Western New York & Pennsylvania Railroad	WNYP	74	bridge list provided by email
Wheeling & Lake Erie Railroad	WE	118	bridges are in PA, all bridge meet Cooper E-65 rating
White Deer & Reading Railroad	WDRR	0	Did not respond to survey: (active?)
York County Rail Trail Authority	[YC]	0	non-oper, no longer deals with RR per phone conv.
York Railway Co.	YRC	25	G&W combined MD&PA RR w/ Yorkrail to get York Railway Co.
Youngstown & Southeastern Railroad	YSE	1	only one bridge in PA

Appendix B

SLRR Owner/Operator Survey Packet

pennsylvania
DEPARTMENT OF TRANSPORTATION

www.dot.state.pa.us

Bureau of Rail Freight, Ports and Waterways
P.O. Box 2777
Harrisburg, PA 17105-2777

October 30, 2008

Re: Condition Assessment of Short-Line Railroad Bridges in Pennsylvania – Survey

Dear Short Line Railroad:

The Pennsylvania Department of Transportation, Bureau of Rail Freight, Ports, and Waterways is requesting your cooperation with the Condition Assessment of Short-line Railroad Bridges in Pennsylvania study being conducted by Penn State University. The purpose of this study is to evaluate, on a system-wide basis, the condition and resource requirements of the bridges on the system.

PennDOT strongly supports the short-line railroad industry in Pennsylvania. It is PennDOT's desire to better understand the system-wide bridge inventory resource and maintenance requirements to more effectively assist the short-line owners and operators in building an effective and efficient transportation network for the movement of goods. In 2001 Penn State assisted PennDOT in conducting an evaluation of short-line needs – the current study is a direct extension of the 2001 study and an opportunity to improve the existing database of bridges and survey the bridge condition through an evaluation of several bridges in the field. Penn State will examine and evaluate in detail a statistically selected sample of short-line railroad bridges from the updated database in order to develop methodologies to identify effective use of resources.

To help make this effort a success, we would like your assistance with compiling a base of information that can be used during the study. Please complete the enclosed survey and return it in the envelope provided no later than December 31, 2008. If a master list of your rail bridges is available, please also return it with the survey. An electronic form of this list, if available, is preferable to a paper form.

Thank you in advance for taking the time and providing us with a quick response. If you have any questions about the study, I invite you to call me to discuss it at (717) 787-2627.

Sincerely,

Daniel D. Leonard, P.E.
Chief Railroad Engineer
Bureau of Rail Freight, Ports and Waterways

PENNSTATE

Department of Civil and
Environmental Engineering
College of Engineering

(814) 863-0523
FAX: (814) 863-7304
jlaman@psu.edu
The Pennsylvania State University
231J Sackett Building
University Park, PA 16802-1408

[DATE]

Contact Name
SLRR
Street
City, Zip

RE: Condition Assessment of Short-Line Railroad Bridges in Pennsylvania – Survey

Dear Mr. /Ms. :

The Pennsylvania Department of Transportation, Bureau of Rail Freight, Ports, and Waterways, in cooperation with the Pennsylvania State University, is conducting a short-line railroad study: *Condition Assessment of Short-line Railroad Bridges in Pennsylvania*. The purpose of this study is to evaluate, on a system-wide basis, the condition and resource requirements of the bridges on the system. This study will provide PennDOT with a better understanding of short-line railroad bridge needs in order to effectively assist the short-lines in maintaining their systems. To make this study a success it is important to compile an up-to-date and accurate short-line railroad bridge database.

Enclosed you will find a summary report taken from an existing database regarding the branches and bridges on your networks. This information was gathered in 2001 under an earlier study of short-line bridges and track. Please review, update, and expand the information as thoroughly as possible to allow the development of the most current, complete database. Please feel free to edit or comment directly on the summary sheets or you may provide us with the information in your preferred format. Please complete this request and return it in the envelope provided by December 31, 2008.

Thank you in advance for participating in this study and providing the requested information in a timely manner. The Pennsylvania short-line railroad industry will benefit from this study. If you have any questions or comments about this study, please do not hesitate to contact me.

Sincerely,

Jeffrey A. Laman, Ph.D., P.E.

Condition Assesment of Short Line Railroad Bridges in Pennsylvania

Survey Form: Railroad Profile

1 Railroad Name: _____

2 Name of Principal Owner: _____

3 Survey Contact Person:
Name: _____
Title: _____
Email: _____
Phone: _____

4 Year Established as a Short Line Railroad: _____

5 Have you operated under a different name in past 10 years? (y/n)
if yes, please provide previous name

_____

6 Which of the following items are available for bridge structures on your system?

Item	No	Yes for some	Yes for all
Details of Bridge Construction or Drawings			
Bridge Inspection Reports			
Bridge Repair Records			
Bridge Rating Calculations			

if yes to any, what form is this information in (paper copy, electronic, etc.)?

_____

7 Does your railroad use a consulting bridge engineer for bridge inspections or ratings? (y/n)
if yes, please provide the engineer's name, organization, email, and telephone

Name: _____
Organization: _____
Email: _____
Telephone: _____

8 Please provide information for the person MOST familiar with the physical condition and load ratings of your bridges (item 6 above) if this person is different from the name you gave in item 7 above.

Name: _____
Organization: _____
Email: _____
Telephone: _____

Condition Assesment of Short Line Railroad Bridges in Pennsylvania

Survey Form: Customer Profile-Annual Operating Statistics by Short Line RR Branch

SLRR Branch Name: _____

STCC	Commodity Type	Number of Customers Served by Commodity Group	Interline Carloads Originated	Interline Carloads Terminated	Total Carloads	Annual MGT
1	Farm Products					
8	Forest Products					
10	Metalic Ores					
11	Coal					
14	Nonmetalic Minerals					
20	Food and Kindred Products					
24	Lumber and Wood Products					
26	Pulp, Paper, and Allied Products					
28	Chemical and Allied Products					
29	Petrolium Products					
32	Stone, Clay, and Glass Products					
33	Primary Metal Products					
37	Transportation Equipment					
40	Waste and Scrap Material					
	Other					

Remarks:

_____

_____

_____

_____

_____

_____

_____

_____

Bridge Data Inventory

SLRR:

Branch Name:

# of Bridges:

ID #	Mat'l	Type	Deck Type	Yr Built	# of Spans	Length	# Tracks	Width	Over	Load Rating 263K	Load Rating 286K	Load Rating 315K	Condition	MGT	Importance

Branch Name:

Con't from previous page

ID #	Dist. to Class I Route	Owner	Date Inspected	Plans?	Replace $	Remarks

Inventory Item Description

1 Branch Name: **Active** branches that **haul freight** need to be considered

2 Bridge ID: Milepost number

3 Year Built: Year bridge construction was completed. Approximation is acceptable

4 # of Spans: Total number of spans

5 Length: Total length of bridge

for each span:

6 Span Number:

6a Length: Length of span

6b Mat'l: Primary Superstructure Material (see Table 1 for code)

6c Type: Structure Type (see Table 1 for code)

Table 1: Bridge Type Code

Primary Superstructure Material	Type	Code
Steel (St)		
	Deck Plate Girder	DPG
	Through Plate Girder	TPG
	Deck Truss	DTR
	Through Truss	TTR
	Stringer	SST
	Corrugated Metal Pipe	CMP
	Cast Iron Pipe	CIP
	Railtop	TOP
Masonry (Mas)		
	Arch	MAR
	Box	MBX
Concrete (Con)		
	Arch	CAR
	Stringer	CST
	Box	CBX
	Slab	CSB
	Pipe	PIP
Timber (Tim)		
	Stringer	TST

7 Deck Type: Ballasted Deck (BA)
Open Deck (OP)
Direct Fixation (DF)

8 # Tracks: Number of active lines on bridge

9 Width: Overall width of structure

10 Over: Geographic or other feature that the bridge spans (ie: Creek Name)

11 Load Rating: Bridge load rating based on engineering analysis (ie Cooper E-xx or 286k GCW)

12 Condition Rating: Condition rating assigned to the bridge based on inspection & engineering evaluation. Please provide rating criteria.

13 MGT: Million Gross Tons Annually (estimate)

14 Importance: Relative indicator of the importance that the subject bridge has on the financial and operational viability of the branch.

- **1=** Most Important (This structure is a vital component to the branch. Failure of this bridge would **disrupt all movement of freight**.)
- **2=** Moderate importance (This structure is an important component to the branch. Failure of this bridge would disrupt **some movement of freight**.)
- **3=** Low importance (This structure is useful component to the branch. Failure of this bridge would have **little effect on the movement of freight**.)
- **4=** No importance (This structure is inactive and failure of this bridge would have **no effect on the movement of freight**.)

15 Dist to Class I Route: The distance the subject structure is away from its connecting Class I Route

16 Owner: The owner of the structure

17 Date Inspected: Date of most recent engineering inspection.

18 Plans?: Yes / No. Are plans or construction drawings are available for the subject structure?

19 Replace $: Estimated cost for subject structure replacement

20 Remarks: Please comment on any additional items specific to the subject bridge that would provide further information regarding its conditional assessment. For example if **steam** locomotives operate on the line.

Appendix C

Number of Bridges According to SLRR and Branch

Number of Bridges According to SLRR and Branch

SLRR	Reporting Mark	Branch Name	Total Length	# of Bridges
Allegheny Valley Railroad Company	**AVR**			
		P&W Sub	17	26
		Allegheny Sub	19	4
		River	1	1
		Brilliant	2	7
		W&P Sub	38	47
		Brilliant Industrial	1	2
		Tylerdale	1	1
Buffalo & Pittsburgh Railroad, Inc.	**BPRR**			
		Adrian Branch	0	1
		Indiana Branch	0	28
		Mainline	286	81
		Wharton Branch	0	2
		Northern Sub	0	16
		Bradford Industrial	0	3
		Shawmut Sub	0	23
		Agway Track	0	2
		Butler Sub	0	19
		Brockway Yard	0	2
		West Mosgrove Branch	0	0
		Laurel Sub	0	28
		Struthers Ind	0	2
		Allegheny Sub	0	60
		Pittsburgh & Western Sub	0	21
		Grandview Ind	0	3
Delaware Lackawanna RR Company Inc.	**DL**			
		Laurel Line	0	0
		Carbondale Main	20	19
		Pocono-DL	50	18
East Penn Railroad, LLC	**EPRR**			
		North East Phila Ind Park	5	1
		Coalbrookdale	9	0
		Bristor Indust. Park	0	0
		Manheim	0	0
		Octoraro	28	21
		Chester Valley	3	1
		Wilmington Northern	28	20
		Lancaster Northern	12	14
		Perkiomen	14	12
		Quakertown	15	13
		Kutztown	6	1
Juniata Valley Railroad Company	**JVRR**			

Number of Bridges According to SLRR and Branch

SLRR	Reporting Mark	Branch Name	Total Length	# of Bridges
		Milroy IT	0	4
		Maitland IT	0	4
Lycoming Valley Railroad Company	**LVRR**			
		Antlers RT	0	2
		Avis Ind.	0	8
		Corning Sec.	0	16
		Newberry Yard	0	0
Mittal Steel USA Railways, Inc (BVRY)	**MSUB**			
		Brandywine Valley	4	3
Mittal Steel USA Railways, Inc (SH)	**MSUS**			
		Mainline	0	1
Mittal Steel USA Railways, Inc (UPM)	**MSUU**			
		Upper Merion & Plymouth	4	1
Mount Union Connecting R.R. Co.	**MTC**			
		Mainline	2	1
New York, Susquehanna & Western Railroad	**NYSW**			
		Mainline	123	22
Nittany & Bald Eagle Railroad Company	**NBER**			
		Tyrone Running	0	6
		Bellefonte Branch	0	8
		Pleasant Gap	0	1
		Post Running	0	4
		Mainline	0	37
North Shore Railroad	**NSHR**			
		North Shore	0	12
R.J. Corman Railroad Company/PA Lines, Inc.	**RJCP**			
		Cresson Branch	66	29
		Wallaceton	35	8
		Hillman	5	1
		C&M	20	8
		Cherry Tree	0	23
		WBV	54	21
		Irvona	0	7
Reading Blue Mountain and Northern Railroad Compan	**RBMN**			
		Scranton	0	3
		Mahanoy & Shamokin	0	12
		Mainline	0	53
		Tremont	0	5
		Middleport	0	4
		Pennsy	0	7
		Susquehanna	0	13
		Pottsville	0	10

Number of Bridges According to SLRR and Branch

SLRR	Reporting Mark	Branch Name	Total Length	# of Bridges
		Minersville	0	7
Shamokin Valley Railroad Company	**SVRR**			
		Reed Ind. Park	0	0
		SVRR	0	9
		Carbon Run	0	2
		Fleetwood	0	0
Southwestern Pennsylvania Railroad Company	**SWP**			
		Mount Pleasant Sub	14	9
		Radebaugh Subdivision	18	11
		FM&P Sub	20	26
		Yukon	2	2
		Greensburgh Industrial	2	2
		Bullskin	5	4
Stourbridge Railway, Inc	**SBR**			
		Mainline	26	7
Towanda-Monroeton Shippers Lifeline, Inc.	**TMSS**			
		Mainline	6	2
Turtle Creek Industrial Railroad Co.	**TCKR**			
		Mainline	11	7
Union County Industrial Railroad	**UCIR**			
		Milton RT	0	4
		Newco RT	0	1
		Winfield RT	0	5
Union Railroad Company	**URR**			
		Mainline	65	35
Western New York & Pennsylvania Railroad	**WNYP**			
		Rouseville Ind. Track	0	5
		Southside Ind Branch	0	1
		Mainline-Niobe to Meadville	0	29
		Buffalo Line	0	22
		Farmers Valley Branch	0	5
		Oil City Branch	0	12
Wheeling & Lake Erie Railroad	**WE**			
		Mifflin Branch	3	4
		Clairton Branch	5	3
		Connellsville Line	86	105
		West End Branch	2	6
York Railway Co.	**YRC**			
		MD & PA Main	0	10
		MD & PA North Central	0	4
		Mainline	0	11
Youngstown & Southeastern Railroad	**YSE**			

Number of Bridges According to SLRR and Branch

SLRR	Reporting Mark	Branch Name	Total Length	# of Bridges
		Youngstown & Southeastern	5	1

Appendix D

Bridge Database Summary-Inventory Data

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
Allegheny Valley Railroad Company											
AVR	Allegheny Sub	8.76	Con	CAR	0	33.25	1	Sandy Creek	BA		0
AVR	Allegheny Sub	10.75	St	DPG	0	52.5	1	Plum Creek	OP		0
AVR	Allegheny Sub	13.4	Con	CAR	0	14	1	Blacks Run	BA		0
AVR	Allegheny Sub	17.08	St	DPG	0	70	1	Pucketa Creek	BA		0
AVR	Brilliant	0.0101	St	TPG	1904	158.5	2	Hamilton Ave	OP		0
AVR	Brilliant	0.0902	St	TPG	1904	132	2	Kelly St	OP		0
AVR	Brilliant	0.14	St	TPG	1904	134	2	Frankstown Ave	OP		0
AVR	Brilliant	0.3401	Mas	MAR	1903	590	6	Silver Lake Viaduct	BA		0
AVR	Brilliant	0.4701	St	TPG	0	54	1	Lincoln Ave	BA		0
AVR	Brilliant	1.24	Mas	MAR	0	185	3	Leach Farm Road	BA		0
AVR	Brilliant	1.65	St	TPG	0	166	3	Allegheny River Blvd	OP		0
AVR	Brilliant Industrial	0.68	St	TTR	1908	1838	14	Allegheny R	OP		0
AVR	Brilliant Industrial	0.92	St	DPG	1930	60	1	Allegheny R Blvd	OP		0
AVR	P&W Sub	1.3	St	TTR	1920	4252	67	Allegheny R	OP		0
AVR	P&W Sub	2.7201	Con	CSB	0	40	1	Bridge St	BA		0
AVR	P&W Sub	2.84	Con	CAR	1923	25	1	Girty's Run	BA		0
AVR	P&W Sub	2.92	Con	CSB	1924	65	2	Norfolk Southern Underpass	BA		0
AVR	P&W Sub	4.06	St	TPG	0	80	1	Pine Creek	OP		0
AVR	P&W Sub	4.41	St	DPG	0	77	1	Pine Creek	OP		0
AVR	P&W Sub	4.76	St	TPG	1922	86	1	Pine Creek	OP		0
AVR	P&W Sub	5.4301	St	TPG	2008	70	1	Pine Creek	OP		0
AVR	P&W Sub	7.65	St	TPG	0	69	1	Pine Creek	OP		0
AVR	P&W Sub	8.35	St	TPG	0	60	1	Pine Creek	OP		0
AVR	P&W Sub	10.55	St	DPG	1922	77	1	Pine Creek	OP		0
AVR	P&W Sub	11.49	St	TPG	1905	66	1	Pine Creek	OP		0
AVR	P&W Sub	12.7001	Con	CSB	1912	14	1	Creek	BA		0
AVR	P&W Sub	13.03	St	TPG	1903	66.75	1	Pine Creek	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
AVR	P&W Sub	13.46	St	TPG	1905	50	1	Pine Creek	OP		0
AVR	P&W Sub	14.05	St	TPG	1902	57.5	1	Pine Creek	OP		0
AVR	P&W Sub	14.67	Con	CSB	1923	11.75	1	Willow Run	BA		0
AVR	P&W Sub	14.87	Con	CSB	1923	11.5	1	Willow Run	BA		0
AVR	P&W Sub	15.05	Con	CSB	1923	11.5	1	Willow Run	BA		0
AVR	P&W Sub	15.85	Con	CSB	1922	20	1	Willow Run	BA		0
AVR	P&W Sub	15.9801	Con	CSB	1909	12	1	Willow Run	BA		0
AVR	P&W Sub	16.48	Con	CSB	1922	15	1	Willow Run	BA		0
AVR	P&W Sub	324.05	St	DPG	0	316	6	Dock Access Rd	OP		0
AVR	P&W Sub	324.47	St	DPG	0	274	6	Mon Con RR	BA		0
AVR	P&W Sub	325.08	Con	CSB	0	83	3	GreenField Ave	BA		0
AVR	P&W Sub	325.39	St	DPG	0	148	3	Boundary St	OP		0
AVR	River	0.0901	Tim	TST	0	847	75	P&W bridge approach	OP		0
AVR	Tylerdale	0.8301	Tim	TST	0	70	6	Chartiere's Creek	OP	>6	286
AVR	W&P Sub	5.13	St	TTR	0	2659	25	Monongahela R	OP		0
AVR	W&P Sub	6.19	St	TPG	1912	212	2	Irwin St	OP		0
AVR	W&P Sub	6.38	Con	CST	0	18	1	Creek	BA		0
AVR	W&P Sub	6.87	Con	CST	1925	26	1	Street's Run	BA		0
AVR	W&P Sub	7.36	Con	CST	0	12	1	Creek	BA		0
AVR	W&P Sub	7.73	Con	CST	0	16	1	Street's Run	BA		0
AVR	W&P Sub	8.23	Con	CST	0	14	1	Street's Run	BA		0
AVR	W&P Sub	8.46	Con	CST	0	14	1	Street's Run	BA		0
AVR	W&P Sub	8.78	Con	CST	0	12	1	Street's Run	BA		0
AVR	W&P Sub	9.25	St	SST	0	34	1	Street's Run	OP		0
AVR	W&P Sub	9.83	St	SST	0	15	1	Creek	OP		0
AVR	W&P Sub	11.23	St	SST	0	16	1	Creek	OP		0
AVR	W&P Sub	11.46	St	SST	0	18	1	Creek	OP		0
AVR	W&P Sub	12.05	Con	CST	1929	30	1	Lick Run	BA		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
AVR	W&P Sub	12.14	St	DPG	1923	34	1	Lick Run	OP		0
AVR	W&P Sub	12.39	St	DPG	1930	41	1	Lick Run	OP		0
AVR	W&P Sub	14.02	Con	CAR	1911	20	1	Rigg's Rd Underpass	BA		0
AVR	W&P Sub	15.21	St	SST	0	35	1	Snowden Rd Underpass	OP		0
AVR	W&P Sub	15.42	Con	CAR	0	27	1	Abandoned PV&C Underpass	BA		0
AVR	W&P Sub	15.45	Con	CAR	0	40	1	Piney Fork Road & Brook	BA		0
AVR	W&P Sub	15.69	Con	CAR	0	30	1	Peter's Creek	BA		0
AVR	W&P Sub	16.55	Con	CAR	0	24.5	1	Snee rd, Twp 844	BA		0
AVR	W&P Sub	16.89	St	DPG	1930	72	1	Peter's Creek	OP		0
AVR	W&P Sub	17.5001	St	SST	0	28	1	Smith's Run	OP		0
AVR	W&P Sub	18.78	St	SST	0	22.83	1	Creek	OP		0
AVR	W&P Sub	20.1	Con	CST	1908	30	2	Peter's Creek	BA		0
AVR	W&P Sub	20.27	St	SST	0	28	1	Peter's Creek	OP		0
AVR	W&P Sub	20.74	Con	CST	1910	20	1	Peter's Creek	BA		0
AVR	W&P Sub	23.58	St	SST	0	18	1	Farm Pass	OP		0
AVR	W&P Sub	24.0101	St	SST	0	18	1	Gillikson Rd	OP		0
AVR	W&P Sub	24.96	Con	CST	0	10.83	1	Cattle Pass	BA		0
AVR	W&P Sub	28.58	St	DPG	0	64	2	Little Chartier's Creek	OP		0
AVR	W&P Sub	29.26	St	DPG	1920	34	1	Little Chartier's Creek	OP		0
AVR	W&P Sub	29.58	St	SST	0	27	1	Little Chartier's Creek	OP		0
AVR	W&P Sub	30.1201	St	DPG	1930	34	1	Little Chartier's Creek	OP		0
AVR	W&P Sub	30.26	St	DPG	1923	34	1	Little Chartier's Creek	OP		0
AVR	W&P Sub	31.63	St	SST	0	25	1	Cattle Pass, Stream	OP		0
AVR	W&P Sub	32.43	St	DPG	0	66	1	Vance Station rd, Creek	OP		0
AVR	W&P Sub	34.06	St	TPG	1910	50	3	Dunn St	OP		0
AVR	W&P Sub	34.64	Con	CST	0	40	3	Stewart St	BA		0
AVR	W&P Sub	34.94	St	TPG	1922	100	3	East Maiden St, Rt 40	BA		0
AVR	W&P Sub	35.05	St	DPG	0	35	1	Lincoln St	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
AVR	W&P Sub	35.12	St	DPG	1923	79	3	College St	OP		0
AVR	W&P Sub	35.55	St	TTR	1907	711	9	West Maiden St, Creek	OP		0
AVR	W&P Sub	36.68	St	TPG	1936	50	1	Route 40	BA		0
AVR	W&P Sub	37.01	Con	CAR	0	30	1	Chartiere's Creek	BA		0
AVR	W&P Sub	37.04	St	DPG	0	40	2	Interatate 70	BA		0
Buffalo & Pittsburgh Railroad, Inc.											
BPRR	Adrian Branch	0.1	Tim	TST	0	12	1	Stream	OP		0
BPRR	Agway Track	25.28	St	SST	0	16	1	Stream	OP		0
BPRR	Agway Track	25.47	St	SST	0	16	1	Stream	OP		0
BPRR	Allegheny Sub	2.83	Con	CSB	1941	75	2	US Route 20	BA		0
BPRR	Allegheny Sub	7.22	St	SST	0	36	1	PA Route 8	OP		0
BPRR	Allegheny Sub	7.26	Mas	MAR	0	20	1	Stream	BA		0
BPRR	Allegheny Sub	9.33	St	SST	0	12	1	Stream	OP		0
BPRR	Allegheny Sub	9.74	Con	CSB	0	18	1	Stream	BA		0
BPRR	Allegheny Sub	11.41	Con	CSB	0	12	1	Walnut Creek	BA		0
BPRR	Allegheny Sub	14.69	Con	CSB	0	64	2	LeBoeuf Creek	BA		0
BPRR	Allegheny Sub	15.71	Con	CSB	0	23	1	Banksons Run	BA		0
BPRR	Allegheny Sub	17.65	Con	CSB	0	64	2	Benson Run	BA		0
BPRR	Allegheny Sub	18.23	Con	CSB	0	64	2	Leboeuf Creek	BA		0
BPRR	Allegheny Sub	18.82	Con	CSB	0	18	1	Cattle Pass	BA		0
BPRR	Allegheny Sub	20.9	Con	CSB	0	14	1	Marauan Run	BA		0
BPRR	Allegheny Sub	23.24	St	TPG	1924	195	3	Little French Creek	OP		0
BPRR	Allegheny Sub	24.72	St	TPG	0	92	1	Little French Creek	OP		0
BPRR	Allegheny Sub	25.05	Con	CSB	0	18	1	Malvin Run	BA		0
BPRR	Allegheny Sub	25.97	St	TPG	0	106	2	Little French Creek	OP		0
BPRR	Allegheny Sub	26.35	St	TPG	1918	134	2	Little French Creek	OP		0
BPRR	Allegheny Sub	26.78	St	DPG	0	64	1	Little French Creek	OP		0
BPRR	Allegheny Sub	27.05	St	DPG	0	70	1	Little French Creek	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Allegheny Sub	27.3	Con	CSB	0	23	1	Bently Run	BA		0
BPRR	Allegheny Sub	28.23	St	DPG	0	55	1	Little French Creek	OP		0
BPRR	Allegheny Sub	31.37	Con	CSB	0	24	1	Beaver Run	BA		0
BPRR	Allegheny Sub	32.7	Con	CSB	0	16	1	Slaughter Run	BA		0
BPRR	Allegheny Sub	33.13	Con	CSB	0	96	3	Little French Creek	BA		0
BPRR	Allegheny Sub	33.72	Con	CSB	0	16	1	Lovell Run	BA		0
BPRR	Allegheny Sub	34.41	Con	CSB	0	20	1	Deer Lick Run	BA		0
BPRR	Allegheny Sub	35.96	Con	CAR	0	20	1	Oil Creek	BA		0
BPRR	Allegheny Sub	38.65	Con	CSB	0	14	1	Winton Run	BA		0
BPRR	Allegheny Sub	41.14	St	TPG	1923	106	2	Brokenstraw Creek	OP		0
BPRR	Allegheny Sub	42.56	St	SST	0	25	1	Damon Run	OP		0
BPRR	Allegheny Sub	46.09	Con	CSB	0	31	1	Stream	BA		0
BPRR	Allegheny Sub	51.1	St	DPG	0	45	1	Blue Eye Creek	OP		0
BPRR	Allegheny Sub	53.59	St	TPG	1925	104	2	Little Brokenstraw Creek	OP		0
BPRR	Allegheny Sub	54.86	Con	CSB	0	12	1	Stream	BA		0
BPRR	Allegheny Sub	56.28	St	SST	0	23	1	Mead Run	OP		0
BPRR	Allegheny Sub	56.97	St	TPG	0	306	6	Brokenstraw Creek	OP		0
BPRR	Allegheny Sub	60.09	St	TPG	0	213	3	Brokenstraw Creek	OP		0
BPRR	Allegheny Sub	60.39	St	SST	0	54	3	Irvine Run	OP		0
BPRR	Allegheny Sub	61.36	Con	CSB	0	18	1	Scotts Run	BA		0
BPRR	Allegheny Sub	62.8	Con	CSB	0	18	1	Jackson Run	BA		0
BPRR	Allegheny Sub	65.9	St	TTR	0	465	3	Allegheny R	OP		0
BPRR	Allegheny Sub	68.91	Mas	MAR	1860	20	1	Rodger's Run & Rd	BA		0
BPRR	Allegheny Sub	73.42	St	SST	0	17	1	Stream	OP		0
BPRR	Allegheny Sub	75.15	St	TPG	0	48	1	Six Mile Run	OP		0
BPRR	Allegheny Sub	76.9	St	TPG	0	48	1	Four Mile Run	OP		0
BPRR	Allegheny Sub	79.56	Con	CSB	0	27	1	Deer Lick Run	BA		0
BPRR	Allegheny Sub	82.65	St	DPG	0	76	2	Two Mile Run	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Allegheny Sub	101.28	Con	CSB	0	40	1	Owl Creek	BA		0
BPRR	Allegheny Sub	103.79	St	DPG	0	153	2	Owl Creek	OP		0
BPRR	Allegheny Sub	104.85	St	SST	0	24	1	Oil Creek	OP		0
BPRR	Allegheny Sub	106.78	St	SST	0	32	1	Milford Run	OP		0
BPRR	Allegheny Sub	107.32	St	DPG	0	108	2	Clarion R	OP		0
BPRR	Allegheny Sub	109.39	Con	CSB	0	28	1	Silver Creek	BA		0
BPRR	Allegheny Sub	109.91	St	DPG	1915	260	4	Clarion R	OP		0
BPRR	Allegheny Sub	110.82	Con	CSB	0	32	1	Power Run	BA		0
BPRR	Allegheny Sub	115	St	TPG	0	103	1	Ridgeway Wye Track	OP		0
BPRR	Allegheny Sub	118.86	St	DPG	0	108	2	Elk Creek	OP		0
BPRR	Allegheny Sub	120.32	St	DPG	0	106	2	Elk Creek	OP		0
BPRR	Allegheny Sub	126.8	Mas	MAR	0	16	1	Silver Creek	BA		0
BPRR	Allegheny Sub	129.89	St	SST	0	26	2	Elk Creek	OP		0
BPRR	Bradford Industrial	2001	St	TPG	1974	164.67	2	Tunungant Creek	OP		0
BPRR	Bradford Industrial	2002	Con	CSB	1974	28	2	Bolivar Run	BA		0
BPRR	Bradford Industrial	2003	St	TPG	1927	110.25	1	Tunungant Creek	OP		0
BPRR	Brockway Yard	0.47	Tim	TST	0	36	3	Walbrun Run	OP		0
BPRR	Brockway Yard	0.471	Tim	TST	0	36	3	Walbrun Run	OP		0
BPRR	Butler Sub	283.79	St	SST	1955	24	1	Stream	OP		0
BPRR	Butler Sub	284.13	St	SST	1955	22	1	Stream	OP		0
BPRR	Butler Sub	285.001	St	TPG	0	65	1	Connoquenessing Creek	OP		0
BPRR	Butler Sub	285.002	Tim	TST	1996	13	1	Stream	OP		0
BPRR	Butler Sub	404	St	DPG	0	80	2	Connoquenessing Creek	OP		0
BPRR	Butler Sub	405	St	SST	0	50	1	Powder Mill Run	OP		0
BPRR	Butler Sub	407	St	DPG	0	160	2	Connoquenessing Creek	OP		0
BPRR	Butler Sub	408	St	SST	0	18	1	Butcher Run	OP		0
BPRR	Butler Sub	409	St	DPG	1948	100	2	Connoquenessing Creek	OP		0
BPRR	Butler Sub	410	St	SST	1953	114.5	3	Connoquenessing Creek	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Butler Sub	412	Tim	TST	1943	50.5	4	Bonnie Brook	OP		0
BPRR	Butler Sub	413	Tim	TST	1949	13	1	Stream	OP		0
BPRR	Butler Sub	414	Tim	TST	1940	14	1	Stream	OP		0
BPRR	Butler Sub	602	St	SST	1952	107	3	Breakneck Creek	OP		0
BPRR	Butler Sub	604	St	TPG	0	240	3	Connoquenessing Creek	OP		0
BPRR	Butler Sub	605	St	DPG	0	120	2	Connoquenessing Creek	OP		0
BPRR	Butler Sub	606	St	DPG	1923	35	1	Stream	OP		0
BPRR	Butler Sub	607	St	DPG	0	100	2	Connoquenessing Creek	OP		0
BPRR	Butler Sub	608	St	DPG	0	220	4	Connoquenessing Creek	OP		0
BPRR	Grandview Ind	0.07	St	DPG	0	35	1	Stream	OP		0
BPRR	Grandview Ind	0.16	St	SST	0	20	1	Stream	OP		0
BPRR	Grandview Ind	0.23	St	SST	0	13	1	Stream	OP		0
BPRR	Indiana Branch	0.01	St	DPG	1903	160	2	Big Mahoning Creek	OP		0
BPRR	Indiana Branch	0.83	Mas	MAR	1908	60	2	Canoe Creek	BA		0
BPRR	Indiana Branch	0.91	St	TTR	1902	207	2	PRR	OP		0
BPRR	Indiana Branch	2.7101	St	TPG	1903	70	1	Canoe Creek	OP		0
BPRR	Indiana Branch	4.6801	St	DPG	1902	30	1	Smiths Run	OP		0
BPRR	Indiana Branch	6.32	St	DPG	1903	30	1	SR 1045	OP		0
BPRR	Indiana Branch	8.71	St	DPG	1903	30	1	Broadhead Run	OP		0
BPRR	Indiana Branch	9.88	Con	CAR	1902	16	1	Leisure Run	BA		0
BPRR	Indiana Branch	11.17	St	SST	1903	20	1	Parsons Run	OP		0
BPRR	Indiana Branch	11.38	St	SST	1902	20	1	Elders Run	OP		0
BPRR	Indiana Branch	12.43	St	TTR	1902	150	1	Little Mahoning Creek	OP		0
BPRR	Indiana Branch	13.81	Con	CAR	1902	16	1	Pickering Run	BA		0
BPRR	Indiana Branch	16.51	Con	CSB	2008	30	1	Pine Run	BA		0
BPRR	Indiana Branch	18.07	St	SST	1917	20	1	Stream	OP		0
BPRR	Indiana Branch	19.22	St	SST	1917	20	1	Stream	OP		0
BPRR	Indiana Branch	20.04	St	DPG	1902	20	1	Stream	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Indiana Branch	22.73	St	DPG	1903	30	1	SR110	OP		0
BPRR	Indiana Branch	23.21	St	TTR	1903	125	1	Crooked Creek	OP		0
BPRR	Indiana Branch	25.7301	St	SST	1963	30	1	Getty Run	OP		0
BPRR	Indiana Branch	29.06	St	TPG	1903	50	1	McKees Run	OP		0
BPRR	Indiana Branch	29.73	St	DPG	1903	40	1	McKees Run	OP		0
BPRR	Indiana Branch	31.13	Con	CAR	1903	12	1	Stream	BA		0
BPRR	Indiana Branch	33.8201	St	SST	1903	20	1	Whites Run	OP		0
BPRR	Indiana Branch	34.0601	St	SST	1903	20	1	Whites Run	OP		0
BPRR	Indiana Branch	35.41	St	TPG	1987	50	1	T 411	OP		0
BPRR	Indiana Branch	35.53	Con	CAR	1903	16	1	McCortney Run	BA		0
BPRR	Indiana Branch	35.97	St	DPG	1921	38	1	Old US 119	OP		0
BPRR	Indiana Branch	40.9	St	SST	1966	178	3	Cherry Run	OP		0
BPRR	Laurel Sub	42.36	St	DPG	1903	265	3	Sandy Lick Creek	OP		0
BPRR	Laurel Sub	42.63	St	DPG	1901	173	2	Sandy Lick Creek	OP		0
BPRR	Laurel Sub	47.68	St	SST	1894	20	1	Emerick Run	OP		0
BPRR	Laurel Sub	47.95	St	DPG	1901	246	3	Sandy Lick Creek	OP		0
BPRR	Laurel Sub	50.76	St	DPG	1980	37	1	Camp Run	OP		0
BPRR	Laurel Sub	51.68	St	DPG	1902	220	3	Sandy Lick Creek	OP		0
BPRR	Laurel Sub	52.74	St	DPG	1899	24	1	O'Donnel Run	OP		0
BPRR	Laurel Sub	53.29	St	DPG	1902	234	3	Sandy Lick Creek	OP		0
BPRR	Laurel Sub	53.5	St	DPG	1902	154	2	Sandy Lick Creek	OP		0
BPRR	Laurel Sub	53.66	St	DPG	1899	26	1	School House Run	OP		0
BPRR	Laurel Sub	54.51	St	TPG	1901	175	2	Sandy Lick Creek	OP		0
BPRR	Laurel Sub	55.31	St	DPG	1903	136	2	Sandy Lick Creek	OP		0
BPRR	Laurel Sub	57.78	St	SST	1901	25	1	Panther Run	OP		0
BPRR	Laurel Sub	62.64	St	TPG	1903	76	1	Falls Creek	OP		0
BPRR	Laurel Sub	63.11	St	DPG	1901	30	1	Slab Rub	OP		0
BPRR	Laurel Sub	64.35	St	DPG	1901	30	1	Clear Run	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Laurel Sub	68.42	St	DPG	1897	20	1	Narrows Creek	OP		0
BPRR	Laurel Sub	70.46	St	DPG	1903	34	1	Sabula Run	OP		0
BPRR	Laurel Sub	85.24	St	DPG	1903	152	2	Bennett Branch	OP		0
BPRR	Laurel Sub	85.69	St	DTR	1904	119	1	Bennett Branch	OP		0
BPRR	Laurel Sub	86.97	St	DPG	1903	77	1	Laurel Run	OP		0
BPRR	Laurel Sub	90.21	St	DPG	1889	88	1	Medix Run	OP		0
BPRR	Laurel Sub	96.27	Mas	MAR	1872	14	1	Johnson Run	BA		0
BPRR	Laurel Sub	103.64	St	DPG	1903	84	1	Millers Run	OP		0
BPRR	Laurel Sub	105.49	St	DPG	1903	84	1	Mix Run	OP		0
BPRR	Laurel Sub	108.66	St	TTR	1903	324	2	Bennett Run	OP		0
BPRR	Laurel Sub	109.24	St	SST	1892	20	1	Meadow Run	OP		0
BPRR	Laurel Sub	109.79	St	TPG	1903	301	4	Driftwood Branch	OP		0
BPRR	Mainline	120.78	St	DPG	1912	30	1	Foster Brook	OP		0
BPRR	Mainline	121.68	St	TPG	1912	50.5	1	Kendall Creek	OP		0
BPRR	Mainline	122.31	St	TPG	1912	173.3	2	Tunungwant Creek	OP		0
BPRR	Mainline	122.84	St	TPG	1912	96	1	Tunungwant Creek	OP		0
BPRR	Mainline	123.01	Con	CST	1960	74	3	Tunungwant Creek	BA		0
BPRR	Mainline	124.54	St	SST	1912	20	1	Rutherford Run	OP		0
BPRR	Mainline	126.17	St	TPG	1912	34	1	Minard Run	OP		0
BPRR	Mainline	138.02	Con	CSB	1910	24	1	StateRoute 59	BA		0
BPRR	Mainline	138.17	Con	CAR	1910	19	1	Kushequa RR	BA		0
BPRR	Mainline	155.61	St	TOP	1911	10	1	Cattle Pass	OP		0
BPRR	Mainline	167.0101	St	TPG	0	129	2	East Br. Clarion R.	OP		0
BPRR	Mainline	167.92	St	DTR	1899	683	12	Clarion River	OP		0
BPRR	Mainline	173.3	St	TPG	1912	46	1	Little Mill Creek	OP		0
BPRR	Mainline	174.83	St	DPG	1912	29.5	1	Stream	OP		0
BPRR	Mainline	176.8	St	DPG	1907	54.5	1	Aylworth Run/Road	OP		0
BPRR	Mainline	179.14	St	DPG	1906	80	1	Mill Creek	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Mainline	180.87	St	DPG	1906	228	3	Clarion R	OP		0
BPRR	Mainline	183.8	St	DPG	1908	240	4	Little Toby Creek	OP		0
BPRR	Mainline	193.73	St	SST	1978	16	1	Stream	OP		0
BPRR	Mainline	196.21	St	DPG	1912	68	1	McQueens Run & Highway	OP		0
BPRR	Mainline	199.6	St	SST	1912	16	1	Harvey Run	OP		0
BPRR	Mainline	200.16	St	DPG	1912	24	1	Smith Run	OP		0
BPRR	Mainline	201.31	St	DPG	1912	130	2	Falls Creek and Highway	OP		0
BPRR	Mainline	202.01	St	TPG	1913	76.5	1	Falls Creek	OP		0
BPRR	Mainline	203.27	St	SST	1902	27	1	Clear Run	OP		0
BPRR	Mainline	203.75	St	TPG	1912	62.5	1	Sandy Lick Creek	OP		0
BPRR	Mainline	204.28	St	SST	1912	33.5	1	Pentz Run	OP		0
BPRR	Mainline	205.6	St	SST	1902	15.5	1	Pentz Run	OP		0
BPRR	Mainline	211.47	St	DPG	1904	60	1	Stump Creek	OP		0
BPRR	Mainline	211.71	St	DPG	1904	60	1	Stump Creek	OP		0
BPRR	Mainline	213.82	St	SST	1904	16	1	Stream	OP		0
BPRR	Mainline	215.53	St	SST	1904	16	1	Stream	OP		0
BPRR	Mainline	217.03	St	DPG	1904	75	1	Clover Run	OP		0
BPRR	Mainline	217.46	St	DPG	1904	75	1	Clover Run	OP		0
BPRR	Mainline	220.67	St	DPG	1904	181	3	Big Mahoning Creek	OP		0
BPRR	Mainline	221.38	St	DPG	1905	181	3	Big Mahoning Creek	OP		0
BPRR	Mainline	222.35	St	SST	1905	26	1	Jackson Run	OP		0
BPRR	Mainline	222.54	St	DPG	1905	181	3	Big Mahoning Creek	OP		0
BPRR	Mainline	222.89	Con	CST	1923	28	1	Flood Plain	BA		0
BPRR	Mainline	225.05	Con	CST	1909	64	2	Elk Run	BA		0
BPRR	Mainline	226.08	St	TTR	1898	190	1	West Mahoning Flood Plane	OP		0
BPRR	Mainline	226.29	St	TTR	1899	140	1	Walston Branch	OP		0
BPRR	Mainline	226.37	St	TTR	1898	494	5	Big Mahoning Creek	OP		0
BPRR	Mainline	228.5	St	DPG	1923	34	1	State Route 3010	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Mainline	229.16	St	CSB	2001	18	1	Stream	BA		0
BPRR	Mainline	230.96	St	DPG	1923	30	1	SR 3013	OP		0
BPRR	Mainline	234.65	St	DPG	1899	24	1	Gamble Run	OP		0
BPRR	Mainline	235.59	St	TPG	1952	215	3	Big Mahoning Creek	OP		0
BPRR	Mainline	238.89	St	DPG	1941	614	6	Big Mahoning Creek	OP		0
BPRR	Mainline	240.73	St	DPG	1923	23	1	SR 4026 Goodville Rd	OP		0
BPRR	Mainline	241.39	St	DTR	1898	967	18	Little Mahoning Creek	OP		0
BPRR	Mainline	244.39	St	DPG	1923	25	1	Glade Run	OP		0
BPRR	Mainline	246.18	St	DPG	1923	23	1	T 748	OP		0
BPRR	Mainline	248	St	DPG	1899	54.5	1	North Branch Pine Creek	OP		0
BPRR	Mainline	248.93	St	TPG	1899	54	1	Pine Creek	OP		0
BPRR	Mainline	252.12	Con	CSB	2001	24	1	Pine Creek	BA		0
BPRR	Mainline	252.19	St	TPG	1898	74.5	1	Pine Creek	OP		0
BPRR	Mainline	252.93	St	SST	1963	23	1	Stream	OP		0
BPRR	Mainline	255	Con	CSB	2001	18	1	Bever Run	BA		0
BPRR	Mainline	255.34	Con	CSB	1964	10	1	Sewer	BA		0
BPRR	Mainline	255.85	St	TTR	1898	123	1	Pine Creek	OP		0
BPRR	Mainline	256.92	St	TTR	1899	123	1	Pine Creek	OP		0
BPRR	Mainline	257.19	St	TTR	1898	123	1	Pine Creek	OP		0
BPRR	Mainline	257.63	St	DPG	1898	96	1	Pine Creek	OP		0
BPRR	Mainline	257.76	St	DPG	1899	96	1	Pine Creek	OP		0
BPRR	Mainline	258.77	St	SST	1964	44	1	Ditch	OP		0
BPRR	Mainline	258.89	St	DTR	1898	1665	10	Allegheny R	OP		0
BPRR	Mainline	260.03	St	SST	1898	23	1	SR 4021	OP		0
BPRR	Mainline	262.51	St	DPG	1898	482	12	McCrackin Run	OP		0
BPRR	Mainline	263.45	St	DPG	1898	460.5	10	Limestone Creek	OP		0
BPRR	Mainline	264.53	St	DPG	1898	34	1	Twp Rd	OP		0
BPRR	Mainline	265.96	Mas	MAR	1898	16	1	Glade Run	BA		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Mainline	267.64	St	DPG	1898	34	1	Twp Rd 416	OP		0
BPRR	Mainline	270.88	St	DTR	1898	124	1	Buffalo Creek	OP		0
BPRR	Mainline	272.84	St	DPG	1898	96	1	Buffalo Creek	OP		0
BPRR	Mainline	274.19	St	TPG	1898	131	2	Buffalo Creek/SR 3010	OP		0
BPRR	Mainline	274.35	St	DPG	1898	96	1	Buffalo Creek	OP		0
BPRR	Mainline	275.15	St	TPG	1898	198.5	3	Buffalo Creek	OP		0
BPRR	Mainline	275.39	St	TPG	1898	65	1	Little Buffalo Creek	OP		0
BPRR	Mainline	277.36	Mas	MAR	1898	16	1	Buffalo Creek	BA		0
BPRR	Mainline	281.15	St	DPG	1898	312	6	Bonnie Brook	OP		0
BPRR	Northern Sub	419	Tim	TST	1925	44	4	Bonnie Brook	OP		0
BPRR	Northern Sub	420	Tim	TST	1965	13	1	Stream	OP		0
BPRR	Northern Sub	422	Tim	TST	1944	25	1	Bonnie Brook	OP		0
BPRR	Northern Sub	424	St	SST	1955	30	1	Bonnie Brook	OP		0
BPRR	Northern Sub	430	Tim	TST	0	79	5	Stream/Driveway	OP		0
BPRR	Northern Sub	431	Tim	TST	0	482	30	Stream/SR68	OP		0
BPRR	Northern Sub	432	Tim	TST	0	144	15	Grove St	OP		0
BPRR	Northern Sub	433	Tim	TST	0	529	35	Stream/Rd	OP		0
BPRR	Northern Sub	438	Tim	TST	1944	23	2	So. Branch Bear Creek	OP		0
BPRR	Northern Sub	439	Tim	TST	1931	24	2	So. Branch Bear Creek	OP		0
BPRR	Northern Sub	440	Tim	TST	0	36.5	2	So. Branch Bear Creek	OP		0
BPRR	Northern Sub	441	St	SST	1955	26.5	1	So. Branch Bear Creek	OP		0
BPRR	Northern Sub	442	Tim	TST	1960	33.75	3	Stream	OP		0
BPRR	Northern Sub	444	Tim	TST	1965	26	2	So. Branch Bear Creek	OP		0
BPRR	Northern Sub	446	Tim	TST	1965	43	5	So. Branch Bear Creek	OP		0
BPRR	Northern Sub	447	St	DPG	1913	30	1	So. Branch Bear Creek	OP		0
BPRR	Pittsburgh & Western Sub	19.4	St	SST	1945	22.5	1	Twp Rd	OP		0
BPRR	Pittsburgh & Western Sub	22.1	St	SST	1922	16	1	Wolfe Run	OP		0
BPRR	Pittsburgh & Western Sub	23.7	St	SST	1904	22	1	Kaufman Creek	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Pittsburgh & Western Sub	25.3	St	SST	1905	11.5	1	Stream	OP		0
BPRR	Pittsburgh & Western Sub	25.9	St	SST	1911	17.3	1	Wolfe Run	OP		0
BPRR	Pittsburgh & Western Sub	27.3001	St	DPG	1909	55.7	1	Breakneck Creek	OP		0
BPRR	Pittsburgh & Western Sub	27.6	St	DPG	1922	63	1	Breakneck Creek	OP		0
BPRR	Pittsburgh & Western Sub	28.6	St	SST	1922	20	1	Creek	OP		0
BPRR	Pittsburgh & Western Sub	28.8	St	SST	1910	22	1	Creek	OP		0
BPRR	Pittsburgh & Western Sub	34.2	St	SST	1906	26	1	Muntz Run	OP		0
BPRR	Pittsburgh & Western Sub	36	St	DPG	1912	151.75	2	Connoquenessing Creek	OP		0
BPRR	Pittsburgh & Western Sub	36.2	St	SST	1912	21	1	Bessor Rd	OP		0
BPRR	Pittsburgh & Western Sub	37.6	St	TPG	1907	52	1	Camp Run	OP		0
BPRR	Pittsburgh & Western Sub	39.7	St	SST	1905	19.8	1	Soap Run	OP		0
BPRR	Pittsburgh & Western Sub	43.1	St	SST	1898	18.2	1	New Brighton Road	OP		0
BPRR	Pittsburgh & Western Sub	43.4	St	TPG	1976	151.2	2	Route 288	OP		0
BPRR	Pittsburgh & Western Sub	43.8	St	DTR	1907	292	3	Connoquenessing Creek	OP		0
BPRR	Pittsburgh & Western Sub	44.6001	St	SST	1912	66	4	5th Street	OP		0
BPRR	Pittsburgh & Western Sub	45.6	St	DPG	1907	557.3	8	Connoquenessing Creek	OP		0
BPRR	Pittsburgh & Western Sub	47.2	Con	CSB	1904	19	1	Spanglers Run	BA		0
BPRR	Pittsburgh & Western Sub	50.4	Con	CSB	0	13	1	Private Rd	BA		0
BPRR	Shawmut Sub	0.33	St	DPG	1918	213.67	3	Toby Creek	OP		0
BPRR	Shawmut Sub	0.73	St	TPG	1907	694.7	19	SR 219	OP		0
BPRR	Shawmut Sub	20.72	St	DPG	0	33.33	1	Road	OP		0
BPRR	Shawmut Sub	20.9801	St	DTR	0	784.5	16	Mahoning Creek	OP		0
BPRR	Shawmut Sub	21.43	St	SST	1908	21.17	1	Road	OP		0
BPRR	Shawmut Sub	21.51	Con	CAR	0	15	1	Swamp Run	BA		0
BPRR	Shawmut Sub	23.95	St	DPG	0	52	1	Hunters Run	OP		0
BPRR	Shawmut Sub	55.43	St	DTR	0	508.3	4	1st Mahoning	OP		0
BPRR	Shawmut Sub	57.81	St	TTR	0	310.08	2	2nd Mahoning	OP		0
BPRR	Shawmut Sub	58.46	St	DPG	1910	23.33	1	Rainy Run	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
BPRR	Shawmut Sub	59.21	St	DPG	1976	23.33	1	Powell Run	OP		0
BPRR	Shawmut Sub	59.41	St	SST	1910	23	1	Deep Hollow Road	OP		0
BPRR	Shawmut Sub	62.13	Con	CAR	1910	15	1	Pettigrew Run	BA		0
BPRR	Shawmut Sub	62.33	St	SST	1910	23	1	Road	OP		0
BPRR	Shawmut Sub	63	St	DPG	1910	23.33	1	Wild Cat Run	OP		0
BPRR	Shawmut Sub	63.23	St	TTR	0	1123	4	Allegheny R	OP		0
BPRR	Shawmut Sub	69.94	St	DPG	1913	108	1	Limestone Run	OP		0
BPRR	Shawmut Sub	70.62	St	SST	1970	23.33	1	Tarrtown Run	OP		0
BPRR	Shawmut Sub	70.82	St	SST	1970	23.33	1	Logtown Run	OP		0
BPRR	Shawmut Sub	74.6	St	DPG	1913	34.5	1	Whiskey Hollow Run	OP		0
BPRR	Shawmut Sub	78.92	St	DPG	1913	56.33	1	Glade Run	OP		0
BPRR	Shawmut Sub	81.6	Con	CAR	0	20	1	Nicholson Run	BA		0
BPRR	Shawmut Sub	86.14	Con	CSB	2003	24	1	Knapps Run	BA		0
BPRR	Struthers Ind	56.79	St	TTR	0	523	3	Allegheny R	OP		0
BPRR	Struthers Ind	58.31	Con	CSB	0	58	2	Glade Run	BA		0
BPRR	Wharton Branch	44.15	Tim	TST	2007	70.83	6	Laborde Branch	OP		0
BPRR	Wharton Branch	44.25	Tim	TST	0	71.5	6	Sandy Lick Creek	OP		0
Delaware Lackawanna RR Company Inc.											
DL	Carbondale Main	2.35	St	DPG	0	28.5	1	Concrete Lined Channel	OP	1455 cars	0
DL	Carbondale Main	2.7001	St	TPG	0	116	2	Roaring Brook	OP	1455 cars	0
DL	Carbondale Main	5.01	Con		0	94	1	Green Ridge St	OP	1455 cars	0
DL	Carbondale Main	5.4	Con		0	99	1	Market St	OP	1455 cars	0
DL	Carbondale Main	5.7	St	TTR	1904	168	1	Lackawanna R	OP	1455 cars	0
DL	Carbondale Main	6.25	St	TPG	0	35	1	Creek	OP	1455 cars	0
DL	Carbondale Main	7.9	St	DPG	0	57	1		OP	1455 cars	0
DL	Carbondale Main	8.15	St	DPG	0	22	1		OP	1455 cars	0
DL	Carbondale Main	8.85	St	TTR	1904	170	1	Lackawanna R	OP	1455 cars	0
DL	Carbondale Main	10.35	St	DPG	1907	60	1	Constitution Ave	OP	1455 cars	0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
DL	Carbondale Main	12.7002	St	DPG	0	22	1		OP	1455 cars	0
DL	Carbondale Main	13	St	TPG	0	50	1	Wayne St	OP	1455 cars	0
DL	Carbondale Main	15	St	TPG	0	28	1	Delaware St	OP	1455 cars	0
DL	Carbondale Main	16.05	St	TPG	1908	48	1	Pine St	OP	1455 cars	0
DL	Carbondale Main	16.25	St	TPG	1908	52	1	Walnut St	OP	1455 cars	0
DL	Carbondale Main	16.35	St	TPG	1908	50	1	Chestnut St	OP	1455 cars	0
DL	Carbondale Main	16.65	St	SST	1908	22	1		OP	1455 cars	0
DL	Carbondale Main	17	St	DPG	1967	45	1	Erie St	OP	1455 cars	0
DL	Carbondale Main	18.4	St	TTR	1904	107	1	Lackawanna R	OP	1455 cars	0
DL	Pocono-DL	85.5	Con		0	106	1	Broadheads Creek	BA	5599 cars	0
DL	Pocono-DL	85.6	Con		0	28	1		BA	5599 cars	0
DL	Pocono-DL	85.8	Con		1911	85	1		BA	5599 cars	0
DL	Pocono-DL	98.4	Con		0	43	1	Route 940	BA	5599 cars	0
DL	Pocono-DL	100.26	Con		0	81	1	Route 611	BA	5599 cars	0
DL	Pocono-DL	102.9	St	TPG	1974	16	1	Stream	OP	5599 cars	0
DL	Pocono-DL	107.05	Con		1917	31	1	Stream	BA	5599 cars	0
DL	Pocono-DL	107.4001	St	TPG	1905	18	1	Highway Underpass	OP	5599 cars	0
DL	Pocono-DL	108.35	St		1961	52.5	1	Highway	BA	5599 cars	0
DL	Pocono-DL	113.52	St	DPG	1903	26	1		OP	5599 cars	0
DL	Pocono-DL	117.8	St	DPG	1908	28	1	Jubilee Rd	OP	5599 cars	0
DL	Pocono-DL	118.93	St	TPG	1907	24	1	Market St	OP	5599 cars	0
DL	Pocono-DL	120.49	Con		0	49	1	Roaring Brook	BA	5599 cars	0
DL	Pocono-DL	127	Con		0	70	1	Roaring Brook	BA	5599 cars	0
DL	Pocono-DL	130.22	St	TPG	1925	58.8	1	Roaring Brook	OP	5599 cars	0
DL	Pocono-DL	130.73	St	TPG	1924	66	1	Roaring Brook	OP	5599 cars	0
DL	Pocono-DL	130.89	St	TPG	1925	58.5	1	Roaring Brook	OP	5599 cars	0
DL	Pocono-DL	133.29	St		1985	70	1	Cedar Ave	BA	5599 cars	0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
EPRR	Chester Valley	1.0501	St	DPG	0	15	1	Borough Line Rd	OP	0.0002	0
EPRR	Kutztown	3.1001	Con	CSB	0	12	1	Private Road Crossing	BA		0
EPRR	Lancaster Northern	1.8	St	DPG	0	24	1	Chapel Hill Road	OP	0.05	0
EPRR	Lancaster Northern	1.82	Con	CSB	0	16	1	Creek	BA	0.05	0
EPRR	Lancaster Northern	3.1	Con	CSB	0	16	1	Mail Route Rd	BA	0.05	0
EPRR	Lancaster Northern	4.0601	Con	CSB	0	11	1	Little Cocalico Creek	BA	0.05	0
EPRR	Lancaster Northern	4.4001	St	DPG	0	13	1	Brook	OP	0.05	0
EPRR	Lancaster Northern	4.75	St	DPG	0	12	1	Stream	OP	0.05	0
EPRR	Lancaster Northern	5.05	Con	CSB	0	12	1	Brook	BA	0.05	0
EPRR	Lancaster Northern	5.5001	Con	CSB	0	12	1	Brook	BA	0.05	0
EPRR	Lancaster Northern	5.6	Con	CSB	0	11.5	1	Flood Channel	BA	0.05	0
EPRR	Lancaster Northern	5.84	Con	CSB	0	11.5	1	Brook	BA	0.05	0
EPRR	Lancaster Northern	5.9	Con	CSB	0	10	1	Dead Water	BA	0.05	0
EPRR	Lancaster Northern	6.54	Con	CSB	0	11	1	Stream	BA	0.05	0
EPRR	Lancaster Northern	7.53	St	TPG	0	20	1	Little Cocalico Creek	OP	0.05	0
EPRR	Lancaster Northern	9.53	St	TPG	0	30	1	Cocalico Creek	OP	0.05	0
EPRR	North East Phila Ind Park	1.0001	St	DPG	0	25	1	Stream	OP	.125	0
EPRR	Octoraro	28.83	St	DPG	0	19	1	Mendenhall Drive	OP	0.1	0
EPRR	Octoraro	29.99	Con	CSB	0	10	1	Cattle Pass	BA	0.1	0
EPRR	Octoraro	31	Con	CSB	0	27	1	Hillendale Road	BA	0.1	0
EPRR	Octoraro	33.37	St	DPG	0	411	3	Red Clay Creek	OP	0.1	0
EPRR	Octoraro	34.34	St	DPG	0	67	1	Red Clay Creek	OP	0.1	0
EPRR	Octoraro	35.86	Con	CSB	0	12	1	Cattle Pass	BA	0.1	0
EPRR	Octoraro	37.73	St	TPG	0	65	1	White Clay Creek	OP	0.1	0
EPRR	Octoraro	38.0401	St	DPG	0	44	1	White Clay Creek	OP	0.1	0
EPRR	Octoraro	38.32	St	DPG	0	56	1	White Clay Creek	OP	0.1	0
EPRR	Octoraro	38.47	St	DPG	0	33	1	White Clay Creek	OP	0.1	0
EPRR	Octoraro	38.95	St	TPG	0	60	1	White Clay Creek	OP	0.1	0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
EPRR	Octoraro	39.19	St	TPG	0	49	1	White Clay Creek	OP	0.1	0
EPRR	Octoraro	39.57	Con	CSB	0	12	1	White Clay Creek	BA	0.1	0
EPRR	Octoraro	41.0101	St	DPG	0	75	2	White Clay Creek	OP	0.1	0
EPRR	Octoraro	41.7001	Con	CSB	0	20	1	Private Rd	BA	0.1	0
EPRR	Octoraro	43.84	St	DPG	0	20	1	Private Rd	OP	0.1	0
EPRR	Octoraro	44.75	St	DPG	0	892	12	Elkview Trestle	OP	0.1	0
EPRR	Octoraro	46.9901	St	DPG	0	92	2	Big Elk Creek	OP	0.1	0
EPRR	Octoraro	47.29	Con	CSB	0	28	1	Big Elk Creek	BA	0.1	0
EPRR	Octoraro	47.79	Con	CSB	0	16	1	Big Elk Creek	BA	0.1	0
EPRR	Octoraro	48.05	Con	CSB	0	10	1	Big Elk Creek	BA	0.1	0
EPRR	Perkiomen	23.51	St	DPG	0	20	1	Third St	OP	0.115	0
EPRR	Perkiomen	23.9301	Con	CSB	0	24	1	Sixth Ave	BA	0.115	0
EPRR	Perkiomen	25.08	St	TPG	0	30	1	State Route 29	OP	0.115	0
EPRR	Perkiomen	25.4	St	DPG	0	52	1	Hosensack Road	OP	0.115	0
EPRR	Perkiomen	25.44	St	SST	0	23	1	Hosensack Road	OP	0.115	0
EPRR	Perkiomen	26.6601	St	DPG	0	26.66	1	Treichler Road	OP	0.115	0
EPRR	Perkiomen	28.14	Mas	MAR	0	29	1	Indian Creek Arch	BA	0.115	0
EPRR	Perkiomen	30.39	St	SST	0	24	1	Farm Pass	OP	0.115	0
EPRR	Perkiomen	30.88	Con	CAR	0	12	1	Brook	BA		0
EPRR	Perkiomen	33.64	Mas	MAR	0	12	1	Creek	BA		0
EPRR	Perkiomen	34.68	St	DPG	0	13.5	1	Quarry Road	OP	0.115	0
EPRR	Perkiomen	37.08	Con	CSB	0	15	1	Second Street	BA	0.115	0
EPRR	Quakertown	32.93	Mas	MAR	0	20	1	Mill Creek	BA	0.107	0
EPRR	Quakertown	33.3	Con	CAR	0	171	7	Perkiomen Creek	BA	0.107	0
EPRR	Quakertown	33.52	St	TPG	0	46.25	1	Maple St	BA	0.107	0
EPRR	Quakertown	34.05	Mas	MAR	0	11	1	Creek	BA		0
EPRR	Quakertown	35.26	Con	CST	0	24	1	Eight St	BA	0.107	0
EPRR	Quakertown	36.09	Con	CST	0	24	1	Three Mile Run Rd	BA	0.107	0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
EPRR	Quakertown	36.14	Mas	MAR	0	20	1	Three Mile Run	BA	0.107	0
EPRR	Quakertown	37.67	Con	CST	0	24	1	Rich Hill Rd	BA	0.107	0
EPRR	Quakertown	37.87	Mas	MAR	0	12	1	Creek	BA		0
EPRR	Quakertown	39.17	Con	CST	0	20	1	Morgan Creek	BA	0.107	0
EPRR	Quakertown	40.0001	Con	CST	0	15	1	Beaver Run	BA	0.107	0
EPRR	Quakertown	40.47	Con	CSB	1917	25.5	1	Channel	BA	0.107	0
EPRR	Quakertown	41.0001	Con	CSB	0	18	1	Pumping Sta Rd	BA	0.107	0
EPRR	Wilmington Northern	12.68	Con	CSB	0	24.5	1	Dillsworth Run	BA	0.25	0
EPRR	Wilmington Northern	13.15	Con	CSB	0	21.5	1	Pyles Road	BA	0.25	0
EPRR	Wilmington Northern	13.76	Con	CSB	0	15.25	1	Cattle Pass	BA	0.25	0
EPRR	Wilmington Northern	14.3	Con	CSB	0	27.5	1	Creek	BA	0.25	0
EPRR	Wilmington Northern	14.65	Con	CSB	0	13	1	Cattle Pass	BA	0.25	0
EPRR	Wilmington Northern	15.46	Mas	MAR	0	24	1	Darlington Run	BA	0.25	0
EPRR	Wilmington Northern	16.24	Con	CSB	0	11	1	Brandywine Ck Trib	BA	0.25	0
EPRR	Wilmington Northern	17.26	Con	CSB	0	22.5	1	Puseys Run	BA	0.25	0
EPRR	Wilmington Northern	17.42	Con	CSB	0	15	1	Cattle Pass	BA	0.25	0
EPRR	Wilmington Northern	17.73	Con	CSB	0	52	2	Pocopson Creek	BA	0.25	0
EPRR	Wilmington Northern	19.91	Con	CSB	0	15.25	1	Faucett's Run	BA	0.25	0
EPRR	Wilmington Northern	20.37	Con	CSB	0	10	1	Faucett's Run	BA	0.25	0
EPRR	Wilmington Northern	21.35	Con	CSB	0	20.5	1	Stream	BA	0.25	0
EPRR	Wilmington Northern	22.04	Con	CSB	0	13.5	1	Cattle Pass/Stream	BA	0.25	0
EPRR	Wilmington Northern	23.57	Con	CSB	0	10	1	Spring Run	BA	0.25	0
EPRR	Wilmington Northern	24.55	Con	CSB	0	23.5	1	Lawrence Run	BA	0.25	0
EPRR	Wilmington Northern	25.73	St	SST	0	19	2	Brandywine Creek	OP	0.25	0
EPRR	Wilmington Northern	27.46	Con	CSB	0	11.5	1	Cattle Pass	BA	0.25	0
EPRR	Wilmington Northern	28.43	Con	CSB	0	126.5	7	Brandywine Creek	BA	0.25	0
EPRR	Wilmington Northern	28.5801	Con	CSB	0	13.5	1	Cattel Pass	BA	0.25	0

Juniata Valley Railroad Company

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
JVRR	Maitland IT	0.46	St	TPG	1918	616	8	Juniata River	BA	<1	286
JVRR	Maitland IT	1.38	St	DPG	1915	50	1	Driveway	OP	<1	286
JVRR	Maitland IT	1.51	St	DPG	1916	159	3	Kishcoquilas Crk	OP	<1	286
JVRR	Maitland IT	4.53	St	DPG	1917	96	3	Jacks Creek	OP	<1	286
JVRR	Milroy IT	0.51	St	TPG	1901	118	3	Kishcoquilas Crk	OP	<1	286
JVRR	Milroy IT	1	St	TPG	1916	204	3	Kishcoquilas Crk	OP	<1	286
JVRR	Milroy IT	2.12	Con	CSB	1915	48	2	Buck Run	BA	<1	286
JVRR	Milroy IT	3.25	St	DPG	1916	153	3	Kishcoquilas Crk	OP	<1	286
Lycoming Valley Railroad Company											
LVRR	Antlers RT	179.44	St	TPG	1901	94	1	Wmspt Ind	BA	3-5	286
LVRR	Antlers RT	213.86	St	TTR	1908	1128	7	Susquehanna River	OP	3-5	286
LVRR	Avis Ind.	1.78	St	DPG	1904	407	4	Pine Creek	OP	3-5	286
LVRR	Avis Ind.	1.98	St	TPG	1902	40	1	Hwy #2	OP	3-5	286
LVRR	Avis Ind.	168.67	Mas	MAR	1882	15	1	Lawshe Run	BA	3-5	286
LVRR	Avis Ind.	169.68	Mas	MAR	0	16	1	Twp Rd	BA	3-5	286
LVRR	Avis Ind.	171.3	St	TPG	1937	101	1	Rt. 220	BA	3-5	286
LVRR	Avis Ind.	171.46	Mas	MAR	1901	82	2	Larry Creek	BA	3-5	286
LVRR	Avis Ind.	174.48	St	SST	1925	25	1	Pine Run	OP	3-5	286
LVRR	Avis Ind.	177.2	Mas	MAR	1883	19	1	Stream	BA	3-5	286
LVRR	Corning Sec.	179.65	Mas	MAR	1901	15	1	Farmer crossing	BA	3-5	286
LVRR	Corning Sec.	179.72	Mas	MAR	1901	15	1	Dougherty Run	BA	3-5	286
LVRR	Corning Sec.	182.34	St	TPG	1949	280	3	Lycoming Creek	OP	3-5	286
LVRR	Corning Sec.	182.88	St	DPG	1949	42	1	Rose St.	OP	3-5	286
LVRR	Corning Sec.	184.27	Con	CAR	0	11	1	sewer	BA	3-5	286
LVRR	Corning Sec.	185.87	St	DPG	1903	16	1	McClure Run	OP	3-5	286
LVRR	Corning Sec.	186.18	Con	CSB	1948	58	5	Millers Run	BA	3-5	286
LVRR	Corning Sec.	188.23	St	DPG	1949	94	2	Pond	OP	3-5	286
LVRR	Corning Sec.	188.32	St	TPG	1927	360	6	Loyalsock Creek	BA	3-5	286

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
LVRR	Corning Sec.	194.34	St	DPG	1949	28	1	Stream	OP	3-5	286
LVRR	Corning Sec.	195.84	Mas	MAR	1880	12	1	Wolf Run	BA	3-5	286
LVRR	Corning Sec.	196.33	St	DPG	1933	160	2	Muncy Creek	BA	3-5	286
LVRR	Corning Sec.	196.62	Con	CSB	1948	32	1	Farm Road	BA	3-5	286
LVRR	Corning Sec.	197.91	Con	CSB	1930	25	1	Dewart Rd.	BA	3-5	286
LVRR	Corning Sec.	198.04	St	DPG	1930	1290	18	Susq. River	BA	3-5	286
LVRR	Corning Sec.	198.91	St	SST	1972	33	1	Turkey Run	OP	3-5	286
Mittal Steel USA Railways, Inc (BVRY)											
MSUB	Brandywine Valley	0.25	St	DPG	0	150	2	Brandywine Creek	OP	.8	263
MSUB	Brandywine Valley	1.0002	Con	CST	0	150	2	Brandywine Creek	BA	.1	263
MSUB	Brandywine Valley	5	Con	CAR	0	150	2	Brandywine Creek	BA	.1	263
Mittal Steel USA Railways, Inc (SH)											
MSUS	Mainline	100	St	DTR	1897	302.3	3	Canal, RR, Road	OP	1560 cars	286
Mittal Steel USA Railways, Inc (UPM)											
MSUU	Upper Merion & Plymouth	0.10001	St	TPG	1911	900	9	Schuylkilll R	BA	.8	286
Mount Union Connecting R.R. Co.											
MTC	Mainline	1.6	Con	CAR	1920	30	1		BA	500 cars	315
New York, Susquehanna & Western Railroad											
NYSW	Mainline	90.8401	St	DTR	0	648	4	Delaware R	OP	2	286
NYSW	Mainline	91.16	Mas	MAR	0	15	1	Bush Kill Creek	BA	2	286
NYSW	Mainline	102.31	Mas	MAR	1956	20	1	Parkers Glen	BA	2	286
NYSW	Mainline	104.78	Mas	MAR	1956	20	1	Waterway	BA	2	286
NYSW	Mainline	105.79	St	DPG	1955	249	3	Shohola Creek	OP	2	286
NYSW	Mainline	105.99	Con	CSB	1941	30	1	SR 434	BA	2	286
NYSW	Mainline	110.54	St	DTR	1894	474	5	Laxawaxen River	OP	2	286
NYSW	Mainline	113.06	St	TPG	1902	120	3	Holderts Creek	OP	2	286
NYSW	Mainline	115.55	St	DPG	1973	92	2	Mast Hope Creek	OP	2	286
NYSW	Mainline	117.76	St	TTR	1903	536	4	Delaware R	OP	2	286

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
NYSW	Mainline	189.46	Mas	MAR	1847	1200	17	Starruca Viaduct over land	BA	2	286
NYSW	Mainline	190.13	Con	CAR	1930	280	9	SR 296	BA	2	286
NYSW	Mainline	190.21	Con	CAR	1930	25	1	Cananacta Creek	BA	2	286
NYSW	Mainline	191.24	St	DPG	1910	96	2	Exchange St.	BA	2	286
NYSW	Mainline	191.99	St	TTR	1907	195	1	Susquehanna R	OP	2	286
NYSW	Mainline	192.22	St	TTR	1917	636	4	Susquehanna R	OP	2	286
NYSW	Mainline	195.46	St	TPG	1904	44	1	Denton Creek	OP	2	286
NYSW	Mainline	197.16	St	TOP	1908	12	1	Stream	BA	2	286
NYSW	Mainline	198.52	St	TPG	1904	44	1	New Mans Creek	OP	2	286
NYSW	Mainline	199.34	St	DPG	1904	39	1	Stream	OP	2	286
NYSW	Mainline	200.7	St	TPG	1902	75	1	Tow Br. Creek	OP	2	286
NYSW	Mainline	201.52	St	DPG	1903	44	1	Thomas Creek	OP	2	286
Nittany & Bald Eagle Railroad Company											
NBER	Bellefonte Branch	30.95	Con	CSB	0	14	1	Moose Run	BA	>6	286
NBER	Bellefonte Branch	31.08	St	TPG	1916	115	2	Bald Eagle Crk	OP	>6	286
NBER	Bellefonte Branch	33.1	Con	CSB	1917	40	2	Buffalo Run	BA	>6	286
NBER	Bellefonte Branch	33.62	St	TPG	1920	203	4	Spring Crk	OP	>6	286
NBER	Bellefonte Branch	34.09	St	TPG	1909	66	1	Spring Crk	OP	>6	286
NBER	Bellefonte Branch	36.9	St	DPG	1912	27	1	Logan Run	OP	>6	286
NBER	Bellefonte Branch	37.3	St	DPG	0	12	1	Stream	OP	>6	286
NBER	Bellefonte Branch	37.69	St	SST	0	10	1	Stream	OP	>6	286
NBER	Mainline	3.21	Con	CSB	1914	12	1	Stream	BA		286
NBER	Mainline	3.93	St	TPG	1915	46	1	Laurel Run	BA	>6	286
NBER	Mainline	4.68	St	TPG	1915	50	1	L. Bald Eagle Cr	BA	>6	286
NBER	Mainline	4.85	St	TPG	1915	54	1	L. Bald Eagle Cr	BA	>6	286
NBER	Mainline	5.57	Con	CSB	1915	12	1	Stream	BA	>6	286
NBER	Mainline	6.17	St	TPG	1907	51	1	L. Bald Eagle Cr	OP	>6	286
NBER	Mainline	6.79	St	TPG	1912	48	1	L. Bald Eagle Cr	TB	>6	286

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
NBER	Mainline	9.24	St	SST	1912	16	1	L. Bald Eagle Cr	OP	>6	286
NBER	Mainline	9.76	Con	CSB	1915	28	1	Bald Eagle Cr	BA	>6	286
NBER	Mainline	16.75	St	DPG	1914	190	3	Bald Eagle Cr	BA	>6	286
NBER	Mainline	17.13	Con	CSB	1915	18	1	Thompson Run	BA	>6	286
NBER	Mainline	17.95	St	TPG	1916	30	1	Fisher's Run	BA	>6	286
NBER	Mainline	19.03	Con	CSB	1910	18	1	Shingleton's Run	BA	>6	286
NBER	Mainline	19.5	Con	CSB	1916	24	1	Mudlick Run	BA	>6	286
NBER	Mainline	20.67	St	TPG	1912	24	1	Williams Run	BA	>6	286
NBER	Mainline	21.46	Con	CSB	1913	42	2	Adams Creek	BA	>6	286
NBER	Mainline	22.55	Con	CSB	1926	18	1	Yeager's Run	BA	>6	286
NBER	Mainline	23.06	St	SST	1916	14	1	Stream	OP	>6	286
NBER	Mainline	24.01	Con	CSB	0	15	1	Stream	BA	>6	286
NBER	Mainline	24.68	St	TPG	1915	45	1	Dick's Run	BA	>6	286
NBER	Mainline	25.75	St	TPG	1916	37	1	Dewitt's Run	BA	>6	286
NBER	Mainline	26.01	Con	CSB	1915	13	1	Stream	BA	>6	286
NBER	Mainline	26.59	Con	CSB	1912	11	1	Stream	BA	>6	286
NBER	Mainline	27.07	Con	CSB	1916	26	1	Hays Run	BA	>6	286
NBER	Mainline	28.04	Con	CSB	1916	28	1	Egypt Run	BA	>6	286
NBER	Mainline	29.07	Con	CSB	1915	17	1	Stream	BA	>6	286
NBER	Mainline	29.39	Con	CSB	1915	61	2	Wallace Run	BA	>6	286
NBER	Mainline	30.94	Con	CSB	1915	23	1	Stream	BA	>6	286
NBER	Mainline	32.11	St	SST	1900	18	1	Shope's Run	TB	>6	286
NBER	Mainline	33.65	Con	CSB	1900	18	1	Stream	BA	>6	286
NBER	Mainline	33.84	St	DPG	1900	454	6	Bald Eagle Creek	BA	>6	286
NBER	Mainline	33.97	St	DPG	1900	40	1	Bald Eagle Canal	OP	>6	286
NBER	Mainline	34.32	Con	CSB	1900	20	1	Stream	BA	>6	286
NBER	Mainline	40	Con	CSB	1968	20	1	Lick Run	BA	>6	286
NBER	Mainline	44.33	Con	CSB	1968	20	1	Frank's Run	BA	>6	286

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
NBER	Mainline	50.65	Con	CSB	1916	52	1	NYC	BA	>6	286
NBER	Mainline	51.21	St	TPG	1915	183	3	Fishing Creek	OP	>6	286
NBER	Pleasant Gap	0.66	St	DPG	1896	107	3	SR 144	OP	>6	286
NBER	Post Running	52.41	St	DPG	1916	242	6	Bald Eagle Creek	BA	>6	286
NBER	Post Running	52.89	Con	CSB	1900	11	1	Stream	BA		0
NBER	Post Running	53.24	Con	CSB	1915	34	1	Race	BA	>6	286
NBER	Post Running	54.01	Con	CSB	1918	20	1	Stream	BA	>6	286
NBER	Tyrone Running	0.05	St	DPG	1905	295	5	Little Juniata River	OP	>6	286
NBER	Tyrone Running	0.24	St	TPG	1903	65	1	10th St.	OP	>6	286
NBER	Tyrone Running	0.27	St	SST	1920	11	1	11th St.	OP	>6	286
NBER	Tyrone Running	0.64	Con	CSB	1918	13	1	Stream	BA	>6	286
NBER	Tyrone Running	1.7	St	DPG	1918	18	1	Decker's Run	OP	>6	286
NBER	Tyrone Running	1.84	Con	CSB	1918	19	1	Spring Run	BA	>6	286
North Shore Railroad											
NSHR	North Shore	180.55	St	DPG	1926	54	1	Briar Creek	OP	<1	286
NSHR	North Shore	185.4	St	SST	1919	14	1	Stream	OP	<1	286
NSHR	North Shore	186.1801	St	SST	0	15	1	Stream	OP	<1	286
NSHR	North Shore	188.5	Con	CSB	1926	18	1	Stream	BA	<1	286
NSHR	North Shore	191.37	Mas	MAR	0	15	1	Hemlock Creek	BA	<1	286
NSHR	North Shore	191.48	St	TPG	0	30	1	Rupert Road	SP	<1	286
NSHR	North Shore	191.52	St	DPG	1936	135	3	Fishing Creek	OP	<1	286
NSHR	North Shore	201.35	St	DPG	1903	23	1	Sechlers Creek	OP	<1	286
NSHR	North Shore	201.66	Con	CSB	0	11	1	Stream	BA	<1	286
NSHR	North Shore	202.07	St	DPG	1903	45	3	Mahoning Creek	OP	<1	286
NSHR	North Shore	204.9	St	SST	1903	14	1	Stream	OP	<1	286
NSHR	North Shore	211.27	St	DPG	1936	68	1	Johnson Run	OP	<1	286
R.J. Corman Railroad Company/PA Lines, Inc.											
RJCP	C&M	17.67	St	TPG	0	155	2		OP	0 cars	286

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
RJCP	C&M	18.27	St	DTR	1909	260	2	Anderson Creek	OP	0 cars	0
RJCP	C&M	18.28	St	DPG	0	661	17		OP	0 cars	286
RJCP	C&M	18.47	St	TTR	0	180	1		OP	0 cars	286
RJCP	C&M	18.52	St	TPG	0	74	1		OP	0 cars	286
RJCP	C&M	18.57	St	TTR	1909	140	1	Rail Trail	BA	0 cars	0
RJCP	C&M	18.65	St	TPG	0	74	1		OP	0 cars	286
RJCP	C&M	19.04	St	TPG	0	44	1		OP	0 cars	286
RJCP	Cherry Tree	19.61	St	DPG	0	372	4		OP	5300 cars	286
RJCP	Cherry Tree	21.291	St	TPG	0	30	1		OP	5300 cars	286
RJCP	Cherry Tree	21.7	Mas	MAR	0	30	1		BA	5300 cars	286
RJCP	Cherry Tree	21.73	St	TPG	0	30	1		OP	5300 cars	286
RJCP	Cherry Tree	21.96	St	DPG	0	563	13		OP	5300 cars	286
RJCP	Cherry Tree	22.88	St	DPG	0	379	5		OP	5300 cars	286
RJCP	Cherry Tree	26.54	St	TTR	0	155	1		OP	5300 cars	286
RJCP	Cherry Tree	29.84	St	DPG	0	31	1		OP	5300 cars	286
RJCP	Cherry Tree	31.99	St	DPG	0	28	1		OP	5300 cars	286
RJCP	Cherry Tree	33.77	St	TPG	0	36	1		OP	5300 cars	286
RJCP	Cherry Tree	35.46	St	SST	0	12	1		OP	5300 cars	286
RJCP	Cherry Tree	36.04	St	DPG	0	45	1		OP	5300 cars	286
RJCP	Cherry Tree	37.691	St	DPG	0	24	1		OP	5300 cars	286
RJCP	Cherry Tree	39.391	St	SST	0	18	1		OP	5300 cars	286
RJCP	Cherry Tree	43.77	St	SST	0	24	1		OP	5300 cars	286
RJCP	Cherry Tree	43.9	Mas	MAR	0	32	2		BA	5300 cars	286
RJCP	Cherry Tree	49.48	St	SST	0	25	1		OP	5300 cars	286
RJCP	Cherry Tree	49.5	St	DPG	0	40	1	Creek	OP	5300 cars	0
RJCP	Cherry Tree	49.58	St	SST	0	17	1		OP	5300 cars	286
RJCP	Cherry Tree	50.46	St	DPG	0	100	2		OP	5300 cars	286
RJCP	Cherry Tree	50.61	St	DPG	0	120	2		OP	5300 cars	286

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
RJCP	Cherry Tree	52.33	St	DPG	0	110	2		OP	5300 cars	286
RJCP	Cherry Tree	52.49	St	SST	0	24	1		OP	5300 cars	286
RJCP	Cresson Branch	0.72	Con	CSB	0	41	1		BA	2623 cars	286
RJCP	Cresson Branch	10.03	Con	CSB	0	23	1		BA	2623 cars	286
RJCP	Cresson Branch	11.31	Con	CSB	0	34	1		BA	2623 cars	286
RJCP	Cresson Branch	12.74	St	SST	0	39	2		OP	2623 cars	286
RJCP	Cresson Branch	15.29	Con	CSB	0	23	1		BA	2623 cars	286
RJCP	Cresson Branch	16.151	St	DPG	0	65	1		OP	2623 cars	286
RJCP	Cresson Branch	16.31	St	DPG	0	66	1		OP	2623 cars	286
RJCP	Cresson Branch	18.02	Con	CSB	0	22	1		BA	2623 cars	286
RJCP	Cresson Branch	18.59	St	DPG	0	76	1		OP	2623 cars	286
RJCP	Cresson Branch	24.7	St	DPG	0	24	1		OP	2623 cars	286
RJCP	Cresson Branch	27.69	St	TPG	0	33	1		OP	2623 cars	286
RJCP	Cresson Branch	28.08	St	TPG	0	112	2		OP	2623 cars	286
RJCP	Cresson Branch	30.24	Con	CSB	0	14	1		BA	2623 cars	286
RJCP	Cresson Branch	30.941	St	SST	0	13	1		OP	2623 cars	286
RJCP	Cresson Branch	31.61	St	SST	0	19	1		OP	2623 cars	286
RJCP	Cresson Branch	35.17	St	SST	0	11	1		OP	2623 cars	286
RJCP	Cresson Branch	37.05	Con	CSB	0	24	1		BA	2623 cars	286
RJCP	Cresson Branch	39	St	DTR	0	130	1	Chest Creek	OP	2623 cars	0
RJCP	Cresson Branch	39.05	St	DPG	0	460	11	Flood Plane	OP	2623 cars	286
RJCP	Cresson Branch	39.1	St	TTR	1892	98	1	Gravel Access Road	OP	2623 cars	0
RJCP	Cresson Branch	44.78	St	DPG	0	272	3		OP	2623 cars	286
RJCP	Cresson Branch	45.57	St	SST	0	112	3		OP	2623 cars	286
RJCP	Cresson Branch	57.62	St	DPG	0	52	1		OP	2623 cars	286
RJCP	Cresson Branch	58.36	St	DPG	0	365	4		OP	2623 cars	286
RJCP	Cresson Branch	58.88	St	DPG	0	855	13		OP	2623 cars	286
RJCP	Cresson Branch	61.16	St	TPG	0	74	1		OP	2623 cars	286

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
RJCP	Cresson Branch	62.81	St	TPG	0	74	1		OP	2623 cars	286
RJCP	Cresson Branch	65.29	St	TPG	0	74	1		OP	2623 cars	286
RJCP	Cresson Branch	65.6	St	TTR	0	350	3		OP	2623 cars	286
RJCP	Hillman	0.461	St	SST	0	18	1		OP	0 cars	286
RJCP	Irvona	4.671	St	DPG	0	30	1		OP	1791 cars	286
RJCP	Irvona	7.12	St	SST	0	13	1		OP	1791 cars	286
RJCP	Irvona	8.751	Con	CSB	0	24	1		BA	1791 cars	286
RJCP	Irvona	10.81	St	SST	0	19	1		OP	1791 cars	286
RJCP	Irvona	12.12	Con	CSB	0	20	1		BA	1791 cars	286
RJCP	Irvona	14.38	St	SST	0	23	1		OP	1791 cars	286
RJCP	Irvona	18.36	St	DPG	0	33	1		OP	1791 cars	286
RJCP	Wallaceton	2.62	St	TTR	0	242	4		OP	3391 cars	286
RJCP	Wallaceton	6.86	St	DPG	0	626	8		OP	3391 cars	286
RJCP	Wallaceton	16.38	St	SST	0	19	1		OP	3391 cars	286
RJCP	Wallaceton	17.23	St	TPG	0	124	2		OP	3391 cars	286
RJCP	Wallaceton	17.93	St	TPG	0	118	2		OP	3391 cars	286
RJCP	Wallaceton	19.06	St	DPG	0	120	2		OP	3391 cars	286
RJCP	Wallaceton	31.54	Con	CSB	0	24	1		BA	3391 cars	286
RJCP	Wallaceton	34.27	Con	CSB	0	21	1		BA	3391 cars	286
RJCP	WBV	2.02	St	DPG	0	402	4		OP	4856 cars	286
RJCP	WBV	3.64	St	DPG	0	422	5		OP	4856 cars	286
RJCP	WBV	7.63	St	DPG	0	603	6		OP	4856 cars	286
RJCP	WBV	18.56	St	DPG	0	55	1		OP	4856 cars	286
RJCP	WBV	22.69	St	DPG	0	65	1		OP	4856 cars	286
RJCP	WBV	23.93	St	SST	0	114	1		OP	4856 cars	286
RJCP	WBV	24.04	Con	CAR	0	22	1		BA	4856 cars	286
RJCP	WBV	31.431	St	DPG	0	89	2		OP	4856 cars	286
RJCP	WBV	33.99	St	DPG	0	22	1		OP	4856 cars	286

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
RJCP	WBV	37.8	St	TPG	0	108	2		OP	4856 cars	286
RJCP	WBV	38.05	St	DPG	0	56	2		OP	4856 cars	286
RJCP	WBV	39.24	St	DPG	0	46	1		OP	4856 cars	286
RJCP	WBV	42.801	St	SST	0	18	1		OP	4856 cars	286
RJCP	WBV	44.1	Con	CSB	0	14	1		BA	4856 cars	286
RJCP	WBV	45.37	St	DPG	0	73	2		OP	4856 cars	286
RJCP	WBV	46.56	Con	CSB	0	12	1		BA	4856 cars	286
RJCP	WBV	46.66	Con	CSB	0	18	1		BA	4856 cars	286
RJCP	WBV	46.99	Con	CSB	0	14	1		BA	4856 cars	286
RJCP	WBV	47.24	St	SST	0	14	1		OP	4856 cars	286
RJCP	WBV	51.2	St	SST	0	15	1		OP	4856 cars	286
RJCP	WBV	53.321	St	TPG	0	400	4		OP	4856 cars	286
Reading Blue Mountain and Northern Railroad Compan											
RBMN	Mahanoy & Shamokin	108.65	Con	CST	0	45	1	South 8th Street	BA		0
RBMN	Mahanoy & Shamokin	109.1			1913	105	2	Main St	BA		0
RBMN	Mahanoy & Shamokin	111.1	Con		0	45	1	Stream	OP		0
RBMN	Mahanoy & Shamokin	112.8			0	42	1	Stream	OP		0
RBMN	Mahanoy & Shamokin	114.35			0	70	1	Mahanoy Creek	OP		0
RBMN	Mahanoy & Shamokin	120			0	100	1	Mahanoy Creek	BA		0
RBMN	Mahanoy & Shamokin	121.55	Con		0	140	2	Mahanoy Creek	OP		0
RBMN	Mahanoy & Shamokin	121.8	Mas	MAR	0	60	1	Mahanoy Creek	BA		0
RBMN	Mahanoy & Shamokin	122.3	Con		0	180	2	Mahanoy Creek	OP		0
RBMN	Mahanoy & Shamokin	123.9			0	44	1	Public Rd	BA		0
RBMN	Mahanoy & Shamokin	124.15			0	0	1	Big Run	OP		0
RBMN	Mahanoy & Shamokin	190.85			0	90	1		BA		0
RBMN	Mainline	62.3			0	0	1	Rt 61	OP		0
RBMN	Mainline	62.801			0	0	1	Laurel Run	OP		0
RBMN	Mainline	63.7			0	0	1		OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
RBMN	Mainline	65.2			0	0	1	Washington Rd	OP		0
RBMN	Mainline	65.4			0	175	1	Stream & Road	OP		0
RBMN	Mainline	67.55			0	0	1	Irish Creek	OP		0
RBMN	Mainline	71.05	Mas	MAR	0	36	1	Stream	BA		0
RBMN	Mainline	71.25	Mas	MAR	0	64	1	Creek	BA		0
RBMN	Mainline	72.55			0	0	1	Mill Creek	OP		0
RBMN	Mainline	75.3	Con	CST	0	95	2	State Street	BA		0
RBMN	Mainline	75.5			0	44	1	Swamp Rd	BA		0
RBMN	Mainline	78.45			0	0	1	Little Schuylkill River	OP		0
RBMN	Mainline	80.85			0	13	1	Stream	OP		0
RBMN	Mainline	83.65			0	28	1	Creek	BA		0
RBMN	Mainline	84.25	Tim		0	215	4	Little Schuylkill River	OP		0
RBMN	Mainline	86.1			0	40	1	Rausch's Creek	OP		0
RBMN	Mainline	87.05			0	37	1	Koenig Creek	BA		0
RBMN	Mainline	88.2			0	0	1	watereway	OP		0
RBMN	Mainline	89.15			0	0	1	Little Schuylkill River	OP		0
RBMN	Mainline	91.75	St	DPG	0	40	1	Little Schuylkill River	OP		0
RBMN	Mainline	92.2	Con		0	17	1	Private Rd	BA		0
RBMN	Mainline	92.85	St	DPG	0	40	1	Little Schuylkill River	BA		0
RBMN	Mainline	98.1			0	0	1	Wabash Creek	OP		0
RBMN	Mainline	100.2			0	0	1	Little Schuylkill River	OP		0
RBMN	Mainline	100.4			0	0	1	Little Schuylkill River	OP		0
RBMN	Mainline	100.75			0	0	1	Pine Creek	OP		0
RBMN	Mainline	102.701			0	0	1	Pine Creek	OP		0
RBMN	Mainline	107.3			0	0	1		OP		0
RBMN	Mainline	108.6			0	16	1		OP		0
RBMN	Mainline	109.15			0	25	1		OP		0
RBMN	Mainline	121.2	St	TTR	0	190	1		OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
RBMN	Mainline	124.901			0	320	2		OP		0
RBMN	Mainline	129.5			0	0	1	Creek	OP		0
RBMN	Mainline	130.9			0	0	1	Lehigh River	OP		0
RBMN	Mainline	133.85			0	50	1	Stoney Creek	OP		0
RBMN	Mainline	135.15			0	84	1	Drakes Creek	OP		0
RBMN	Mainline	139			0	75	1	Mud Run	OP		0
RBMN	Mainline	141			0	85	1	Hickory Run	OP		0
RBMN	Mainline	142.75	Mas	MAR	0	50	1	Hayes Creek	BA		0
RBMN	Mainline	144	Con	CAR	0	20	1	Creek	BA		0
RBMN	Mainline	144.9			0	0	6	Lehigh River	OP		0
RBMN	Mainline	145			0	0	1		OP		0
RBMN	Mainline	145.62			0	0	1	Susquehanna St	OP		0
RBMN	Mainline	147.25	St		0	0	1		OP		0
RBMN	Mainline	149.9	Con	CAR	0	36	1	Rt. 437	BA		0
RBMN	Mainline	155.6			0	0	1	Wapwallow Creek	OP		0
RBMN	Mainline	164.5			0	0	1	Laurel Run	OP		0
RBMN	Mainline	166.45			0	0	1	W. Borrow Run	OP		0
RBMN	Mainline	166.9			0	0	1	Kellys Run	OP		0
RBMN	Mainline	169.5			0	0	1	Creek Rd	OP		0
RBMN	Mainline	169.7	Mas	MAR	0	15	2	Westminster Rd	BA		0
RBMN	Mainline	170.3	Mas	MAR	0	15	1	Gardner Run	BA		0
RBMN	Mainline	173.8			0	0	1	Cork Lane	OP		0
RBMN	Middleport	95.9			0	0	1	Creek	OP		0
RBMN	Middleport	97.8			0	0	1	Creek	OP		0
RBMN	Middleport	98.9			0	0	1	Schuylkill River	OP		0
RBMN	Middleport	99.45			0	0	1	Schuylkill River	OP		0
RBMN	Minersville	1.0502			0	0	1	Rt 183	OP		0
RBMN	Minersville	2.2			0	0	1	Creek	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
RBMN	Minersville	2.8			0	0	1	Schuylkill River	OP		0
RBMN	Minersville	3.2			0	0	1	Schuylkill River	OP		0
RBMN	Minersville	5.3			0	0	1	Schuylkill River	OP		0
RBMN	Minersville	5.75			0	0	1	Schuylkill River	OP		0
RBMN	Minersville	7.651			0	0	1	Schuylkill River	OP		0
RBMN	Pennsy	64.56			0	0	1	Rt 222	OP		0
RBMN	Pennsy	64.85			0	0	1	West Huller Lane	OP		0
RBMN	Pennsy	64.95			0	0	1	Rt 61	OP		0
RBMN	Pennsy	65.601			0	0	1		OP		0
RBMN	Pennsy	66.7			0	0	1		OP		0
RBMN	Pennsy	69.95			0	0	1	Mohrsville Rd	OP		0
RBMN	Pennsy	72.35			0	0	1	Water St	OP		0
RBMN	Pottsville	80.7			0	0	1	Stoney Creek	OP		0
RBMN	Pottsville	82.1			0	0	1	Schuylkill River	OP		0
RBMN	Pottsville	82.45			0	0	1	Schuylkill River	OP		0
RBMN	Pottsville	83.45			0	0	1	E Market St	OP		0
RBMN	Pottsville	84.6			0	0	1	Schuylkill River	OP		0
RBMN	Pottsville	85.7			0	0	1	Schuylkill River	OP		0
RBMN	Pottsville	87.8			0	0	1	Schuylkill River	OP		0
RBMN	Pottsville	88.95			0	0	1	Schuylkill River	OP		0
RBMN	Pottsville	92.5			0	0	1	Centre St	OP		0
RBMN	Pottsville	98.45			0	0	1	Schuylkill River	OP		0
RBMN	Scranton	0.15			0	0	1	Main St	OP		0
RBMN	Scranton	1.95			0	0	1	Lonesome Rd	OP		0
RBMN	Scranton	6.701			0	0	1	Lackawanna R	OP		0
RBMN	Susquehanna	0.1501			0	0	1	D&H Railway	OP		0
RBMN	Susquehanna	3.85			0	0	1	Lackawanna R	OP		0
RBMN	Susquehanna	6.9			0	0	1	Stouts Creek	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
RBMN	Susquehanna	7.652			0	0	1	Gardner Creek	OP		0
RBMN	Susquehanna	11.9			0	0	1	Keeler Creek	OP		0
RBMN	Susquehanna	13.95			0	0	1	Creek Rd	OP		0
RBMN	Susquehanna	14.301			0	0	1	Bowmans Creek	OP		0
RBMN	Susquehanna	14.5			0	0	1	Smith Creek	OP		0
RBMN	Susquehanna	17.6			0	0	1	Wilseys Creek	OP		0
RBMN	Susquehanna	20.3			0	0	1	Mill Run	OP		0
RBMN	Susquehanna	21			0	0	1	Jenkins Creek	OP		0
RBMN	Susquehanna	24.5			0	0	1	Tunkhannock Creek	OP		0
RBMN	Susquehanna	30.05			0	0	1	Tagues Creek	OP		0
RBMN	Tremont	5.751	Tim		0	68	2		OP		0
RBMN	Tremont	10.9			0	50	1		OP		0
RBMN	Tremont	14			0	30	1		OP		0
RBMN	Tremont	15.601	St	SST	0	50	1		OP		0
RBMN	Tremont	17.601	St	SST	0	30	1		OP		0
Shamokin Valley Railroad Company											
SVRR	Carbon Run	0.08	St	SST	1923	82	4	Shamokin Creek	OP	<1	286
SVRR	Carbon Run	0.18	St	SST	1923	38	2	Carbon Run	OP	<1	286
SVRR	SVRR	13.34	St	TPG	1946	28	1	Stream	BA	<1	286
SVRR	SVRR	14.93	St	TPG	0	156	3	Shamokin Creek	OP	<1	286
SVRR	SVRR	17.39	Con	CSB	0	28	1	Creek	BA	<1	286
SVRR	SVRR	136.65	St	DPG	1946	52	1	Shamokin Creek	BA	<1	286
SVRR	SVRR	149.53	Con	CSB	1917	27	1	Stream	BA	<1	286
SVRR	SVRR	151.82	Mas	MAR	1917	12	1	Stream	BA	<1	286
SVRR	SVRR	154.84	St	DPG	1917	68	2	Little Shamokin Crk	OP	<1	286
SVRR	SVRR	155.1	St	DPG	1907	34	1	Rt 61	OP	<1	286
SVRR	SVRR	155.22	St	DPG	1903	250	4	Shamokin Creek	OP	<1	286
Southwestern Pennsylvania Railroad Company											

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
SWP	Bullskin	22.79	St	DPG	0	90	2	Mounts Creek	OP		0
SWP	Bullskin	22.901	St	DPG	0	108	2	Mounts Creek	OP		0
SWP	Bullskin	23.02	St	DPG	0	98	2	Mounts Creek	OP		0
SWP	Bullskin	23.14	St	DPG	0	155	3	Mounts Creek	OP		0
SWP	FM&P Sub	59.51	St	DPG	1903	556	6	Youghiogheny R	OP		0
SWP	FM&P Sub	60.57	St	TPG	1908	75	1	Dunbar Creek	OP		0
SWP	FM&P Sub	60.83	St	TPG	1908	73	1	Dunbar Creek	OP		0
SWP	FM&P Sub	61.48	St	SST	0	84	2	Dunbar Creek	OP		0
SWP	FM&P Sub	61.68	St	SST	1945	24	1	Gist Run	OP		0
SWP	FM&P Sub	62.08	St	TPG	0	48	1	Gist Run	OP		0
SWP	FM&P Sub	62.78	Con	CSB	0	18.5	1	Gist Run	BA		0
SWP	FM&P Sub	62.87	St	SST	0	25	1	Gist Run	OP		0
SWP	FM&P Sub	63.1101	St	SST	1944	20	1	Gist Run	OP		0
SWP	FM&P Sub	63.38	St	SST	0	22	1	Gist Run	OP		0
SWP	FM&P Sub	63.77	St	SST	1944	20	1	Laurel Run	OP		0
SWP	FM&P Sub	67.22	Con	CSB	0	34	2	Cove Run	BA		0
SWP	FM&P Sub	67.91	St	SST	0	20.75	1	Cove Run	OP		0
SWP	FM&P Sub	68.49	St	DPG	0	37	1	Cove Run	OP		0
SWP	FM&P Sub	68.64	St	DPG	0	28	1	Cove Run	OP		0
SWP	FM&P Sub	69.47	St	SST	0	30	1	Cove Run	OP		0
SWP	FM&P Sub	69.74	St	SST	0	29.67	1	Cove Run	OP		0
SWP	FM&P Sub	70.821	St	TPG	1917	50	1	Redstone Creek	OP		0
SWP	FM&P Sub	70.97	St	TPG	0	40	1	Dry Span	OP		0
SWP	FM&P Sub	71.08	St	TPG	1917	60	1	Redstone Creek	OP		0
SWP	FM&P Sub	71.62	St	SST	0	55	2	Redstone Creek	OP		0
SWP	FM&P Sub	72.2	Con	CAR	0	18	1	Redstone Creek	BA		0
SWP	FM&P Sub	72.85	Con	CSB	0	15.75	1	Lick Run	BA		0
SWP	FM&P Sub	73.38	St	SST	1933	23	1	Stream	OP		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
SWP	FM&P Sub	76.76	St	SST	0	16	1	George Creek	OP		0
SWP	FM&P Sub	78.48	St	TPG	1917	60	1	George Creek	OP		0
SWP	Greensburgh Industrial	0.34	St	DPG	1906	40	1	Pittsburgh St	OP		0
SWP	Greensburgh Industrial	1.05	St	TPG	0	90	1	Mount Pleasant St	OP		0
SWP	Mount Pleasant Sub	0.081	St	DPG	0	40	1	Galley Run	OP		0
SWP	Mount Pleasant Sub	0.19	St	DPG	0	22.5	1	Galley Run	OP		0
SWP	Mount Pleasant Sub	0.54	St	DPG	0	23.5	1	Galley Run	OP		0
SWP	Mount Pleasant Sub	1.03	St	SST	0	20	1	Galley Run	OP		0
SWP	Mount Pleasant Sub	6.7	St	SST	0	75.5	5	Jacob's Creek	OP		0
SWP	Mount Pleasant Sub	8.28	Tim	TST	0	56	4	Sulphur Run	OP		0
SWP	Mount Pleasant Sub	10.96	St	DPG	0	156	1	SR 2007	OP		0
SWP	Mount Pleasant Sub	11.6	St	DPG	0	301	4	SR 981	OP		0
SWP	Mount Pleasant Sub	12.7	St	DPG	0	230	3	T 752	OP		0
SWP	Radebaugh Subdivision	2.65	St	DPG	0	70	1	US Rt 119	OP		0
SWP	Radebaugh Subdivision	2.68	Mas	MAR	0	25	1	Jack's Run	BA		0
SWP	Radebaugh Subdivision	2.74	St	DPG	0	54	1	Slate Creek	OP		0
SWP	Radebaugh Subdivision	2.9	St	DPG	0	40	1	Slate Creek	OP		0
SWP	Radebaugh Subdivision	3.55	St	DPG	0	40	1	Slate Creek	BA		0
SWP	Radebaugh Subdivision	7.2601	St	DPG	0	107	1	Sewickley Creek	OP		0
SWP	Radebaugh Subdivision	8.31	Con	CST	0	16	1	Wilson Run	BA		0
SWP	Radebaugh Subdivision	8.82	Con	CST	0	16	1	Nelson Run	BA		0
SWP	Radebaugh Subdivision	15.81	St	DPG	0	40	1	Stauffer Run	OP		0
SWP	Radebaugh Subdivision	16.16	Con	CSB	0	18	1	Stauffer Run	BA		0
SWP	Radebaugh Subdivision	17.54	St	TPG	0	93	2	Jacob Creek	OP		0
SWP	Yukon	0.26	St	TPG	0	34	1	SR 3089	OP		0
SWP	Yukon	1.94	St	DPG	0	98	1	Sewickley Creek	OP		0
Stourbridge Railway, Inc											
SBR	Mainline	113.91	St	DPG	1915	29.41	1	Mill Cr	OP	2	263

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
SBR	Mainline	115.36	St	DPG	1915	24.5	1	Kirkham Cr	OP	2	263
SBR	Mainline	115.62	St	DPG	1915	29	1	Grassy Is. Cr	OP	2	263
SBR	Mainline	117.51	St	DPG	1991	100	1	Blooming Grove Cr	OP	2	263
SBR	Mainline	122.2	Con	CAR	1926	83	2	PP&L Outflow	BA	2	263
SBR	Mainline	124.9	St	DPG	2008	105	2	Wallenpaupack Cr	OP	2	263
SBR	Mainline	125.65	St	TPG	1915	208.83	2	Middle Cr	OP	2	263
Towanda-Monroeton Shippers Lifeline, Inc.											
TMSS	Mainline	10	St	SST	1910	20	1	Creek	OP	125 cars	286
TMSS	Mainline	20	St	SST	1910	20	1	Creek	OP	125 cars	286
Turtle Creek Industrial Railroad Co.											
TCKR	Mainline	2.52	St	DPG	1891	108	2	Turtle Creek	BA	150 cars	286
TCKR	Mainline	3	St	SST	1950	24	1	Trib Creek	OP	150 cars	286
TCKR	Mainline	3.69	St	DPG	1891	104	1		OP	150 cars	286
TCKR	Mainline	5.83	St	DPG	1895	55.5	1		OP	150 cars	286
TCKR	Mainline	7.76	St	DPG	1898	75	1	Turtle Creek	OP	150 cars	286
TCKR	Mainline	8.19	St	DPG	1898	55.5	1	Turtle Creek	OP	150 cars	286
TCKR	Mainline	10.19	Con	CAR	1903	25	1		BA		0
Union County Industrial Railroad											
UCIR	Milton RT	169.99	St	TPG	1927	52	1	Cameron Ave.	BA	<1	286
UCIR	Milton RT	170.2	St	TPG	1927	68	1	Front St.	BA	<1	286
UCIR	Milton RT	170.29	St	TPG	1931	665	7	Susq. River	OP	<1	286
UCIR	Milton RT	170.45	St	TPG	1931	595	7	Susq. River	OP	<1	286
UCIR	Newco RT	172.38	St	DPG	1924	52	1	Stream	OP	<1	286
UCIR	Winfield RT	161.8	St	DPG	1917	45	1	Winfield Creek	BA	<1	286
UCIR	Winfield RT	162.88	St	DPG	1927	65	1	Turtle Creek	BA	<1	286
UCIR	Winfield RT	165.58	St	TPG	1931	52	1	St. George St.	OP	<1	286
UCIR	Winfield RT	166.54	St	DPG	1917	139	2	Buffalo Creek	BA	<1	286
UCIR	Winfield RT	167.73	Mas	MAR	1920	12	1		BA		0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
Union Railroad Company											
URR	Mainline	1003	Con	CAR	1906	180	2	Leek Run, Old Will. Penn Hwy	BA	>5 MGT	286
URR	Mainline	1006	Con	CAR	1902	191	2	Thompson Run	BA	>5 MGT	286
URR	Mainline	1007	Con	CAR	1906	172	2	Rt 503	BA	>5 MGT	286
URR	Mainline	1008	Con	CAR	1908	349	3	Miller Run, Maint. Rd	BA	>5 MGT	286
URR	Mainline	1010	Con	CAR	1908	241	2	Thompson Run	BA	>5 MGT	286
URR	Mainline	1012	Con	CAR	1901	62	1	Jobe's Run	BA	>5 MGT	286
URR	Mainline	1015	St	DPG	1907	1100	10	Streets	OP	>5 MGT	286
URR	Mainline	1020	St	TPG	1946	196	2	Abandoned Track	OP	>5 MGT	E-79
URR	Mainline	1022	St	TTR	1943	5346	10	Monongahela R, URR & CSX track	OP	>5 MGT	286
URR	Mainline	1024	St	TPG	1930	102	1	NS track, private Rd	OP	>5 MGT	E-104.4
URR	Mainline	1029	St	DPG	1930	36	1	private Rd.	OP	>5 MGT	E-70.4
URR	Mainline	1032	St	DPG	1940	1611	15		OP	>5 MGT	286
URR	Mainline	1043	St	DPG	1953	66	1	Thompson Run	OP	>5 MGT	286
URR	Mainline	1045	Con	CAR	1906	120	2	Bull Run, Bull Run Rd.	BA	>5 MGT	286
URR	Mainline	1047	St	DPG	1939	96	1	Buttermilk Hollow Rd	OP	>5 MGT	E-84
URR	Mainline	1048	St	DPG	1906	58	1	Second Ave	OP	>5 MGT	E-67.9
URR	Mainline	1052	St	DPG	1906	232	5	Delwar Rd	OP	>5 MGT	E-101.5
URR	Mainline	1054	St	TPG	1920	114	1	Bull Run, Bettis Road	OP	>5 MGT	E-81.8
URR	Mainline	1057	Con	CAR	1920	431	2	Curry Run, Curry Hollow Rd	BA	>5 MGT	286
URR	Mainline	1058	Con	CAR	1920	178	2	Breick Hollow Rd, Breick Hollow St	BA	>5 MGT	286
URR	Mainline	1060	Con	CAR	1920	165	2	Camden Rd	BA	>5 MGT	286
URR	Mainline	1062	St	TTR	1920	601	5	Pine Run, Rt 837	OP	>5 MGT	E-87.5
URR	Mainline	1063	St	TTR	1941	244	3	State St, Railroad St, 5th Ave	OP	>5 MGT	E-65
URR	Mainline	1066	St	TPG	1930	364	5	NS Track, Maint Rd	OP	>5 MGT	E-46.9
URR	Mainline	1068	St	TPG	1904	147	3	Turtle Creek, URR track	OP	>5 MGT	E-59.3
URR	Mainline	1082	St	DPG	1943	161	3	Turtle Creek, URR track	OP	>5 MGT	E-96
URR	Mainline	1086	St	TTR	1946	204	1	Conrail track	OP	>5 MGT	E-67.3

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
URR	Mainline	1087	St	DTR	1946	889	5	Braddock Ave, Turtle Creek	OP	>5 MGT	E-67.3
URR	Mainline	1088	St	DPG	1946	1601	15	Braddock Ave	OP	>5 MGT	E-69.7
URR	Mainline	1090	Con	CAR	1916	1130	3	Peter's Creek	BA	>5 MGT	286
URR	Mainline	1093	St	DPG	1951	800	10	Thompson Run, Church St, Larimer	OP	>5 MGT	E-106.8
URR	Mainline	1094	St	DPG	1951	44	1	Negley Ave	OP	>5 MGT	E-100
URR	Mainline	1095	St	DPG	1951	528	6	Brown Ave, Hunter Ave	OP	>5 MGT	E-98.1
URR	Mainline	1096	St	DPG	1937	50	1	Leechburg Rd	OP	>5 MGT	E-107.5
URR	Mainline	1097	Con	CAR	1937	350	2	Plum Creek	BA		286
Western New York & Pennsylvania Railroad											
WNYP	Buffalo Line	80.4	Concrete	CSB	0	12	1	Stream	BA		286k
WNYP	Buffalo Line	84.72	Steel	DPG	0	45	1	Barden Brook	OP		286k
WNYP	Buffalo Line	85.66	Concrete	CSB	0	21	1	Canfield Creek	BA		286k
WNYP	Buffalo Line	86.19	Concrete	CSB	0	28	1	Carpenter Creek	BA		286k
WNYP	Buffalo Line	87.56	Concrete	CSB	0	10	1	Stream	BA		286k
WNYP	Buffalo Line	90.22	Steel	DPG	0	40	1	Newell Creek	OP		286k
WNYP	Buffalo Line	90.93	Concrete	CSB	0	64	4	Rock Run	BA		286k
WNYP	Buffalo Line	91.65	Steel	TPG	0	57	1	Annin Creek	OP		286k
WNYP	Buffalo Line	93.02	Concrete	CSB	0	14	1	Stream	BA		286k
WNYP	Buffalo Line	93.73	Concrete	CSB	0	14	1	Stream	BA		286k
WNYP	Buffalo Line	95.29	Steel	TPG	0	55	1	Two Mile creek	OP		286k
WNYP	Buffalo Line	97.07	Steel	TPG	0	50	1	Lille Brook Creek	OP		286k
WNYP	Buffalo Line	97.28	Steel	TPG	0	285	3	Allegheny River	OP		286k
WNYP	Buffalo Line	101.75	Concrete	CSB	0	16	1	Hamilton Creek	BA		286k
WNYP	Buffalo Line	104.95	Steel	DPG	0	45	1	Allegeny Creek	OP		286k
WNYP	Buffalo Line	115.22	Steel	TPG	0	55	1	Cowley Run	OP		286k
WNYP	Buffalo Line	116.28	Steel	DPG	0	110	2	Sizer Run	OP		286k
WNYP	Buffalo Line	118.03	Concrete	CSB	0	22	1	Four Mile Run	BA		286k
WNYP	Buffalo Line	150.05	Steel	TPG	0	166	2	Portage Run	OP		286k

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
WNYP	Buffalo Line	155.2	Steel	TTR	0	282	2	Driftwood Branch	OP		286k
WNYP	Buffalo Line	158.7	Steel	TPG	0	80	1	Sterling Run	OP		286k
WNYP	Buffalo Line	161.41	Steel	TPG	0	300	4	Tunnel Hill	OP		286k
WNYP	Farmers Valley Branch	1.2	St	TTR	0	300	11	Stream	OP	0.1	263
WNYP	Farmers Valley Branch	1.85	St	DPG	0	22	1	Swamp equalizing	OP	0.1	263
WNYP	Farmers Valley Branch	3.06	St	TPG	0	37	1	Swamp equalizing	OP	0.1	263
WNYP	Farmers Valley Branch	4.82	Tim	TST	0	16	1	Swamp equalizing	OP	0.1	263
WNYP	Farmers Valley Branch	5.53	Tim	TST	0	100	4	Swamp equalizing	BA	0.1	263
WNYP	Mainline-Niobe to Meadvi	3.91	Con	CAR	0	50	1	Swamp equalizing	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	5.16	Con	CAR	0	24	2	Swamp equalizing	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	10.23	Con	CAR	0	15	1	Swamp Equilizing	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	57.53	St	TPG	0	57	1	PA Route 6	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	57.6701	St	DPG	0	96	1	Straw Creek	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	59.96	St	TPG	0	60	1	Hare Creek	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	61.95	St	DPG	1978	45	1	French Creek	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	66.18	St	DPG	1969	30	1	Stream	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	66.23	St	TPG	1941	31	1	Elgin Street	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	66.61	St	DPG	1927	30	1	Lilley Creek	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	68.77	St	TPG	0	40	1	Waid Creek	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	72.02	Con	CAR	0	11	1	Cattle Pass	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	74.41	St	DPG	0	40	1	Town Line Road	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	79.62	Con	CAR	1946	13	1	Stream	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	79.74	St	TPG	1947	40	1	West Center Street	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	82.46	St	DPG	0	24	1	Stream	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	83.06	St	TTR	0	295	2	French Creek	OP	4	263
WNYP	Mainline-Niobe to Meadvi	87.14	St	TTR	1925	437	4	French Creek	OP	4	263
WNYP	Mainline-Niobe to Meadvi	89.31	St	DPG	0	39	1	Stream	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	91.22	St	TPG	1939	57	1	PA Route 6	BA	4	286k

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
WNYP	Mainline-Niobe to Meadvi	92.64	St	DPG	0	75	1	Gravel Run Road	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	93.47	Con	CAR	0	20	1	Stream	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	93.76	Con	CAR	0	20	1	Stream	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	96.19	St	TPG	0	56	1	Erie Street	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	96.5	St	TPG	0	56	1	South Street	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	97.03	St	DPG	0	95	1	Wood Cock Creek	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	99.34	St	TPG	0	30	1	Stream	BA	4	286k
WNYP	Mainline-Niobe to Meadvi	102.7	St	DPG	0	38	1	Stream	OP	4	286k
WNYP	Mainline-Niobe to Meadvi	104.75	Con	CSB	0	104	2	Stream	BA	4	286k
WNYP	Oil City Branch	0.3301	St	TPG	1924	92	2	French Creek Trib	OP	0.05	
WNYP	Oil City Branch	0.9101	St	DPG	0	25	1	Overflow	OP	0.05	286k
WNYP	Oil City Branch	5.67	St	DPG	0	27	1	Stream	OP	0.05	286k
WNYP	Oil City Branch	7.68	St	TPG	0	107	2	Stream	OP	0.05	286k
WNYP	Oil City Branch	9.99	Con	CSB	0	10	1	Stream	BA	0.05	286k
WNYP	Oil City Branch	11.3101	St	DPG	0	27	1	Stream	OP	0.05	286k
WNYP	Oil City Branch	12.25	St	TTR	0	121	1	Stream	OP	0.05	263
WNYP	Oil City Branch	13.35	St	DPG	0	36	1	McCune Run	OP	0.05	286k
WNYP	Oil City Branch	20.48	St	DPG	0	19	1	Stream	OP	0.05	286k
WNYP	Oil City Branch	21.3601	St	TTR	0	130	1	Sugar Creek	OP	0.05	263
WNYP	Oil City Branch	22.52	St	DPG	0	19	1	Patchen Run	OP	0.05	286k
WNYP	Oil City Branch	27.45	St	DPG	0	80	1	2-Mile Run	OP	0.05	286k
WNYP	Rouseville Ind. Track	33.25	St	TTR	0	290	2	Oil Creek	OP	0.03	263
WNYP	Rouseville Ind. Track	34.16	St	TPG	0	315	3	Oil Creek	OP	0.03	286k
WNYP	Rouseville Ind. Track	34.36	Con	CSB	0	12	1	Stream	BA	0.03	286k
WNYP	Rouseville Ind. Track	35.77	St	TPG	0	315	3	Oil Creek	OP	0.03	286k
WNYP	Rouseville Ind. Track	36.31	St	DPG	0	39	1	Cherry Run	OP	0.03	286k
WNYP	Southside Ind Branch	1.1	St	TTR	0	730	7	Allegheny R.	OP	.1	263

Wheeling & Lake Erie Railroad

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
WE	Clairton Branch	0.1801	Con	CAR	0	10	1		BA		0
WE	Clairton Branch	0.4	St	TTR	0	466.5	10	Peters Creek, RR	OP		E-65
WE	Clairton Branch	0.59	St	DPG	0	30	1	Public Road	OP		E-65
WE	Connellsville Line	0.09	St	TTR	1930	1498.5	22	Youghipgheny R., C&O RR	OP		E-65
WE	Connellsville Line	0.9	Con	CSB	1930	54	1	Highway	BA		E-65
WE	Connellsville Line	4.86	St	DPG	1930	516	8	Highway, C&O RR	OP		E-65
WE	Connellsville Line	5.43	St	DPG	1930	64	1	Highway	OP		E-65
WE	Connellsville Line	6.26	St	DPG	1930	105.25	2	Highway	OP		E-65
WE	Connellsville Line	6.73	St	DPG	1930	363	4	Jacob's Creek, Twp Rd	OP		E-65
WE	Connellsville Line	8.51	St	TTR	1930	159.33	2	Twp Rd	OP		E-65
WE	Connellsville Line	8.98	St	DPG	1930	290	3	Jacob's Creek	OP		E-65
WE	Connellsville Line	9.58	St	DPG	1930	270	3	Jacob's Creek	OP		E-65
WE	Connellsville Line	10.251	St	DTR	1930	480	6	Jacob's Creek	OP		E-65
WE	Connellsville Line	12.52	St	DPG	1930	1148.58	17	Perry Viaduct	OP		E-65
WE	Connellsville Line	13.97	St	DPG	1930	1812	14	Yougiogheny R, C&O RR	OP		E-65
WE	Connellsville Line	15.35	St	DPG	1930	216.84	3	Twp Rd.	OP		E-65
WE	Connellsville Line	15.48	St	DPG	1930	580	8		OP		E-65
WE	Connellsville Line	15.73	St	SST	1930	36.5	1	Twp Rd.	OP		E-65
WE	Connellsville Line	17.01	St	DPG	1930	56	1	Hwy Rt 51	OP		E-65
WE	Connellsville Line	18.08	St	DPG	1930	150	3	Twp Rd	OP		E-65
WE	Connellsville Line	20.82	St	DPG	1930	140	3	Hwy Rt 71	OP		E-65
WE	Connellsville Line	21.34	St	SST	1930	33.5	1	Twp Rd	OP		E-65
WE	Connellsville Line	21.68	St	DPG	1930	350	6	Hwy	OP		E-65
WE	Connellsville Line	23.01	St	DTR	1930	2770	18	Monongahela R., Hwy, PC RR	OP		E-65
WE	Connellsville Line	23.991	St	DPG	1930	440	7	South Fork Maple Creek, Hwy	OP		E-65
WE	Connellsville Line	24.801	St	DPG	1930	300	6	Trinder Viaduct	OP		E-65
WE	Connellsville Line	25.88	St	DPG	1929	360	6	Maple Terrace Viaduct	OP		E-65
WE	Connellsville Line	26.2	St	DPG	1929	860	14	McCracken Viaduct, Twp Rd.	OP		E-65

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
WE	Connellsville Line	26.66	St	DPG	0	550	8	Warner Viaduct, Twp Rd	OP		E-65
WE	Connellsville Line	27.051	St	DPG	1929	720	10	Maple Creek Viaduct, Hwy 71, Mapl	OP		E-65
WE	Connellsville Line	27.79	St	TPG	1929	44.17	1	Hwy	OP		E-65
WE	Connellsville Line	30.12	St	DPG	1929	1607	24	Pigeon Creek Viaduct, PC RR, Pigeo	OP		E-65
WE	Connellsville Line	31.71	Con	CAR	1929	25	1	Twp Rd	BA		E-65
WE	Connellsville Line	32.4	St	DTR	1929	380	5	Country Rd	OP		E-65
WE	Connellsville Line	33.36	St	DPG	1929	274	3	De Croix Hollow, Twp Rd	OP		E-65
WE	Connellsville Line	33.67	St	DPG	1929	1790	28	Mingo Creek Viaduct, Twp Rd, Min	OP		E-65
WE	Connellsville Line	35.29	St	DTR	1929	485	7	Froman Viaduct, Hwy 88, Froman R	OP		E-65
WE	Connellsville Line	36.92	St	DPG	1929	72	1	Greens Crossing	OP		E-65
WE	Connellsville Line	37.27	St	DTR	1929	200	1	Hwy	OP		E-65
WE	Connellsville Line	37.85	Con	CAR	1929	25	1	Twp Rd	BA		E-65
WE	Connellsville Line	39.16	Con	CAR	1929	25	1	Twp Rd	BA		E-65
WE	Connellsville Line	39.38	St	DPG	1929	745	12	Peters Creek Viaduct, Peters Cr.	OP		E-65
WE	Connellsville Line	39.671	Con	CAR	1928	25	1	Lick Run	BA		E-65
WE	Connellsville Line	39.86	St	SST	1931	21.33	1	Private Rd	OP		E-65
WE	Connellsville Line	40.23	St	SST	1931	21.33	1	Private Rd	OP		E-65
WE	Connellsville Line	42.09	Con	CAR	1902	20	1	Rd	BA		E-65
WE	Connellsville Line	42.631	St	TPG	1939	108	2	C&O RR, Hwy	OP		E-65
WE	Connellsville Line	43.75	St	DPG	1939	94.84	2	Brownsville Rd.	BA		E-65
WE	Connellsville Line	44.21	St	DPG	1902	43.5	1	Hwy	OP		E-65
WE	Connellsville Line	45.38	Con	CAR	0	24	1	Rd	BA		E-65
WE	Connellsville Line	46.57	St	DPG	1931	37.67	1	Hwy	OP		E-65
WE	Connellsville Line	46.87	St	SST	1931	24.33	1	Private Rd	OP		E-65
WE	Connellsville Line	47.14	St	SST	1931	18	1	Private Rd	OP		E-65
WE	Connellsville Line	47.49	St	DPG	1910	869.5	17	Hwy 88	OP		E-65
WE	Connellsville Line	48.07	Con	CAR	0	40	1	Willow Dr	BA		E-65
WE	Connellsville Line	48.42	Con	CAR	0	16	1	Private Dr.	BA		E-65

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
WE	Connellsville Line	48.62	Con	CAR	0	21	1	Private Dr.	BA		E-65
WE	Connellsville Line	48.93	Con	CAR	0	24	1	McNeilly Rd	BA		E-65
WE	Connellsville Line	49.43	Con	CAR	0	33	1	Glenbury St.	BA		E-65
WE	Connellsville Line	50.15	St	TPG	0	160	1		OP		E-65
WE	Connellsville Line	50.36	St	DPG	1902	31.67	1	Whited St	OP		E-65
WE	Connellsville Line	50.75	St	SST	0	154	7		OP		E-65
WE	Connellsville Line	50.78	St	DPG	1932	285	4	Timberland Ave, Edgebrook Ave	OP		E-65
WE	Connellsville Line	51.71	St	TPG	1932	295.25	5	W. Liberty Ave, Hargrove St.	OP		E-65
WE	Connellsville Line	52.16	St	SST	1902	26	1	Crane Ave	OP		E-65
WE	Connellsville Line	52.71	St	DPG	1932	50	1	Saw Mill Run	OP		E-65
WE	Connellsville Line	52.81	St	DPG	1932	150.75	3	Saw Mill Run Hwy	OP		E-65
WE	Connellsville Line	53.31	St	DPG	0	487.34	8	Hwy	OP		E-65
WE	Connellsville Line	53.91	St	TPG	1933	86.25	1	Independence St	BA		E-65
WE	Connellsville Line	54.25	St	SST	1944	15	1		OP		E-65
WE	Connellsville Line	56.39	St	DTR	1904	798.13	13	Whiskey Run Viaduct, Whiskey Run	OP		E-65
WE	Connellsville Line	56.98	St	DPG	1936	40	1	Allen St.	OP		E-65
WE	Connellsville Line	57.67	St	DPG	1936	371.5	9	Georges Run Viaduct	OP		E-65
WE	Connellsville Line	58.3	Mas	MAR	0	40	1	Washington Pike	BA		E-65
WE	Connellsville Line	59.18	Con	CAR	1903	30	1	Rd	BA		E-65
WE	Connellsville Line	59.42	St	DTR	1902	628.55	10	Chartier's Creek	OP		E-65
WE	Connellsville Line	60.26	St	DTR	1902	240	2	Chartier's Creek	OP		E-65
WE	Connellsville Line	60.45	St	TPG	1902	95.49	3	Washington Ave.	OP		E-65
WE	Connellsville Line	60.85	St	TPG	1902	35	1	Villars Ave	OP		E-65
WE	Connellsville Line	61.01	St	TTR	1902	150	1	Chartier's Creek	OP		E-65
WE	Connellsville Line	61.44	St	DPG	1902	60	1	Miller's Run	OP		E-65
WE	Connellsville Line	61.71	St	DPG	1902	50	1	Verner St.	OP		E-65
WE	Connellsville Line	62.02	St	TTR	1902	666	9	Miller's Run Rd, Miller's Run	OP		E-65
WE	Connellsville Line	64.01	St	DPG	0	170	2	Miller's Run	OP		E-65

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
WE	Connellsville Line	64.84	St	DPG	1902	26	1	Hwy	OP		E-65
WE	Connellsville Line	64.92	St	DPG	1902	36.5	1	Hwy	OP		E-65
WE	Connellsville Line	65.36	St	DPG	1902	23	1	Hwy	OP		E-65
WE	Connellsville Line	65.38	St	DPG	1902	151	2	RR	OP		E-65
WE	Connellsville Line	65.79	St	DPG	1902	38.5	1	Hwy	OP		E-65
WE	Connellsville Line	66.36	St	DPG	1902	38.5	1	Hwy	OP		E-65
WE	Connellsville Line	67.47	St	DPG	1902	38.42	1	Hwy	OP		E-65
WE	Connellsville Line	68.1	Con	CAR	1903	20	1	Rd	BA		E-65
WE	Connellsville Line	68.59	St	DTR	1902	200	2	Miller's Run, RR	OP		E-65
WE	Connellsville Line	68.69	St	DPG	1902	36.5	1	Hwy	OP		E-65
WE	Connellsville Line	73.03	St	DPG	1902	25.5	1	Hwy	OP		E-65
WE	Connellsville Line	76.08	St	DPG	1902	53.42	1	Hwy 50	BA		E-65
WE	Connellsville Line	77.43	St	SST	1902	22.25	1	Hwy	OP		E-65
WE	Connellsville Line	78.53	St	SST	1902	22.25	1	Hwy	OP		E-65
WE	Connellsville Line	79.16	St	SST	1902	38.42	1	Cross Cr	OP		E-65
WE	Connellsville Line	79.64	St	DPG	1902	38.42	1	Cross Cr	OP		E-65
WE	Connellsville Line	80.5	St	SST	1902	22.25	1	Hwy	OP		E-65
WE	Connellsville Line	80.84	St	DPG	1902	58.17	1	Cross Cr	OP		E-65
WE	Connellsville Line	81.3	St	SST	0	23.67	1	Hwy	OP		E-65
WE	Connellsville Line	82.61	St	TTR	1902	99.75	1	Cross Cr	OP		E-65
WE	Connellsville Line	82.87	St	DTR	1902	100	1	Cross Cr	OP		E-65
WE	Connellsville Line	84.71	St	DTR	1902	100	1	Cross Cr	OP		E-65
WE	Connellsville Line	85.15	St	DTR	1902	100	1	Cross Cr	OP		E-65
WE	Connellsville Line	85.72	St	DPG	1902	77.5	1	Cross Cr	OP		E-65
WE	Mifflin Branch	0.57	Con	CAR	0	23	1		BA		E-65
WE	Mifflin Branch	1.29	Con	CAR	0	24	1		BA		E-65
WE	Mifflin Branch	2.63	Con	CAR	0	15	1		BA		0
WE	Mifflin Branch	2.91	St	TPG	0	86.5	1		OP		E-65

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
WE	West End Branch	0.11	St	DPG	0	50	1	Saw Mill Run	OP		E-65
WE	West End Branch	0.22	St	DPG	0	48.5	1	Saw Mill Run	OP		E-65
WE	West End Branch	0.75	St	TPG	0	365.6	5	Penn-Lincoln Parkway West	OP		E-65
WE	West End Branch	1.02	St	DPG	1907	1050.6	25	Saw Mill Run	OP		E-65
WE	West End Branch	1.74	St	DPG	1907	443.8	13	Saw Mill Run	OP		E-65
WE	West End Branch	1.93	St	DPG	0	679	15	West Carson St	OP		E-65
York Railway Co.											
YRC	Mainline	0.401	St	SST	0	16	1	Stream	OP	10000 cars	0
YRC	Mainline	0.501	St	TPG	0	80	1	Stream	OP	10000 cars	0
YRC	Mainline	1.111	St	SST	0	12	1	Stream	OP	10000 cars	0
YRC	Mainline	2.7	St	SST	0	16.5	1	Stream	OP	10000 cars	0
YRC	Mainline	3.9	St	DPG	1931	298.5	6	Stream	OP	10000 cars	0
YRC	Mainline	4.71	St	TPG	1930	318.5	8	Dry	OP	10000 cars	0
YRC	Mainline	6.4	St	SST	0	15	1	Stream	OP	10000 cars	0
YRC	Mainline	12.31	St	TOP	0	14	1	Stream	OP	10000 cars	0
YRC	Mainline	12.4	St	SST	1981	26.33	1	Stream	OP	10000 cars	0
YRC	Mainline	15.6	St	TTR	0	286	2	Stream	OP	10000 cars	0
YRC	Mainline	16.2	St	SST	0	50	1	Stream	OP	10000 cars	0
YRC	MD & PA Main	12.8	Mas	MAR	0	15	1		BA	2100 cars	0
YRC	MD & PA Main	13.52	St	TPG	0	217.67	2	Stream	OP	2100 cars	0
YRC	MD & PA Main	18.04	Con	CSB	0	25	1	Stream	BA	2100 cars	0
YRC	MD & PA Main	20.71	St	DPG	0	54.5	2	Rd & Stream	OP	2100 cars	0
YRC	MD & PA Main	21.36	St	SST	0	19	1	Stream	OP	2100 cars	0
YRC	MD & PA Main	23.61	St	DPG	0	28	1	Stream	OP	2100 cars	0
YRC	MD & PA Main	24.17	Tim	TST	0	10	1	Dry	OP	2100 cars	0
YRC	MD & PA Main	24.98	St	TPG	0	58	1	Stream	OP	2100 cars	0
YRC	MD & PA Main	27.85	St	DPG	0	40.5	1	Stream	OP	2100 cars	0
YRC	MD & PA Main	28.05	St	SST	0	18	1	Stream	OP	2100 cars	0

Bridge Database Summary-Inventory Data

SLRR	Branch Name	Bridge ID	Bridge Mat'l	Bridge Typ	Yr Built	Length(ft)	# Spans	Over	Deck Typ	Freight Qty	Load Rating
YRC	MD & PA North Central	54.17	St	DPG	0	30	1	Road	OP	900 cars	0
YRC	MD & PA North Central	55.25	St	TPG	0	90	1	Road	OP	900 cars	0
YRC	MD & PA North Central	55.87	Mas	MAR	0	20	1	Stream	BA	900 cars	0
YRC	MD & PA North Central	56.09	Mas	MAR	0	15	1	Stream	BA	900 cars	0
Youngstown & Southeastern Railroad											
YSE	Youngstown & Southeaste	34.15	Tim	TST	0	12	1	Creek	OP	50 annual cars	263

Appendix E

Bridge Database Summary-Known Risk Data

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
Allegheny Valley Railroad Company																
AVR	Allegheny Sub	8.76	CAR						10		1	6	33.25	0.00	0.05	1
AVR	Allegheny Sub	10.75	DPG						4		1	6	52.50	0.00	0.08	1
AVR	Allegheny Sub	13.4	CAR						10		1	3	14.00	0.00	0.02	1
AVR	Allegheny Sub	17.08	DPG						4		1	6	70.00	0.00	0.11	1
AVR	Brilliant	0.0101	TPG						4	4.24	3	1	112.08	0.00	0.17	1
AVR	Brilliant	0.0902	TPG						4	4.24	3	1	93.34	0.00	0.14	1
AVR	Brilliant	0.14	TPG						4	4.24	3	1	94.75	0.00	0.14	1
AVR	Brilliant	0.3401	MAR						10	10.7	1	3	240.87	0.00	0.36	1
AVR	Brilliant	0.4701	TPG						4		3	1	54.00	0.00	0.08	1
AVR	Brilliant	1.24	MAR						10		1	1	106.81	0.00	0.16	1
AVR	Brilliant	1.65	TPG						4		3	1	95.84	0.00	0.14	1
AVR	Brilliant Industrial	0.68	TTR	1.42	5	0.28	3	2	3	3.06	1	10	491.23	0.00	0.74	1
AVR	Brilliant Industrial	0.92	DPG						4	3.2	3	1	60.00	0.00	0.09	1
AVR	P&W Sub	1.3	TTR						3	2.7	1	10	500.00	0.00	0.75	1
AVR	P&W Sub	2.7201	CSB						10		3	1	40.00	0.00	0.06	1
AVR	P&W Sub	2.84	CAR						10	8.7	1	3	25.00	0.00	0.04	1
AVR	P&W Sub	2.92	CSB						10	8.6	6	1	45.96	0.00	0.07	1
AVR	P&W Sub	4.06	TPG						4		1	6	80.00	0.00	0.12	1
AVR	P&W Sub	4.41	DPG						4		1	6	77.00	0.00	0.12	1
AVR	P&W Sub	4.76	TPG						4	3.52	1	6	86.00	0.00	0.13	1
AVR	P&W Sub	5.4301	TPG						4	0.08	1	6	70.00	0.00	0.11	1
AVR	P&W Sub	7.65	TPG						4		1	6	69.00	0.00	0.10	1
AVR	P&W Sub	8.35	TPG						4		1	6	60.00	0.00	0.09	1
AVR	P&W Sub	10.55	DPG	1.59	3	0.22	2	1	4	3.52	1	6	77.00	0.00	0.12	1
AVR	P&W Sub	11.49	TPG						4	4.2	1	6	66.00	0.00	0.10	1
AVR	P&W Sub	12.7001	CSB						10	9.8	1	6	14.00	0.00	0.02	1
AVR	P&W Sub	13.03	TPG						4	4.28	1	6	66.75	0.00	0.10	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
AVR	P&W Sub	13.46	TPG						4	4.2	1	6	10.00	0.00	0.02	1
AVR	P&W Sub	14.05	TPG						4	4.32	1	6	57.50	0.00	0.09	1
AVR	P&W Sub	14.67	CSB						10	8.7	1	3	11.75	0.00	0.02	1
AVR	P&W Sub	14.87	CSB						10	8.7	1	3	11.50	0.00	0.02	1
AVR	P&W Sub	15.05	CSB						10	8.7	1	3	11.50	0.00	0.02	1
AVR	P&W Sub	15.85	CSB						10	8.8	1	3	20.00	0.00	0.03	1
AVR	P&W Sub	15.9801	CSB						10	10.1	1	3	12.00	0.00	0.02	1
AVR	P&W Sub	16.48	CSB						10	8.8	1	3	15.00	0.00	0.02	1
AVR	P&W Sub	324.05	DPG						4		3	1	129.01	0.00	0.19	1
AVR	P&W Sub	324.47	DPG						4		1	1	111.86	0.00	0.17	1
AVR	P&W Sub	325.08	CSB						10		3	1	47.92	0.00	0.07	1
AVR	P&W Sub	325.39	DPG						4		3	1	85.45	0.00	0.13	1
AVR	River	0.0901	TST						10		3	1	97.80	0.00	0.15	1
AVR	Tylerdale	0.8301	TST	1					10		1	6	28.58	5.00	0.29	1
AVR	W&P Sub	5.13	TTR						3		1	10	500.00	0.00	0.75	1
AVR	W&P Sub	6.19	TPG						4	3.92	3	1	149.91	0.00	0.22	1
AVR	W&P Sub	6.38	CST						10		1	6	18.00	0.00	0.03	1
AVR	W&P Sub	6.87	CST						10	8.5	1	3	26.00	0.00	0.04	1
AVR	W&P Sub	7.36	CST						10		1	6	12.00	0.00	0.02	1
AVR	W&P Sub	7.73	CST						10		1	3	16.00	0.00	0.02	1
AVR	W&P Sub	8.23	CST						10		1	3	14.00	0.00	0.02	1
AVR	W&P Sub	8.46	CST						10		1	3	14.00	0.00	0.02	1
AVR	W&P Sub	8.78	CST						10		1	3	12.00	0.00	0.02	1
AVR	W&P Sub	9.25	SST						10		1	3	34.00	0.00	0.05	1
AVR	W&P Sub	9.83	SST						10		1	6	15.00	0.00	0.02	1
AVR	W&P Sub	11.23	SST						10		1	6	16.00	0.00	0.02	1
AVR	W&P Sub	11.46	SST						10		1	6	18.00	0.00	0.03	1
AVR	W&P Sub	12.05	CST						10	8.1	1	3	30.00	0.00	0.05	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
AVR	W&P Sub	12.14	DPG	1.53	7	0.49	3	1	4	3.48	1	3	34.00	0.00	0.05	1
AVR	W&P Sub	12.39	DPG	1.63	8	0.65	3	1	4	3.2	1	3	41.00	0.00	0.06	1
AVR	W&P Sub	14.02	CAR						10	9.9	3	1	20.00	0.00	0.03	1
AVR	W&P Sub	15.21	SST						10		3	1	35.00	0.00	0.05	1
AVR	W&P Sub	15.42	CAR						10		1	1	27.00	0.00	0.04	1
AVR	W&P Sub	15.45	CAR						10		3	3	40.00	0.00	0.06	1
AVR	W&P Sub	15.69	CAR						10		1	6	30.00	0.00	0.05	1
AVR	W&P Sub	16.55	CAR						10		3	1	24.50	0.00	0.04	1
AVR	W&P Sub	16.89	DPG						4	3.2	1	6	72.00	0.00	0.11	1
AVR	W&P Sub	17.5001	SST						10		1	3	28.00	0.00	0.04	1
AVR	W&P Sub	18.78	SST						10		1	6	22.83	0.00	0.03	1
AVR	W&P Sub	20.1	CST						10	10.2	1	6	21.21	0.00	0.03	1
AVR	W&P Sub	20.27	SST						10		1	6	28.00	0.00	0.04	1
AVR	W&P Sub	20.74	CST						10	10	1	6	20.00	0.00	0.03	1
AVR	W&P Sub	23.58	SST						10		1	1	18.00	0.00	0.03	1
AVR	W&P Sub	24.0101	SST						10		3	1	18.00	0.00	0.03	1
AVR	W&P Sub	24.96	CST						10		1	1	10.83	0.00	0.02	1
AVR	W&P Sub	28.58	DPG						4		1	6	45.25	0.00	0.07	1
AVR	W&P Sub	29.26	DPG						4	3.6	1	6	34.00	0.00	0.05	1
AVR	W&P Sub	29.58	SST						10		1	6	27.00	0.00	0.04	1
AVR	W&P Sub	30.1201	DPG						4	3.2	1	6	34.00	0.00	0.05	1
AVR	W&P Sub	30.26	DPG						4	3.48	1	6	34.00	0.00	0.05	1
AVR	W&P Sub	31.63	SST						10		1	3	25.00	0.00	0.04	1
AVR	W&P Sub	32.43	DPG						4		3	6	66.00	0.00	0.10	1
AVR	W&P Sub	34.06	TPG						4	4	3	1	5.77	0.00	0.01	1
AVR	W&P Sub	34.64	CST						10		3	1	5.77	0.00	0.01	1
AVR	W&P Sub	34.94	TPG						4	3.52	6	1	57.74	0.00	0.09	1
AVR	W&P Sub	35.05	DPG						4		3	1	35.00	0.00	0.05	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	C/L	Sp	Reserve	Sb	Sc	Fatigue catagory value	F	Hu	En	Lb	Tgf	Ec	Rc
AVR	W&P Sub	35.12	DPG						4	3.48	3	1	45.61	0.00	0.07	1
AVR	W&P Sub	35.55	TTR						3	3.09	3	6	237.00	0.00	0.36	1
AVR	W&P Sub	36.68	TPG						4	2.96	6	1	10.00	0.00	0.02	1
AVR	W&P Sub	37.01	CAR						10		1	6	30.00	0.00	0.05	1
AVR	W&P Sub	37.04	DPG						4		10	1	7.07	0.00	0.01	1
Buffalo & Pittsburgh Railroad, Inc.																
BPRR	Adrian Branch	0.1	TST						10		1	3	12.00	0.00	0.02	1
BPRR	Agway Track	25.28	SST						10		1	3	16.00	0.00	0.02	1
BPRR	Agway Track	25.47	SST						10		1	3	16.00	0.00	0.02	1
BPRR	Allegheny Sub	2.83	CSB						10	6.9	6	1	53.03	0.00	0.08	1
BPRR	Allegheny Sub	7.22	SST						10		6	1	36.00	0.00	0.05	1
BPRR	Allegheny Sub	7.26	MAR						10		1	3	20.00	0.00	0.03	1
BPRR	Allegheny Sub	9.33	SST						10		1	3	12.00	0.00	0.02	1
BPRR	Allegheny Sub	9.74	CSB						10		1	3	18.00	0.00	0.03	1
BPRR	Allegheny Sub	11.41	CSB						10		1	6	12.00	0.00	0.02	1
BPRR	Allegheny Sub	14.69	CSB						10		1	6	45.25	0.00	0.07	1
BPRR	Allegheny Sub	15.71	CSB						10		1	3	23.00	0.00	0.03	1
BPRR	Allegheny Sub	17.65	CSB						10		1	3	45.25	0.00	0.07	1
BPRR	Allegheny Sub	18.23	CSB						10		1	6	45.25	0.00	0.07	1
BPRR	Allegheny Sub	18.82	CSB						10		1	1	18.00	0.00	0.03	1
BPRR	Allegheny Sub	20.9	CSB						10		1	3	14.00	0.00	0.02	1
BPRR	Allegheny Sub	23.24	TPG						4	3.44	1	6	112.58	0.00	0.17	1
BPRR	Allegheny Sub	24.72	TPG						4		1	6	92.00	0.00	0.14	1
BPRR	Allegheny Sub	25.05	CSB						10		1	3	18.00	0.00	0.03	1
BPRR	Allegheny Sub	25.97	TPG						4		1	6	74.95	0.00	0.11	1
BPRR	Allegheny Sub	26.35	TPG						4	3.68	1	6	94.75	0.00	0.14	1
BPRR	Allegheny Sub	26.78	DPG						4		1	6	64.00	0.00	0.10	1
BPRR	Allegheny Sub	27.05	DPG						4		1	6	70.00	0.00	0.11	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Allegheny Sub	27.3	CSB						10		1	3	23.00	0.00	0.03	1
BPRR	Allegheny Sub	28.23	DPG						4		1	6	55.00	0.00	0.08	1
BPRR	Allegheny Sub	31.37	CSB						10		1	3	24.00	0.00	0.04	1
BPRR	Allegheny Sub	32.7	CSB						10		1	3	16.00	0.00	0.02	1
BPRR	Allegheny Sub	33.13	CSB						10		1	6	55.43	0.00	0.08	1
BPRR	Allegheny Sub	33.72	CSB						10		1	3	16.00	0.00	0.02	1
BPRR	Allegheny Sub	34.41	CSB						10		1	3	20.00	0.00	0.03	1
BPRR	Allegheny Sub	35.96	CAR						10		1	6	20.00	0.00	0.03	1
BPRR	Allegheny Sub	38.65	CSB						10		1	3	14.00	0.00	0.02	1
BPRR	Allegheny Sub	41.14	TPG						4	3.48	1	6	74.95	0.00	0.11	1
BPRR	Allegheny Sub	42.56	SST						10		1	3	25.00	0.00	0.04	1
BPRR	Allegheny Sub	46.09	CSB						10		1	3	31.00	0.00	0.05	1
BPRR	Allegheny Sub	51.1	DPG						4		1	6	45.00	0.00	0.07	1
BPRR	Allegheny Sub	53.59	TPG						4	3.4	1	6	73.54	0.00	0.11	1
BPRR	Allegheny Sub	54.86	CSB						10		1	3	12.00	0.00	0.02	1
BPRR	Allegheny Sub	56.28	SST						10		1	3	23.00	0.00	0.03	1
BPRR	Allegheny Sub	56.97	TPG						4		1	6	124.92	0.00	0.19	1
BPRR	Allegheny Sub	60.09	TPG						4		1	6	122.98	0.00	0.18	1
BPRR	Allegheny Sub	60.39	SST						10		1	3	31.18	0.00	0.05	1
BPRR	Allegheny Sub	61.36	CSB						10		1	3	18.00	0.00	0.03	1
BPRR	Allegheny Sub	62.8	CSB						10		1	3	18.00	0.00	0.03	1
BPRR	Allegheny Sub	65.9	TTR						3		1	10	268.47	0.00	0.40	1
BPRR	Allegheny Sub	68.91	MAR						10	15	3	3	20.00	0.00	0.03	1
BPRR	Allegheny Sub	73.42	SST						10		1	3	17.00	0.00	0.03	1
BPRR	Allegheny Sub	75.15	TPG						4		1	3	48.00	0.00	0.07	1
BPRR	Allegheny Sub	76.9	TPG						4		1	3	48.00	0.00	0.07	1
BPRR	Allegheny Sub	79.56	CSB						10		1	3	27.00	0.00	0.04	1
BPRR	Allegheny Sub	82.65	DPG						4		1	3	53.74	0.00	0.08	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Allegheny Sub	101.28	CSB						10		1	6	40.00	0.00	0.06	1
BPRR	Allegheny Sub	103.79	DPG						4		1	6	108.19	0.00	0.16	1
BPRR	Allegheny Sub	104.85	SST						10		1	6	24.00	0.00	0.04	1
BPRR	Allegheny Sub	106.78	SST						10		1	3	32.00	0.00	0.05	1
BPRR	Allegheny Sub	107.32	DPG						4		1	8	76.37	0.00	0.11	1
BPRR	Allegheny Sub	109.39	CSB						10		1	6	28.00	0.00	0.04	1
BPRR	Allegheny Sub	109.91	DPG						4	3.8	1	8	130.00	0.00	0.20	1
BPRR	Allegheny Sub	110.82	CSB						10		1	3	32.00	0.00	0.05	1
BPRR	Allegheny Sub	115	TPG						4		1	1	103.00	0.00	0.15	1
BPRR	Allegheny Sub	118.86	DPG						4		1	6	76.37	0.00	0.11	1
BPRR	Allegheny Sub	120.32	DPG						4		1	6	74.95	0.00	0.11	1
BPRR	Allegheny Sub	126.8	MAR						10		1	6	16.00	0.00	0.02	1
BPRR	Allegheny Sub	129.89	SST						10		1	6	18.38	0.00	0.03	1
BPRR	Bradford Industrial	2001	TPG						4	1.44	1	6	116.44	0.00	0.17	1
BPRR	Bradford Industrial	2002	CSB						10	3.6	1	3	19.80	0.00	0.03	1
BPRR	Bradford Industrial	2003	TPG						4	3.32	1	6	110.25	0.00	0.17	1
BPRR	Brockway Yard	0.47	TST						10		1	3	20.78	0.00	0.03	1
BPRR	Brockway Yard	0.471	TST						10		1	3	20.78	0.00	0.03	1
BPRR	Butler Sub	283.79	SST						10	5.5	1	3	24.00	0.00	0.04	1
BPRR	Butler Sub	284.13	SST						10	5.5	1	3	22.00	0.00	0.03	1
BPRR	Butler Sub	285.001	TPG						4		1	6	65.00	0.00	0.10	1
BPRR	Butler Sub	285.002	TST						10	1.4	1	3	13.00	0.00	0.02	1
BPRR	Butler Sub	404	DPG						4		1	6	56.57	0.00	0.08	1
BPRR	Butler Sub	405	SST						10		1	3	50.00	0.00	0.08	1
BPRR	Butler Sub	407	DPG						4		1	6	113.14	0.00	0.17	1
BPRR	Butler Sub	408	SST						10		1	3	18.00	0.00	0.03	1
BPRR	Butler Sub	409	DPG						4	2.48	1	6	70.71	0.00	0.11	1
BPRR	Butler Sub	410	SST						10	5.7	1	6	66.11	0.00	0.10	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Butler Sub	412	TST						10	6.7	1	3	25.25	0.00	0.04	1
BPRR	Butler Sub	413	TST						10	6.1	1	3	13.00	0.00	0.02	1
BPRR	Butler Sub	414	TST						10	7	1	3	14.00	0.00	0.02	1
BPRR	Butler Sub	602	SST						10	5.8	1	6	61.78	0.00	0.09	1
BPRR	Butler Sub	604	TPG						4		1	6	138.56	0.00	0.21	1
BPRR	Butler Sub	605	DPG						4		1	6	84.85	0.00	0.13	1
BPRR	Butler Sub	606	DPG						4	3.48	1	3	35.00	0.00	0.05	1
BPRR	Butler Sub	607	DPG						4		1	6	70.71	0.00	0.11	1
BPRR	Butler Sub	608	DPG						4		1	6	110.00	0.00	0.17	1
BPRR	Grandview Ind	0.07	DPG						4		1	3	35.00	0.00	0.05	1
BPRR	Grandview Ind	0.16	SST						10		1	3	20.00	0.00	0.03	1
BPRR	Grandview Ind	0.23	SST						10		1	3	13.00	0.00	0.02	1
BPRR	Indiana Branch	0.01	DPG						4	4.28	1	6	113.14	0.00	0.17	1.2
BPRR	Indiana Branch	0.83	MAR						10	10.2	1	6	42.43	0.00	0.06	1.2
BPRR	Indiana Branch	0.91	TTR						3	3.24	1	1	146.37	0.00	0.22	1.2
BPRR	Indiana Branch	2.7101	TPG						4	4.28	1	6	70.00	0.00	0.11	1.2
BPRR	Indiana Branch	4.6801	DPG	1.23	7	0.32	3	1	4	4.32	1	3	30.00	0.00	0.05	1.2
BPRR	Indiana Branch	6.32	DPG						4	4.28	3	1	30.00	0.00	0.05	1.2
BPRR	Indiana Branch	8.71	DPG	1.43	5	0.27	2	1	4	4.28	1	3	30.00	0.00	0.05	1.2
BPRR	Indiana Branch	9.88	CAR						10	10.8	1	3	16.00	0.00	0.02	1.2
BPRR	Indiana Branch	11.17	SST						10	10.7	1	3	20.00	0.00	0.03	1.2
BPRR	Indiana Branch	11.38	SST						10	10.8	1	3	20.00	0.00	0.03	1.2
BPRR	Indiana Branch	12.43	TTR						3	3.24	1	6	150.00	0.00	0.23	1.2
BPRR	Indiana Branch	13.81	CAR						10	10.8	1	3	16.00	0.00	0.02	1.2
BPRR	Indiana Branch	16.51	CSB		10		4		10	0.2	1	3	30.00	0.00	0.05	1.2
BPRR	Indiana Branch	18.07	SST						10	9.3	1	3	20.00	0.00	0.03	1.2
BPRR	Indiana Branch	19.22	SST						10	9.3	1	3	20.00	0.00	0.03	1.2
BPRR	Indiana Branch	20.04	DPG	1.07	4	0.16	2	3	4	4.32	1	3	20.00	0.00	0.03	1.2

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Indiana Branch	22.73	DPG						4	4.28	6	1	30.00	0.00	0.05	1.2
BPRR	Indiana Branch	23.21	TTR						3	3.21	1	6	125.00	0.00	0.19	1.2
BPRR	Indiana Branch	25.7301	SST						10	4.7	1	3	30.00	0.00	0.05	1.2
BPRR	Indiana Branch	29.06	TPG						4	4.28	1	3	50.00	0.00	0.08	1.2
BPRR	Indiana Branch	29.73	DPG	1.22	6	0.27	1	1	4	4.28	1	3	40.00	0.00	0.06	1.2
BPRR	Indiana Branch	31.13	CAR	2	6	0.45	2	1	10	10.7	1	3	12.00	0.00	0.02	1.2
BPRR	Indiana Branch	33.8201	SST						10	10.7	1	3	20.00	0.00	0.03	1.2
BPRR	Indiana Branch	34.0601	SST						10	10.7	1	3	20.00	0.00	0.03	1.2
BPRR	Indiana Branch	35.41	TPG						4	0.92	3	1	50.00	0.00	0.08	1.2
BPRR	Indiana Branch	35.53	CAR						10	10.7	1	3	16.00	0.00	0.02	1.2
BPRR	Indiana Branch	35.97	DPG						4	3.56	3	1	38.00	0.00	0.06	1.2
BPRR	Indiana Branch	40.9	SST						10	4.4	1	3	102.77	0.00	0.15	1.2
BPRR	Laurel Sub	42.36	DPG						4	4.28	1	6	153.00	0.00	0.23	1
BPRR	Laurel Sub	42.63	DPG						4	4.36	1	6	122.33	0.00	0.18	1
BPRR	Laurel Sub	47.68	SST						10	11.6	1	3	20.00	0.00	0.03	1
BPRR	Laurel Sub	47.95	DPG						4	4.36	1	6	142.03	0.00	0.21	1
BPRR	Laurel Sub	50.76	DPG						4	1.2	1	3	37.00	0.00	0.06	1
BPRR	Laurel Sub	51.68	DPG						4	4.32	1	6	127.02	0.00	0.19	1
BPRR	Laurel Sub	52.74	DPG						4	4.44	1	3	24.00	0.00	0.04	1
BPRR	Laurel Sub	53.29	DPG						4	4.32	1	6	135.10	0.00	0.20	1
BPRR	Laurel Sub	53.5	DPG						4	4.32	1	6	108.89	0.00	0.16	1
BPRR	Laurel Sub	53.66	DPG						4	4.44	1	3	26.00	0.00	0.04	1
BPRR	Laurel Sub	54.51	TPG						4	4.36	1	6	123.74	0.00	0.19	1
BPRR	Laurel Sub	55.31	DPG						4	4.28	1	6	96.17	0.00	0.14	1
BPRR	Laurel Sub	57.78	SST						10	10.9	1	3	25.00	0.00	0.04	1
BPRR	Laurel Sub	62.64	TPG						4	4.28	1	6	76.00	0.00	0.11	1
BPRR	Laurel Sub	63.11	DPG						4	4.36	1	3	30.00	0.00	0.05	1
BPRR	Laurel Sub	64.35	DPG						4	4.36	1	3	30.00	0.00	0.05	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Laurel Sub	68.42	DPG						4	4.52	1	6	20.00	0.00	0.03	1
BPRR	Laurel Sub	70.46	DPG						4	4.28	1	3	34.00	0.00	0.05	1
BPRR	Laurel Sub	85.24	DPG						4	4.28	1	3	107.48	0.00	0.16	1
BPRR	Laurel Sub	85.69	DTR						3	3.18	1	3	119.00	0.00	0.18	1
BPRR	Laurel Sub	86.97	DPG						4	4.28	1	3	77.00	0.00	0.12	1
BPRR	Laurel Sub	90.21	DPG						4	4.84	1	3	88.00	0.00	0.13	1
BPRR	Laurel Sub	96.27	MAR						10	13.8	1	3	14.00	0.00	0.02	1
BPRR	Laurel Sub	103.64	DPG						4	4.28	1	3	84.00	0.00	0.13	1
BPRR	Laurel Sub	105.49	DPG						4	4.28	1	3	84.00	0.00	0.13	1
BPRR	Laurel Sub	108.66	TTR						3	3.21	1	3	229.10	0.00	0.34	1
BPRR	Laurel Sub	109.24	SST						10	11.8	1	3	20.00	0.00	0.03	1
BPRR	Laurel Sub	109.79	TPG						4	4.28	1	6	150.50	0.00	0.23	1
BPRR	Mainline	120.78	DPG						4	3.92	1	3	30.00	0.00	0.05	1.2
BPRR	Mainline	121.68	TPG						4	3.92	1	6	50.50	0.00	0.08	1.2
BPRR	Mainline	122.31	TPG						4	3.92	1	6	122.54	0.00	0.18	1.2
BPRR	Mainline	122.84	TPG						4	3.92	1	6	96.00	0.00	0.14	1.2
BPRR	Mainline	123.01	CST						10	5	1	6	42.72	0.00	0.06	1.2
BPRR	Mainline	124.54	SST						10	9.8	1	3	20.00	0.00	0.03	1.2
BPRR	Mainline	126.17	TPG						4	3.92	1	3	34.00	0.00	0.05	1.2
BPRR	Mainline	138.02	CSB						10	10	6	1	24.00	0.00	0.04	1.2
BPRR	Mainline	138.17	CAR						10	10	1	1	19.00	0.00	0.03	1.2
BPRR	Mainline	155.61	TOP						10	9.9	1	1	10.00	0.00	0.02	1.2
BPRR	Mainline	167.0101	TPG						4		1	8	91.22	0.00	0.14	1.2
BPRR	Mainline	167.92	DTR						3	3.33	1	8	197.17	0.00	0.30	1.2
BPRR	Mainline	173.3	TPG						4	3.92	1	6	46.00	0.00	0.07	1.2
BPRR	Mainline	174.83	DPG						4	3.92	1	3	29.50	0.00	0.04	1.2
BPRR	Mainline	176.8	DPG						4	4.12	1	3	54.50	0.00	0.08	1.2
BPRR	Mainline	179.14	DPG						4	4.16	1	6	80.00	0.00	0.12	1.2

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Mainline	180.87	DPG						4	4.16	1	8	131.64	0.00	0.20	1.2
BPRR	Mainline	183.8	DPG						4	4.08	1	6	120.00	0.00	0.18	1.2
BPRR	Mainline	193.73	SST						10	3.2	1	3	16.00	0.00	0.02	1.2
BPRR	Mainline	196.21	DPG						4	3.92	6	3	68.00	0.00	0.10	1.2
BPRR	Mainline	199.6	SST						10	9.8	1	3	16.00	0.00	0.02	1.2
BPRR	Mainline	200.16	DPG						4	3.92	1	3	24.00	0.00	0.04	1.2
BPRR	Mainline	201.31	DPG						4	3.92	6	6	91.92	0.00	0.14	1.2
BPRR	Mainline	202.01	TPG						4	3.88	1	6	76.50	0.00	0.11	1.2
BPRR	Mainline	203.27	SST						10	10.8	1	3	27.00	0.00	0.04	1.2
BPRR	Mainline	203.75	TPG						4	3.92	1	6	62.50	0.00	0.09	1.2
BPRR	Mainline	204.28	SST						10	9.8	1	3	33.50	0.00	0.05	1.2
BPRR	Mainline	205.6	SST						10	10.8	1	3	15.50	0.00	0.02	1.2
BPRR	Mainline	211.47	DPG						4	4.24	1	6	60.00	0.00	0.09	1.2
BPRR	Mainline	211.71	DPG						4	4.24	1	6	60.00	0.00	0.09	1.2
BPRR	Mainline	213.82	SST						10	10.6	1	3	16.00	0.00	0.02	1.2
BPRR	Mainline	215.53	SST						10	10.6	1	3	16.00	0.00	0.02	1.2
BPRR	Mainline	217.03	DPG						4	4.24	1	3	75.00	0.00	0.11	1.2
BPRR	Mainline	217.46	DPG						4	4.24	1	3	75.00	0.00	0.11	1.2
BPRR	Mainline	220.67	DPG						4	4.24	1	6	104.50	0.00	0.16	1.2
BPRR	Mainline	221.38	DPG						4	4.2	1	6	104.50	0.00	0.16	1.2
BPRR	Mainline	222.35	SST						10	10.5	1	3	26.00	0.00	0.04	1.2
BPRR	Mainline	222.54	DPG						4	4.2	1	6	104.50	0.00	0.16	1.2
BPRR	Mainline	222.89	CST						10	8.7	1	1	28.00	0.00	0.04	1.2
BPRR	Mainline	225.05	CST						10	10.1	1	3	45.25	0.00	0.07	1.2
BPRR	Mainline	226.08	TTR	0.85	6	0.18	3	4	3	3.36	1	1	190.00	0.00	0.29	1.2
BPRR	Mainline	226.29	TTR						3	3.33	1	3	140.00	0.00	0.21	1.2
BPRR	Mainline	226.37	TTR						3	3.36	1	6	220.92	0.00	0.33	1.2
BPRR	Mainline	228.5	DPG						4	3.48	3	1	34.00	0.00	0.05	1.2

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Mainline	229.16	CSB						10	0.9	1	3	18.00	0.00	0.03	1.2
BPRR	Mainline	230.96	DPG						4	3.48	3	1	30.00	0.00	0.05	1.2
BPRR	Mainline	234.65	DPG	1.23	7	0.31	3	1	4	4.44	1	3	24.00	0.00	0.04	1.2
BPRR	Mainline	235.59	TPG						4	2.32	1	6	124.13	0.00	0.19	1.2
BPRR	Mainline	238.89	DPG						4	2.76	1	6	250.66	0.00	0.38	1.2
BPRR	Mainline	240.73	DPG						4	3.48	3	1	23.00	0.00	0.03	1.2
BPRR	Mainline	241.39	DTR						3	3.36	1	6	227.92	0.00	0.34	1.2
BPRR	Mainline	244.39	DPG						4	3.48	1	3	25.00	0.00	0.04	1.2
BPRR	Mainline	246.18	DPG						4	3.48	3	1	23.00	0.00	0.03	1.2
BPRR	Mainline	248	DPG						4	4.44	1	6	54.50	0.00	0.08	1.2
BPRR	Mainline	248.93	TPG						4	4.44	1	6	54.00	0.00	0.08	1.2
BPRR	Mainline	252.12	CSB						10	0.9	1	6	24.00	0.00	0.04	1.2
BPRR	Mainline	252.19	TPG						4	4.48	1	6	74.50	0.00	0.11	1.2
BPRR	Mainline	252.93	SST						10	4.7	1	3	23.00	0.00	0.03	1.2
BPRR	Mainline	255	CSB						10	0.9	1	3	18.00	0.00	0.03	1.2
BPRR	Mainline	255.34	CSB						10	4.6	1	1	10.00	0.00	0.02	1.2
BPRR	Mainline	255.85	TTR						3	3.36	1	6	123.00	0.00	0.18	1.2
BPRR	Mainline	256.92	TTR						3	3.33	1	6	123.00	0.00	0.18	1.2
BPRR	Mainline	257.19	TTR						3	3.36	1	6	123.00	0.00	0.18	1.2
BPRR	Mainline	257.63	DPG						4	4.48	1	6	96.00	0.00	0.14	1.2
BPRR	Mainline	257.76	DPG						4	4.44	1	6	96.00	0.00	0.14	1.2
BPRR	Mainline	258.77	SST						10	4.6	1	1	44.00	0.00	0.07	1.2
BPRR	Mainline	258.89	DTR						3	3.36	1	10	500.00	0.00	0.75	1.2
BPRR	Mainline	260.03	SST						10	11.2	3	1	23.00	0.00	0.03	1.2
BPRR	Mainline	262.51	DPG						4	4.48	1	3	139.14	0.00	0.21	1.2
BPRR	Mainline	263.45	DPG						4	4.48	1	6	145.62	0.00	0.22	1.2
BPRR	Mainline	264.53	DPG						4	4.48	3	1	34.00	0.00	0.05	1.2
BPRR	Mainline	265.96	MAR						10	11.2	1	3	16.00	0.00	0.02	1.2

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Mainline	267.64	DPG						4	4.48	3	1	34.00	0.00	0.05	1.2
BPRR	Mainline	270.88	DTR						3	3.36	1	6	124.00	0.00	0.19	1.2
BPRR	Mainline	272.84	DPG						4	4.48	1	6	96.00	0.00	0.14	1.2
BPRR	Mainline	274.19	TPG						4	4.48	3	6	92.63	0.00	0.14	1.2
BPRR	Mainline	274.35	DPG						4	4.48	1	6	96.00	0.00	0.14	1.2
BPRR	Mainline	275.15	TPG						4	4.48	1	6	114.60	0.00	0.17	1.2
BPRR	Mainline	275.39	TPG						4	4.48	1	6	65.00	0.00	0.10	1.2
BPRR	Mainline	277.36	MAR						10	11.2	1	6	16.00	0.00	0.02	1.2
BPRR	Mainline	281.15	DPG						4	4.48	1	3	127.37	0.00	0.19	1.2
BPRR	Northern Sub	419	TST						10	8.5	1	3	22.00	0.00	0.03	1
BPRR	Northern Sub	420	TST						10	4.5	1	3	13.00	0.00	0.02	1
BPRR	Northern Sub	422	TST						10	6.6	1	3	25.00	0.00	0.04	1
BPRR	Northern Sub	424	SST						10	5.5	1	3	30.00	0.00	0.05	1
BPRR	Northern Sub	430	TST						10		1	3	35.33	0.00	0.05	1
BPRR	Northern Sub	431	TST	1.06	5		1	3	10		6	3	88.00	0.00	0.13	1.2
BPRR	Northern Sub	432	TST						10		3	1	37.18	0.00	0.06	1
BPRR	Northern Sub	433	TST						10		3	3	89.42	0.00	0.13	1
BPRR	Northern Sub	438	TST						10	6.6	1	6	16.26	0.00	0.02	1
BPRR	Northern Sub	439	TST						10	7.9	1	6	16.97	0.00	0.03	1
BPRR	Northern Sub	440	TST						10		1	6	25.81	0.00	0.04	1
BPRR	Northern Sub	441	SST						10	5.5	1	6	26.50	0.00	0.04	1
BPRR	Northern Sub	442	TST						10	5	1	3	19.49	0.00	0.03	1
BPRR	Northern Sub	444	TST						10	4.5	1	6	18.38	0.00	0.03	1
BPRR	Northern Sub	446	TST						10	4.5	1	6	19.23	0.00	0.03	1
BPRR	Northern Sub	447	DPG						4	3.88	1	6	30.00	0.00	0.05	1
BPRR	Pittsburgh & Western	19.4	SST						10	6.5	3	1	22.50	0.00	0.03	1
BPRR	Pittsburgh & Western	22.1	SST						10	8.8	1	3	16.00	0.00	0.02	1
BPRR	Pittsburgh & Western	23.7	SST						10	10.6	1	6	22.00	0.00	0.03	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Pittsburgh & Western	25.3	SST						10	10.5	1	3	11.50	0.00	0.02	1
BPRR	Pittsburgh & Western	25.9	SST						10	9.9	1	3	17.30	0.00	0.03	1
BPRR	Pittsburgh & Western	27.3001	DPG						4	4.04	1	6	55.70	0.00	0.08	1
BPRR	Pittsburgh & Western	27.6	DPG						4	3.52	1	6	63.00	0.00	0.09	1
BPRR	Pittsburgh & Western	28.6	SST						10	8.8	1	6	20.00	0.00	0.03	1
BPRR	Pittsburgh & Western	28.8	SST						10	10	1	6	22.00	0.00	0.03	1
BPRR	Pittsburgh & Western	34.2	SST						10	10.4	1	3	26.00	0.00	0.04	1
BPRR	Pittsburgh & Western	36	DPG						4	3.92	1	6	107.30	0.00	0.16	1
BPRR	Pittsburgh & Western	36.2	SST						10	9.8	3	1	21.00	0.00	0.03	1
BPRR	Pittsburgh & Western	37.6	TPG						4	4.12	1	3	52.00	0.00	0.08	1
BPRR	Pittsburgh & Western	39.7	SST						10	10.5	1	3	19.80	0.00	0.03	1
BPRR	Pittsburgh & Western	43.1	SST						10	11.2	3	1	18.20	0.00	0.03	1
BPRR	Pittsburgh & Western	43.4	TPG						4	1.36	6	1	106.91	0.00	0.16	1
BPRR	Pittsburgh & Western	43.8	DTR						3	3.09	1	6	168.59	0.00	0.25	1
BPRR	Pittsburgh & Western	44.6001	SST						10	9.8	3	1	33.00	0.00	0.05	1
BPRR	Pittsburgh & Western	45.6	DPG						4	4.12	1	6	197.04	0.00	0.30	1
BPRR	Pittsburgh & Western	47.2	CSB						10	10.6	1	3	19.00	0.00	0.03	1
BPRR	Pittsburgh & Western	50.4	CSB						10		1	1	13.00	0.00	0.02	1
BPRR	Shawmut Sub	0.33	DPG						4	3.68	1	6	123.36	0.00	0.19	1
BPRR	Shawmut Sub	0.73	TPG						4	4.12	6	1	159.38	0.00	0.24	1
BPRR	Shawmut Sub	20.72	DPG						4		3	1	33.33	0.00	0.05	1
BPRR	Shawmut Sub	20.9801	DTR						3		1	6	196.13	0.00	0.29	1
BPRR	Shawmut Sub	21.43	SST						10	10.2	3	1	21.17	0.00	0.03	1
BPRR	Shawmut Sub	21.51	CAR						10		1	3	15.00	0.00	0.02	1
BPRR	Shawmut Sub	23.95	DPG						4		1	3	52.00	0.00	0.08	1
BPRR	Shawmut Sub	55.43	DTR						3		1	1	254.15	0.00	0.38	1
BPRR	Shawmut Sub	57.81	TTR						3		3	1	219.26	0.00	0.33	1
BPRR	Shawmut Sub	58.46	DPG						4	4	1	3	23.33	0.00	0.03	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
BPRR	Shawmut Sub	59.21	DPG						4	1.36	1	3	23.33	0.00	0.03	1
BPRR	Shawmut Sub	59.41	SST						10	10	3	1	23.00	0.00	0.03	1
BPRR	Shawmut Sub	62.13	CAR						10	10	1	3	15.00	0.00	0.02	1
BPRR	Shawmut Sub	62.33	SST						10	10	3	1	23.00	0.00	0.03	1
BPRR	Shawmut Sub	63	DPG						4	4	1	3	23.33	0.00	0.03	1
BPRR	Shawmut Sub	63.23	TTR						3		1	10	500.00	0.00	0.75	1
BPRR	Shawmut Sub	69.94	DPG						4	3.88	1	3	108.00	0.00	0.16	1
BPRR	Shawmut Sub	70.62	SST						10	4	1	3	23.33	0.00	0.03	1
BPRR	Shawmut Sub	70.82	SST						10	4	1	3	23.33	0.00	0.03	1
BPRR	Shawmut Sub	74.6	DPG						4	3.88	1	3	34.50	0.00	0.05	1
BPRR	Shawmut Sub	78.92	DPG						4	3.88	1	3	56.33	0.00	0.08	1
BPRR	Shawmut Sub	81.6	CAR						10		1	3	20.00	0.00	0.03	1
BPRR	Shawmut Sub	86.14	CSB						10	0.7	1	3	24.00	0.00	0.04	1
BPRR	Struthers Ind	56.79	TTR						3		1	10	301.95	0.00	0.45	1
BPRR	Struthers Ind	58.31	CSB						10		1	3	41.01	0.00	0.06	1
BPRR	Wharton Branch	44.15	TST						10	0.3	1	3	28.92	0.00	0.04	1
BPRR	Wharton Branch	44.25	TST						10		1	6	29.19	0.00	0.04	1
Delaware Lackawanna RR Company Inc.																
DL	Carbondale Main	2.35	DPG	2.56	7		2	4	4		1	3	28.50	0.21	0.05	1
DL	Carbondale Main	2.7001	TPG						4		1	3	82.02	0.21	0.13	1
DL	Carbondale Main	5.01									3	1	94.00	0.21	0.15	1
DL	Carbondale Main	5.4									3	1	99.00	0.21	0.16	1
DL	Carbondale Main	5.7	TTR	1.01	5	0.19	2	2	4	4.24	1	8	168.00	0.21	0.26	1
DL	Carbondale Main	6.25	TPG						4		1	6	35.00	0.21	0.06	1
DL	Carbondale Main	7.9	DPG						4				57.00	0.21	0.10	1
DL	Carbondale Main	8.15	DPG						4				22.00	0.21	0.04	1
DL	Carbondale Main	8.85	TTR						3	3.18	1	8	170.00	0.21	0.27	1
DL	Carbondale Main	10.35	DPG						4	4.12	3	1	60.00	0.21	0.10	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
DL	Carbondale Main	12.7002	DPG						4				22.00	0.21	0.04	1
DL	Carbondale Main	13	TPG						4		3	1	50.00	0.21	0.09	1
DL	Carbondale Main	15	TPG						4		3	1	28.00	0.21	0.05	1
DL	Carbondale Main	16.05	TPG						4	4.08	3	1	48.00	0.21	0.08	1
DL	Carbondale Main	16.25	TPG						4	4.08	3	1	52.00	0.21	0.09	1
DL	Carbondale Main	16.35	TPG						4	4.08	3	1	50.00	0.21	0.09	1
DL	Carbondale Main	16.65	SST						10	10.2			22.00	0.21	0.04	1
DL	Carbondale Main	17	DPG						4	1.72	3	1	45.00	0.21	0.08	1
DL	Carbondale Main	18.4	TTR						3	3.18	1	8	107.00	0.21	0.17	1
DL	Pocono-DL	85.5									1	6	106.00	0.80	0.20	1
DL	Pocono-DL	85.6											28.00	0.80	0.08	1
DL	Pocono-DL	85.8											85.00	0.80	0.17	1
DL	Pocono-DL	98.4									6	1	43.00	0.80	0.10	1
DL	Pocono-DL	100.26									6	1	81.00	0.80	0.16	1
DL	Pocono-DL	102.9	TPG						4	1.44	1	3	16.00	0.80	0.06	1
DL	Pocono-DL	107.05									1	3	31.00	0.80	0.09	1
DL	Pocono-DL	107.4001	TPG						4	4.2	6	1	18.00	0.80	0.07	1
DL	Pocono-DL	108.35									6	1	52.50	0.80	0.12	1
DL	Pocono-DL	113.52	DPG						4	4.28			26.00	0.80	0.08	1
DL	Pocono-DL	117.8	DPG						4	4.08	3	1	28.00	0.80	0.08	1
DL	Pocono-DL	118.93	TPG						4	4.12	3	1	24.00	0.80	0.08	1
DL	Pocono-DL	120.49									1	3	49.00	0.80	0.11	1
DL	Pocono-DL	127									1	3	70.00	0.80	0.15	1
DL	Pocono-DL	130.22	TPG						4	3.4	1	3	58.80	0.80	0.13	1
DL	Pocono-DL	130.73	TPG						4	3.44	1	3	66.00	0.80	0.14	1
DL	Pocono-DL	130.89	TPG						4	3.4	1	3	58.50	0.80	0.13	1
DL	Pocono-DL	133.29									3	1	70.00	0.80	0.15	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
EPRR	Chester Valley	1.0501	DPG						4		3	1	15.00	0.01	0.02	1
EPRR	Kutztown	3.1001	CSB						10		1	1	12.00	0.00	0.02	1
EPRR	Lancaster Northern	1.8	DPG						4		3	1	24.00	0.05	0.04	1
EPRR	Lancaster Northern	1.82	CSB						10		1	6	16.00	0.05	0.03	1
EPRR	Lancaster Northern	3.1	CSB						10		3	1	16.00	0.05	0.03	1
EPRR	Lancaster Northern	4.0601	CSB						10		1	6	11.00	0.05	0.02	1
EPRR	Lancaster Northern	4.4001	DPG						4		1	3	13.00	0.05	0.02	1
EPRR	Lancaster Northern	4.75	DPG						4		1	3	12.00	0.05	0.02	1
EPRR	Lancaster Northern	5.05	CSB						10		1	3	12.00	0.05	0.02	1
EPRR	Lancaster Northern	5.5001	CSB						10		1	3	12.00	0.05	0.02	1
EPRR	Lancaster Northern	5.6	CSB						10		1	1	11.50	0.05	0.02	1
EPRR	Lancaster Northern	5.84	CSB						10		1	3	11.50	0.05	0.02	1
EPRR	Lancaster Northern	5.9	CSB						10		1	3	10.00	0.05	0.02	1
EPRR	Lancaster Northern	6.54	CSB						10		1	3	11.00	0.05	0.02	1
EPRR	Lancaster Northern	7.53	TPG						4		1	6	20.00	0.05	0.03	1
EPRR	Lancaster Northern	9.53	TPG						4		1	6	30.00	0.05	0.05	1
EPRR	North East Phila Ind Pa	1.0001	DPG						4		1	3	25.00	0.13	0.04	1
EPRR	Octoraro	28.83	DPG						4		1	1	19.00	0.10	0.03	1
EPRR	Octoraro	29.99	CSB						10		1	1	10.00	0.10	0.02	1
EPRR	Octoraro	31	CSB						10		3	1	27.00	0.10	0.05	1
EPRR	Octoraro	33.37	DPG						4		1	6	237.29	0.10	0.36	1
EPRR	Octoraro	34.34	DPG						4		1	6	67.00	0.10	0.11	1
EPRR	Octoraro	35.86	CSB						10		1	1	12.00	0.10	0.02	1
EPRR	Octoraro	37.73	TPG						4		1	6	65.00	0.10	0.10	1
EPRR	Octoraro	38.0401	DPG						4		1	6	44.00	0.10	0.07	1
EPRR	Octoraro	38.32	DPG						4		1	6	56.00	0.10	0.09	1
EPRR	Octoraro	38.47	DPG						4		1	6	33.00	0.10	0.05	1
EPRR	Octoraro	38.95	TPG						4		1	6	60.00	0.10	0.10	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	C/L	Sp	Reserve	Sb	Sc	Fatigue catagory value	F	Hu	En	Lb	Tgf	Ec	Rc
EPRR	Octoraro	39.19	TPG						4		1	6	49.00	0.10	0.08	1
EPRR	Octoraro	39.57	CSB						10		1	6	12.00	0.10	0.02	1
EPRR	Octoraro	41.0101	DPG						4		1	6	53.03	0.10	0.08	1
EPRR	Octoraro	41.7001	CSB						10		1	1	20.00	0.10	0.04	1
EPRR	Octoraro	43.84	DPG						4		1	1	20.00	0.10	0.04	1
EPRR	Octoraro	44.75	DPG						4		1	1	257.50	0.10	0.39	1
EPRR	Octoraro	46.9901	DPG						4		1	6	65.05	0.10	0.10	1
EPRR	Octoraro	47.29	CSB						10		1	6	28.00	0.10	0.05	1
EPRR	Octoraro	47.79	CSB						10		1	6	16.00	0.10	0.03	1
EPRR	Octoraro	48.05	CSB						10		1	6	10.00	0.10	0.02	1
EPRR	Perkiomen	23.51	DPG						4		3	1	20.00	0.12	0.04	1
EPRR	Perkiomen	23.9301	CSB						10		3	1	24.00	0.12	0.04	1
EPRR	Perkiomen	25.08	TPG						4		6	1	30.00	0.12	0.05	1
EPRR	Perkiomen	25.4	DPG						4		3	1	52.00	0.12	0.08	1
EPRR	Perkiomen	25.44	SST						10		3	1	23.00	0.12	0.04	1
EPRR	Perkiomen	26.6601	DPG						4		3	1	26.66	0.12	0.05	1
EPRR	Perkiomen	28.14	MAR						10		1	3	29.00	0.12	0.05	1
EPRR	Perkiomen	30.39	SST						10		1	1	24.00	0.12	0.04	1
EPRR	Perkiomen	30.88	CAR						10		1	3	12.00	0.00	0.02	1
EPRR	Perkiomen	33.64	MAR						10		1	6	12.00	0.00	0.02	1
EPRR	Perkiomen	34.68	DPG						4		3	1	13.50	0.12	0.03	1
EPRR	Perkiomen	37.08	CSB						10		3	1	15.00	0.12	0.03	1
EPRR	Quakertown	32.93	MAR	1	3		2	2	10		1	6	20.00	0.11	0.04	1
EPRR	Quakertown	33.3	CAR						10		1	6	64.63	0.11	0.10	1
EPRR	Quakertown	33.52	TPG						4		3	1	46.25	0.11	0.07	1
EPRR	Quakertown	34.05	MAR						10		1	6	11.00	0.00	0.02	1
EPRR	Quakertown	35.26	CST						10		3	1	24.00	0.11	0.04	1
EPRR	Quakertown	36.09	CST						10		3	1	24.00	0.11	0.04	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
EPRR	Quakertown	36.14	MAR						10		1	3	20.00	0.11	0.04	1
EPRR	Quakertown	37.67	CST						10		3	1	24.00	0.11	0.04	1
EPRR	Quakertown	37.87	MAR						10		1	6	12.00	0.00	0.02	1
EPRR	Quakertown	39.17	CST						10		1	6	20.00	0.11	0.04	1
EPRR	Quakertown	40.0001	CST						10		1	3	15.00	0.11	0.03	1
EPRR	Quakertown	40.47	CSB	1	6	0.26	3	3	10	9.3	1	3	25.50	0.11	0.04	1
EPRR	Quakertown	41.0001	CSB						10		1	1	18.00	0.11	0.03	1
EPRR	Wilmington Northern	12.68	CSB						10		1	3	24.50	0.25	0.05	1
EPRR	Wilmington Northern	13.15	CSB						10		3	1	21.50	0.25	0.04	1
EPRR	Wilmington Northern	13.76	CSB						10		1	1	15.25	0.25	0.04	1
EPRR	Wilmington Northern	14.3	CSB						10		1	6	27.50	0.25	0.05	1
EPRR	Wilmington Northern	14.65	CSB						10		1	1	13.00	0.25	0.03	1
EPRR	Wilmington Northern	15.46	MAR						10		1	3	24.00	0.25	0.05	1
EPRR	Wilmington Northern	16.24	CSB						10		1	3	11.00	0.25	0.03	1
EPRR	Wilmington Northern	17.26	CSB						10		1	3	22.50	0.25	0.05	1
EPRR	Wilmington Northern	17.42	CSB						10		1	1	15.00	0.25	0.04	1
EPRR	Wilmington Northern	17.73	CSB						10		1	6	36.77	0.25	0.07	1
EPRR	Wilmington Northern	19.91	CSB						10		1	3	15.25	0.25	0.04	1
EPRR	Wilmington Northern	20.37	CSB						10		1	3	10.00	0.25	0.03	1
EPRR	Wilmington Northern	21.35	CSB						10		1	3	20.50	0.25	0.04	1
EPRR	Wilmington Northern	22.04	CSB						10		1	3	13.50	0.25	0.03	1
EPRR	Wilmington Northern	23.57	CSB						10		1	3	10.00	0.25	0.03	1
EPRR	Wilmington Northern	24.55	CSB						10		1	3	23.50	0.25	0.05	1
EPRR	Wilmington Northern	25.73	SST						10		1	6	13.44	0.25	0.03	1
EPRR	Wilmington Northern	27.46	CSB						10		1	1	11.50	0.25	0.03	1
EPRR	Wilmington Northern	28.43	CSB						10		1	6	47.81	0.25	0.08	1
EPRR	Wilmington Northern	28.5801	CSB						10		1	1	13.50	0.25	0.03	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
JVRR	Maitland IT	0.46	TPG	1					4	3.68	1	8	217.79	0.75	0.36	1
JVRR	Maitland IT	1.38	DPG	1					4	3.8	1	1	50.00	0.75	0.11	1
JVRR	Maitland IT	1.51	DPG	1					4	3.76	1	6	91.80	0.75	0.18	1
JVRR	Maitland IT	4.53	DPG	1					4	3.72	1	6	55.43	0.75	0.12	1
JVRR	Milroy IT	0.51	TPG	1					4	4.36	1	6	68.13	0.75	0.14	1
JVRR	Milroy IT	1	TPG	1					4	3.76	1	6	117.78	0.75	0.21	1
JVRR	Milroy IT	2.12	CSB	1					10	9.5	1	3	33.94	0.75	0.09	1
JVRR	Milroy IT	3.25	DPG	1					4	3.76	1	6	88.33	0.75	0.17	1
Lycoming Valley Railroad Company																
LVRR	Antlers RT	179.44	TPG	1					4	4.36	1	1	94.00	4.00	0.34	1
LVRR	Antlers RT	213.86	TTR	1					3	3.06	1	10	426.34	4.00	0.84	1
LVRR	Avis Ind.	1.78	DPG	1					4	4.24	1	6	203.50	4.00	0.51	1
LVRR	Avis Ind.	1.98	TPG	1					4	4.32	6	1	40.00	4.00	0.26	1
LVRR	Avis Ind.	168.67	MAR	1					10	12.8	1	3	15.00	4.00	0.22	1
LVRR	Avis Ind.	169.68	MAR	1					10		3	1	16.00	4.00	0.22	1
LVRR	Avis Ind.	171.3	TPG	1					4	2.92	6	1	101.00	4.00	0.35	1
LVRR	Avis Ind.	171.46	MAR	1					10	10.9	1	6	57.98	4.00	0.29	1
LVRR	Avis Ind.	174.48	SST	1					10	8.5	1	3	25.00	4.00	0.24	1
LVRR	Avis Ind.	177.2	MAR	1					10	12.7	1	3	19.00	4.00	0.23	1
LVRR	Corning Sec.	179.65	MAR	1					10	10.9	1	1	15.00	4.00	0.22	1
LVRR	Corning Sec.	179.72	MAR	1					10	10.9	1	3	15.00	4.00	0.22	1
LVRR	Corning Sec.	182.34	TPG	1					4	2.44	1	6	161.66	4.00	0.44	1
LVRR	Corning Sec.	182.88	DPG	1					4	2.44	3	1	42.00	4.00	0.26	1
LVRR	Corning Sec.	184.27	CAR	1					10		1	1	11.00	4.00	0.22	1
LVRR	Corning Sec.	185.87	DPG	1					4	4.28	1	3	16.00	4.00	0.22	1
LVRR	Corning Sec.	186.18	CSB	1					10	6.2	1	3	25.94	4.00	0.24	1
LVRR	Corning Sec.	188.23	DPG	1					4	2.44	1	3	66.47	4.00	0.30	1
LVRR	Corning Sec.	188.32	TPG	1					4	3.32	1	6	146.97	4.00	0.42	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
LVRR	Corning Sec.	194.34	DPG	1					4	2.44	1	3	28.00	4.00	0.24	1
LVRR	Corning Sec.	195.84	MAR	1					10	13	1	3	12.00	4.00	0.22	1
LVRR	Corning Sec.	196.33	DPG	1					4	3.08	1	6	113.14	4.00	0.37	1
LVRR	Corning Sec.	196.62	CSB	1					10	6.2	1	1	32.00	4.00	0.25	1
LVRR	Corning Sec.	197.91	CSB	1					10	8	3	1	25.00	4.00	0.24	1
LVRR	Corning Sec.	198.04	DPG	1					4	3.2	1	10	304.06	4.00	0.66	1
LVRR	Corning Sec.	198.91	SST	1					10	3.8	1	3	33.00	4.00	0.25	1
Mittal Steel USA Railways, Inc (BVRY)																
MSUB	Brandywine Valley	0.25	DPG	0.92	5		3		4		1	6	106.07	0.80	0.20	1
MSUB	Brandywine Valley	1.0002	CST	0.92	5		3		10		1	6	106.07	0.10	0.16	1
MSUB	Brandywine Valley	5	CAR	0.92	5		3		10		1	6	106.07	0.10	0.16	1
Mittal Steel USA Railways, Inc (SH)																
MSUS	Mainline	100	DTR	1	7	0.25	3		3	3.39	3	3	174.53	0.22	0.27	1
Mittal Steel USA Railways, Inc (UPM)																
MSUU	Upper Merion & Plym	0.10001	TPG	1	5	0.20	3		4	3.96	1	8	300.00	0.80	0.49	1
Mount Union Connecting R.R. Co.																
MTC	Mainline	1.6	CAR	1.1					10	9			30.00	0.07	0.05	1
New York, Susquehanna & Western Railroad																
NYSW	Mainline	90.8401	DTR	1	7		3		3		1	10	324.00	2.00	0.59	1.2
NYSW	Mainline	91.16	MAR	1	7		3		10		1	6	15.00	2.00	0.12	1.2
NYSW	Mainline	102.31	MAR	1	7	0.52	3		10	5.4	1	3	20.00	2.00	0.13	1.2
NYSW	Mainline	104.78	MAR	1	7	0.52	3		10	5.4	1	3	20.00	2.00	0.13	1.2
NYSW	Mainline	105.79	DPG	1	7	0.51	3		4	2.2	1	6	143.76	2.00	0.32	1.2
NYSW	Mainline	105.99	CSB	1	7	0.41	3		10	6.9	6	1	30.00	2.00	0.15	1.2
NYSW	Mainline	110.54	DTR	1	5	0.17	2		3	3.48	1	8	211.98	2.00	0.42	1.2
NYSW	Mainline	113.06	TPG	1	7	0.26	3		4	4.32	1	1	69.28	2.00	0.20	1.2
NYSW	Mainline	115.55	DPG	1	7	0.76	3		4	1.48	1	6	65.05	2.00	0.20	1.2
NYSW	Mainline	117.76	TTR	1	7	0.26	3		3	3.21	1	10	268.00	2.00	0.50	1.2

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
NYSW	Mainline	189.46	MAR	1	7	0.17	3		10	16.3	1	1	291.04	2.00	0.54	1.2
NYSW	Mainline	190.13	CAR	1	7	0.35	3		10	8	6	1	93.33	2.00	0.24	1.2
NYSW	Mainline	190.21	CAR	1	7	0.35	3		10	8	1	6	25.00	2.00	0.14	1.2
NYSW	Mainline	191.24	DPG	1	7	0.28	3		4	4	3	1	67.88	2.00	0.20	1.2
NYSW	Mainline	191.99	TTR	0.94	5	0.18	2	1	3	3.09	1	10	195.00	2.00	0.39	1.2
NYSW	Mainline	192.22	TTR	1	7	0.30	3		3	2.79	1	10	318.00	2.00	0.58	1.2
NYSW	Mainline	195.46	TPG	1	7	0.26	3		4	4.24	1	6	44.00	2.00	0.17	1.2
NYSW	Mainline	197.16	TOP	1	7	0.27	3		10	10.2	1	3	12.00	2.00	0.12	1.2
NYSW	Mainline	198.52	TPG	1	7	0.26	3		4	4.24	1	6	44.00	2.00	0.17	1.2
NYSW	Mainline	199.34	DPG	1	7	0.26	3		4	4.24	1	3	39.00	2.00	0.16	1.2
NYSW	Mainline	200.7	TPG	1	7	0.26	3		4	4.32	1	6	75.00	2.00	0.21	1.2
NYSW	Mainline	201.52	DPG	1	7	0.26	3		4	4.28	1	6	44.00	2.00	0.17	1.2
Nittany & Bald Eagle Railroad Company																
NBER	Bellefonte Branch	30.95	CSB	1					10		1	3	14.00	5.00	0.27	1
NBER	Bellefonte Branch	31.08	TPG	1					4	3.76	1	6	81.32	5.00	0.37	1
NBER	Bellefonte Branch	33.1	CSB	1					10	9.3	1	3	28.28	5.00	0.29	1
NBER	Bellefonte Branch	33.62	TPG	1					4	3.6	1	6	101.50	5.00	0.40	1
NBER	Bellefonte Branch	34.09	TPG	1					4	4.04	1	6	66.00	5.00	0.35	1
NBER	Bellefonte Branch	36.9	DPG	1					4	3.92	1	3	27.00	5.00	0.29	1
NBER	Bellefonte Branch	37.3	DPG	1					4		1	3	12.00	5.00	0.27	1
NBER	Bellefonte Branch	37.69	SST	1					10		1	3	10.00	5.00	0.27	1
NBER	Mainline	3.21	CSB	1					10	9.6	1	3	12.00	0.00	0.02	1
NBER	Mainline	3.93	TPG	1					4	3.8	1	3	46.00	5.00	0.32	1
NBER	Mainline	4.68	TPG	1					4	3.8	1	6	50.00	5.00	0.33	1
NBER	Mainline	4.85	TPG	1					4	3.8	1	6	54.00	5.00	0.33	1
NBER	Mainline	5.57	CSB	1					10	9.5	1	3	12.00	5.00	0.27	1
NBER	Mainline	6.17	TPG	1					4	4.12	1	6	51.00	5.00	0.33	1
NBER	Mainline	6.79	TPG	1					4	3.92	1	6	48.00	5.00	0.32	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
NBER	Mainline	9.24	SST	1					10	9.8	1	6	16.00	5.00	0.27	1
NBER	Mainline	9.76	CSB	1					10	9.5	1	6	28.00	5.00	0.29	1
NBER	Mainline	16.75	DPG	1					4	3.84	1	6	109.70	5.00	0.41	1
NBER	Mainline	17.13	CSB	1					10	9.5	1	3	18.00	5.00	0.28	1
NBER	Mainline	17.95	TPG	1					4	3.76	1	3	30.00	5.00	0.30	1
NBER	Mainline	19.03	CSB	1					10	10	1	3	18.00	5.00	0.28	1
NBER	Mainline	19.5	CSB	1					10	9.4	1	3	24.00	5.00	0.29	1
NBER	Mainline	20.67	TPG	1					4	3.92	1	3	24.00	5.00	0.29	1
NBER	Mainline	21.46	CSB	1					10	9.7	1	6	29.70	5.00	0.29	1
NBER	Mainline	22.55	CSB	1					10	8.4	1	3	18.00	5.00	0.28	1
NBER	Mainline	23.06	SST	1					10	9.4	1	3	14.00	5.00	0.27	1
NBER	Mainline	24.01	CSB	1					10		1	3	15.00	5.00	0.27	1
NBER	Mainline	24.68	TPG	1					4	3.8	1	3	45.00	5.00	0.32	1
NBER	Mainline	25.75	TPG	1					4	3.76	1	3	37.00	5.00	0.31	1
NBER	Mainline	26.01	CSB	1					10	9.5	1	3	13.00	5.00	0.27	1
NBER	Mainline	26.59	CSB	1					10	9.8	1	3	11.00	5.00	0.27	1
NBER	Mainline	27.07	CSB	1					10	9.4	1	3	26.00	5.00	0.29	1
NBER	Mainline	28.04	CSB	1					10	9.4	1	3	28.00	5.00	0.29	1
NBER	Mainline	29.07	CSB	1					10	9.5	1	3	17.00	5.00	0.28	1
NBER	Mainline	29.39	CSB	1					10	9.5	1	3	43.13	5.00	0.31	1
NBER	Mainline	30.94	CSB	1					10	9.5	1	3	23.00	5.00	0.28	1
NBER	Mainline	32.11	SST	1					10	11	1	3	18.00	5.00	0.28	1
NBER	Mainline	33.65	CSB	1					10	11	1	3	18.00	5.00	0.28	1
NBER	Mainline	33.84	DPG	1					4	4.4	1	6	185.34	5.00	0.53	1
NBER	Mainline	33.97	DPG	1					4	4.4	1	3	40.00	5.00	0.31	1
NBER	Mainline	34.32	CSB	1					10	11	1	3	20.00	5.00	0.28	1
NBER	Mainline	40	CSB	1					10	4.2	1	3	20.00	5.00	0.28	1
NBER	Mainline	44.33	CSB	1					10	4.2	1	3	20.00	5.00	0.28	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
NBER	Mainline	50.65	CSB	1					10	9.4	1	1	52.00	5.00	0.33	1
NBER	Mainline	51.21	TPG	1					4	3.8	1	6	105.66	5.00	0.41	1
NBER	Pleasant Gap	0.66	DPG	1					4	4.56	6	1	61.78	5.00	0.34	1
NBER	Post Running	52.41	DPG	1					4	3.76	1	6	98.80	5.00	0.40	1
NBER	Post Running	52.89	CSB						10	11	1	3	11.00	0.00	0.02	1
NBER	Post Running	53.24	CSB	1					10	9.5	1	1	34.00	5.00	0.30	1
NBER	Post Running	54.01	CSB	1					10	9.2	1	3	20.00	5.00	0.28	1
NBER	Tyrone Running	0.05	DPG	1					4	4.2	1	8	131.93	5.00	0.45	1
NBER	Tyrone Running	0.24	TPG	1					4	4.28	3	1	65.00	5.00	0.35	1
NBER	Tyrone Running	0.27	SST	1					10	9	3	1	11.00	5.00	0.27	1
NBER	Tyrone Running	0.64	CSB	1					10	9.2	1	3	13.00	5.00	0.27	1
NBER	Tyrone Running	1.7	DPG	1					4	3.68	1	3	18.00	5.00	0.28	1
NBER	Tyrone Running	1.84	CSB	1					10	9.2	1	3	19.00	5.00	0.28	1
North Shore Railroad																
NSHR	North Shore	180.55	DPG	1					4	3.36	1	6	54.00	0.75	0.12	1
NSHR	North Shore	185.4	SST	1					10	9.1	1	3	14.00	0.75	0.06	1
NSHR	North Shore	186.1801	SST	1					10		1	3	15.00	0.75	0.06	1
NSHR	North Shore	188.5	CSB	1					10	8.4	1	3	18.00	0.75	0.06	1
NSHR	North Shore	191.37	MAR	1					10		1	6	15.00	0.75	0.06	1
NSHR	North Shore	191.48	TPG	1					4		3	1	30.00	0.75	0.08	1
NSHR	North Shore	191.52	DPG	1					4	2.96	1	6	77.94	0.75	0.15	1
NSHR	North Shore	201.35	DPG	1					4	4.28	3	6	23.00	0.75	0.07	1
NSHR	North Shore	201.66	CSB	1					10		1	3	11.00	0.75	0.05	1
NSHR	North Shore	202.07	DPG	1					4	4.28	1	6	25.98	0.75	0.08	1
NSHR	North Shore	204.9	SST	1					10	10.7	1	3	14.00	0.75	0.06	1
NSHR	North Shore	211.27	DPG	1					4	2.96	1	3	68.00	0.75	0.14	1
R.J. Corman Railroad Company/PA Lines, Inc.																
RJCP	C&M	17.67	TPG	1					4				109.60	0.00	0.16	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
RJCP	C&M	18.27	DTR	1.64	5	0.32	3	1	4	4.04	1	6	183.85	0.00	0.28	1
RJCP	C&M	18.28	DPG	1					4				160.32	0.00	0.24	1
RJCP	C&M	18.47	TTR	1					3				180.00	0.00	0.27	1
RJCP	C&M	18.52	TPG	1					4				74.00	0.00	0.11	1
RJCP	C&M	18.57	TTR	1.02	5	0.20	3	4	4	4.04	1	1	140.00	0.00	0.21	1
RJCP	C&M	18.65	TPG	1					4				74.00	0.00	0.11	1
RJCP	C&M	19.04	TPG	1					4				44.00	0.00	0.07	1
RJCP	Cherry Tree	19.61	DPG	1					4				186.00	0.76	0.32	1
RJCP	Cherry Tree	21.291	TPG	1					4				30.00	0.76	0.08	1
RJCP	Cherry Tree	21.7	MAR	1					10				30.00	0.76	0.08	1
RJCP	Cherry Tree	21.73	TPG	1					4				30.00	0.76	0.08	1
RJCP	Cherry Tree	21.96	DPG	1					4				156.15	0.76	0.27	1
RJCP	Cherry Tree	22.88	DPG	1					4				169.49	0.76	0.29	1
RJCP	Cherry Tree	26.54	TTR	1					3				155.00	0.76	0.27	1
RJCP	Cherry Tree	29.84	DPG	1					4				31.00	0.76	0.08	1
RJCP	Cherry Tree	31.99	DPG	1					4				28.00	0.76	0.08	1
RJCP	Cherry Tree	33.77	TPG	1					4				36.00	0.76	0.09	1
RJCP	Cherry Tree	35.46	SST	1					10				12.00	0.76	0.06	1
RJCP	Cherry Tree	36.04	DPG	1					4				45.00	0.76	0.11	1
RJCP	Cherry Tree	37.691	DPG	1					4				24.00	0.76	0.07	1
RJCP	Cherry Tree	39.391	SST	1					10				18.00	0.76	0.07	1
RJCP	Cherry Tree	43.77	SST	1					10				24.00	0.76	0.07	1
RJCP	Cherry Tree	43.9	MAR	1					10				22.63	0.76	0.07	1
RJCP	Cherry Tree	49.48	SST	1					10				25.00	0.76	0.08	1
RJCP	Cherry Tree	49.5	DPG	1.15	6		3	1	4		1	6	40.00	0.76	0.10	1.1
RJCP	Cherry Tree	49.58	SST	1					10				17.00	0.76	0.06	1
RJCP	Cherry Tree	50.46	DPG	1					4				70.71	0.76	0.14	1
RJCP	Cherry Tree	50.61	DPG	1					4				84.85	0.76	0.17	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
RJCP	Cherry Tree	52.33	DPG	1					4				77.78	0.76	0.15	1
RJCP	Cherry Tree	52.49	SST	1					10				24.00	0.76	0.07	1
RJCP	Cresson Branch	0.72	CSB	1					10				41.00	0.38	0.08	1.2
RJCP	Cresson Branch	10.03	CSB	1					10				23.00	0.38	0.05	1.2
RJCP	Cresson Branch	11.31	CSB	1					10				34.00	0.38	0.07	1.2
RJCP	Cresson Branch	12.74	SST	1					10				27.58	0.38	0.06	1.2
RJCP	Cresson Branch	15.29	CSB	1					10				23.00	0.38	0.05	1.2
RJCP	Cresson Branch	16.151	DPG	1					4				65.00	0.38	0.12	1.2
RJCP	Cresson Branch	16.31	DPG	1					4				66.00	0.38	0.12	1.2
RJCP	Cresson Branch	18.02	CSB	1					10				22.00	0.38	0.05	1.2
RJCP	Cresson Branch	18.59	DPG	1					4				76.00	0.38	0.13	1.2
RJCP	Cresson Branch	24.7	DPG	1					4				24.00	0.38	0.06	1.2
RJCP	Cresson Branch	27.69	TPG	1					4				33.00	0.38	0.07	1.2
RJCP	Cresson Branch	28.08	TPG	1					4				79.20	0.38	0.14	1.2
RJCP	Cresson Branch	30.24	CSB	1					10				14.00	0.38	0.04	1.2
RJCP	Cresson Branch	30.941	SST	1					10				13.00	0.38	0.04	1.2
RJCP	Cresson Branch	31.61	SST	1					10				19.00	0.38	0.05	1.2
RJCP	Cresson Branch	35.17	SST	1					10				11.00	0.38	0.04	1.2
RJCP	Cresson Branch	37.05	CSB	1					10				24.00	0.38	0.06	1.2
RJCP	Cresson Branch	39	DTR	1	6		3	1	4		1	6	130.00	0.38	0.21	1.2
RJCP	Cresson Branch	39.05	DPG	1					4		1	1	138.70	0.38	0.23	1.2
RJCP	Cresson Branch	39.1	TTR	0.85	6	0.17	3	4	4	4.72	1	1	98.00	0.38	0.17	1.2
RJCP	Cresson Branch	44.78	DPG	1					4				157.04	0.38	0.25	1.2
RJCP	Cresson Branch	45.57	SST	1					10				64.66	0.38	0.12	1.2
RJCP	Cresson Branch	57.62	DPG	1					4				52.00	0.38	0.10	1.2
RJCP	Cresson Branch	58.36	DPG	1					4				182.50	0.38	0.29	1.2
RJCP	Cresson Branch	58.88	DPG	1					4				237.13	0.38	0.37	1.2
RJCP	Cresson Branch	61.16	TPG	1					4				74.00	0.38	0.13	1.2

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
RJCP	Cresson Branch	62.81	TPG	1					4				74.00	0.38	0.13	1.2
RJCP	Cresson Branch	65.29	TPG	1					4				74.00	0.38	0.13	1.2
RJCP	Cresson Branch	65.6	TTR	1					3				202.07	0.38	0.32	1.2
RJCP	Hillman	0.461	SST	1					10				18.00	0.00	0.03	1
RJCP	Irvona	4.671	DPG	1					4				30.00	0.26	0.06	1
RJCP	Irvona	7.12	SST	1					10				13.00	0.26	0.03	1
RJCP	Irvona	8.751	CSB	1					10				24.00	0.26	0.05	1
RJCP	Irvona	10.81	SST	1					10				19.00	0.26	0.04	1
RJCP	Irvona	12.12	CSB	1					10				20.00	0.26	0.04	1
RJCP	Irvona	14.38	SST	1					10				23.00	0.26	0.05	1
RJCP	Irvona	18.36	DPG	1					4				33.00	0.26	0.06	1
RJCP	Wallaceton	2.62	TTR	1					3				121.00	0.48	0.21	1
RJCP	Wallaceton	6.86	DPG	1					4				221.32	0.48	0.36	1
RJCP	Wallaceton	16.38	SST	1					10				19.00	0.48	0.05	1
RJCP	Wallaceton	17.23	TPG	1					4				87.68	0.48	0.16	1
RJCP	Wallaceton	17.93	TPG	1					4				83.44	0.48	0.15	1
RJCP	Wallaceton	19.06	DPG	1					4				84.85	0.48	0.15	1
RJCP	Wallaceton	31.54	CSB	1					10				24.00	0.48	0.06	1
RJCP	Wallaceton	34.27	CSB	1					10				21.00	0.48	0.06	1
RJCP	WBV	2.02	DPG	1					4				201.00	0.69	0.34	1
RJCP	WBV	3.64	DPG	1					4				188.72	0.69	0.32	1
RJCP	WBV	7.63	DPG	1					4				246.17	0.69	0.40	1
RJCP	WBV	18.56	DPG	1					4				55.00	0.69	0.12	1
RJCP	WBV	22.69	DPG	1					4				65.00	0.69	0.13	1
RJCP	WBV	23.93	SST	1					10				114.00	0.69	0.21	1
RJCP	WBV	24.04	CAR	1					10				22.00	0.69	0.07	1
RJCP	WBV	31.431	DPG	1					4				62.93	0.69	0.13	1
RJCP	WBV	33.99	DPG	1					4				22.00	0.69	0.07	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
RJCP	WBV	37.8	TPG	1					4				76.37	0.69	0.15	1
RJCP	WBV	38.05	DPG	1					4				39.60	0.69	0.09	1
RJCP	WBV	39.24	DPG	1					4				46.00	0.69	0.10	1
RJCP	WBV	42.801	SST	1					10				18.00	0.69	0.06	1
RJCP	WBV	44.1	CSB	1					10				14.00	0.69	0.06	1
RJCP	WBV	45.37	DPG	1					4				51.62	0.69	0.11	1
RJCP	WBV	46.56	CSB	1					10				12.00	0.69	0.05	1
RJCP	WBV	46.66	CSB	1					10				18.00	0.69	0.06	1
RJCP	WBV	46.99	CSB	1					10				14.00	0.69	0.06	1
RJCP	WBV	47.24	SST	1					10				14.00	0.69	0.06	1
RJCP	WBV	51.2	SST	1					10				15.00	0.69	0.06	1
RJCP	WBV	53.321	TPG	1					4				200.00	0.69	0.33	1
Reading Blue Mountain and Northern Railroad Compan																
RBMN	Mahanoy & Shamokin	108.65	CST						10		3	1	45.00	0.00	0.07	1
RBMN	Mahanoy & Shamokin	109.1									3	1	74.25	0.00	0.11	1
RBMN	Mahanoy & Shamokin	111.1									1	3	45.00	0.00	0.07	1
RBMN	Mahanoy & Shamokin	112.8									1	3	42.00	0.00	0.06	1
RBMN	Mahanoy & Shamokin	114.35									1	6	70.00	0.00	0.11	1
RBMN	Mahanoy & Shamokin	120									1	6	100.00	0.00	0.15	1
RBMN	Mahanoy & Shamokin	121.55									1	6	98.99	0.00	0.15	1
RBMN	Mahanoy & Shamokin	121.8	MAR						10		1	6	60.00	0.00	0.09	1
RBMN	Mahanoy & Shamokin	122.3									1	6	127.28	0.00	0.19	1
RBMN	Mahanoy & Shamokin	123.9									3	1	44.00	0.00	0.07	1
RBMN	Mahanoy & Shamokin	124.15									1	3	10.00	0.00	0.02	1
RBMN	Mahanoy & Shamokin	190.85											90.00	0.00	0.14	1
RBMN	Mainline	62.3									6	1	10.00	0.00	0.02	1
RBMN	Mainline	62.801									1	3	10.00	0.00	0.02	1
RBMN	Mainline	63.7											10.00	0.00	0.02	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	C/L	Sp	Reserve	Sb	Sc	Fatigue catagory value	F	Hu	En	Lb	Tgf	Ec	Rc
RBMN	Mainline	65.2									3	1	10.00	0.00	0.02	1
RBMN	Mainline	65.4									3	3	175.00	0.00	0.26	1
RBMN	Mainline	67.55									1	6	10.00	0.00	0.02	1
RBMN	Mainline	71.05	MAR						10		1	3	36.00	0.00	0.05	1
RBMN	Mainline	71.25	MAR						10		1	6	64.00	0.00	0.10	1
RBMN	Mainline	72.55									1	6	10.00	0.00	0.02	1
RBMN	Mainline	75.3	CST						10		3	1	67.18	0.00	0.10	1
RBMN	Mainline	75.5									3	1	44.00	0.00	0.07	1
RBMN	Mainline	78.45									1	8	10.00	0.00	0.02	1
RBMN	Mainline	80.85									1	3	13.00	0.00	0.02	1
RBMN	Mainline	83.65									1	6	28.00	0.00	0.04	1
RBMN	Mainline	84.25									1	8	107.50	0.00	0.16	1
RBMN	Mainline	86.1									1	6	40.00	0.00	0.06	1
RBMN	Mainline	87.05									1	6	37.00	0.00	0.06	1
RBMN	Mainline	88.2									1	3	10.00	0.00	0.02	1
RBMN	Mainline	89.15									1	8	10.00	0.00	0.02	1
RBMN	Mainline	91.75	DPG						4		1	8	10.00	0.00	0.02	1
RBMN	Mainline	92.2									1	1	17.00	0.00	0.03	1
RBMN	Mainline	92.85	DPG						4		1	8	10.00	0.00	0.02	1
RBMN	Mainline	98.1									1	6	10.00	0.00	0.02	1
RBMN	Mainline	100.2									1	8	10.00	0.00	0.02	1
RBMN	Mainline	100.4									1	8	10.00	0.00	0.02	1
RBMN	Mainline	100.75									1	6	10.00	0.00	0.02	1
RBMN	Mainline	102.701									1	6	10.00	0.00	0.02	1
RBMN	Mainline	107.3											10.00	0.00	0.02	1
RBMN	Mainline	108.6											16.00	0.00	0.02	1
RBMN	Mainline	109.15											25.00	0.00	0.04	1
RBMN	Mainline	121.2	TTR						3				190.00	0.00	0.29	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
RBMN	Mainline	124.901											226.27	0.00	0.34	1
RBMN	Mainline	129.5									1	6	10.00	0.00	0.02	1
RBMN	Mainline	130.9									1	8	10.00	0.00	0.02	1
RBMN	Mainline	133.85									1	6	50.00	0.00	0.08	1
RBMN	Mainline	135.15									1	6	84.00	0.00	0.13	1
RBMN	Mainline	139									1	3	75.00	0.00	0.11	1
RBMN	Mainline	141									1	3	85.00	0.00	0.13	1
RBMN	Mainline	142.75	MAR						10		1	6	50.00	0.00	0.08	1
RBMN	Mainline	144	CAR						10		1	6	20.00	0.00	0.03	1
RBMN	Mainline	144.9									1	8	4.08	0.00	0.01	1
RBMN	Mainline	145											10.00	0.00	0.02	1
RBMN	Mainline	145.62									3	1	10.00	0.00	0.02	1
RBMN	Mainline	147.25											10.00	0.00	0.02	1
RBMN	Mainline	149.9	CAR						10		6	1	36.00	0.00	0.05	1
RBMN	Mainline	155.6									1	6	10.00	0.00	0.02	1
RBMN	Mainline	164.5									1	3	10.00	0.00	0.02	1
RBMN	Mainline	166.45									1	3	10.00	0.00	0.02	1
RBMN	Mainline	166.9									1	3	10.00	0.00	0.02	1
RBMN	Mainline	169.5									3	1	10.00	0.00	0.02	1
RBMN	Mainline	169.7	MAR						10		3	1	7.07	0.00	0.01	1
RBMN	Mainline	170.3	MAR						10		1	3	10.00	0.00	0.02	1
RBMN	Mainline	173.8									1	1	10.00	0.00	0.02	1
RBMN	Middleport	95.9									1	6	10.00	0.00	0.02	1
RBMN	Middleport	97.8									1	6	10.00	0.00	0.02	1
RBMN	Middleport	98.9									1	8	10.00	0.00	0.02	1
RBMN	Middleport	99.45									1	8	10.00	0.00	0.02	1
RBMN	Minersville	1.0502									6	1	10.00	0.00	0.02	1
RBMN	Minersville	2.2									1	6	10.00	0.00	0.02	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
RBMN	Minersville	2.8									1	8	10.00	0.00	0.02	1
RBMN	Minersville	3.2									1	8	10.00	0.00	0.02	1
RBMN	Minersville	5.3									1	8	10.00	0.00	0.02	1
RBMN	Minersville	5.75									1	8	10.00	0.00	0.02	1
RBMN	Minersville	7.651									1	8	10.00	0.00	0.02	1
RBMN	Pennsy	64.56									6	1	10.00	0.00	0.02	1
RBMN	Pennsy	64.85									3	1	10.00	0.00	0.02	1
RBMN	Pennsy	64.95									6	1	10.00	0.00	0.02	1
RBMN	Pennsy	65.601											10.00	0.00	0.02	1
RBMN	Pennsy	66.7											10.00	0.00	0.02	1
RBMN	Pennsy	69.95									3	1	10.00	0.00	0.02	1
RBMN	Pennsy	72.35									3	1	10.00	0.00	0.02	1
RBMN	Pottsville	80.7									1	6	10.00	0.00	0.02	1
RBMN	Pottsville	82.1									1	8	10.00	0.00	0.02	1
RBMN	Pottsville	82.45									1	8	10.00	0.00	0.02	1
RBMN	Pottsville	83.45									3	1	10.00	0.00	0.02	1
RBMN	Pottsville	84.6									1	8	10.00	0.00	0.02	1
RBMN	Pottsville	85.7									1	8	10.00	0.00	0.02	1
RBMN	Pottsville	87.8									1	8	10.00	0.00	0.02	1
RBMN	Pottsville	88.95									1	8	10.00	0.00	0.02	1
RBMN	Pottsville	92.5									3	1	10.00	0.00	0.02	1
RBMN	Pottsville	98.45									1	8	10.00	0.00	0.02	1
RBMN	Scranton	0.15									3	1	10.00	0.00	0.02	1
RBMN	Scranton	1.95									3	1	10.00	0.00	0.02	1
RBMN	Scranton	6.701									1	8	10.00	0.00	0.02	1
RBMN	Susquehanna	0.1501									3	1	10.00	0.00	0.02	1
RBMN	Susquehanna	3.85									1	8	10.00	0.00	0.02	1
RBMN	Susquehanna	6.9									1	6	10.00	0.00	0.02	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
RBMN	Susquehanna	7.652									1	6	10.00	0.00	0.02	1
RBMN	Susquehanna	11.9									1	6	10.00	0.00	0.02	1
RBMN	Susquehanna	13.95									3	1	10.00	0.00	0.02	1
RBMN	Susquehanna	14.301									1	6	10.00	0.00	0.02	1
RBMN	Susquehanna	14.5									1	6	10.00	0.00	0.02	1
RBMN	Susquehanna	17.6									1	6	10.00	0.00	0.02	1
RBMN	Susquehanna	20.3									1	3	10.00	0.00	0.02	1
RBMN	Susquehanna	21									1	6	10.00	0.00	0.02	1
RBMN	Susquehanna	24.5									1	6	10.00	0.00	0.02	1
RBMN	Susquehanna	30.05									1	6	10.00	0.00	0.02	1
RBMN	Tremont	5.751											48.08	0.00	0.07	1
RBMN	Tremont	10.9											50.00	0.00	0.08	1
RBMN	Tremont	14											30.00	0.00	0.05	1
RBMN	Tremont	15.601	SST						10				50.00	0.00	0.08	1
RBMN	Tremont	17.601	SST						10				30.00	0.00	0.05	1
Shamokin Valley Railroad Company																
SVRR	Carbon Run	0.08	SST	1					10	8.7	1	6	41.00	0.75	0.10	1
SVRR	Carbon Run	0.18	SST	1					10	8.7	1	3	26.87	0.75	0.08	1
SVRR	SVRR	13.34	TPG	1					4	2.56	1	3	28.00	0.75	0.08	1
SVRR	SVRR	14.93	TPG	1					4		1	6	90.07	0.75	0.17	1
SVRR	SVRR	17.39	CSB	1					10		1	6	28.00	0.75	0.08	1
SVRR	SVRR	136.65	DPG	1					4	2.56	1	6	52.00	0.75	0.12	1
SVRR	SVRR	149.53	CSB	1					10	9.3	1	3	27.00	0.75	0.08	1
SVRR	SVRR	151.82	MAR	1					10	9.3	1	3	12.00	0.75	0.06	1
SVRR	SVRR	154.84	DPG	1					4	3.72	1	6	48.08	0.75	0.11	1
SVRR	SVRR	155.1	DPG	1					4	4.12	6	1	34.00	0.75	0.09	1
SVRR	SVRR	155.22	DPG	1					4	4.28	1	6	125.00	0.75	0.23	1
Southwestern Pennsylvania Railroad Company																

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
SWP	Bullskin	22.79	DPG						4		1	6	63.64	0.00	0.10	1
SWP	Bullskin	22.901	DPG						4		1	6	76.37	0.00	0.11	1
SWP	Bullskin	23.02	DPG						4		1	6	69.30	0.00	0.10	1
SWP	Bullskin	23.14	DPG						4		1	6	89.49	0.00	0.13	1
SWP	FM&P Sub	59.51	DPG						4	4.28	1	8	226.99	0.00	0.34	1
SWP	FM&P Sub	60.57	TPG						4	4.08	1	6	75.00	0.00	0.11	1
SWP	FM&P Sub	60.83	TPG						4	4.08	1	6	73.00	0.00	0.11	1
SWP	FM&P Sub	61.48	SST						10		1	6	59.40	0.00	0.09	1
SWP	FM&P Sub	61.68	SST						10	6.5	1	3	24.00	0.00	0.04	1
SWP	FM&P Sub	62.08	TPG						4		1	3	48.00	0.00	0.07	1
SWP	FM&P Sub	62.78	CSB						10		1	3	18.50	0.00	0.03	1
SWP	FM&P Sub	62.87	SST						10		1	3	25.00	0.00	0.04	1
SWP	FM&P Sub	63.1101	SST						10	6.6	1	3	20.00	0.00	0.03	1
SWP	FM&P Sub	63.38	SST						10		1	3	22.00	0.00	0.03	1
SWP	FM&P Sub	63.77	SST						10	6.6	1	3	20.00	0.00	0.03	1
SWP	FM&P Sub	67.22	CSB						10		1	3	24.04	0.00	0.04	1
SWP	FM&P Sub	67.91	SST						10		1	3	20.75	0.00	0.03	1
SWP	FM&P Sub	68.49	DPG						4		1	3	37.00	0.00	0.06	1
SWP	FM&P Sub	68.64	DPG						4		1	3	28.00	0.00	0.04	1
SWP	FM&P Sub	69.47	SST						10		1	3	30.00	0.00	0.05	1
SWP	FM&P Sub	69.74	SST						10		1	3	29.67	0.00	0.04	1
SWP	FM&P Sub	70.821	TPG						4	3.72	1	6	10.00	0.00	0.02	1
SWP	FM&P Sub	70.97	TPG						4		1	1	40.00	0.00	0.06	1
SWP	FM&P Sub	71.08	TPG						4	3.72	1	6	60.00	0.00	0.09	1
SWP	FM&P Sub	71.62	SST						10		1	6	38.89	0.00	0.06	1
SWP	FM&P Sub	72.2	CAR						10		1	6	18.00	0.00	0.03	1
SWP	FM&P Sub	72.85	CSB						10		1	3	15.75	0.00	0.02	1
SWP	FM&P Sub	73.38	SST						10	7.7	1	3	23.00	0.00	0.03	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
SWP	FM&P Sub	76.76	SST						10		1	6	16.00	0.00	0.02	1
SWP	FM&P Sub	78.48	TPG						4	3.72	1	6	60.00	0.00	0.09	1
SWP	Greensburgh Industrial	0.34	DPG						4	4.16	3	1	10.00	0.00	0.02	1
SWP	Greensburgh Industrial	1.05	TPG						4		3	1	90.00	0.00	0.14	1
SWP	Mount Pleasant Sub	0.081	DPG						4		1	3	10.00	0.00	0.02	1
SWP	Mount Pleasant Sub	0.19	DPG						4		1	3	22.50	0.00	0.03	1
SWP	Mount Pleasant Sub	0.54	DPG						4		1	3	23.50	0.00	0.04	1
SWP	Mount Pleasant Sub	1.03	SST						10		1	3	20.00	0.00	0.03	1
SWP	Mount Pleasant Sub	6.7	SST						10		1	6	33.76	0.00	0.05	1
SWP	Mount Pleasant Sub	8.28	TST						10		1	3	28.00	0.00	0.04	1
SWP	Mount Pleasant Sub	10.96	DPG						4		3	1	156.00	0.00	0.23	1
SWP	Mount Pleasant Sub	11.6	DPG						4		6	1	150.50	0.00	0.23	1
SWP	Mount Pleasant Sub	12.7	DPG						4		3	1	132.79	0.00	0.20	1
SWP	Radebaugh Subdivisio	2.65	DPG						4		6	1	70.00	0.00	0.11	1
SWP	Radebaugh Subdivisio	2.68	MAR						10		1	3	25.00	0.00	0.04	1
SWP	Radebaugh Subdivisio	2.74	DPG						4		1	6	54.00	0.00	0.08	1
SWP	Radebaugh Subdivisio	2.9	DPG						4		1	6	10.00	0.00	0.02	1
SWP	Radebaugh Subdivisio	3.55	DPG						4		1	6	10.00	0.00	0.02	1
SWP	Radebaugh Subdivisio	7.2601	DPG						4		1	6	107.00	0.00	0.16	1
SWP	Radebaugh Subdivisio	8.31	CST						10		1	3	16.00	0.00	0.02	1
SWP	Radebaugh Subdivisio	8.82	CST						10		3	3	16.00	0.00	0.02	1
SWP	Radebaugh Subdivisio	15.81	DPG						4		1	3	10.00	0.00	0.02	1
SWP	Radebaugh Subdivisio	16.16	CSB						10		1	3	18.00	0.00	0.03	1
SWP	Radebaugh Subdivisio	17.54	TPG						4		1	6	65.76	0.00	0.10	1
SWP	Yukon	0.26	TPG						4		3	1	34.00	0.00	0.05	1
SWP	Yukon	1.94	DPG						4		1	6	98.00	0.00	0.15	1
Stourbridge Railway, Inc																
SBR	Mainline	113.91	DPG	0.92	7	0.27	3		4	3.8	1	6	29.41	2.00	0.14	1.1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	C/L	Sp	Reserve	Sb	Sc	Fatigue catagory value	F	Hu	En	Lb	Tgf	Ec	Rc
SBR	Mainline	115.36	DPG	1.27	7	0.37	3	3	4	3.8	1	3	24.50	2.00	0.14	1.1
SBR	Mainline	115.62	DPG	1.28	6	0.32	3	3	4	3.8	1	3	29.00	2.00	0.14	1.1
SBR	Mainline	117.51	DPG	0.92	5	0.97	2		4	0.76	1	6	100.00	2.00	0.25	1.1
SBR	Mainline	122.2	CAR	0.92	5	0.22	2		10	8.4	1	3	58.69	2.00	0.19	1.1
SBR	Mainline	124.9	DPG	0.92	10	18.40	4		4	0.08	1	6	74.25	2.00	0.21	1.1
SBR	Mainline	125.65	TPG	0.92	5	0.19	2		4	3.8	1	6	147.67	2.00	0.32	1.1
Towanda-Monroeton Shippers Lifeline, Inc.																
TMSS	Mainline	10	SST	1	7	0.28	3		10	10	1	6	20.00	0.02	0.03	1
TMSS	Mainline	20	SST	1	7	0.28	3		10	10	1	6	20.00	0.02	0.03	1
Turtle Creek Industrial Railroad Co.																
TCKR	Mainline	2.52	DPG	1.33	4	0.18	2	1	4	4.76	1	6	76.37	0.02	0.12	1
TCKR	Mainline	3	SST	1.23	6	0.49	3	1	7	4.2	1	3	24.00	0.02	0.04	1
TCKR	Mainline	3.69	DPG	1	7	0.24	3		4	4.76			104.00	0.02	0.16	1
TCKR	Mainline	5.83	DPG	1	7	0.24	3		4	4.6			55.50	0.02	0.08	1
TCKR	Mainline	7.76	DPG	0.93	6	0.20	2	1	4	4.48	1	6	75.00	0.02	0.11	1
TCKR	Mainline	8.19	DPG	1	4	0.14	2	1	4	4.48	1	6	55.50	0.02	0.08	1
TCKR	Mainline	10.19	CAR		3		2		10	10.7			25.00	0.00	0.04	1
Union County Industrial Railroad																
UCIR	Milton RT	169.99	TPG	1					4	3.32	3	1	52.00	0.75	0.12	1
UCIR	Milton RT	170.2	TPG	1					4	3.32	3	1	68.00	0.75	0.14	1
UCIR	Milton RT	170.29	TPG	1					4	3.16	1	10	251.35	0.75	0.41	1
UCIR	Milton RT	170.45	TPG	1					4	3.16	1	10	224.89	0.75	0.37	1
UCIR	Newco RT	172.38	DPG	1					4	3.44	1	3	52.00	0.75	0.12	1
UCIR	Winfield RT	161.8	DPG	1					4	3.72	1	6	45.00	0.75	0.11	1
UCIR	Winfield RT	162.88	DPG	1					4	3.32	1	6	65.00	0.75	0.14	1
UCIR	Winfield RT	165.58	TPG	1					4	3.16	3	1	52.00	0.75	0.12	1
UCIR	Winfield RT	166.54	DPG	1					4	3.72	1	6	98.29	0.75	0.18	1
UCIR	Winfield RT	167.73	MAR						10	9			12.00	0.00	0.02	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
Union Railroad Company																
URR	Mainline	1003	CAR	1					10	10.4	3	3	127.28	5.00	0.44	1
URR	Mainline	1006	CAR	1					10	10.8	1	3	135.06	5.00	0.45	1
URR	Mainline	1007	CAR	1					10	10.4	6	1	121.62	5.00	0.43	1
URR	Mainline	1008	CAR	1					10	10.2	1	3	201.50	5.00	0.55	1
URR	Mainline	1010	CAR	1					10	10.2	1	3	170.41	5.00	0.51	1
URR	Mainline	1012	CAR	1					10	10.9	1	3	62.00	5.00	0.34	1
URR	Mainline	1015	DPG	1					4	4.12	1	3	347.85	5.00	0.77	1
URR	Mainline	1020	TPG	1.22					4	2.56	1	1	138.59	5.00	0.46	1
URR	Mainline	1022	TTR	1					3	2.01	3	10	500.00	5.00	1.00	1
URR	Mainline	1024	TPG	1.61					4	3.2	6	1	102.00	5.00	0.40	1
URR	Mainline	1029	DPG	1.08					4	3.2	1	1	36.00	5.00	0.30	1
URR	Mainline	1032	DPG	1					4	2.8			415.96	5.00	0.87	1
URR	Mainline	1043	DPG	1					4	2.28	1	3	66.00	5.00	0.35	1
URR	Mainline	1045	CAR	1					10	10.4	3	3	84.85	5.00	0.38	1
URR	Mainline	1047	DPG	1.29					4	2.84	3	1	96.00	5.00	0.39	1
URR	Mainline	1048	DPG	1.04					4	4.16	3	1	58.00	5.00	0.34	1
URR	Mainline	1052	DPG	1.56					4	4.16	3	1	103.75	5.00	0.41	1
URR	Mainline	1054	TPG	1.26					4	3.6	3	3	114.00	5.00	0.42	1
URR	Mainline	1057	CAR	1					10	9	3	3	304.76	5.00	0.71	1
URR	Mainline	1058	CAR	1					10	9	3	3	125.87	5.00	0.44	1
URR	Mainline	1060	CAR	1					10	9	3	1	116.67	5.00	0.43	1
URR	Mainline	1062	TTR	1.35					3	2.7	6	3	268.78	5.00	0.65	1
URR	Mainline	1063	TTR	1					3	38.07	6	1	140.87	5.00	0.46	1
URR	Mainline	1066	TPG	1					4	3.2	6	1	162.79	5.00	0.49	1
URR	Mainline	1068	TPG	1					4	4.24	3	6	84.87	5.00	0.38	1
URR	Mainline	1082	DPG	1.48					4	2.68	3	6	92.95	5.00	0.39	1
URR	Mainline	1086	TTR	1.04					3	1.92	1	1	204.00	5.00	0.56	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
URR	Mainline	1087	DTR	1.04					3	1.92	3	6	397.57	5.00	0.85	1
URR	Mainline	1088	DPG	1.07					4	2.56	3	1	413.38	5.00	0.87	1
URR	Mainline	1090	CAR	1					10	9.4	1	6	500.00	5.00	1.00	1
URR	Mainline	1093	DPG	1.64					4	2.36	3	3	252.98	5.00	0.63	1
URR	Mainline	1094	DPG	1.54					4	2.36	3	1	44.00	5.00	0.32	1
URR	Mainline	1095	DPG	1.51					4	2.36	3	1	215.56	5.00	0.57	1
URR	Mainline	1096	DPG	1.65					4	2.92	3	1	50.00	5.00	0.33	1
URR	Mainline	1097	CAR	1					10	7.3	1	6	247.49	0.00	0.37	1
Western New York & Pennsylvania Railroad																
WNYP	Buffalo Line	80.4	CSB	1	6		3		10		1	3	12.00	0.00	0.02	1
WNYP	Buffalo Line	84.72	DPG	1	6		3		4		1	3	45.00	0.00	0.07	1
WNYP	Buffalo Line	85.66	CSB	1	6		3		10		1	6	21.00	0.00	0.03	1
WNYP	Buffalo Line	86.19	CSB	1	6		3		10		1	6	28.00	0.00	0.04	1
WNYP	Buffalo Line	87.56	CSB	1	6		3		10		1	3	10.00	0.00	0.02	1
WNYP	Buffalo Line	90.22	DPG	1	6		3		4		1	6	40.00	0.00	0.06	1
WNYP	Buffalo Line	90.93	CSB	1	6		3		10		1	3	32.00	0.00	0.05	1
WNYP	Buffalo Line	91.65	TPG	1	6		3		4		1	6	57.00	0.00	0.09	1
WNYP	Buffalo Line	93.02	CSB	1	6		3		10		1	3	14.00	0.00	0.02	1
WNYP	Buffalo Line	93.73	CSB	1	6		3		10		1	3	14.00	0.00	0.02	1
WNYP	Buffalo Line	95.29	TPG	1	6		3		4		1	6	55.00	0.00	0.08	1
WNYP	Buffalo Line	97.07	TPG	1	6		3		4		1	6	50.00	0.00	0.08	1
WNYP	Buffalo Line	97.28	TPG	1	6		3		4		1	10	164.54	0.00	0.25	1
WNYP	Buffalo Line	101.75	CSB	1	6		3		10		1	6	16.00	0.00	0.02	1
WNYP	Buffalo Line	104.95	DPG	1	6		3		4		1	6	45.00	0.00	0.07	1
WNYP	Buffalo Line	115.22	TPG	1	6		3		4		1	3	55.00	0.00	0.08	1
WNYP	Buffalo Line	116.28	DPG	1	6		3		4		1	3	77.78	0.00	0.12	1
WNYP	Buffalo Line	118.03	CSB	1	6		3		10		1	3	22.00	0.00	0.03	1
WNYP	Buffalo Line	150.05	TPG	1	6		3		4		1	3	117.38	0.00	0.18	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
WNYP	Buffalo Line	155.2	TTR	1	6		3		3		1	6	199.40	0.00	0.30	1
WNYP	Buffalo Line	158.7	TPG	1	6		3		4		1	3	80.00	0.00	0.12	1
WNYP	Buffalo Line	161.41	TPG	1	6		3		4		1	1	150.00	0.00	0.23	1
WNYP	Farmers Valley Branch	1.2	TTR	0.92	6		3		3		1	3	90.45	0.10	0.14	1
WNYP	Farmers Valley Branch	1.85	DPG	0.92	5		2		4		1	3	22.00	0.10	0.04	1
WNYP	Farmers Valley Branch	3.06	TPG	0.92	5		2		4		1	3	37.00	0.10	0.06	1
WNYP	Farmers Valley Branch	4.82	TST	0.92	5		2		10		1	3	16.00	0.10	0.03	1
WNYP	Farmers Valley Branch	5.53	TST	0.92	5		2		10		1	3	50.00	0.10	0.08	1
WNYP	Mainline-Niobe to Me	3.91	CAR	1	6		3		10		1	3	50.00	4.00	0.28	1.2
WNYP	Mainline-Niobe to Me	5.16	CAR	1	6		3		10		1	3	16.97	4.00	0.23	1.2
WNYP	Mainline-Niobe to Me	10.23	CAR	1	5		2		10		1	3	15.00	4.00	0.22	1.2
WNYP	Mainline-Niobe to Me	57.53	TPG	1	6		3		4		6	1	57.00	4.00	0.29	1.2
WNYP	Mainline-Niobe to Me	57.6701	DPG	1	6		3		4		1	6	96.00	4.00	0.34	1.2
WNYP	Mainline-Niobe to Me	59.96	TPG	1	5		2		4		1	6	60.00	4.00	0.29	1.2
WNYP	Mainline-Niobe to Me	61.95	DPG	1	6	0.75	3		4	1.28	1	6	45.00	4.00	0.27	1.2
WNYP	Mainline-Niobe to Me	66.18	DPG	1	6	0.59	3		4	1.64	1	3	30.00	4.00	0.25	1.2
WNYP	Mainline-Niobe to Me	66.23	TPG	1	6	0.35	3		4	2.76	3	1	31.00	4.00	0.25	1.2
WNYP	Mainline-Niobe to Me	66.61	DPG	1	6	0.29	3		4	3.32	1	6	30.00	4.00	0.25	1.2
WNYP	Mainline-Niobe to Me	68.77	TPG	1	6		3		4		1	6	40.00	4.00	0.26	1.2
WNYP	Mainline-Niobe to Me	72.02	CAR	1	6		3		10		1	1	11.00	4.00	0.22	1.2
WNYP	Mainline-Niobe to Me	74.41	DPG	1	6		3		4		3	1	40.00	4.00	0.26	1.2
WNYP	Mainline-Niobe to Me	79.62	CAR	1	7	0.44	3		10	6.4	1	3	13.00	4.00	0.22	1.2
WNYP	Mainline-Niobe to Me	79.74	TPG	1	5	0.32	2		4	2.52	3	1	40.00	4.00	0.26	1.2
WNYP	Mainline-Niobe to Me	82.46	DPG	1	6		3		4		1	3	24.00	4.00	0.24	1.2
WNYP	Mainline-Niobe to Me	83.06	TTR	0.92	2		2	2	3		1	6	208.60	4.00	0.51	1.2
WNYP	Mainline-Niobe to Me	87.14	TTR	0.92	6	0.26	3		3	2.55	1	6	218.50	4.00	0.53	1.2
WNYP	Mainline-Niobe to Me	89.31	DPG	1	6		3		4		1	3	39.00	4.00	0.26	1.2
WNYP	Mainline-Niobe to Me	91.22	TPG	1	5	0.28	2		4	2.84	6	1	57.00	4.00	0.29	1.2

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
WNYP	Mainline-Niobe to Me	92.64	DPG	1	6		3		4		3	1	75.00	4.00	0.31	1.2
WNYP	Mainline-Niobe to Me	93.47	CAR	1	6		3		10		1	3	20.00	4.00	0.23	1.2
WNYP	Mainline-Niobe to Me	93.76	CAR	1	6		3		10		1	3	20.00	4.00	0.23	1.2
WNYP	Mainline-Niobe to Me	96.19	TPG	1	6		3		4		3	1	56.00	4.00	0.28	1.2
WNYP	Mainline-Niobe to Me	96.5	TPG	1	6		3		4		3	1	56.00	4.00	0.28	1.2
WNYP	Mainline-Niobe to Me	97.03	DPG	1	6		3		4		1	6	95.00	4.00	0.34	1.2
WNYP	Mainline-Niobe to Me	99.34	TPG	1	6		3		4		1	3	30.00	4.00	0.25	1.2
WNYP	Mainline-Niobe to Me	102.7	DPG	1	7		3		4		1	3	38.00	4.00	0.26	1.2
WNYP	Mainline-Niobe to Me	104.75	CSB	1	6		3		10		1	3	73.54	4.00	0.31	1.2
WNYP	Oil City Branch	0.3301	TPG	0.84	5	0.20	1	2	3	2.58	1	6	65.05	0.05	0.10	1.2
WNYP	Oil City Branch	0.9101	DPG	1	6		3		4		1	1	25.00	0.05	0.04	1.2
WNYP	Oil City Branch	5.67	DPG	1	6		3		4		1	3	27.00	0.05	0.04	1.2
WNYP	Oil City Branch	7.68	TPG	1	6		3		4		1	3	75.66	0.05	0.12	1.2
WNYP	Oil City Branch	9.99	CSB	1	5		2		10		1	3	10.00	0.05	0.02	1.2
WNYP	Oil City Branch	11.3101	DPG	1	6		3		4		1	3	27.00	0.05	0.04	1.2
WNYP	Oil City Branch	12.25	TTR	0.92	6		3		3		1	3	121.00	0.05	0.18	1.2
WNYP	Oil City Branch	13.35	DPG	1	6		3		4		1	3	36.00	0.05	0.06	1.2
WNYP	Oil City Branch	20.48	DPG	1	6		3		4		1	3	19.00	0.05	0.03	1.2
WNYP	Oil City Branch	21.3601	TTR	0.92	6		3		3		1	6	130.00	0.05	0.20	1.2
WNYP	Oil City Branch	22.52	DPG	1	6		3		4		1	3	19.00	0.05	0.03	1.2
WNYP	Oil City Branch	27.45	DPG	1	6		3		4		1	3	80.00	0.05	0.12	1.2
WNYP	Rouseville Ind. Track	33.25	TTR	0.92	6		3		3		1	6	205.06	0.03	0.31	1
WNYP	Rouseville Ind. Track	34.16	TPG	1	6		3		4		1	6	181.87	0.03	0.27	1
WNYP	Rouseville Ind. Track	34.36	CSB	1	6		3		10		1	3	12.00	0.03	0.02	1
WNYP	Rouseville Ind. Track	35.77	TPG	1	6		3		4		1	6	181.87	0.03	0.27	1
WNYP	Rouseville Ind. Track	36.31	DPG	1	6		3		4		1	3	39.00	0.03	0.06	1
WNYP	Southside Ind Branch	1.1	TTR	0.92	6		3		3		1	10	275.91	0.10	0.42	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
WE	Clairton Branch	0.1801	CAR						10				10.00	0.00	0.02	1
WE	Clairton Branch	0.4	TTR	1					3		3	6	147.52	0.00	0.22	1
WE	Clairton Branch	0.59	DPG	1					4		3	1	30.00	0.00	0.05	1
WE	Connellsville Line	0.09	TTR	1					3	2.4	1	8	319.48	0.00	0.48	1
WE	Connellsville Line	0.9	CSB	1					10	8	6	1	54.00	0.00	0.08	1
WE	Connellsville Line	4.86	DPG	1					4	3.2	6	1	182.43	0.00	0.27	1
WE	Connellsville Line	5.43	DPG	1					4	3.2	6	1	64.00	0.00	0.10	1
WE	Connellsville Line	6.26	DPG	1					4	3.2	6	1	74.42	0.00	0.11	1
WE	Connellsville Line	6.73	DPG	1					4	3.2	3	6	181.50	0.00	0.27	1
WE	Connellsville Line	8.51	TTR	1					3	2.4	3	1	112.66	0.00	0.17	1
WE	Connellsville Line	8.98	DPG	1					4	3.2	1	6	167.43	0.00	0.25	1
WE	Connellsville Line	9.58	DPG	1					4	3.2	1	6	155.88	0.00	0.23	1
WE	Connellsville Line	10.251	DTR	1					3	2.4	1	6	195.96	0.00	0.29	1
WE	Connellsville Line	12.52	DPG	1					4	3.2	1	3	278.57	0.00	0.42	1
WE	Connellsville Line	13.97	DPG	1					4	3.2	1	8	484.28	0.00	0.73	1
WE	Connellsville Line	15.35	DPG	1					4	3.2	3	1	125.19	0.00	0.19	1
WE	Connellsville Line	15.48	DPG	1					4	3.2			205.06	0.00	0.31	1
WE	Connellsville Line	15.73	SST	1					10	8	3	1	36.50	0.00	0.05	1
WE	Connellsville Line	17.01	DPG	1					4	3.2	6	1	56.00	0.00	0.08	1
WE	Connellsville Line	18.08	DPG	1					4	3.2	3	1	86.60	0.00	0.13	1
WE	Connellsville Line	20.82	DPG	1					4	3.2	6	1	80.83	0.00	0.12	1
WE	Connellsville Line	21.34	SST	1					10	8	3	1	33.50	0.00	0.05	1
WE	Connellsville Line	21.68	DPG	1					4	3.2	6	1	142.89	0.00	0.21	1
WE	Connellsville Line	23.01	DTR	1					3	2.4	6	10	500.00	0.00	0.75	1
WE	Connellsville Line	23.991	DPG	1					4	3.2	6	6	166.30	0.00	0.25	1
WE	Connellsville Line	24.801	DPG	1					4	3.2	1	1	122.47	0.00	0.18	1
WE	Connellsville Line	25.88	DPG	1					4	3.24	1	1	146.97	0.00	0.22	1
WE	Connellsville Line	26.2	DPG	1					4	3.24	3	3	229.84	0.00	0.34	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
WE	Connellsville Line	26.66	DPG	1					4		3	1	194.45	0.00	0.29	1
WE	Connellsville Line	27.051	DPG	1					4	3.24	6	6	227.68	0.00	0.34	1
WE	Connellsville Line	27.79	TPG	1					4	3.24	6	1	44.17	0.00	0.07	1
WE	Connellsville Line	30.12	DPG	1					4	3.24	6	6	328.03	0.00	0.49	1
WE	Connellsville Line	31.71	CAR	1					10	8.1	3	1	25.00	0.00	0.04	1
WE	Connellsville Line	32.4	DTR	1					3	2.43	1	1	169.94	0.00	0.25	1
WE	Connellsville Line	33.36	DPG	1					4	3.24	3	1	158.19	0.00	0.24	1
WE	Connellsville Line	33.67	DPG	1					4	3.24	3	6	338.28	0.00	0.51	1
WE	Connellsville Line	35.29	DTR	1					3	2.43	6	3	183.31	0.00	0.27	1
WE	Connellsville Line	36.92	DPG	1					4	3.24	1	1	72.00	0.00	0.11	1
WE	Connellsville Line	37.27	DTR	1					3	2.43	6	1	200.00	0.00	0.30	1
WE	Connellsville Line	37.85	CAR	1					10	8.1	3	1	25.00	0.00	0.04	1
WE	Connellsville Line	39.16	CAR	1					10	8.1	3	1	25.00	0.00	0.04	1
WE	Connellsville Line	39.38	DPG	1					4	3.24	1	6	215.06	0.00	0.32	1
WE	Connellsville Line	39.671	CAR	1					10	8.2	1	3	25.00	0.00	0.04	1
WE	Connellsville Line	39.86	SST	1					10	7.9	1	1	21.33	0.00	0.03	1
WE	Connellsville Line	40.23	SST	1					10	7.9	1	1	21.33	0.00	0.03	1
WE	Connellsville Line	42.09	CAR	1					10	10.8	3	1	20.00	0.00	0.03	1
WE	Connellsville Line	42.631	TPG	1					4	2.84	6	1	76.37	0.00	0.11	1
WE	Connellsville Line	43.75	DPG	1					4	2.84	3	1	67.06	0.00	0.10	1
WE	Connellsville Line	44.21	DPG	1					4	4.32	6	1	43.50	0.00	0.07	1
WE	Connellsville Line	45.38	CAR	1					10		3	1	24.00	0.00	0.04	1
WE	Connellsville Line	46.57	DPG	1					4	3.16	6	1	37.67	0.00	0.06	1
WE	Connellsville Line	46.87	SST	1					10	7.9	1	1	24.33	0.00	0.04	1
WE	Connellsville Line	47.14	SST	1					10	7.9	1	1	18.00	0.00	0.03	1
WE	Connellsville Line	47.49	DPG	1					4	4	6	1	210.88	0.00	0.32	1
WE	Connellsville Line	48.07	CAR	1					10		1	1	40.00	0.00	0.06	1
WE	Connellsville Line	48.42	CAR	1					10		1	1	16.00	0.00	0.02	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
WE	Connellsville Line	48.62	CAR	1					10		1	1	21.00	0.00	0.03	1
WE	Connellsville Line	48.93	CAR	1					10		3	1	24.00	0.00	0.04	1
WE	Connellsville Line	49.43	CAR	1					10		3	1	33.00	0.00	0.05	1
WE	Connellsville Line	50.15	TPG	1					4				160.00	0.00	0.24	1
WE	Connellsville Line	50.36	DPG	1					4	4.32	3	1	31.67	0.00	0.05	1
WE	Connellsville Line	50.75	SST	1					10				58.21	0.00	0.09	1
WE	Connellsville Line	50.78	DPG	1					4	3.12	3	1	142.50	0.00	0.21	1
WE	Connellsville Line	51.71	TPG	1					4	3.12	3	1	132.04	0.00	0.20	1
WE	Connellsville Line	52.16	SST	1					10	10.8	3	1	26.00	0.00	0.04	1
WE	Connellsville Line	52.71	DPG	1					4	3.12	1	3	50.00	0.00	0.08	1
WE	Connellsville Line	52.81	DPG	1					4	3.12	6	1	87.04	0.00	0.13	1
WE	Connellsville Line	53.31	DPG	1					4		6	1	172.30	0.00	0.26	1
WE	Connellsville Line	53.91	TPG	1					4	3.08	3	1	86.25	0.00	0.13	1
WE	Connellsville Line	54.25	SST	1					10	6.6			15.00	0.00	0.02	1
WE	Connellsville Line	56.39	DTR	1					3	3.18	1	3	221.36	0.00	0.33	1
WE	Connellsville Line	56.98	DPG	1					4	2.96	3	1	40.00	0.00	0.06	1
WE	Connellsville Line	57.67	DPG	1					4	2.96	1	3	123.83	0.00	0.19	1
WE	Connellsville Line	58.3	MAR	1					10		3	1	40.00	0.00	0.06	1
WE	Connellsville Line	59.18	CAR	1					10	10.7	3	1	30.00	0.00	0.05	1
WE	Connellsville Line	59.42	DTR	1					3	3.24	1	6	198.76	0.00	0.30	1
WE	Connellsville Line	60.26	DTR	1					3	3.24	1	6	169.71	0.00	0.25	1
WE	Connellsville Line	60.45	TPG	1					4	4.32	3	1	55.13	0.00	0.08	1
WE	Connellsville Line	60.85	TPG	1					4	4.32	3	1	35.00	0.00	0.05	1
WE	Connellsville Line	61.01	TTR	1					3	3.24	1	6	150.00	0.00	0.23	1
WE	Connellsville Line	61.44	DPG	1					4	4.32	1	3	60.00	0.00	0.09	1
WE	Connellsville Line	61.71	DPG	1					4	4.32	3	1	50.00	0.00	0.08	1
WE	Connellsville Line	62.02	TTR	1					3	3.24	3	3	222.00	0.00	0.33	1
WE	Connellsville Line	64.01	DPG	1					4		1	3	120.21	0.00	0.18	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
WE	Connellsville Line	64.84	DPG	1					4	4.32	6	1	26.00	0.00	0.04	1
WE	Connellsville Line	64.92	DPG	1					4	4.32	6	1	36.50	0.00	0.05	1
WE	Connellsville Line	65.36	DPG	1					4	4.32	6	1	23.00	0.00	0.03	1
WE	Connellsville Line	65.38	DPG	1					4	4.32	1	1	106.77	0.00	0.16	1
WE	Connellsville Line	65.79	DPG	1					4	4.32	6	1	38.50	0.00	0.06	1
WE	Connellsville Line	66.36	DPG	1					4	4.32	6	1	38.50	0.00	0.06	1
WE	Connellsville Line	67.47	DPG	1					4	4.32	6	1	38.42	0.00	0.06	1
WE	Connellsville Line	68.1	CAR	1					10	10.7	3	1	20.00	0.00	0.03	1
WE	Connellsville Line	68.59	DTR	1					3	3.24	1	3	141.42	0.00	0.21	1
WE	Connellsville Line	68.69	DPG	1					4	4.32	6	1	36.50	0.00	0.05	1
WE	Connellsville Line	73.03	DPG	1					4	4.32	6	1	25.50	0.00	0.04	1
WE	Connellsville Line	76.08	DPG	1					4	4.32	6	1	53.42	0.00	0.08	1
WE	Connellsville Line	77.43	SST	1					10	10.8	6	1	22.25	0.00	0.03	1
WE	Connellsville Line	78.53	SST	1					10	10.8	6	1	22.25	0.00	0.03	1
WE	Connellsville Line	79.16	SST	1					10	10.8	1	6	38.42	0.00	0.06	1
WE	Connellsville Line	79.64	DPG	1					4	4.32	1	6	38.42	0.00	0.06	1
WE	Connellsville Line	80.5	SST	1					10	10.8	6	1	22.25	0.00	0.03	1
WE	Connellsville Line	80.84	DPG	1					4	4.32	1	6	58.17	0.00	0.09	1
WE	Connellsville Line	81.3	SST	1					10		6	1	23.67	0.00	0.04	1
WE	Connellsville Line	82.61	TTR	1					3	3.24	1	6	99.75	0.00	0.15	1
WE	Connellsville Line	82.87	DTR	1					3	3.24	1	6	100.00	0.00	0.15	1
WE	Connellsville Line	84.71	DTR	1					3	3.24	1	6	100.00	0.00	0.15	1
WE	Connellsville Line	85.15	DTR	1					3	3.24	1	6	100.00	0.00	0.15	1
WE	Connellsville Line	85.72	DPG	1					4	4.32	1	6	77.50	0.00	0.12	1
WE	Mifflin Branch	0.57	CAR	1					10				23.00	0.00	0.03	1
WE	Mifflin Branch	1.29	CAR	1					10				24.00	0.00	0.04	1
WE	Mifflin Branch	2.63	CAR						10				15.00	0.00	0.02	1
WE	Mifflin Branch	2.91	TPG	1					4				86.50	0.00	0.13	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
WE	West End Branch	0.11	DPG	1					4		1	3	50.00	0.00	0.08	1
WE	West End Branch	0.22	DPG	1					4		1	3	48.50	0.00	0.07	1
WE	West End Branch	0.75	TPG	1					4		6	1	163.50	0.00	0.25	1
WE	West End Branch	1.02	DPG	1					4	4.12	1	3	210.12	0.00	0.32	1
WE	West End Branch	1.74	DPG	1					4	4.12	1	3	123.09	0.00	0.18	1
WE	West End Branch	1.93	DPG	1					4		3	1	175.32	0.00	0.26	1
York Railway Co.																
YRC	Mainline	0.401	SST						10		1	3	16.00	1.43	0.10	1
YRC	Mainline	0.501	TPG						4		1	3	80.00	1.43	0.19	1
YRC	Mainline	1.111	SST						10		1	3	12.00	1.43	0.09	1
YRC	Mainline	2.7	SST						10		1	3	16.50	1.43	0.10	1
YRC	Mainline	3.9	DPG						4	3.16	1	3	121.86	1.43	0.25	1
YRC	Mainline	4.71	TPG						4	3.2	1	1	112.61	1.43	0.24	1
YRC	Mainline	6.4	SST						10		1	3	15.00	1.43	0.09	1
YRC	Mainline	12.31	TOP						10		1	3	14.00	1.43	0.09	1
YRC	Mainline	12.4	SST						10	2.9	1	3	26.33	1.43	0.11	1
YRC	Mainline	15.6	TTR						3		1	3	202.23	1.43	0.37	1
YRC	Mainline	16.2	SST						10		1	3	50.00	1.43	0.15	1
YRC	MD & PA Main	12.8	MAR		7		3		10				15.00	0.30	0.04	1
YRC	MD & PA Main	13.52	TPG		7		3		4		1	3	153.92	0.30	0.25	1
YRC	MD & PA Main	18.04	CSB		7		3		10		1	3	25.00	0.30	0.05	1
YRC	MD & PA Main	20.71	DPG		7		3		4		3	3	38.54	0.30	0.07	1
YRC	MD & PA Main	21.36	SST		7		3		10		1	3	19.00	0.30	0.04	1
YRC	MD & PA Main	23.61	DPG		7		3		4		1	3	28.00	0.30	0.06	1
YRC	MD & PA Main	24.17	TST		7		3		10		1	1	10.00	0.30	0.03	1
YRC	MD & PA Main	24.98	TPG		7		3		4		1	3	58.00	0.30	0.10	1
YRC	MD & PA Main	27.85	DPG		7		3		4		1	3	40.50	0.30	0.08	1
YRC	MD & PA Main	28.05	SST		7		3		10		1	3	18.00	0.30	0.04	1

Bridge Database Summary-Known Risk Data

SLRR	Branch Name	Bridge ID	Bridge Typ	*C/L*	*Sp*	*Reserve*	*Sb*	*Sc*	*Fatigue catagory value*	*F*	*Hu*	*En*	*Lb*	*Tgf*	*Ec*	*Rc*
YRC	MD & PA North Centr	54.17	DPG		7		3		4		3	1	30.00	0.13	0.05	1
YRC	MD & PA North Centr	55.25	TPG		7		3		4		3	1	90.00	0.13	0.14	1
YRC	MD & PA North Centr	55.87	MAR		7		3		10		1	3	20.00	0.13	0.04	1
YRC	MD & PA North Centr	56.09	MAR		7		3		10		1	3	15.00	0.13	0.03	1
Youngstown & Southeastern Railroad																
YSE	Youngstown & Southe	34.15	TST	0.92	8		3		10		1	6	12.00	0.01	0.02	1

Appendix F

Risk Evaluation with Known Parameters – No Assumed Values

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
0.68	Brilliant Ind-AVR	TTR	1838	Allegheny R	0.13	0.23	0.10	0.02	0.02	0.15	0.44	0.08	0.53	0.69	0.37
191.99	CNY-NYSW	TTR	195	Susquehanna R	0.08	0.15	0.05	0.02	0.02	0.15	0.24	0.10	0.70	0.50	0.35
5.7	Carbondale-DL	TTR	168	Lackawanna R	0.09	0.15	0.10	0.02	0.02	0.12	0.16	0.08	0.64	0.38	0.24
18.27	C&M-RJCP	DTR	260	Anderson Creek	0.15	0.23	0.05	0.02	0.02	0.09	0.17	0.08	0.56	0.35	0.20
0.3301	Oil City-WNYP	TPG	92	French Creek Trib	0.09	0.08	0.10	0.01	0.02	0.09	0.06	0.10	0.72	0.27	0.19
2.52	Main-TCKR	DPG	108	Turtle Creek	0.08	0.15	0.05	0.02	0.02	0.09	0.07	0.08	0.70	0.26	0.18
10.55	P&W-AVR	DPG	77	Pine Creek	0.10	0.15	0.05	0.02	0.02	0.09	0.07	0.08	0.68	0.26	0.18
7.76	Main-TCKR	DPG	75	Turtle Creek	0.09	0.15	0.05	0.02	0.02	0.09	0.07	0.08	0.69	0.26	0.18
8.19	Main-TCKR	DPG	55.5	Turtle Creek	0.06	0.15	0.05	0.02	0.02	0.09	0.05	0.08	0.71	0.24	0.17
226.08	Main-BPRR	TTR	190	West Mahoning Flo	0.08	0.23	0.20	0.02	0.02	0.02	0.17	0.10	0.48	0.30	0.14
29.73	Indiana-BPRR	DPG	40	McKees Run	0.12	0.08	0.05	0.02	0.02	0.05	0.04	0.10	0.73	0.20	0.14
8.71	Indiana-BPRR	DPG	30	Broadhead Run	0.12	0.15	0.05	0.02	0.02	0.05	0.03	0.10	0.66	0.19	0.12
18.57	C&M-RJCP	TTR	140	Rail Trail	0.09	0.23	0.20	0.02	0.02	0.02	0.13	0.08	0.46	0.24	0.11
115.62	Main-SBR	DPG	29	Grassy Is. Cr	0.15	0.23	0.15	0.02	0.02	0.05	0.09	0.09	0.46	0.24	0.11
39.1	Cresson-RJCP	TTR	98	Gravel Access Road	0.08	0.23	0.20	0.02	0.02	0.02	0.10	0.10	0.47	0.23	0.11
20.04	Indiana-BPRR	DPG	20	Stream	0.07	0.15	0.15	0.02	0.02	0.05	0.02	0.10	0.61	0.18	0.11
4.6801	Indiana-BPRR	DPG	30	Smiths Run	0.14	0.23	0.05	0.02	0.02	0.05	0.03	0.10	0.56	0.19	0.10
234.65	Main-BPRR	DPG	24	Gamble Run	0.14	0.23	0.05	0.02	0.02	0.05	0.02	0.10	0.56	0.18	0.10
115.36	Main-SBR	DPG	24.5	Kirkham Cr	0.17	0.23	0.15	0.02	0.02	0.05	0.08	0.09	0.44	0.23	0.10
31.13	Indiana-BPRR	CAR	12	Stream	0.20	0.15	0.05	0.05	0.02	0.05	0.01	0.10	0.54	0.17	0.09
12.14	W&P-AVR	DPG	34	Lick Run	0.22	0.23	0.05	0.02	0.02	0.05	0.03	0.08	0.49	0.17	0.08
3	Main-TCKR	SST	24	Trib Creek	0.22	0.23	0.05	0.02	0.02	0.05	0.02	0.08	0.48	0.17	0.08
40.47	Quaker-EPRR	CSB	25.5	Channel	0.12	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.46	0.17	0.08

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
12.39	W&P-AVR	DPG	41	Lick Run	0.29	0.23	0.05	0.02	0.02	0.05	0.04	0.08	0.42	0.18	0.07
1022	Main-URR	TTR	5346	Monongahela R, U				0.01	0.05	0.15	0.60	0.08		0.88	
1090	Main-URR	CAR	1130	Peter's Creek				0.05	0.02	0.09	0.60	0.08		0.79	
23.01	Connellsville-WE	DTR	2770	Monongahela R., H				0.01	0.09	0.15	0.45	0.08		0.77	
213.86	Ant-LV	TTR	1128	Susquehanna River				0.02	0.02	0.15	0.50	0.08		0.75	
1087	Main-URR	DTR	889	Braddock Ave, Turt				0.01	0.05	0.09	0.51	0.08		0.73	
258.89	Main-BPRR	DTR	1665	Allegheny R				0.02	0.02	0.15	0.45	0.10		0.72	
63.23	Shawmut-BPRR	TTR	1123	Allegheny R					0.02	0.15	0.45	0.08		0.70	
5.13	W&P-AVR	TTR	2659	Monongahela R					0.02	0.15	0.45	0.08		0.70	
1.3	P&W-AVR	TTR	4252	Allegheny R				0.01	0.02	0.15	0.45	0.08		0.70	
1088	Main-URR	DPG	1601	Braddock Ave				0.01	0.05	0.02	0.52	0.08		0.67	
13.97	Connellsville-WE	DPG	1812	Yougiogheny R, C				0.02	0.02	0.12	0.44	0.08		0.65	
198.04	Corning-LV	DPG	1290	Susq. River				0.02	0.02	0.15	0.39	0.08		0.64	
1032	Main-URR	DPG	1611					0.01	0.02	0.02	0.52	0.08		0.64	
90.8401	CNY-NYSW	DTR	648	Delaware R		0.23			0.02	0.15	0.35	0.10		0.62	
192.22	CNY-NYSW	TTR	636	Susquehanna R	0.14	0.23		0.01	0.02	0.15	0.35	0.10		0.61	
1062	Main-URR	TTR	601	Pine Run, Rt 837				0.01	0.09	0.05	0.39	0.08		0.61	
1015	Main-URR	DPG	1100	Streets				0.02	0.02	0.05	0.46	0.08		0.61	
1057	Main-URR	CAR	431	Curry Run, Curry H				0.05	0.05	0.05	0.42	0.08		0.60	
117.76	CNY-NYSW	TTR	536	Delaware R	0.12	0.23		0.02	0.02	0.15	0.30	0.10		0.57	
30.12	Connellsville-WE	DPG	1607	Pigeon Creek Viadu				0.02	0.09	0.09	0.30	0.08		0.56	
1093	Main-URR	DPG	800	Thompson Run, Ch				0.01	0.05	0.05	0.38	0.08		0.55	
33.67	Connellsville-WE	DPG	1790	Mingo Creek Viadu				0.02	0.05	0.09	0.30	0.08		0.52	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
87.14	Main-WNYP	TTR	437	French Creek	0.12	0.23		0.01	0.02	0.09	0.32	0.10		0.52	
56.79	Struthers-BPRR	TTR	523	Allegheny R					0.02	0.15	0.27	0.08		0.52	
83.06	Main-WNYP	TTR	295	French Creek		0.15	0.10		0.02	0.09	0.31	0.10		0.51	
0.10001	UMP-MSUU	TPG	900	Schuylkilll R	0.09	0.23		0.02	0.02	0.12	0.29	0.08		0.51	
0.09	Connellsville-WE	TTR	1498.5	Youghipgheny R.,				0.01	0.02	0.12	0.29	0.08		0.51	
33.84	Main-NBER	DPG	454	Bald Eagle Creek				0.02	0.02	0.09	0.32	0.08		0.51	
1.1	Southside-WNYP	TTR	730	Allegheny R.		0.23			0.02	0.15	0.25	0.08		0.50	
170.29	Milton-UCI	TPG	665	Susq. River				0.02	0.02	0.15	0.25	0.08		0.50	
1.78	Avis-LV	DPG	407	Pine Creek				0.02	0.02	0.09	0.30	0.08		0.49	
65.9	Allegheny-BPRR	TTR	465	Allegheny R					0.02	0.15	0.24	0.08		0.49	
1095	Main-URR	DPG	528	Brown Ave, Hunter				0.01	0.05	0.02	0.34	0.08		0.49	
0.05	Tyrone-NBER	DPG	295	Little Juniata River				0.02	0.02	0.12	0.27	0.08		0.49	
110.54	CNY-NYSW	DTR	474	Laxawaxen River	0.08	0.15		0.02	0.02	0.12	0.25	0.10		0.49	
1066	Main-URR	TPG	364	NS Track, Maint Rd				0.02	0.09	0.02	0.30	0.08		0.48	
1008	Main-URR	CAR	349	Miller Run, Maint.				0.05	0.02	0.05	0.33	0.08		0.47	
170.45	Milton-UCI	TPG	595	Susq. River				0.02	0.02	0.15	0.22	0.08		0.47	
27.051	Connellsville-WE	DPG	720	Maple Creek Viadu				0.02	0.09	0.09	0.20	0.08		0.47	
1063	Main-URR	TTR	244	State St, Railroad St				0.19	0.09	0.02	0.28	0.08		0.47	
182.34	Corning-LV	TPG	280	Lycoming Creek				0.01	0.02	0.09	0.27	0.08		0.45	
1082	Main-URR	DPG	161	Turtle Creek, URR t				0.01	0.05	0.09	0.23	0.08		0.45	
189.46	CNY-NYSW	MAR	1200	Starruca Viaduct ov	0.08	0.23		0.08	0.02	0.02	0.32	0.10		0.45	
1007	Main-URR	CAR	172	Rt 503				0.05	0.09	0.02	0.26	0.08		0.45	
1086	Main-URR	TTR	204	Conrail track				0.01	0.02	0.02	0.33	0.08		0.45	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1010	Main-URR	CAR	241	Thompson Run				0.05	0.02	0.05	0.30	0.08		0.45	
1068	Main-URR	TPG	147	Turtle Creek, URR t				0.02	0.05	0.09	0.23	0.08		0.44	
188.32	Corning-LV	TPG	360	Loyalsock Creek				0.02	0.02	0.09	0.25	0.08		0.44	
1003	Main-URR	CAR	180	Leek Run, Old Will.				0.05	0.05	0.05	0.26	0.08		0.44	
16.75	Main-NBER	DPG	190	Bald Eagle Cr				0.02	0.02	0.09	0.25	0.08		0.44	
0.46	Mait-JVRR	TPG	616	Juniata River				0.02	0.02	0.12	0.22	0.08		0.44	
1058	Main-URR	CAR	178	Breick Hollow Rd,				0.05	0.05	0.05	0.26	0.08		0.44	
51.21	Main-NBER	TPG	183	Fishing Creek				0.02	0.02	0.09	0.25	0.08		0.43	
35.55	W&P-AVR	TTR	711	West Maiden St, Cr				0.02	0.05	0.09	0.21	0.08		0.43	
238.89	Main-BPRR	DPG	614	Big Mahoning Cree				0.01	0.02	0.09	0.23	0.10		0.43	
1024	Main-URR	TPG	102	NS track, private R				0.02	0.09	0.02	0.24	0.08		0.43	
33.62	Bell-NBER	TPG	203	Spring Crk				0.02	0.02	0.09	0.24	0.08		0.43	
52.41	Post-NBER	DPG	242	Bald Eagle Creek				0.02	0.02	0.09	0.24	0.08		0.43	
1054	Main-URR	TPG	114	Bull Run, Bettis Ro				0.02	0.05	0.05	0.25	0.08		0.43	
59.51	FM&P-SWP	DPG	556	Youghiogheny R				0.02	0.02	0.12	0.20	0.08		0.42	
1006	Main-URR	CAR	191	Thompson Run				0.05	0.02	0.05	0.27	0.08		0.41	
23.991	Connellsville-WE	DPG	440	South Fork Maple				0.02	0.09	0.09	0.15	0.08		0.41	
167.92	Main-BPRR	DTR	683	Clarion River				0.02	0.02	0.12	0.18	0.10		0.41	
31.08	Bell-NBER	TPG	115	Bald Eagle Crk				0.02	0.02	0.09	0.22	0.08		0.41	
57.6701	Main-WNYP	DPG	96	Straw Creek		0.23			0.02	0.09	0.21	0.10		0.41	
1097	Main-URR	CAR	350	Plum Creek				0.04	0.02	0.09	0.22	0.08		0.41	
97.03	Main-WNYP	DPG	95	Wood Cock Creek		0.23			0.02	0.09	0.21	0.10		0.41	
196.33	Corning-LV	DPG	160	Muncy Creek				0.02	0.02	0.09	0.22	0.08		0.41	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
241.39	Main-BPRR	DTR	967	Little Mahoning Cr				0.02	0.02	0.09	0.21	0.10		0.41	
33.37	Oct-EPRR	DPG	411	Red Clay Creek					0.02	0.09	0.22	0.08		0.40	
226.37	Main-BPRR	TTR	494	Big Mahoning Cree				0.02	0.02	0.09	0.20	0.10		0.40	
1045	Main-URR	CAR	120	Bull Run, Bull Run				0.05	0.05	0.05	0.23	0.08		0.40	
171.3	Avis-LV	TPG	101	Rt. 220				0.01	0.09	0.02	0.21	0.08		0.40	
1060	Main-URR	CAR	165	Camden Rd				0.05	0.05	0.02	0.26	0.08		0.40	
34.09	Bell-NBER	TPG	66	Spring Crk				0.02	0.02	0.09	0.21	0.08		0.40	
97.28	Buffalo-WNYP	TPG	285	Allegheny River		0.23			0.02	0.15	0.15	0.08		0.40	
105.79	CNY-NYSW	DPG	249	Shohola Creek	0.23	0.23		0.01	0.02	0.09	0.19	0.10		0.39	
12.52	Connellsville-WE	DPG	1148.58	Perry Viaduct				0.02	0.02	0.05	0.25	0.08		0.39	
0.66	Pgap-NBER	DPG	107	SR 144				0.02	0.09	0.02	0.21	0.08		0.39	
125.65	Main-SBR	TPG	208.83	Middle Cr	0.09	0.15		0.02	0.02	0.09	0.19	0.09		0.39	
1020	Main-URR	TPG	196	Abandoned Track				0.01	0.02	0.02	0.27	0.08		0.39	
4.85	Main-NBER	TPG	54	L. Bald Eagle Cr				0.02	0.02	0.09	0.20	0.08		0.39	
1052	Main-URR	DPG	232	Delwar Rd				0.02	0.05	0.02	0.24	0.08		0.39	
6.17	Main-NBER	TPG	51	L. Bald Eagle Cr				0.02	0.02	0.09	0.20	0.08		0.38	
4.68	Main-NBER	TPG	50	L. Bald Eagle Cr				0.02	0.02	0.09	0.20	0.08		0.38	
35.29	Connellsville-WE	DTR	485	Froman Viaduct, H				0.01	0.09	0.05	0.16	0.08		0.38	
39.38	Connellsville-WE	DPG	745	Peters Creek Viadu				0.02	0.02	0.09	0.19	0.08		0.38	
6.73	Connellsville-WE	DPG	363	Jacob's Creek, Twp				0.02	0.05	0.09	0.16	0.08		0.38	
6.79	Main-NBER	TPG	48	L. Bald Eagle Cr				0.02	0.02	0.09	0.19	0.08		0.38	
26.2	Connellsville-WE	DPG	860	McCracken Viaduct				0.02	0.05	0.05	0.21	0.08		0.38	
1047	Main-URR	DPG	96	Buttermilk Hollow				0.01	0.05	0.02	0.24	0.08		0.38	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
59.96	Main-WNYP	TPG	60	Hare Creek		0.15			0.02	0.09	0.17	0.10		0.38	
47.49	Connellsville-WE	DPG	869.5	Hwy 88				0.02	0.09	0.02	0.19	0.08		0.38	
8.85	Carbondale-DL	TTR	170	Lackawanna R				0.02	0.02	0.12	0.16	0.08		0.38	
57.53	Main-WNYP	TPG	57	PA Route 6		0.23			0.09	0.02	0.17	0.10		0.38	
91.22	Main-WNYP	TPG	57	PA Route 6	0.13	0.15		0.01	0.09	0.02	0.17	0.10		0.38	
33.25	Rouseville-WNYP	TTR	290	Oil Creek		0.23			0.02	0.09	0.19	0.08		0.37	
62.02	Connellsville-WE	TTR	666	Miller's Run Rd, Mi				0.02	0.05	0.05	0.20	0.08		0.37	
37.27	Connellsville-WE	DTR	200	Hwy				0.01	0.09	0.02	0.18	0.08		0.37	
15.6	Main-YRC	TTR	286	Stream					0.02	0.05	0.22	0.08		0.37	
155.2	Buffalo-WNYP	TTR	282	Driftwood Branch		0.23			0.02	0.09	0.18	0.08		0.37	
59.42	Connellsville-WE	DTR	628.55	Chartier's Creek				0.02	0.02	0.09	0.18	0.08		0.37	
45.6	Pitts&West-BPRR	DPG	557.3	Connoquenessing C				0.02	0.02	0.09	0.18	0.08		0.37	
61.95	Main-WNYP	DPG	45	French Creek	0.34	0.23		0.01	0.02	0.09	0.16	0.10		0.37	
21.46	Main-NBER	CSB	42	Adams Creek				0.05	0.02	0.09	0.18	0.08		0.37	
20.9801	Shawmut-BPRR	DTR	784.5	Mahoning Creek					0.02	0.09	0.18	0.08		0.36	
10.251	Connellsville-WE	DTR	480	Jacob's Creek				0.01	0.02	0.09	0.18	0.08		0.36	
0.8301	Tylerdale-AVR	TST	70	Chartiere's Creek					0.02	0.09	0.18	0.08		0.36	
9.76	Main-NBER	CSB	28	Bald Eagle Cr				0.05	0.02	0.09	0.18	0.08		0.36	
201.31	Main-BPRR	DPG	130	Falls Creek and Hig				0.02	0.09	0.09	0.08	0.10		0.36	
68.77	Main-WNYP	TPG	40	Waid Creek		0.23			0.02	0.09	0.16	0.10		0.36	
171.46	Avis-LV	MAR	82	Larry Creek				0.05	0.02	0.09	0.17	0.08		0.36	
0.3401	Brilliant-AVR	MAR	590	Silver Lake Viaduct				0.05	0.02	0.05	0.22	0.08		0.36	
7.63	WBV-RJCP	DPG	603						0.02	0.02	0.24	0.08		0.36	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
58.88	Cresson-RJCP	DPG	855						0.02	0.02	0.22	0.10		0.35	
180.87	Main-BPRR	DPG	228	Clarion R				0.02	0.02	0.12	0.12	0.10		0.35	
34.16	Rouseville-WNYP	TPG	315	Oil Creek		0.23			0.02	0.09	0.16	0.08		0.35	
35.77	Rouseville-WNYP	TPG	315	Oil Creek		0.23			0.02	0.09	0.16	0.08		0.35	
1043	Main-URR	DPG	66	Thompson Run				0.01	0.02	0.05	0.21	0.08		0.35	
9.24	Main-NBER	SST	16	L. Bald Eagle Cr				0.05	0.02	0.09	0.16	0.08		0.35	
4.86	Connellsville-WE	DPG	516	Highway, C&O RR				0.02	0.09	0.02	0.16	0.08		0.35	
66.61	Main-WNYP	DPG	30	Lilley Creek	0.13	0.23		0.02	0.02	0.09	0.15	0.10		0.35	
0.24	Tyrone-NBER	TPG	65	10th St.				0.02	0.05	0.02	0.21	0.08		0.35	
0.4	Clairton-WE	TTR	466.5	Peters Creek, RR					0.05	0.09	0.13	0.08		0.35	
108.66	Laurel-BPRR	TTR	324	Bennett Run				0.02	0.02	0.05	0.21	0.08		0.35	
1012	Main-URR	CAR	62	Jobe's Run				0.05	0.02	0.05	0.21	0.08		0.35	
190.13	CNY-NYSW	CAR	280	SR 296	0.16	0.23		0.04	0.09	0.02	0.14	0.10		0.35	
44.75	Oct-EPRR	DPG	892	Elkview Trestle					0.02	0.02	0.23	0.08		0.35	
92.64	Main-WNYP	DPG	75	Gravel Run Road		0.23			0.05	0.02	0.19	0.10		0.35	
117.51	Main-SBR	DPG	100	Blooming Grove Cr	0.44	0.15		0.00	0.02	0.09	0.15	0.09		0.35	
104.75	Main-WNYP	CSB	104	Stream		0.23			0.02	0.05	0.19	0.10		0.35	
1048	Main-URR	DPG	58	Second Ave				0.02	0.05	0.02	0.20	0.08		0.35	
1.98	Avis-LV	TPG	40	Hwy #2				0.02	0.09	0.02	0.16	0.08		0.34	
53.31	Connellsville-WE	DPG	487.34	Hwy					0.09	0.02	0.16	0.08		0.34	
56.39	Connellsville-WE	DTR	798.13	Whiskey Run Viadu				0.02	0.02	0.05	0.20	0.08		0.34	
55.43	Shawmut-BPRR	DTR	508.3	1st Mahoning					0.02	0.02	0.23	0.08		0.34	
60.26	Connellsville-WE	DTR	240	Chartier's Creek				0.02	0.02	0.09	0.15	0.08		0.34	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
57.81	Shawmut-BPRR	TTR	310.08	2nd Mahoning					0.05	0.02	0.20	0.08		0.34	
43.8	Pitts&West-BPRR	DTR	292	Connoquenessing C				0.02	0.02	0.09	0.15	0.08		0.34	
12.43	Indiana-BPRR	TTR	150	Little Mahoning Cr				0.02	0.02	0.09	0.14	0.10		0.34	
8.98	Connellsville-WE	DPG	290	Jacob's Creek				0.02	0.02	0.09	0.15	0.08		0.34	
1096	Main-URR	DPG	50	Leechburg Rd				0.01	0.05	0.02	0.20	0.08		0.34	
100	Main-MSUS	DTR	302.3	Canal, RR, Road	0.11	0.23		0.02	0.05	0.05	0.16	0.08		0.34	
263.45	Main-BPRR	DPG	460.5	Limestone Creek				0.02	0.02	0.09	0.13	0.10		0.34	
0.75	West End-WE	TPG	365.6	Penn-Lincoln Park					0.09	0.02	0.15	0.08		0.34	
109.91	Allegheny-BPRR	DPG	260	Clarion R				0.02	0.02	0.12	0.12	0.08		0.34	
3.93	Main-NBER	TPG	46	Laurel Run				0.02	0.02	0.05	0.19	0.08		0.33	
24.68	Main-NBER	TPG	45	Dick's Run				0.02	0.02	0.05	0.19	0.08		0.33	
39	Cresson-RJCP	DTR	130	Chest Creek		0.23	0.05		0.02	0.09	0.13	0.10		0.33	
1094	Main-URR	DPG	44	Negley Ave				0.01	0.05	0.02	0.19	0.08		0.33	
200.7	CNY-NYSW	TPG	75	Tow Br. Creek	0.12	0.23		0.02	0.02	0.09	0.13	0.10		0.33	
1.02	West End-WE	DPG	1050.6	Saw Mill Run				0.02	0.02	0.05	0.19	0.08		0.33	
29.39	Main-NBER	CSB	61	Wallace Run				0.05	0.02	0.05	0.19	0.08		0.33	
0.73	Shawmut-BPRR	TPG	694.7	SR 219				0.02	0.09	0.02	0.14	0.08		0.33	
65.4	Main-RBMN		175	Stream & Road					0.05	0.05	0.16	0.08		0.33	
96.5	Main-WNYP	TPG	56	South Street		0.23			0.05	0.02	0.17	0.10		0.33	
96.19	Main-WNYP	TPG	56	Erie Street		0.23			0.05	0.02	0.17	0.10		0.33	
33.97	Main-NBER	DPG	40	Bald Eagle Canal				0.02	0.02	0.05	0.19	0.08		0.33	
9.58	Connellsville-WE	DPG	270	Jacob's Creek				0.02	0.02	0.09	0.14	0.08		0.33	
6.86	Wallaceton-RJCP	DPG	626						0.02	0.02	0.21	0.08		0.33	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
25.75	Main-NBER	TPG	37	Dewitt's Run				0.02	0.02	0.05	0.18	0.08		0.33	
42.36	Laurel-BPRR	DPG	265	Sandy Lick Creek				0.02	0.02	0.09	0.14	0.08		0.33	
3.91	Main-WNYP	CAR	50	Swamp equalizing		0.23			0.02	0.05	0.17	0.10		0.33	
109.79	Laurel-BPRR	TPG	301	Driftwood Branch				0.02	0.02	0.09	0.14	0.08		0.32	
11.6	MP-SWP	DPG	301	SR 981					0.09	0.02	0.14	0.08		0.32	
115.55	CNY-NYSW	DPG	92	Mast Hope Creek	0.34	0.23		0.01	0.02	0.09	0.12	0.10		0.32	
21.3601	Oil City-WNYP	TTR	130	Sugar Creek		0.23			0.02	0.09	0.12	0.10		0.32	
124.9	Main-SBR	DPG	105	Wallenpaupack Cr	8.28	0.30		0.00	0.02	0.09	0.13	0.09		0.32	
61.01	Connellsville-WE	TTR	150	Chartier's Creek				0.02	0.02	0.09	0.14	0.08		0.32	
155.22	SVRR-SVRR	DPG	250	Shamokin Creek				0.02	0.02	0.09	0.14	0.08		0.32	
65.6	Cresson-RJCP	TTR	350						0.02	0.02	0.19	0.10		0.32	
188.23	Corning-LV	DPG	94	Pond				0.01	0.02	0.05	0.18	0.08		0.32	
18.4	Carbondale-DL	TTR	107	Lackawanna R				0.02	0.02	0.12	0.10	0.08		0.32	
17.95	Main-NBER	TPG	30	Fisher's Run				0.02	0.02	0.05	0.18	0.08		0.32	
33.1	Bell-NBER	CSB	40	Buffalo Run				0.05	0.02	0.05	0.18	0.08		0.32	
28.04	Main-NBER	CSB	28	Egypt Run				0.05	0.02	0.05	0.18	0.08		0.32	
274.19	Main-BPRR	TPG	131	Buffalo Creek/SR 3				0.02	0.05	0.09	0.08	0.10		0.32	
26.66	Connellsville-WE	DPG	550	Warner Viaduct, T					0.05	0.02	0.18	0.08		0.32	
179.44	Ant-LV	TPG	94	Wmspt Ind				0.02	0.02	0.02	0.20	0.08		0.32	
36.9	Bell-NBER	DPG	27	Logan Run				0.02	0.02	0.05	0.17	0.08		0.32	
23.21	Indiana-BPRR	TTR	125	Crooked Creek				0.02	0.02	0.09	0.11	0.10		0.32	
167.0101	Main-BPRR	TPG	129	East Br. Clarion R.					0.02	0.12	0.08	0.10		0.32	
124.901	Main-RBMN		320						0.02	0.02	0.20	0.08		0.32	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
21.68	Connellsville-WE	DPG	350	Hwy				0.02	0.09	0.02	0.13	0.08		0.32	
1	Milroy-JVRR	TPG	204	Kishcoquilas Crk				0.02	0.02	0.09	0.13	0.08		0.32	
27.07	Main-NBER	CSB	26	Hays Run				0.05	0.02	0.05	0.17	0.08		0.32	
235.59	Main-BPRR	TPG	215	Big Mahoning Cree				0.01	0.02	0.09	0.11	0.10		0.32	
270.88	Main-BPRR	DTR	124	Buffalo Creek				0.02	0.02	0.09	0.11	0.10		0.32	
47.95	Laurel-BPRR	DPG	246	Sandy Lick Creek				0.02	0.02	0.09	0.13	0.08		0.32	
74.41	Main-WNYP	DPG	40	Town Line Road		0.23			0.05	0.02	0.16	0.10		0.32	
79.74	Main-WNYP	TPG	40	West Center Street	0.14	0.15		0.01	0.05	0.02	0.16	0.10		0.32	
257.19	Main-BPRR	TTR	123	Pine Creek				0.02	0.02	0.09	0.11	0.10		0.32	
256.92	Main-BPRR	TTR	123	Pine Creek				0.02	0.02	0.09	0.11	0.10		0.32	
255.85	Main-BPRR	TTR	123	Pine Creek				0.02	0.02	0.09	0.11	0.10		0.32	
122.31	Main-BPRR	TPG	173.3	Tunungwant Creek				0.02	0.02	0.09	0.11	0.10		0.32	
89.31	Main-WNYP	DPG	39	Stream		0.23			0.02	0.05	0.16	0.10		0.32	
84.25	Main-RBMN		215	Little Schuylkill Riv					0.02	0.12	0.10	0.08		0.32	
2.02	WBV-RJCP	DPG	402						0.02	0.02	0.20	0.08		0.31	
20.67	Main-NBER	TPG	24	Williams Run				0.02	0.02	0.05	0.17	0.08		0.31	
19.5	Main-NBER	CSB	24	Mudlick Run				0.05	0.02	0.05	0.17	0.08		0.31	
431	Northern-BPRR	TST	482	Stream/SR68		0.08	0.15		0.09	0.05	0.08	0.10		0.31	
102.7	Main-WNYP	DPG	38	Stream		0.23			0.02	0.05	0.15	0.10		0.31	
30.94	Main-NBER	CSB	23	Stream				0.05	0.02	0.05	0.17	0.08		0.31	
53.321	WBV-RJCP	TPG	400						0.02	0.02	0.20	0.08		0.31	
604	Butler-BPRR	TPG	240	Connoquenessing C					0.02	0.09	0.12	0.08		0.31	
183.8	Main-BPRR	DPG	240	Little Toby Creek				0.02	0.02	0.09	0.11	0.10		0.31	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
34.32	Main-NBER	CSB	20	Stream				0.06	0.02	0.05	0.17	0.08		0.31	
40	Main-NBER	CSB	20	Lick Run				0.02	0.02	0.05	0.17	0.08		0.31	
44.33	Main-NBER	CSB	20	Frank's Run				0.02	0.02	0.05	0.17	0.08		0.31	
54.01	Post-NBER	CSB	20	Stream				0.05	0.02	0.05	0.17	0.08		0.31	
1.84	Tyrone-NBER	CSB	19	Spring Run				0.05	0.02	0.05	0.17	0.08		0.31	
50.65	Main-NBER	CSB	52	NYC				0.05	0.02	0.02	0.20	0.08		0.31	
53.29	Laurel-BPRR	DPG	234	Sandy Lick Creek				0.02	0.02	0.09	0.12	0.08		0.31	
32.11	Main-NBER	SST	18	Shope's Run				0.06	0.02	0.05	0.17	0.08		0.31	
17.13	Main-NBER	CSB	18	Thompson Run				0.05	0.02	0.05	0.17	0.08		0.31	
19.03	Main-NBER	CSB	18	Shingleton's Run				0.05	0.02	0.05	0.17	0.08		0.31	
22.55	Main-NBER	CSB	18	Yeager's Run				0.04	0.02	0.05	0.17	0.08		0.31	
1.7	Tyrone-NBER	DPG	18	Decker's Run				0.02	0.02	0.05	0.17	0.08		0.31	
33.65	Main-NBER	CSB	18	Stream				0.06	0.02	0.05	0.17	0.08		0.31	
29.07	Main-NBER	CSB	17	Stream				0.05	0.02	0.05	0.17	0.08		0.31	
275.15	Main-BPRR	TPG	198.5	Buffalo Creek				0.02	0.02	0.09	0.10	0.10		0.31	
66.23	Main-WNYP	TPG	31	Elgin Street	0.16	0.23		0.01	0.05	0.02	0.15	0.10		0.31	
0.25	BVRY-MSUB	DPG	150	Brandywine Creek		0.23			0.02	0.09	0.12	0.08		0.31	
85.5	Pocono-DL		106	Broadheads Creek					0.02	0.09	0.12	0.08		0.31	
99.34	Main-WNYP	TPG	30	Stream		0.23			0.02	0.05	0.15	0.10		0.31	
66.18	Main-WNYP	DPG	30	Stream	0.26	0.23		0.01	0.02	0.05	0.15	0.10		0.31	
24.01	Main-NBER	CSB	15	Stream					0.02	0.05	0.16	0.08		0.31	
0.01	Indiana-BPRR	DPG	160	Big Mahoning Cree				0.02	0.02	0.09	0.10	0.10		0.31	
30.95	Bell-NBER	CSB	14	Moose Run					0.02	0.05	0.16	0.08		0.31	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
23.06	Main-NBER	SST	14	Stream				0.05	0.02	0.05	0.16	0.08		0.31	
58.36	Cresson-RJCP	DPG	365						0.02	0.02	0.18	0.10		0.31	
26.01	Main-NBER	CSB	13	Stream				0.05	0.02	0.05	0.16	0.08		0.31	
0.64	Tyrone-NBER	CSB	13	Stream				0.05	0.02	0.05	0.16	0.08		0.31	
198.52	CNY-NYSW	TPG	44	New Mans Creek	0.12	0.23		0.02	0.02	0.09	0.10	0.10		0.30	
201.52	CNY-NYSW	DPG	44	Thomas Creek	0.12	0.23		0.02	0.02	0.09	0.10	0.10		0.30	
195.46	CNY-NYSW	TPG	44	Denton Creek	0.12	0.23		0.02	0.02	0.09	0.10	0.10		0.30	
5.57	Main-NBER	CSB	12	Stream				0.05	0.02	0.05	0.16	0.08		0.30	
37.3	Bell-NBER	DPG	12	Stream					0.02	0.05	0.16	0.08		0.30	
3.64	WBV-RJCP	DPG	422						0.02	0.02	0.19	0.08		0.30	
19.61	CherryTree-RJCP	DPG	372						0.02	0.02	0.19	0.08		0.30	
0.27	Tyrone-NBER	SST	11	11th St.				0.05	0.05	0.02	0.16	0.08		0.30	
26.59	Main-NBER	CSB	11	Stream				0.05	0.02	0.05	0.16	0.08		0.30	
122.3	M&S-RBMN		180	Mahanoy Creek					0.02	0.09	0.11	0.08		0.30	
51.68	Laurel-BPRR	DPG	220	Sandy Lick Creek				0.02	0.02	0.09	0.11	0.08		0.30	
37.69	Bell-NBER	SST	10	Stream					0.02	0.05	0.16	0.08		0.30	
82.46	Main-WNYP	DPG	24	Stream		0.23			0.02	0.05	0.14	0.10		0.30	
182.88	Corning-LV	DPG	42	Rose St.				0.01	0.05	0.02	0.16	0.08		0.30	
1.93	West End-WE	DPG	679	West Carson St					0.05	0.02	0.16	0.08		0.30	
56.97	Allegheny-BPRR	TPG	306	Brokenstraw Creek					0.02	0.09	0.11	0.08		0.30	
54.51	Laurel-BPRR	TPG	175	Sandy Lick Creek				0.02	0.02	0.09	0.11	0.08		0.30	
0.33	Shawmut-BPRR	DPG	213.67	Toby Creek				0.02	0.02	0.09	0.11	0.08		0.30	
166.54	Winfield-UCI	DPG	139	Buffalo Creek				0.02	0.02	0.09	0.11	0.08		0.30	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
221.38	Main-BPRR	DPG	181	Big Mahoning Cree				0.02	0.02	0.09	0.09	0.10		0.30	
220.67	Main-BPRR	DPG	181	Big Mahoning Cree				0.02	0.02	0.09	0.09	0.10		0.30	
222.54	Main-BPRR	DPG	181	Big Mahoning Cree				0.02	0.02	0.09	0.09	0.10		0.30	
60.09	Allegheny-BPRR	TPG	213	Brokenstraw Creek					0.02	0.09	0.11	0.08		0.30	
42.63	Laurel-BPRR	DPG	173	Sandy Lick Creek				0.02	0.02	0.09	0.11	0.08		0.30	
93.47	Main-WNYP	CAR	20	Stream		0.23			0.02	0.05	0.14	0.10		0.30	
93.76	Main-WNYP	CAR	20	Stream		0.23			0.02	0.05	0.14	0.10		0.30	
15.48	Connellsville-WE	DPG	580					0.02	0.02	0.02	0.18	0.08		0.30	
196.21	Main-BPRR	DPG	68	McQueens Run &				0.02	0.09	0.05	0.06	0.10		0.30	
3.9	Main-YRC	DPG	298.5	Stream				0.02	0.02	0.05	0.15	0.08		0.30	
1029	Main-URR	DPG	36	private Rd.				0.02	0.02	0.02	0.18	0.08		0.30	
5.16	Main-WNYP	CAR	24	Swamp equalizing		0.23			0.02	0.05	0.14	0.10		0.30	
53.24	Post-NBER	CSB	34	Race				0.05	0.02	0.02	0.18	0.08		0.29	
10.23	Main-WNYP	CAR	15	Swamp Equilizing		0.15			0.02	0.05	0.13	0.10		0.29	
1.51	Mait-JVRR	DPG	159	Kishcoquilas Crk				0.02	0.02	0.09	0.11	0.08		0.29	
2001	Bradford-BPRR	TPG	164.67	Tunungant Creek				0.01	0.02	0.09	0.10	0.08		0.29	
198.91	Corning-LV	SST	33	Turkey Run				0.02	0.02	0.05	0.15	0.08		0.29	
105.99	CNY-NYSW	CSB	30	SR 434	0.18	0.23		0.03	0.09	0.02	0.09	0.10		0.29	
14.93	SVRR-SVRR	TPG	156	Shamokin Creek					0.02	0.09	0.10	0.08		0.29	
79.62	Main-WNYP	CAR	13	Stream	0.20	0.23		0.03	0.02	0.05	0.13	0.10		0.29	
122.84	Main-BPRR	TPG	96	Tunungwant Creek				0.02	0.02	0.09	0.09	0.10		0.29	
257.63	Main-BPRR	DPG	96	Pine Creek				0.02	0.02	0.09	0.09	0.10		0.29	
257.76	Main-BPRR	DPG	96	Pine Creek				0.02	0.02	0.09	0.09	0.10		0.29	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
272.84	Main-BPRR	DPG	96	Buffalo Creek				0.02	0.02	0.09	0.09	0.10		0.29	
274.35	Main-BPRR	DPG	96	Buffalo Creek				0.02	0.02	0.09	0.09	0.10		0.29	
13.52	MD & PAmain-YR	TPG	217.67	Stream		0.23			0.02	0.05	0.15	0.08		0.29	
3.25	Milroy-JVRR	DPG	153	Kishcoquilas Crk				0.02	0.02	0.09	0.10	0.08		0.29	
407	Butler-BPRR	DPG	160	Connoquenessing C					0.02	0.09	0.10	0.08		0.29	
23.24	Allegheny-BPRR	TPG	195	Little French Creek				0.02	0.02	0.09	0.10	0.08		0.29	
22.88	CherryTree-RJCP	DPG	379						0.02	0.02	0.18	0.08		0.29	
194.34	Corning-LV	DPG	28	Stream				0.01	0.02	0.05	0.15	0.08		0.29	
2003	Bradford-BPRR	TPG	110.25	Tunungant Creek				0.02	0.02	0.09	0.10	0.08		0.29	
190.21	CNY-NYSW	CAR	25	Cananacta Creek	0.16	0.23		0.04	0.02	0.09	0.08	0.10		0.29	
608	Butler-BPRR	DPG	220	Connoquenessing C					0.02	0.09	0.10	0.08		0.29	
107.32	Allegheny-BPRR	DPG	108	Clarion R					0.02	0.12	0.07	0.08		0.29	
1.0002	BVRY-MSUB	CST	150	Brandywine Creek		0.23			0.02	0.09	0.10	0.08		0.29	
5	BVRY-MSUB	CAR	150	Brandywine Creek		0.23			0.02	0.09	0.10	0.08		0.29	
186.18	Corning-LV	CSB	58	Millers Run				0.03	0.02	0.05	0.14	0.08		0.29	
53.5	Laurel-BPRR	DPG	154	Sandy Lick Creek				0.02	0.02	0.09	0.10	0.08		0.29	
226.29	Main-BPRR	TTR	140	Walston Branch				0.02	0.02	0.05	0.13	0.10		0.29	
197.91	Corning-LV	CSB	25	Dewart Rd.				0.04	0.05	0.02	0.14	0.08		0.29	
174.48	Avis-LV	SST	25	Pine Run				0.04	0.02	0.05	0.14	0.08		0.29	
33.36	Connellsville-WE	DPG	274	De Croix Hollow, T				0.02	0.05	0.02	0.14	0.08		0.29	
103.79	Allegheny-BPRR	DPG	153	Owl Creek					0.02	0.09	0.10	0.08		0.29	
100.26	Pocono-DL		81	Route 611					0.09	0.02	0.10	0.08		0.29	
262.51	Main-BPRR	DPG	482	McCrackin Run				0.02	0.02	0.05	0.13	0.10		0.29	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
36	Pitts&West-BPRR	DPG	151.75	Connoquenessing C				0.02	0.02	0.09	0.10	0.08		0.28	
7.2601	Radebaugh-SWP	DPG	107	Sewickley Creek					0.02	0.09	0.10	0.08		0.28	
43.4	Pitts&West-BPRR	TPG	151.2	Route 288				0.01	0.09	0.02	0.10	0.08		0.28	
121.2	Main-RBMN	TTR	190						0.02	0.02	0.17	0.08		0.28	
10.96	MP-SWP	DPG	156	SR 2007					0.05	0.02	0.14	0.08		0.28	
113.91	Main-SBR	DPG	29.41	Mill Cr	0.12	0.23		0.02	0.02	0.09	0.09	0.09		0.28	
44.78	Cresson-RJCP	DPG	272						0.02	0.02	0.15	0.10		0.28	
191.24	CNY-NYSW	DPG	96	Exchange St.	0.13	0.23		0.02	0.05	0.02	0.12	0.10		0.28	
191.52	NS-NSHR	DPG	135	Fishing Creek				0.01	0.02	0.09	0.09	0.08		0.28	
177.2	Avis-LV	MAR	19	Stream				0.06	0.02	0.05	0.14	0.08		0.28	
91.16	CNY-NYSW	MAR	15	Bush Kill Creek		0.23			0.02	0.09	0.07	0.10		0.28	
82.87	Connellsville-WE	DTR	100	Cross Cr				0.02	0.02	0.09	0.09	0.08		0.28	
84.71	Connellsville-WE	DTR	100	Cross Cr				0.02	0.02	0.09	0.09	0.08		0.28	
120	M&S-RBMN		100	Mahanoy Creek					0.02	0.09	0.09	0.08		0.28	
85.15	Connellsville-WE	DTR	100	Cross Cr				0.02	0.02	0.09	0.09	0.08		0.28	
6.19	W&P-AVR	TPG	212	Irwin St				0.02	0.05	0.02	0.13	0.08		0.28	
82.61	Connellsville-WE	TTR	99.75	Cross Cr				0.02	0.02	0.09	0.09	0.08		0.28	
32.43	W&P-AVR	DPG	66	Vance Station rd, C					0.05	0.09	0.06	0.08		0.28	
169.68	Avis-LV	MAR	16	Twp Rd					0.05	0.02	0.13	0.08		0.28	
185.87	Corning-LV	DPG	16	McClure Run				0.02	0.02	0.05	0.13	0.08		0.28	
121.55	M&S-RBMN		140	Mahanoy Creek					0.02	0.09	0.09	0.08		0.28	
179.14	Main-BPRR	DPG	80	Mill Creek				0.02	0.02	0.09	0.07	0.10		0.28	
168.67	Avis-LV	MAR	15	Lawshe Run				0.06	0.02	0.05	0.13	0.08		0.28	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
179.72	Corning-LV	MAR	15	Dougherty Run				0.05	0.02	0.05	0.13	0.08		0.28	
21.96	CherryTree-RJCP	DPG	563						0.02	0.02	0.16	0.08		0.28	
1.94	Yukon-SWP	DPG	98	Sewickley Creek					0.02	0.09	0.09	0.08		0.28	
26.54	CherryTree-RJCP	TTR	155						0.02	0.02	0.16	0.08		0.28	
18.47	C&M-RJCP	TTR	180						0.02	0.02	0.16	0.08		0.28	
55.31	Laurel-BPRR	DPG	136	Sandy Lick Creek				0.02	0.02	0.09	0.09	0.08		0.27	
281.15	Main-BPRR	DPG	312	Bonnie Brook				0.02	0.02	0.05	0.11	0.10		0.27	
195.84	Corning-LV	MAR	12	Wolf Run				0.07	0.02	0.05	0.13	0.08		0.27	
202.01	Main-BPRR	TPG	76.5	Falls Creek				0.02	0.02	0.09	0.07	0.10		0.27	
26.35	Allegheny-BPRR	TPG	134	Little French Creek				0.02	0.02	0.09	0.09	0.08		0.27	
0.51	Milroy-JVRR	TPG	118	Kishcoquilas Crk				0.02	0.02	0.09	0.08	0.08		0.27	
252.19	Main-BPRR	TPG	74.5	Pine Creek				0.02	0.02	0.09	0.07	0.10		0.27	
50.78	Connellsville-WE	DPG	285	Timberland Ave, Ed				0.02	0.05	0.02	0.13	0.08		0.27	
24.72	Allegheny-BPRR	TPG	92	Little French Creek					0.02	0.09	0.08	0.08		0.27	
68.59	Connellsville-WE	DTR	200	Miller's Run, RR				0.02	0.02	0.05	0.13	0.08		0.27	
12.25	Oil City-WNYP	TTR	121	Stream		0.23			0.02	0.05	0.11	0.10		0.27	
162.88	Winfield-UCI	DPG	65	Turtle Creek				0.02	0.02	0.09	0.08	0.08		0.27	
23.14	Bullskin-SWP	DPG	155	Mounts Creek					0.02	0.09	0.08	0.08		0.27	
2.7101	Indiana-BPRR	TPG	70	Canoe Creek				0.02	0.02	0.09	0.06	0.10		0.27	
52.81	Connellsville-WE	DPG	150.75	Saw Mill Run Hwy				0.02	0.09	0.02	0.08	0.08		0.27	
32.4	Connellsville-WE	DTR	380	Country Rd				0.01	0.02	0.02	0.15	0.08		0.27	
39.05	Cresson-RJCP	DPG	460	Flood Plane					0.02	0.02	0.14	0.10		0.27	
4.76	P&W-AVR	TPG	86	Pine Creek				0.02	0.02	0.09	0.08	0.08		0.27	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
605	Butler-BPRR	DPG	120	Connoquenessing C					0.02	0.09	0.08	0.08		0.26	
122.2	Main-SBR	CAR	83	PP&L Outflow	0.10	0.15		0.04	0.02	0.05	0.11	0.09		0.26	
135.15	Main-RBMN		84	Drakes Creek					0.02	0.09	0.08	0.08		0.26	
275.39	Main-BPRR	TPG	65	Little Buffalo Creek				0.02	0.02	0.09	0.06	0.10		0.26	
12.7	MP-SWP	DPG	230	T 752					0.05	0.02	0.12	0.08		0.26	
51.71	Connellsville-WE	TPG	295.25	W. Liberty Ave, Ha				0.02	0.05	0.02	0.12	0.08		0.26	
196.62	Corning-LV	CSB	32	Farm Road				0.03	0.02	0.02	0.15	0.08		0.26	
0.91	Indiana-BPRR	TTR	207	PRR				0.02	0.02	0.02	0.13	0.10		0.26	
201.35	NS-NSHR	DPG	23	Sechlers Creek				0.02	0.05	0.09	0.04	0.08		0.26	
203.75	Main-BPRR	TPG	62.5	Sandy Lick Creek				0.02	0.02	0.09	0.06	0.10		0.26	
20.82	Connellsville-WE	DPG	140	Hwy Rt 71				0.02	0.09	0.02	0.07	0.08		0.26	
4.53	Mait-JVRR	DPG	96	Jacks Creek				0.02	0.02	0.09	0.07	0.08		0.26	
4.06	P&W-AVR	TPG	80	Pine Creek					0.02	0.09	0.07	0.08		0.26	
72.02	Main-WNYP	CAR	11	Cattle Pass		0.23			0.02	0.02	0.13	0.10		0.26	
108.35	Pocono-DL		52.5	Highway					0.09	0.02	0.07	0.08		0.26	
324.05	P&W-AVR	DPG	316	Dock Access Rd					0.05	0.02	0.12	0.08		0.26	
180.55	NS-NSHR	DPG	54	Briar Creek				0.02	0.02	0.09	0.07	0.08		0.26	
211.47	Main-BPRR	DPG	60	Stump Creek				0.02	0.02	0.09	0.05	0.10		0.26	
211.71	Main-BPRR	DPG	60	Stump Creek				0.02	0.02	0.09	0.05	0.10		0.26	
0.501	Main-YRC	TPG	80	Stream					0.02	0.05	0.11	0.08		0.26	
85.72	Connellsville-WE	DPG	77.5	Cross Cr				0.02	0.02	0.09	0.07	0.08		0.26	
4.41	P&W-AVR	DPG	77	Pine Creek					0.02	0.09	0.07	0.08		0.26	
136.65	SVRR-SVRR	DPG	52	Shamokin Creek				0.01	0.02	0.09	0.07	0.08		0.26	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
18.28	C&M-RJCP	DPG	661						0.02	0.02	0.14	0.08		0.26	
4.71	Main-YRC	TPG	318.5	Dry				0.02	0.02	0.02	0.14	0.08		0.26	
50.15	Connellsville-WE	TPG	160						0.02	0.02	0.14	0.08		0.26	
42.631	Connellsville-WE	TPG	108	C&O RR, Hwy				0.01	0.09	0.02	0.07	0.08		0.26	
118.86	Allegheny-BPRR	DPG	108	Elk Creek					0.02	0.09	0.07	0.08		0.26	
22.901	Bullskin-SWP	DPG	108	Mounts Creek					0.02	0.09	0.07	0.08		0.26	
62.64	Laurel-BPRR	TPG	76	Falls Creek				0.02	0.02	0.09	0.07	0.08		0.26	
15.35	Connellsville-WE	DPG	216.84	Twp Rd.				0.02	0.05	0.02	0.11	0.08		0.26	
60.57	FM&P-SWP	TPG	75	Dunbar Creek				0.02	0.02	0.09	0.07	0.08		0.26	
25.97	Allegheny-BPRR	TPG	106	Little French Creek					0.02	0.09	0.07	0.08		0.26	
41.14	Allegheny-BPRR	TPG	106	Brokenstraw Creek				0.02	0.02	0.09	0.07	0.08		0.26	
120.32	Allegheny-BPRR	DPG	106	Elk Creek					0.02	0.09	0.07	0.08		0.26	
49.5	CherryTree-RJCP	DPG	40	Creek		0.23	0.05		0.02	0.09	0.06	0.09		0.26	
6.26	Connellsville-WE	DPG	105.25	Highway				0.02	0.09	0.02	0.07	0.08		0.26	
199.34	CNY-NYSW	DPG	39	Stream	0.12	0.23		0.02	0.02	0.05	0.10	0.10		0.26	
57.67	Connellsville-WE	DPG	371.5	Georges Run Viadu				0.01	0.02	0.05	0.11	0.08		0.25	
37.04	W&P-AVR	DPG	0	Interatate 70					0.15	0.02	0.01	0.08		0.25	
53.59	Allegheny-BPRR	TPG	104	Little Brokenstraw				0.02	0.02	0.09	0.07	0.08		0.25	
1.74	West End-WE	DPG	443.8	Saw Mill Run				0.02	0.02	0.05	0.11	0.08		0.25	
154.84	SVRR-SVRR	DPG	68	Little Shamokin Crk				0.02	0.02	0.09	0.07	0.08		0.25	
248	Main-BPRR	DPG	54.5	North Branch Pine				0.02	0.02	0.09	0.05	0.10		0.25	
60.83	FM&P-SWP	TPG	73	Dunbar Creek				0.02	0.02	0.09	0.07	0.08		0.25	
433	Northern-BPRR	TST	529	Stream/Rd					0.05	0.05	0.08	0.08		0.25	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
248.93	Main-BPRR	TPG	54	Pine Creek				0.02	0.02	0.09	0.05	0.10		0.25	
16.89	W&P-AVR	DPG	72	Peter's Creek				0.02	0.02	0.09	0.06	0.08		0.25	
40.9	Indiana-BPRR	SST	178	Cherry Run				0.02	0.02	0.05	0.09	0.10		0.25	
113.06	CNY-NYSW	TPG	120	Holderts Creek	0.12	0.23		0.02	0.02	0.02	0.12	0.10		0.25	
607	Butler-BPRR	DPG	100	Connoquenessing C					0.02	0.09	0.06	0.08		0.25	
409	Butler-BPRR	DPG	100	Connoquenessing C				0.01	0.02	0.09	0.06	0.08		0.25	
34.34	Oct-EPRR	DPG	67	Red Clay Creek					0.02	0.09	0.06	0.08		0.25	
64.01	Connellsville-WE	DPG	170	Miller's Run					0.02	0.05	0.11	0.08		0.25	
5.4301	P&W-AVR	TPG	70	Pine Creek				0.00	0.02	0.09	0.06	0.08		0.25	
17.08	Allegheny-AVR	DPG	70	Pucketa Creek					0.02	0.09	0.06	0.08		0.25	
161.8	Winfield-UCI	DPG	45	Winfield Creek				0.02	0.02	0.09	0.06	0.08		0.25	
27.05	Allegheny-BPRR	DPG	70	Little French Creek					0.02	0.09	0.06	0.08		0.25	
2.65	Radebaugh-SWP	DPG	70	US Rt 119					0.09	0.02	0.06	0.08		0.25	
114.35	M&S-RBMN		70	Mahanoy Creek					0.02	0.09	0.06	0.08		0.25	
98.4	Pocono-DL		43	Route 940					0.09	0.02	0.06	0.08		0.25	
23.02	Bullskin-SWP	DPG	98	Mounts Creek					0.02	0.09	0.06	0.08		0.25	
121.68	Main-BPRR	TPG	50.5	Kendall Creek				0.02	0.02	0.09	0.05	0.10		0.25	
7.65	P&W-AVR	TPG	69	Pine Creek					0.02	0.09	0.06	0.08		0.25	
85.69	Laurel-BPRR	DTR	119	Bennett Branch				0.02	0.02	0.05	0.11	0.08		0.25	
46.9901	Oct-EPRR	DPG	92	Big Elk Creek					0.02	0.09	0.06	0.08		0.25	
37.73	Oct-EPRR	TPG	65	White Clay Creek					0.02	0.09	0.06	0.08		0.25	
33.3	Quaker-EPRR	CAR	171	Perkiomen Creek					0.02	0.09	0.06	0.08		0.25	
150.05	Buffalo-WNYP	TPG	166	Portage Run		0.23			0.02	0.05	0.11	0.08		0.25	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
13.03	P&W-AVR	TPG	66.75	Pine Creek				0.02	0.02	0.09	0.06	0.08		0.25	
161.41	Buffalo-WNYP	TPG	300	Tunnel Hill		0.23			0.02	0.02	0.14	0.08		0.25	
410	Butler-BPRR	SST	114.5	Connoquenessing C				0.03	0.02	0.09	0.06	0.08		0.25	
11.49	P&W-AVR	TPG	66	Pine Creek				0.02	0.02	0.09	0.06	0.08		0.25	
0.08	Carbon-SVRR	SST	82	Shamokin Creek				0.04	0.02	0.09	0.06	0.08		0.25	
17.54	Radebaugh-SWP	TPG	93	Jacob Creek					0.02	0.09	0.06	0.08		0.25	
179.65	Corning-LV	MAR	15	Farmer crossing				0.05	0.02	0.02	0.13	0.08		0.25	
285.001	Butler-BPRR	TPG	65	Connoquenessing C					0.02	0.09	0.06	0.08		0.25	
173.3	Main-BPRR	TPG	46	Little Mill Creek				0.02	0.02	0.09	0.04	0.10		0.25	
5.43	Connellsville-WE	DPG	64	Highway				0.02	0.09	0.02	0.06	0.08		0.25	
26.78	Allegheny-BPRR	DPG	64	Little French Creek					0.02	0.09	0.06	0.08		0.25	
71.25	Main-RBMN	MAR	64	Creek					0.02	0.09	0.06	0.08		0.25	
22.79	Bullskin-SWP	DPG	90	Mounts Creek					0.02	0.09	0.06	0.08		0.25	
25.88	Connellsville-WE	DPG	360	Maple Terrace Viad				0.02	0.02	0.02	0.13	0.08		0.25	
38.95	Oct-EPRR	TPG	60	White Clay Creek					0.02	0.09	0.06	0.08		0.25	
27.6	Pitts&West-BPRR	DPG	63	Breakneck Creek				0.02	0.02	0.09	0.06	0.08		0.25	
8.51	Connellsville-WE	TTR	159.33	Twp Rd				0.01	0.05	0.02	0.10	0.08		0.24	
0.0101	Brilliant-AVR	TPG	158.5	Hamilton Ave				0.02	0.05	0.02	0.10	0.08		0.24	
602	Butler-BPRR	SST	107	Breakneck Creek				0.03	0.02	0.09	0.06	0.08		0.24	
123.01	Main-BPRR	CST	74	Tunungwant Creek				0.03	0.02	0.09	0.04	0.10		0.24	
184.27	Corning-LV	CAR	11	sewer					0.02	0.02	0.13	0.08		0.24	
0.83	Indiana-BPRR	MAR	60	Canoe Creek				0.05	0.02	0.09	0.04	0.10		0.24	
8.35	P&W-AVR	TPG	60	Pine Creek					0.02	0.09	0.05	0.08		0.24	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
121.8	M&S-RBMN	MAR	60	Mahanoy Creek					0.02	0.09	0.05	0.08		0.24	
78.48	FM&P-SWP	TPG	60	George Creek				0.02	0.02	0.09	0.05	0.08		0.24	
71.08	FM&P-SWP	TPG	60	Redstone Creek				0.02	0.02	0.09	0.05	0.08		0.24	
61.48	FM&P-SWP	SST	84	Dunbar Creek					0.02	0.09	0.05	0.08		0.24	
38.32	Oct-EPRR	DPG	56	White Clay Creek					0.02	0.09	0.05	0.08		0.24	
155.1	SVRR-SVRR	DPG	34	Rt 61				0.02	0.09	0.02	0.05	0.08		0.24	
80.84	Connellsville-WE	DPG	58.17	Cross Cr				0.02	0.02	0.09	0.05	0.08		0.24	
69.94	Shawmut-BPRR	DPG	108	Limestone Run				0.02	0.02	0.05	0.10	0.08		0.24	
34.94	W&P-AVR	TPG	100	East Maiden St, Rt				0.02	0.09	0.02	0.05	0.08		0.24	
14.05	P&W-AVR	TPG	57.5	Pine Creek				0.02	0.02	0.09	0.05	0.08		0.24	
85.24	Laurel-BPRR	DPG	152	Bennett Branch				0.02	0.02	0.05	0.10	0.08		0.24	
91.65	Buffalo-WNYP	TPG	57	Annin Creek		0.23			0.02	0.09	0.05	0.08		0.24	
404	Butler-BPRR	DPG	80	Connoquenessing C					0.02	0.09	0.05	0.08		0.24	
41.0101	Oct-EPRR	DPG	75	White Clay Creek					0.02	0.09	0.05	0.08		0.24	
28.43	WN-EPRR	CSB	126.5	Brandywine Creek					0.02	0.09	0.05	0.08		0.24	
5.4	Carbondale-DL		99	Market St					0.05	0.02	0.10	0.08		0.24	
17.01	Connellsville-WE	DPG	56	Hwy Rt 51				0.02	0.09	0.02	0.05	0.08		0.24	
27.3001	Pitts&West-BPRR	DPG	55.7	Breakneck Creek				0.02	0.02	0.09	0.05	0.08		0.24	
33.13	Allegheny-BPRR	CSB	96	Little French Creek					0.02	0.09	0.05	0.08		0.24	
104.78	CNY-NYSW	MAR	20	Waterway	0.23	0.23		0.03	0.02	0.05	0.08	0.10		0.24	
102.31	CNY-NYSW	MAR	20	Parkers Glen	0.23	0.23		0.03	0.02	0.05	0.08	0.10		0.24	
95.29	Buffalo-WNYP	TPG	55	Two Mile creek		0.23			0.02	0.09	0.05	0.08		0.24	
28.23	Allegheny-BPRR	DPG	55	Little French Creek					0.02	0.09	0.05	0.08		0.24	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
2.74	Radebaugh-SWP	DPG	54	Slate Creek					0.02	0.09	0.05	0.08		0.24	
0.9	Connellsville-WE	CSB	54	Highway				0.04	0.09	0.02	0.05	0.08		0.24	
2.62	Wallaceton-RJCP	TTR	242						0.02	0.02	0.12	0.08		0.24	
23.93	WBV-RJCP	SST	114						0.02	0.02	0.12	0.08		0.24	
76.08	Connellsville-WE	DPG	53.42	Hwy 50				0.02	0.09	0.02	0.05	0.08		0.24	
2.83	Allegheny-BPRR	CSB	75	US Route 20				0.03	0.09	0.02	0.05	0.08		0.24	
17.39	SVRR-SVRR	CSB	28	Creek					0.02	0.09	0.05	0.08		0.24	
10.75	Allegheny-AVR	DPG	52.5	Plum Creek					0.02	0.09	0.05	0.08		0.24	
39.19	Oct-EPRR	TPG	49	White Clay Creek					0.02	0.09	0.05	0.08		0.24	
5.01	Carbondale-DL		94	Green Ridge St					0.05	0.02	0.09	0.08		0.23	
202.07	NS-NSHR	DPG	45	Mahoning Creek				0.02	0.02	0.09	0.05	0.08		0.23	
27.45	Oil City-WNYP	DPG	80	2-Mile Run		0.23			0.02	0.05	0.07	0.10		0.23	
97.07	Buffalo-WNYP	TPG	50	Lille Brook Creek		0.23			0.02	0.09	0.05	0.08		0.23	
142.75	Main-RBMN	MAR	50	Hayes Creek					0.02	0.09	0.05	0.08		0.23	
133.85	Main-RBMN		50	Stoney Creek					0.02	0.09	0.05	0.08		0.23	
22.73	Indiana-BPRR	DPG	30	SR110				0.02	0.09	0.02	0.03	0.10		0.23	
0.0901	River-AVR	TST	847	P&W bridge approa					0.05	0.02	0.09	0.08		0.23	
16.2	Main-YRC	SST	50	Stream					0.02	0.05	0.09	0.08		0.23	
38.0401	Oct-EPRR	DPG	44	White Clay Creek					0.02	0.09	0.04	0.08		0.23	
197.16	CNY-NYSW	TOP	12	Stream	0.12	0.23		0.05	0.02	0.05	0.07	0.10		0.23	
133.29	Pocono-DL		70	Cedar Ave					0.05	0.02	0.09	0.08		0.23	
127	Pocono-DL		70	Roaring Brook					0.02	0.05	0.09	0.08		0.23	
2.92	P&W-AVR	CSB	65	Norfolk Southern U				0.04	0.09	0.02	0.04	0.08		0.23	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
7.68	Oil City-WNYP	TPG	107	Stream		0.23			0.02	0.05	0.07	0.10		0.23	
1.65	Brilliant-AVR	TPG	166	Allegheny River Bl					0.05	0.02	0.09	0.08		0.23	
28.58	W&P-AVR	DPG	64	Little Chartier's Cre					0.02	0.09	0.04	0.08		0.23	
14.69	Allegheny-BPRR	CSB	64	LeBoeuf Creek					0.02	0.09	0.04	0.08		0.23	
18.23	Allegheny-BPRR	CSB	64	Leboeuf Creek					0.02	0.09	0.04	0.08		0.23	
17.73	WN-EPRR	CSB	52	Pocopson Creek					0.02	0.09	0.04	0.08		0.23	
51.1	Allegheny-BPRR	DPG	45	Blue Eye Creek					0.02	0.09	0.04	0.08		0.23	
104.95	Buffalo-WNYP	DPG	45	Allegeny Creek		0.23			0.02	0.09	0.04	0.08		0.23	
0.14	Brilliant-AVR	TPG	134	Frankstown Ave				0.02	0.05	0.02	0.09	0.08		0.23	
107.4001	Pocono-DL	TPG	18	Highway Underpass				0.02	0.09	0.02	0.04	0.08		0.23	
55.25	MD & PAncb-YRC	TPG	90	Road		0.23			0.05	0.02	0.08	0.08		0.23	
27.79	Connellsville-WE	TPG	44.17	Hwy				0.02	0.09	0.02	0.04	0.08		0.23	
1.2	Farmers-WNYP	TTR	300	Stream		0.23			0.02	0.05	0.08	0.08		0.23	
217.03	Main-BPRR	DPG	75	Clover Run				0.02	0.02	0.05	0.07	0.10		0.23	
217.46	Main-BPRR	DPG	75	Clover Run				0.02	0.02	0.05	0.07	0.10		0.23	
44.21	Connellsville-WE	DPG	43.5	Hwy				0.02	0.09	0.02	0.04	0.08		0.23	
0.0902	Brilliant-AVR	TPG	132	Kelly St				0.02	0.05	0.02	0.08	0.08		0.23	
2.8	Minersville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
88.95	Pottsville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
89.15	Main-RBMN		0	Little Schuylkill Riv					0.02	0.12	0.01	0.08		0.23	
85.7	Pottsville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
98.45	Pottsville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
98.9	Middleport-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
6.701	Scranton-RBMN		0	Lackawanna R					0.02	0.12	0.01	0.08		0.23	
87.8	Pottsville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
5.75	Minersville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
130.9	Main-RBMN		0	Lehigh River					0.02	0.12	0.01	0.08		0.23	
82.45	Pottsville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
5.3	Minersville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
84.6	Pottsville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
99.45	Middleport-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
92.85	Main-RBMN	DPG	0	Little Schuylkill Riv					0.02	0.12	0.01	0.08		0.23	
3.2	Minersville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
7.651	Minersville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
100.4	Main-RBMN		0	Little Schuylkill Riv					0.02	0.12	0.01	0.08		0.23	
100.2	Main-RBMN		0	Little Schuylkill Riv					0.02	0.12	0.01	0.08		0.23	
3.85	Susquehanna-RBM		0	Lackawanna R					0.02	0.12	0.01	0.08		0.23	
91.75	Main-RBMN	DPG	0	Little Schuylkill Riv					0.02	0.12	0.01	0.08		0.23	
82.1	Pottsville-RBMN		0	Schuylkill River					0.02	0.12	0.01	0.08		0.23	
78.45	Main-RBMN		0	Little Schuylkill Riv					0.02	0.12	0.01	0.08		0.23	
170.2	Milton-UCI	TPG	68	Front St.				0.02	0.05	0.02	0.08	0.08		0.23	
211.27	NS-NSHR	DPG	68	Johnson Run				0.01	0.02	0.05	0.08	0.08		0.23	
130.73	Pocono-DL	TPG	66	Roaring Brook				0.02	0.02	0.05	0.08	0.08		0.23	
138.02	Main-BPRR	CSB	24	StateRoute 59				0.05	0.09	0.02	0.02	0.10		0.23	
252.12	Main-BPRR	CSB	24	Pine Creek				0.00	0.02	0.09	0.02	0.10		0.23	
6.25	Carbondale-DL	TPG	35	Creek					0.02	0.09	0.04	0.08		0.23	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1.05	Greensburgh-SWP	TPG	90	Mount Pleasant St					0.05	0.02	0.08	0.08		0.22	
101.28	Allegheny-BPRR	CSB	40	Owl Creek					0.02	0.09	0.04	0.08		0.22	
86.1	Main-RBMN		40	Rausch's Creek					0.02	0.09	0.04	0.08		0.22	
191.37	NS-NSHR	MAR	15	Hemlock Creek					0.02	0.09	0.04	0.08		0.22	
90.22	Buffalo-WNYP	DPG	40	Newell Creek		0.23			0.02	0.09	0.04	0.08		0.22	
24.801	Connellsville-WE	DPG	300	Trinder Viaduct				0.02	0.02	0.02	0.11	0.08		0.22	
2.7001	Carbondale-DL	TPG	116	Roaring Brook					0.02	0.05	0.08	0.08		0.22	
71.62	FM&P-SWP	SST	55	Redstone Creek					0.02	0.09	0.04	0.08		0.22	
66.36	Connellsville-WE	DPG	38.5	Hwy				0.02	0.09	0.02	0.03	0.08		0.22	
65.79	Connellsville-WE	DPG	38.5	Hwy				0.02	0.09	0.02	0.03	0.08		0.22	
79.16	Connellsville-WE	SST	38.42	Cross Cr				0.05	0.02	0.09	0.03	0.08		0.22	
79.64	Connellsville-WE	DPG	38.42	Cross Cr				0.02	0.02	0.09	0.03	0.08		0.22	
67.47	Connellsville-WE	DPG	38.42	Hwy				0.02	0.09	0.02	0.03	0.08		0.22	
90.21	Laurel-BPRR	DPG	88	Medix Run				0.02	0.02	0.05	0.08	0.08		0.22	
46.57	Connellsville-WE	DPG	37.67	Hwy				0.02	0.09	0.02	0.03	0.08		0.22	
144.9	Main-RBMN		0	Lehigh River					0.02	0.12	0.00	0.08		0.22	
87.05	Main-RBMN		37	Koenig Creek					0.02	0.09	0.03	0.08		0.22	
18.08	Connellsville-WE	DPG	150	Twp Rd				0.02	0.05	0.02	0.08	0.08		0.22	
68.69	Connellsville-WE	DPG	36.5	Hwy				0.02	0.09	0.02	0.03	0.08		0.22	
64.92	Connellsville-WE	DPG	36.5	Hwy				0.02	0.09	0.02	0.03	0.08		0.22	
38.47	Oct-EPRR	DPG	33	White Clay Creek					0.02	0.09	0.03	0.08		0.22	
53.91	Connellsville-WE	TPG	86.25	Independence St				0.02	0.05	0.02	0.08	0.08		0.22	
7.22	Allegheny-BPRR	SST	36	PA Route 8					0.09	0.02	0.03	0.08		0.22	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
149.9	Main-RBMN	CAR	36	Rt. 437					0.09	0.02	0.03	0.08		0.22	
14.3	WN-EPRR	CSB	27.5	Creek					0.02	0.09	0.03	0.08		0.22	
130.22	Pocono-DL	TPG	58.8	Roaring Brook				0.02	0.02	0.05	0.08	0.08		0.22	
325.39	P&W-AVR	DPG	148	Boundary St					0.05	0.02	0.08	0.08		0.22	
130.89	Pocono-DL	TPG	58.5	Roaring Brook				0.02	0.02	0.05	0.08	0.08		0.22	
141	Main-RBMN		85	Hickory Run					0.02	0.05	0.08	0.08		0.22	
277.36	Main-BPRR	MAR	16	Buffalo Creek				0.06	0.02	0.09	0.01	0.10		0.22	
105.49	Laurel-BPRR	DPG	84	Mix Run				0.02	0.02	0.05	0.08	0.08		0.22	
29.26	W&P-AVR	DPG	34	Little Chartier's Cre				0.02	0.02	0.09	0.03	0.08		0.22	
30.1201	W&P-AVR	DPG	34	Little Chartier's Cre				0.02	0.02	0.09	0.03	0.08		0.22	
103.64	Laurel-BPRR	DPG	84	Millers Run				0.02	0.02	0.05	0.08	0.08		0.22	
25.08	Perk-EPRR	TPG	30	State Route 29					0.09	0.02	0.03	0.08		0.22	
30.26	W&P-AVR	DPG	34	Little Chartier's Cre				0.02	0.02	0.09	0.03	0.08		0.22	
6.7	MP-SWP	SST	75.5	Jacob's Creek					0.02	0.09	0.03	0.08		0.22	
8.76	Allegheny-AVR	CAR	33.25	Sandy Creek					0.02	0.09	0.03	0.08		0.22	
20.71	MD & PAmain-YR	DPG	54.5	Rd & Stream		0.23			0.05	0.05	0.04	0.08		0.22	
9.53	LN-EPRR	TPG	30	Cocalico Creek					0.02	0.09	0.03	0.08		0.22	
47.29	Oct-EPRR	CSB	28	Big Elk Creek					0.02	0.09	0.03	0.08		0.22	
37.01	W&P-AVR	CAR	30	Chartiere's Creek					0.02	0.09	0.03	0.08		0.22	
15.69	W&P-AVR	CAR	30	Peter's Creek					0.02	0.09	0.03	0.08		0.22	
158.7	Buffalo-WNYP	TPG	80	Sterling Run		0.23			0.02	0.05	0.07	0.08		0.22	
447	Northern-BPRR	DPG	30	So. Branch Bear Cr				0.02	0.02	0.09	0.03	0.08		0.22	
44.25	Wharton-BPRR	TST	71.5	Sandy Lick Creek					0.02	0.09	0.03	0.08		0.21	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
324.47	P&W-AVR	DPG	274	Mon Con RR					0.02	0.02	0.10	0.08		0.21	
85.8	Pocono-DL		85						0.02	0.02	0.10	0.08		0.21	
20.27	W&P-AVR	SST	28	Peter's Creek					0.02	0.09	0.03	0.08		0.21	
86.19	Buffalo-WNYP	CSB	28	Carpenter Creek		0.23			0.02	0.09	0.03	0.08		0.21	
83.65	Main-RBMN		28	Creek					0.02	0.09	0.03	0.08		0.21	
109.39	Allegheny-BPRR	CSB	28	Silver Creek					0.02	0.09	0.03	0.08		0.21	
116.28	Buffalo-WNYP	DPG	110	Sizer Run		0.23			0.02	0.05	0.07	0.08		0.21	
28.08	Cresson-RJCP	TPG	112						0.02	0.02	0.08	0.10		0.21	
86.97	Laurel-BPRR	DPG	77	Laurel Run				0.02	0.02	0.05	0.07	0.08		0.21	
29.58	W&P-AVR	SST	27	Little Chartier's Cre					0.02	0.09	0.02	0.08		0.21	
169.99	Milton-UCI	TPG	52	Cameron Ave.				0.02	0.05	0.02	0.07	0.08		0.21	
172.38	Newco-UCI	DPG	52	Stream				0.02	0.02	0.05	0.07	0.08		0.21	
165.58	Winfield-UCI	TPG	52	St. George St.				0.02	0.05	0.02	0.07	0.08		0.21	
50.61	CherryTree-RJCP	DPG	120						0.02	0.02	0.10	0.08		0.21	
441	Northern-BPRR	SST	26.5	So. Branch Bear Cr				0.03	0.02	0.09	0.02	0.08		0.21	
17.67	C&M-RJCP	TPG	155						0.02	0.02	0.10	0.08		0.21	
64.84	Connellsville-WE	DPG	26	Hwy				0.02	0.09	0.02	0.02	0.08		0.21	
440	Northern-BPRR	TST	36.5	So. Branch Bear Cr					0.02	0.09	0.02	0.08		0.21	
120.49	Pocono-DL		49	Roaring Brook					0.02	0.05	0.07	0.08		0.21	
73.03	Connellsville-WE	DPG	25.5	Hwy				0.02	0.09	0.02	0.02	0.08		0.21	
139	Main-RBMN		75	Mud Run					0.02	0.05	0.07	0.08		0.21	
109.1	M&S-RBMN		105	Main St					0.05	0.02	0.07	0.08		0.21	
104.85	Allegheny-BPRR	SST	24	Oil Creek					0.02	0.09	0.02	0.08		0.21	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
12.4	Main-YRC	SST	26.33	Stream				0.01	0.02	0.05	0.07	0.08		0.21	
18.59	Cresson-RJCP	DPG	76						0.02	0.02	0.08	0.10		0.21	
81.3	Connellsville-WE	SST	23.67	Hwy					0.09	0.02	0.02	0.08		0.21	
32.93	Quaker-EPRR	MAR	20	Mill Creek		0.15	0.10		0.02	0.09	0.02	0.08		0.21	
39.17	Quaker-EPRR	CST	20	Morgan Creek					0.02	0.09	0.02	0.08		0.21	
1.24	Brilliant-AVR	MAR	185	Leach Farm Road					0.02	0.02	0.10	0.08		0.21	
65.38	Connellsville-WE	DPG	151	RR				0.02	0.02	0.02	0.10	0.08		0.21	
15.45	W&P-AVR	CAR	40	Piney Fork Road &					0.05	0.05	0.04	0.08		0.21	
176.8	Main-BPRR	DPG	54.5	Aylworth Run/Road				0.02	0.02	0.05	0.05	0.10		0.21	
65.36	Connellsville-WE	DPG	23	Hwy				0.02	0.09	0.02	0.02	0.08		0.21	
18.78	W&P-AVR	SST	22.83	Creek					0.02	0.09	0.02	0.08		0.21	
80.5	Connellsville-WE	SST	22.25	Hwy				0.05	0.09	0.02	0.02	0.08		0.21	
77.43	Connellsville-WE	SST	22.25	Hwy				0.05	0.09	0.02	0.02	0.08		0.21	
78.53	Connellsville-WE	SST	22.25	Hwy				0.05	0.09	0.02	0.02	0.08		0.21	
23.7	Pitts&West-BPRR	SST	22	Kaufman Creek				0.05	0.02	0.09	0.02	0.08		0.21	
28.8	Pitts&West-BPRR	SST	22	Creek				0.05	0.02	0.09	0.02	0.08		0.21	
61.16	Cresson-RJCP	TPG	74						0.02	0.02	0.08	0.10		0.21	
62.81	Cresson-RJCP	TPG	74						0.02	0.02	0.08	0.10		0.21	
65.29	Cresson-RJCP	TPG	74						0.02	0.02	0.08	0.10		0.21	
25.73	WN-EPRR	SST	19	Brandywine Creek					0.02	0.09	0.02	0.08		0.21	
7.53	LN-EPRR	TPG	20	Little Cocalico Cree					0.02	0.09	0.02	0.08		0.21	
3.69	Main-TCKR	DPG	104		0.11	0.23		0.02	0.02	0.02	0.09	0.08		0.21	
20.1	W&P-AVR	CST	30	Peter's Creek				0.05	0.02	0.09	0.02	0.08		0.21	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
85.66	Buffalo-WNYP	CSB	21	Canfield Creek		0.23			0.02	0.09	0.02	0.08		0.21	
10	Main-TMSS	SST	20	Creek	0.13	0.23		0.05	0.02	0.09	0.02	0.08		0.21	
20	Main-TMSS	SST	20	Creek	0.13	0.23		0.05	0.02	0.09	0.02	0.08		0.21	
17.23	Wallaceton-RJCP	TPG	124						0.02	0.02	0.09	0.08		0.21	
20.74	W&P-AVR	CST	20	Peter's Creek				0.05	0.02	0.09	0.02	0.08		0.21	
68.42	Laurel-BPRR	DPG	20	Narrows Creek				0.02	0.02	0.09	0.02	0.08		0.21	
28.6	Pitts&West-BPRR	SST	20	Creek				0.04	0.02	0.09	0.02	0.08		0.21	
144	Main-RBMN	CAR	20	Creek					0.02	0.09	0.02	0.08		0.21	
35.96	Allegheny-BPRR	CAR	20	Oil Creek					0.02	0.09	0.02	0.08		0.21	
52.33	CherryTree-RJCP	DPG	110						0.02	0.02	0.09	0.08		0.21	
115	Allegheny-BPRR	TPG	103	Ridgeway Wye Tra					0.02	0.02	0.09	0.08		0.21	
47.79	Oct-EPRR	CSB	16	Big Elk Creek					0.02	0.09	0.02	0.08		0.21	
446	Northern-BPRR	TST	43	So. Branch Bear Cr				0.02	0.02	0.09	0.02	0.08		0.21	
29.06	Indiana-BPRR	TPG	50	McKees Run				0.02	0.02	0.05	0.05	0.10		0.21	
35.41	Indiana-BPRR	TPG	50	T 411				0.00	0.05	0.02	0.05	0.10		0.21	
444	Northern-BPRR	TST	26	So. Branch Bear Cr				0.02	0.02	0.09	0.02	0.08		0.20	
129.89	Allegheny-BPRR	SST	26	Elk Creek					0.02	0.09	0.02	0.08		0.20	
11.46	W&P-AVR	SST	18	Creek					0.02	0.09	0.02	0.08		0.20	
24.98	MD & PAmain-YR	TPG	58	Stream		0.23			0.02	0.05	0.06	0.08		0.20	
72.2	FM&P-SWP	CAR	18	Redstone Creek					0.02	0.09	0.02	0.08		0.20	
6.38	W&P-AVR	CST	18	Creek					0.02	0.09	0.02	0.08		0.20	
1.82	LN-EPRR	CSB	16	Creek					0.02	0.09	0.02	0.08		0.20	
19.06	Wallaceton-RJCP	DPG	120						0.02	0.02	0.09	0.08		0.20	

Risk Evaluation with Known Parameters - No Assumed Values

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75.3	Main-RBMN	CST	95	State Street					0.05	0.02	0.06	0.08		0.20	
43.75	Connellsville-WE	DPG	94.84	Brownsville Rd.				0.01	0.05	0.02	0.06	0.08		0.20	
10.35	Carbondale-DL	DPG	60	Constitution Ave				0.02	0.05	0.02	0.06	0.08		0.20	
439	Northern-BPRR	TST	24	So. Branch Bear Cr				0.04	0.02	0.09	0.02	0.08		0.20	
438	Northern-BPRR	TST	23	So. Branch Bear Cr				0.03	0.02	0.09	0.01	0.08		0.20	
17.93	Wallaceton-RJCP	TPG	118						0.02	0.02	0.09	0.08		0.20	
37.8	WBV-RJCP	TPG	108						0.02	0.02	0.09	0.08		0.20	
76.76	FM&P-SWP	SST	16	George Creek					0.02	0.09	0.01	0.08		0.20	
126.8	Allegheny-BPRR	MAR	16	Silver Creek					0.02	0.09	0.01	0.08		0.20	
101.75	Buffalo-WNYP	CSB	16	Hamilton Creek		0.23			0.02	0.09	0.01	0.08		0.20	
11.23	W&P-AVR	SST	16	Creek					0.02	0.09	0.01	0.08		0.20	
39.57	Oct-EPRR	CSB	12	White Clay Creek					0.02	0.09	0.01	0.08		0.20	
9.83	W&P-AVR	SST	15	Creek					0.02	0.09	0.01	0.08		0.20	
2.7	Main-YRC	SST	16.5	Stream					0.02	0.05	0.06	0.08		0.20	
12.7001	P&W-AVR	CSB	14	Creek				0.05	0.02	0.09	0.01	0.08		0.20	
16.31	Cresson-RJCP	DPG	66						0.02	0.02	0.07	0.10		0.20	
225.05	Main-BPRR	CST	64	Elk Run				0.05	0.02	0.05	0.04	0.10		0.20	
0.401	Main-YRC	SST	16	Stream					0.02	0.05	0.06	0.08		0.20	
48.05	Oct-EPRR	CSB	10	Big Elk Creek					0.02	0.09	0.01	0.08		0.20	
16.151	Cresson-RJCP	DPG	65						0.02	0.02	0.07	0.10		0.20	
50.46	CherryTree-RJCP	DPG	100						0.02	0.02	0.09	0.08		0.20	
6.4	Main-YRC	SST	15	Stream					0.02	0.05	0.06	0.08		0.20	
4.0601	LN-EPRR	CSB	11	Little Cocalico Cree					0.02	0.09	0.01	0.08		0.20	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
45.57	Cresson-RJCP	SST	112						0.02	0.02	0.07	0.10		0.20	
34.15	YSRR-YSE	TST	12	Creek		0.23			0.02	0.09	0.01	0.08		0.20	
33.64	Perk-EPRR	MAR	12	Creek					0.02	0.09	0.01	0.08		0.20	
37.87	Quaker-EPRR	MAR	12	Creek					0.02	0.09	0.01	0.08		0.20	
7.36	W&P-AVR	CST	12	Creek					0.02	0.09	0.01	0.08		0.20	
11.41	Allegheny-BPRR	CSB	12	Walnut Creek					0.02	0.09	0.01	0.08		0.20	
12.31	Main-YRC	TOP	14	Stream					0.02	0.05	0.06	0.08		0.20	
34.05	Quaker-EPRR	MAR	11	Creek					0.02	0.09	0.01	0.08		0.20	
61.44	Connellsville-WE	DPG	60	Miller's Run				0.02	0.02	0.05	0.05	0.08		0.20	
21	Susquehanna-RBM		0	Jenkins Creek					0.02	0.09	0.01	0.08		0.20	
98.1	Main-RBMN		0	Wabash Creek					0.02	0.09	0.01	0.08		0.20	
97.8	Middleport-RBMN		0	Creek					0.02	0.09	0.01	0.08		0.20	
95.9	Middleport-RBMN		0	Creek					0.02	0.09	0.01	0.08		0.20	
7.652	Susquehanna-RBM		0	Gardner Creek					0.02	0.09	0.01	0.08		0.20	
6.9	Susquehanna-RBM		0	Stouts Creek					0.02	0.09	0.01	0.08		0.20	
2.9	Radebaugh-SWP	DPG	0	Slate Creek					0.02	0.09	0.01	0.08		0.20	
62.3	Main-RBMN		0	Rt 61					0.09	0.02	0.01	0.08		0.20	
2.2	Minersville-RBMN		0	Creek					0.02	0.09	0.01	0.08		0.20	
129.5	Main-RBMN		0	Creek					0.02	0.09	0.01	0.08		0.20	
64.56	Pennsy-RBMN		0	Rt 222					0.09	0.02	0.01	0.08		0.20	
64.95	Pennsy-RBMN		0	Rt 61					0.09	0.02	0.01	0.08		0.20	
1.0502	Minersville-RBMN		0	Rt 183					0.09	0.02	0.01	0.08		0.20	
67.55	Main-RBMN		0	Irish Creek					0.02	0.09	0.01	0.08		0.20	

Risk Evaluation with Known Parameters - No Assumed Values

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24.5	Susquehanna-RBM		0	Tunkhannock Creek					0.02	0.09	0.01	0.08		0.20	
0.92	Brilliant Ind-AVR	DPG	60	Allegheny R Blvd				0.02	0.05	0.02	0.05	0.08		0.20	
70.821	FM&P-SWP	TPG	0	Redstone Creek				0.02	0.02	0.09	0.01	0.08		0.20	
72.55	Main-RBMN		0	Mill Creek					0.02	0.09	0.01	0.08		0.20	
80.7	Pottsville-RBMN		0	Stoney Creek					0.02	0.09	0.01	0.08		0.20	
3.55	Radebaugh-SWP	DPG	0	Slate Creek					0.02	0.09	0.01	0.08		0.20	
155.6	Main-RBMN		0	Wapwallow Creek					0.02	0.09	0.01	0.08		0.20	
100.75	Main-RBMN		0	Pine Creek					0.02	0.09	0.01	0.08		0.20	
30.05	Susquehanna-RBM		0	Tagues Creek					0.02	0.09	0.01	0.08		0.20	
102.701	Main-RBMN		0	Pine Creek					0.02	0.09	0.01	0.08		0.20	
14.301	Susquehanna-RBM		0	Bowmans Creek					0.02	0.09	0.01	0.08		0.20	
13.46	P&W-AVR	TPG	0	Pine Creek				0.02	0.02	0.09	0.01	0.08		0.20	
14.5	Susquehanna-RBM		0	Smith Creek					0.02	0.09	0.01	0.08		0.20	
36.68	W&P-AVR	TPG	0	Route 40				0.01	0.09	0.02	0.01	0.08		0.20	
11.9	Susquehanna-RBM		0	Keeler Creek					0.02	0.09	0.01	0.08		0.20	
17.6	Susquehanna-RBM		0	Wilseys Creek					0.02	0.09	0.01	0.08		0.20	
1.111	Main-YRC	SST	12	Stream					0.02	0.05	0.05	0.08		0.20	
16.25	Carbondale-DL	TPG	52	Walnut St				0.02	0.05	0.02	0.05	0.08		0.20	
2.12	Milroy-JVRR	CSB	48	Buck Run				0.05	0.02	0.05	0.05	0.08		0.20	
107.05	Pocono-DL		31	Stream					0.02	0.05	0.05	0.08		0.20	
16.35	Carbondale-DL	TPG	50	Chestnut St				0.02	0.05	0.02	0.05	0.08		0.19	
13	Carbondale-DL	TPG	50	Wayne St					0.05	0.02	0.05	0.08		0.19	
190.85	M&S-RBMN		90						0.02	0.02	0.08	0.08		0.19	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
35.97	Indiana-BPRR	DPG	38	Old US 119				0.02	0.05	0.02	0.03	0.10		0.19	
78.92	Shawmut-BPRR	DPG	56.33	Glade Run				0.02	0.02	0.05	0.05	0.08		0.19	
13.35	Oil City-WNYP	DPG	36	McCune Run		0.23			0.02	0.05	0.03	0.10		0.19	
25.4	Perk-EPRR	DPG	52	Hosensack Road					0.05	0.02	0.05	0.08		0.19	
60.45	Connellsville-WE	TPG	95.49	Washington Ave.				0.02	0.05	0.02	0.05	0.08		0.19	
115.22	Buffalo-WNYP	TPG	55	Cowley Run		0.23			0.02	0.05	0.05	0.08		0.19	
16.05	Carbondale-DL	TPG	48	Pine St				0.02	0.05	0.02	0.05	0.08		0.19	
191.48	NS-NSHR	TPG	30	Rupert Road					0.05	0.02	0.05	0.08		0.19	
117.8	Pocono-DL	DPG	28	Jubilee Rd				0.02	0.05	0.02	0.05	0.08		0.19	
22.69	WBV-RJCP	DPG	65						0.02	0.02	0.08	0.08		0.19	
0.4701	Brilliant-AVR	TPG	54	Lincoln Ave					0.05	0.02	0.05	0.08		0.19	
82.65	Allegheny-BPRR	DPG	76	Two Mile Run					0.02	0.05	0.05	0.08		0.19	
68.91	Allegheny-BPRR	MAR	20	Rodger's Run & Rd				0.08	0.05	0.05	0.02	0.08		0.19	
5.53	Farmers-WNYP	TST	100	Swamp equalizing		0.15			0.02	0.05	0.05	0.08		0.19	
2.91	Mifflin-WE	TPG	86.5						0.02	0.02	0.08	0.08		0.19	
13.34	SVRR-SVRR	TPG	28	Stream				0.01	0.02	0.05	0.05	0.08		0.19	
31.431	WBV-RJCP	DPG	89						0.02	0.02	0.08	0.08		0.19	
228.5	Main-BPRR	DPG	34	State Route 3010				0.02	0.05	0.02	0.03	0.10		0.19	
264.53	Main-BPRR	DPG	34	Twp Rd				0.02	0.05	0.02	0.03	0.10		0.19	
126.17	Main-BPRR	TPG	34	Minard Run				0.02	0.02	0.05	0.03	0.10		0.19	
267.64	Main-BPRR	DPG	34	Twp Rd 416				0.02	0.05	0.02	0.03	0.10		0.19	
204.28	Main-BPRR	SST	33.5	Pentz Run				0.05	0.02	0.05	0.03	0.10		0.19	
37.6	Pitts&West-BPRR	TPG	52	Camp Run				0.02	0.02	0.05	0.05	0.08		0.19	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
23.95	Shawmut-BPRR	DPG	52	Hunters Run					0.02	0.05	0.05	0.08		0.19	
17	Carbondale-DL	DPG	45	Erie St				0.01	0.05	0.02	0.05	0.08		0.19	
149.53	SVRR-SVRR	CSB	27	Stream				0.05	0.02	0.05	0.05	0.08		0.19	
0.18	Carbon-SVRR	SST	38	Carbon Run				0.04	0.02	0.05	0.05	0.08		0.19	
118.93	Pocono-DL	TPG	24	Market St				0.02	0.05	0.02	0.05	0.08		0.19	
27.85	MD & PAmain-YR	DPG	40.5	Stream		0.23			0.02	0.05	0.05	0.08		0.19	
0.11	West End-WE	DPG	50	Saw Mill Run					0.02	0.05	0.05	0.08		0.19	
405	Butler-BPRR	SST	50	Powder Mill Run					0.02	0.05	0.05	0.08		0.19	
52.71	Connellsville-WE	DPG	50	Saw Mill Run				0.02	0.02	0.05	0.05	0.08		0.19	
61.71	Connellsville-WE	DPG	50	Verner St.				0.02	0.05	0.02	0.05	0.08		0.19	
33.52	Quaker-EPRR	TPG	46.25	Maple St					0.05	0.02	0.04	0.08		0.19	
57.62	Cresson-RJCP	DPG	52						0.02	0.02	0.06	0.10		0.19	
8.82	Radebaugh-SWP	CST	16	Nelson Run					0.05	0.05	0.01	0.08		0.19	
16.51	Indiana-BPRR	CSB	30	Pine Run		0.30		0.00	0.02	0.05	0.03	0.10		0.19	
6.32	Indiana-BPRR	DPG	30	SR 1045				0.02	0.05	0.02	0.03	0.10		0.19	
230.96	Main-BPRR	DPG	30	SR 3013				0.02	0.05	0.02	0.03	0.10		0.19	
120.78	Main-BPRR	DPG	30	Foster Brook				0.02	0.02	0.05	0.03	0.10		0.19	
25.7301	Indiana-BPRR	SST	30	Getty Run				0.02	0.02	0.05	0.03	0.10		0.19	
0.22	West End-WE	DPG	48.5	Saw Mill Run					0.02	0.05	0.04	0.08		0.19	
174.83	Main-BPRR	DPG	29.5	Stream				0.02	0.02	0.05	0.03	0.10		0.19	
62.08	FM&P-SWP	TPG	48	Gist Run					0.02	0.05	0.04	0.08		0.19	
75.15	Allegheny-BPRR	TPG	48	Six Mile Run					0.02	0.05	0.04	0.08		0.19	
76.9	Allegheny-BPRR	TPG	48	Four Mile Run					0.02	0.05	0.04	0.08		0.19	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
325.08	P&W-AVR	CSB	83	GreenField Ave					0.05	0.02	0.04	0.08		0.19	
11.3101	Oil City-WNYP	DPG	27	Stream		0.23			0.02	0.05	0.03	0.10		0.19	
5.67	Oil City-WNYP	DPG	27	Stream		0.23			0.02	0.05	0.03	0.10		0.19	
35.12	W&P-AVR	DPG	79	College St				0.02	0.05	0.02	0.04	0.08		0.18	
203.27	Main-BPRR	SST	27	Clear Run				0.05	0.02	0.05	0.02	0.10		0.18	
17.65	Allegheny-BPRR	CSB	64	Benson Run					0.02	0.05	0.04	0.08		0.18	
84.72	Buffalo-WNYP	DPG	45	Barden Brook		0.23			0.02	0.05	0.04	0.08		0.18	
108.65	M&S-RBMN	CST	45	South 8th Street					0.05	0.02	0.04	0.08		0.18	
111.1	M&S-RBMN		45	Stream					0.02	0.05	0.04	0.08		0.18	
18.56	WBV-RJCP	DPG	55						0.02	0.02	0.07	0.08		0.18	
222.35	Main-BPRR	SST	26	Jackson Run				0.05	0.02	0.05	0.02	0.10		0.18	
123.9	M&S-RBMN		44	Public Rd					0.05	0.02	0.04	0.08		0.18	
75.5	Main-RBMN		44	Swamp Rd					0.05	0.02	0.04	0.08		0.18	
244.39	Main-BPRR	DPG	25	Glade Run				0.02	0.02	0.05	0.02	0.10		0.18	
188.5	NS-NSHR	CSB	18	Stream				0.04	0.02	0.05	0.04	0.08		0.18	
102.9	Pocono-DL	TPG	16	Stream				0.01	0.02	0.05	0.04	0.08		0.18	
200.16	Main-BPRR	DPG	24	Smith Run				0.02	0.02	0.05	0.02	0.10		0.18	
112.8	M&S-RBMN		42	Stream					0.02	0.05	0.04	0.08		0.18	
1.38	Mait-JVRR	DPG	50	Driveway				0.02	0.02	0.02	0.07	0.08		0.18	
260.03	Main-BPRR	SST	23	SR 4021				0.06	0.05	0.02	0.02	0.10		0.18	
252.93	Main-BPRR	SST	23	Stream				0.02	0.02	0.05	0.02	0.10		0.18	
246.18	Main-BPRR	DPG	23	T 748				0.02	0.05	0.02	0.02	0.10		0.18	
240.73	Main-BPRR	DPG	23	SR 4026 Goodville				0.02	0.05	0.02	0.02	0.10		0.18	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
45.37	WBV-RJCP	DPG	73						0.02	0.02	0.07	0.08		0.18	
58.31	Struthers-BPRR	CSB	58	Glade Run					0.02	0.05	0.04	0.08		0.18	
18.52	C&M-RJCP	TPG	74						0.02	0.02	0.07	0.08		0.18	
18.65	C&M-RJCP	TPG	74						0.02	0.02	0.07	0.08		0.18	
3.06	Farmers-WNYP	TPG	37	Swamp equalizing		0.15			0.02	0.05	0.04	0.08		0.18	
58.3	Connellsville-WE	MAR	40	Washington Pike					0.05	0.02	0.04	0.08		0.18	
2.7201	P&W-AVR	CSB	40	Bridge St					0.05	0.02	0.04	0.08		0.18	
186.1801	NS-NSHR	SST	15	Stream					0.02	0.05	0.04	0.08		0.18	
36.31	Rouseville-WNYP	DPG	39	Cherry Run		0.23			0.02	0.05	0.04	0.08		0.18	
56.98	Connellsville-WE	DPG	40	Allen St.				0.01	0.05	0.02	0.04	0.08		0.18	
22.52	Oil City-WNYP	DPG	19	Patchen Run		0.23			0.02	0.05	0.02	0.10		0.18	
20.48	Oil City-WNYP	DPG	19	Stream		0.23			0.02	0.05	0.02	0.10		0.18	
185.4	NS-NSHR	SST	14	Stream				0.05	0.02	0.05	0.04	0.08		0.18	
204.9	NS-NSHR	SST	14	Stream				0.05	0.02	0.05	0.04	0.08		0.18	
0.72	Cresson-RJCP	CSB	41						0.02	0.02	0.05	0.10		0.18	
36.92	Connellsville-WE	DPG	72	Greens Crossing				0.02	0.02	0.02	0.06	0.08		0.18	
124.54	Main-BPRR	SST	20	Rutherford Run				0.05	0.02	0.05	0.02	0.10		0.18	
11.38	Indiana-BPRR	SST	20	Elders Run				0.05	0.02	0.05	0.02	0.10		0.18	
18.07	Indiana-BPRR	SST	20	Stream				0.05	0.02	0.05	0.02	0.10		0.18	
19.22	Indiana-BPRR	SST	20	Stream				0.05	0.02	0.05	0.02	0.10		0.18	
33.8201	Indiana-BPRR	SST	20	Whites Run				0.05	0.02	0.05	0.02	0.10		0.18	
11.17	Indiana-BPRR	SST	20	Parsons Run				0.05	0.02	0.05	0.02	0.10		0.18	
34.0601	Indiana-BPRR	SST	20	Whites Run				0.05	0.02	0.05	0.02	0.10		0.18	

Risk Evaluation with Known Parameters - No Assumed Values

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23.61	MD & PAmain-YR	DPG	28	Stream		0.23			0.02	0.05	0.03	0.08		0.18	
432	Northern-BPRR	TST	144	Grove St					0.05	0.02	0.03	0.08		0.18	
36.04	CherryTree-RJCP	DPG	45						0.02	0.02	0.06	0.08		0.18	
50.76	Laurel-BPRR	DPG	37	Camp Run				0.01	0.02	0.05	0.03	0.08		0.18	
68.49	FM&P-SWP	DPG	37	Cove Run					0.02	0.05	0.03	0.08		0.18	
151.82	SVRR-SVRR	MAR	12	Stream				0.05	0.02	0.05	0.03	0.08		0.18	
229.16	Main-BPRR	CSB	18	Stream				0.00	0.02	0.05	0.02	0.10		0.18	
255	Main-BPRR	CSB	18	Bever Run				0.00	0.02	0.05	0.02	0.10		0.18	
15.73	Connellsville-WE	SST	36.5	Twp Rd.				0.04	0.05	0.02	0.03	0.08		0.18	
201.66	NS-NSHR	CSB	11	Stream					0.02	0.05	0.03	0.08		0.18	
71.05	Main-RBMN	MAR	36	Stream					0.02	0.05	0.03	0.08		0.18	
39.24	WBV-RJCP	DPG	46						0.02	0.02	0.06	0.08		0.18	
2.35	Carbondale-DL	DPG	28.5	Concrete Lined Cha		0.15	0.20		0.02	0.05	0.03	0.08		0.18	
430	Northern-BPRR	TST	79	Stream/Driveway					0.02	0.05	0.03	0.08		0.18	
35.05	W&P-AVR	DPG	35	Lincoln St					0.05	0.02	0.03	0.08		0.17	
60.85	Connellsville-WE	TPG	35	Villars Ave				0.02	0.05	0.02	0.03	0.08		0.17	
15.21	W&P-AVR	SST	35	Snowden Rd Under					0.05	0.02	0.03	0.08		0.17	
18.04	MD & PAmain-YR	CSB	25	Stream		0.23			0.02	0.05	0.03	0.08		0.17	
606	Butler-BPRR	DPG	35	Stream				0.02	0.02	0.05	0.03	0.08		0.17	
0.07	Grandview-BPRR	DPG	35	Stream					0.02	0.05	0.03	0.08		0.17	
15	Carbondale-DL	TPG	28	Delaware St					0.05	0.02	0.03	0.08		0.17	
9.88	Indiana-BPRR	CAR	16	Leisure Run				0.05	0.02	0.05	0.01	0.10		0.17	
35.53	Indiana-BPRR	CAR	16	McCortney Run				0.05	0.02	0.05	0.01	0.10		0.17	

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213.82	Main-BPRR	SST	16	Stream				0.05	0.02	0.05	0.01	0.10		0.17	
199.6	Main-BPRR	SST	16	Harvey Run				0.05	0.02	0.05	0.01	0.10		0.17	
193.73	Main-BPRR	SST	16	Stream				0.02	0.02	0.05	0.01	0.10		0.17	
265.96	Main-BPRR	MAR	16	Glade Run				0.06	0.02	0.05	0.01	0.10		0.17	
215.53	Main-BPRR	SST	16	Stream				0.05	0.02	0.05	0.01	0.10		0.17	
13.81	Indiana-BPRR	CAR	16	Pickering Run				0.05	0.02	0.05	0.01	0.10		0.17	
74.6	Shawmut-BPRR	DPG	34.5	Whiskey Hollow R				0.02	0.02	0.05	0.03	0.08		0.17	
54.17	MD & PAncb-YRC	DPG	30	Road		0.23			0.05	0.02	0.03	0.08		0.17	
205.6	Main-BPRR	SST	15.5	Pentz Run				0.05	0.02	0.05	0.01	0.10		0.17	
0.26	Yukon-SWP	TPG	34	SR 3089					0.05	0.02	0.03	0.08		0.17	
70.46	Laurel-BPRR	DPG	34	Sabula Run				0.02	0.02	0.05	0.03	0.08		0.17	
9.25	W&P-AVR	SST	34	Street's Run					0.02	0.05	0.03	0.08		0.17	
21.34	Connellsville-WE	SST	33.5	Twp Rd				0.04	0.05	0.02	0.03	0.08		0.17	
20.72	Shawmut-BPRR	DPG	33.33	Road					0.05	0.02	0.03	0.08		0.17	
44.6001	Pitts&West-BPRR	SST	66	5th Street				0.05	0.05	0.02	0.03	0.08		0.17	
49.43	Connellsville-WE	CAR	33	Glenbury St.					0.05	0.02	0.03	0.08		0.17	
28.14	Perk-EPRR	MAR	29	Indian Creek Arch					0.02	0.05	0.03	0.08		0.17	
12.68	WN-EPRR	CSB	24.5	Dillsworth Run					0.02	0.05	0.03	0.08		0.17	
15.46	WN-EPRR	MAR	24	Darlington Run					0.02	0.05	0.03	0.08		0.17	
110.82	Allegheny-BPRR	CSB	32	Power Run					0.02	0.05	0.03	0.08		0.17	
90.93	Buffalo-WNYP	CSB	64	Rock Run		0.23			0.02	0.05	0.03	0.08		0.17	
106.78	Allegheny-BPRR	SST	32	Milford Run					0.02	0.05	0.03	0.08		0.17	
11.31	Cresson-RJCP	CSB	34						0.02	0.02	0.04	0.10		0.17	

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24.55	WN-EPRR	CSB	23.5	Lawrence Run					0.02	0.05	0.03	0.08		0.17	
50.36	Connellsville-WE	DPG	31.67	Whited St				0.02	0.05	0.02	0.03	0.08		0.17	
60.39	Allegheny-BPRR	SST	54	Irvine Run					0.02	0.05	0.03	0.08		0.17	
46.09	Allegheny-BPRR	CSB	31	Stream					0.02	0.05	0.03	0.08		0.17	
27.69	Cresson-RJCP	TPG	33						0.02	0.02	0.04	0.10		0.17	
17.26	WN-EPRR	CSB	22.5	Puseys Run					0.02	0.05	0.03	0.08		0.17	
7.9	Carbondale-DL	DPG	57						0.02	0.02	0.06	0.08		0.17	
26.6601	Perk-EPRR	DPG	26.66	Treichler Road					0.05	0.02	0.03	0.08		0.17	
31	Oct-EPRR	CSB	27	Hillendale Road					0.05	0.02	0.03	0.08		0.17	
9.99	Oil City-WNYP	CSB	10	Stream		0.15			0.02	0.05	0.01	0.10		0.17	
69.47	FM&P-SWP	SST	30	Cove Run					0.02	0.05	0.03	0.08		0.17	
424	Northern-BPRR	SST	30	Bonnie Brook				0.03	0.02	0.05	0.03	0.08		0.17	
63.11	Laurel-BPRR	DPG	30	Slab Rub				0.02	0.02	0.05	0.03	0.08		0.17	
12.05	W&P-AVR	CST	30	Lick Run				0.04	0.02	0.05	0.03	0.08		0.17	
64.35	Laurel-BPRR	DPG	30	Clear Run				0.02	0.02	0.05	0.03	0.08		0.17	
59.18	Connellsville-WE	CAR	30	Rd				0.05	0.05	0.02	0.03	0.08		0.17	
0.59	Clairton-WE	DPG	30	Public Road					0.05	0.02	0.03	0.08		0.17	
13.15	WN-EPRR	CSB	21.5	Pyles Road					0.05	0.02	0.03	0.08		0.17	
69.74	FM&P-SWP	SST	29.67	Cove Run					0.02	0.05	0.03	0.08		0.17	
1.0001	NEPIP-EPRR	DPG	25	Stream					0.02	0.05	0.03	0.08		0.17	
38.05	WBV-RJCP	DPG	56						0.02	0.02	0.06	0.08		0.17	
258.77	Main-BPRR	SST	44	Ditch				0.02	0.02	0.02	0.04	0.10		0.17	
21.36	MD & PAmain-YR	SST	19	Stream		0.23			0.02	0.05	0.03	0.08		0.17	

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44.15	Wharton-BPRR	TST	70.83	Laborde Branch				0.00	0.02	0.05	0.03	0.08		0.17	
21.35	WN-EPRR	CSB	20.5	Stream					0.02	0.05	0.03	0.08		0.17	
68.64	FM&P-SWP	DPG	28	Cove Run					0.02	0.05	0.03	0.08		0.17	
33.77	CherryTree-RJCP	TPG	36						0.02	0.02	0.06	0.08		0.17	
28.05	MD & PAmain-YR	SST	18	Stream		0.23			0.02	0.05	0.03	0.08		0.17	
17.5001	W&P-AVR	SST	28	Smith's Run					0.02	0.05	0.03	0.08		0.17	
23.9301	Perk-EPRR	CSB	24	Sixth Ave					0.05	0.02	0.03	0.08		0.17	
8.28	MP-SWP	TST	56	Sulphur Run					0.02	0.05	0.03	0.08		0.17	
36.09	Quaker-EPRR	CST	24	Three Mile Run Rd					0.05	0.02	0.02	0.08		0.17	
35.26	Quaker-EPRR	CST	24	Eight St					0.05	0.02	0.02	0.08		0.17	
37.67	Quaker-EPRR	CST	24	Rich Hill Rd					0.05	0.02	0.02	0.08		0.17	
79.56	Allegheny-BPRR	CSB	27	Deer Lick Run					0.02	0.05	0.02	0.08		0.17	
25.44	Perk-EPRR	SST	23	Hosensack Road					0.05	0.02	0.02	0.08		0.17	
34.2	Pitts&West-BPRR	SST	26	Muntz Run				0.05	0.02	0.05	0.02	0.08		0.17	
53.66	Laurel-BPRR	DPG	26	School House Run				0.02	0.02	0.05	0.02	0.08		0.17	
6.87	W&P-AVR	CST	26	Street's Run				0.04	0.02	0.05	0.02	0.08		0.17	
52.16	Connellsville-WE	SST	26	Crane Ave				0.05	0.05	0.02	0.02	0.08		0.17	
1.8	LN-EPRR	DPG	24	Chapel Hill Road					0.05	0.02	0.02	0.08		0.17	
12.74	Cresson-RJCP	SST	39						0.02	0.02	0.04	0.10		0.17	
1.85	Farmers-WNYP	DPG	22	Swamp equalizing		0.15			0.02	0.05	0.02	0.08		0.17	
412	Butler-BPRR	TST	50.5	Bonnie Brook				0.03	0.02	0.05	0.02	0.08		0.17	
39.16	Connellsville-WE	CAR	25	Twp Rd				0.04	0.05	0.02	0.02	0.08		0.17	
37.85	Connellsville-WE	CAR	25	Twp Rd				0.04	0.05	0.02	0.02	0.08		0.17	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
2.84	P&W-AVR	CAR	25	Girty's Run				0.04	0.02	0.05	0.02	0.08		0.17	
57.78	Laurel-BPRR	SST	25	Panther Run				0.05	0.02	0.05	0.02	0.08		0.17	
62.87	FM&P-SWP	SST	25	Gist Run					0.02	0.05	0.02	0.08		0.17	
42.56	Allegheny-BPRR	SST	25	Damon Run					0.02	0.05	0.02	0.08		0.17	
31.63	W&P-AVR	SST	25	Cattle Pass, Stream					0.02	0.05	0.02	0.08		0.17	
31.71	Connellsville-WE	CAR	25	Twp Rd				0.04	0.05	0.02	0.02	0.08		0.17	
2.68	Radebaugh-SWP	MAR	25	Jack's Run					0.02	0.05	0.02	0.08		0.17	
422	Northern-BPRR	TST	25	Bonnie Brook				0.03	0.02	0.05	0.02	0.08		0.17	
39.671	Connellsville-WE	CAR	25	Lick Run				0.04	0.02	0.05	0.02	0.08		0.17	
50.75	Connellsville-WE	SST	154						0.02	0.02	0.05	0.08		0.17	
16.55	W&P-AVR	CAR	24.5	Snee rd, Twp 844					0.05	0.02	0.02	0.08		0.17	
55.87	MD & PAncb-YRC	MAR	20	Stream		0.23			0.02	0.05	0.02	0.08		0.17	
67.22	FM&P-SWP	CSB	34	Cove Run					0.02	0.05	0.02	0.08		0.16	
31.37	Allegheny-BPRR	CSB	24	Beaver Run					0.02	0.05	0.02	0.08		0.16	
45.38	Connellsville-WE	CAR	24	Rd					0.05	0.02	0.02	0.08		0.16	
48.93	Connellsville-WE	CAR	24	McNeilly Rd					0.05	0.02	0.02	0.08		0.16	
61.68	FM&P-SWP	SST	24	Gist Run				0.03	0.02	0.05	0.02	0.08		0.16	
86.14	Shawmut-BPRR	CSB	24	Knapps Run				0.00	0.02	0.05	0.02	0.08		0.16	
52.74	Laurel-BPRR	DPG	24	O'Donnel Run				0.02	0.02	0.05	0.02	0.08		0.16	
283.79	Butler-BPRR	SST	24	Stream				0.03	0.02	0.05	0.02	0.08		0.16	
23.51	Perk-EPRR	DPG	20	Third St					0.05	0.02	0.02	0.08		0.16	
36.14	Quaker-EPRR	MAR	20	Three Mile Run					0.02	0.05	0.02	0.08		0.16	
19.91	WN-EPRR	CSB	15.25	Faucett's Run					0.02	0.05	0.02	0.08		0.16	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
0.54	MP-SWP	DPG	23.5	Galley Run					0.02	0.05	0.02	0.08		0.16	
63	Shawmut-BPRR	DPG	23.33	Wild Cat Run				0.02	0.02	0.05	0.02	0.08		0.16	
58.46	Shawmut-BPRR	DPG	23.33	Rainy Run				0.02	0.02	0.05	0.02	0.08		0.16	
59.21	Shawmut-BPRR	DPG	23.33	Powell Run				0.01	0.02	0.05	0.02	0.08		0.16	
70.62	Shawmut-BPRR	SST	23.33	Tarrtown Run				0.02	0.02	0.05	0.02	0.08		0.16	
70.82	Shawmut-BPRR	SST	23.33	Logtown Run				0.02	0.02	0.05	0.02	0.08		0.16	
27.3	Allegheny-BPRR	CSB	23	Bently Run					0.02	0.05	0.02	0.08		0.16	
15.71	Allegheny-BPRR	CSB	23	Banksons Run					0.02	0.05	0.02	0.08		0.16	
73.38	FM&P-SWP	SST	23	Stream				0.04	0.02	0.05	0.02	0.08		0.16	
59.41	Shawmut-BPRR	SST	23	Deep Hollow Road				0.05	0.05	0.02	0.02	0.08		0.16	
29.84	CherryTree-RJCP	DPG	31						0.02	0.02	0.05	0.08		0.16	
56.28	Allegheny-BPRR	SST	23	Mead Run					0.02	0.05	0.02	0.08		0.16	
62.33	Shawmut-BPRR	SST	23	Road				0.05	0.05	0.02	0.02	0.08		0.16	
5.83	Main-TCKR	DPG	55.5		0.11	0.23		0.02	0.02	0.02	0.05	0.08		0.16	
0.19	MP-SWP	DPG	22.5	Galley Run					0.02	0.05	0.02	0.08		0.16	
19.4	Pitts&West-BPRR	SST	22.5	Twp Rd				0.03	0.05	0.02	0.02	0.08		0.16	
419	Northern-BPRR	TST	44	Bonnie Brook				0.04	0.02	0.05	0.02	0.08		0.16	
63.38	FM&P-SWP	SST	22	Gist Run					0.02	0.05	0.02	0.08		0.16	
284.13	Butler-BPRR	SST	22	Stream				0.03	0.02	0.05	0.02	0.08		0.16	
118.03	Buffalo-WNYP	CSB	22	Four Mile Run		0.23			0.02	0.05	0.02	0.08		0.16	
21.291	CherryTree-RJCP	TPG	30						0.02	0.02	0.05	0.08		0.16	
21.7	CherryTree-RJCP	MAR	30						0.02	0.02	0.05	0.08		0.16	
21.73	CherryTree-RJCP	TPG	30						0.02	0.02	0.05	0.08		0.16	

Risk Evaluation with Known Parameters - No Assumed Values

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24.7	Cresson-RJCP	DPG	24						0.02	0.02	0.03	0.10		0.16	
37.05	Cresson-RJCP	CSB	24						0.02	0.02	0.03	0.10		0.16	
22.04	WN-EPRR	CSB	13.5	Cattle Pass/Stream					0.02	0.05	0.02	0.08		0.16	
85.6	Pocono-DL		28						0.02	0.02	0.05	0.08		0.16	
21.43	Shawmut-BPRR	SST	21.17	Road				0.05	0.05	0.02	0.02	0.08		0.16	
36.2	Pitts&West-BPRR	SST	21	Bessor Rd				0.05	0.05	0.02	0.02	0.08		0.16	
10.03	Cresson-RJCP	CSB	23						0.02	0.02	0.03	0.10		0.16	
15.29	Cresson-RJCP	CSB	23						0.02	0.02	0.03	0.10		0.16	
0.471	Brockway-BPRR	TST	36	Walbrun Run					0.02	0.05	0.02	0.08		0.16	
0.47	Brockway-BPRR	TST	36	Walbrun Run					0.02	0.05	0.02	0.08		0.16	
67.91	FM&P-SWP	SST	20.75	Cove Run					0.02	0.05	0.02	0.08		0.16	
7.26	Allegheny-BPRR	MAR	20	Stream					0.02	0.05	0.02	0.08		0.16	
47.68	Laurel-BPRR	SST	20	Emerick Run				0.06	0.02	0.05	0.02	0.08		0.16	
0.16	Grandview-BPRR	SST	20	Stream					0.02	0.05	0.02	0.08		0.16	
63.77	FM&P-SWP	SST	20	Laurel Run				0.03	0.02	0.05	0.02	0.08		0.16	
14.02	W&P-AVR	CAR	20	Rigg's Rd Underpas				0.05	0.05	0.02	0.02	0.08		0.16	
81.6	Shawmut-BPRR	CAR	20	Nicholson Run					0.02	0.05	0.02	0.08		0.16	
42.09	Connellsville-WE	CAR	20	Rd				0.05	0.05	0.02	0.02	0.08		0.16	
1.03	MP-SWP	SST	20	Galley Run					0.02	0.05	0.02	0.08		0.16	
15.85	P&W-AVR	CSB	20	Willow Run				0.04	0.02	0.05	0.02	0.08		0.16	
63.1101	FM&P-SWP	SST	20	Gist Run				0.03	0.02	0.05	0.02	0.08		0.16	
31.99	CherryTree-RJCP	DPG	28						0.02	0.02	0.05	0.08		0.16	
68.1	Connellsville-WE	CAR	20	Rd				0.05	0.05	0.02	0.02	0.08		0.16	

Risk Evaluation with Known Parameters - No Assumed Values

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34.41	Allegheny-BPRR	CSB	20	Deer Lick Run					0.02	0.05	0.02	0.08		0.16	
109.24	Laurel-BPRR	SST	20	Meadow Run				0.06	0.02	0.05	0.02	0.08		0.16	
18.02	Cresson-RJCP	CSB	22						0.02	0.02	0.03	0.10		0.16	
39.7	Pitts&West-BPRR	SST	19.8	Soap Run				0.05	0.02	0.05	0.02	0.08		0.16	
2002	Bradford-BPRR	CSB	28	Bolivar Run				0.02	0.02	0.05	0.02	0.08		0.16	
442	Northern-BPRR	TST	33.75	Stream				0.03	0.02	0.05	0.02	0.08		0.16	
4.82	Farmers-WNYP	TST	16	Swamp equalizing		0.15			0.02	0.05	0.02	0.08		0.16	
16.24	WN-EPRR	CSB	11	Brandywine Ck Tri					0.02	0.05	0.02	0.08		0.16	
113.52	Pocono-DL	DPG	26					0.02	0.02	0.02	0.05	0.08		0.16	
56.09	MD & PAncb-YRC	MAR	15	Stream		0.23			0.02	0.05	0.02	0.08		0.16	
47.2	Pitts&West-BPRR	CSB	19	Spanglers Run				0.05	0.02	0.05	0.02	0.08		0.16	
37.08	Perk-EPRR	CSB	15	Second Street					0.05	0.02	0.02	0.08		0.16	
40.0001	Quaker-EPRR	CST	15	Beaver Run					0.02	0.05	0.02	0.08		0.16	
62.78	FM&P-SWP	CSB	18.5	Gist Run					0.02	0.05	0.02	0.08		0.16	
23.57	WN-EPRR	CSB	10	Spring Run					0.02	0.05	0.02	0.08		0.16	
20.37	WN-EPRR	CSB	10	Faucett's Run					0.02	0.05	0.02	0.08		0.16	
43.1	Pitts&West-BPRR	SST	18.2	New Brighton Road				0.06	0.05	0.02	0.02	0.08		0.16	
16.16	Radebaugh-SWP	CSB	18	Stauffer Run					0.02	0.05	0.02	0.08		0.16	
61.36	Allegheny-BPRR	CSB	18	Scotts Run					0.02	0.05	0.02	0.08		0.16	
62.8	Allegheny-BPRR	CSB	18	Jackson Run					0.02	0.05	0.02	0.08		0.16	
25.05	Allegheny-BPRR	CSB	18	Malvin Run					0.02	0.05	0.02	0.08		0.16	
9.74	Allegheny-BPRR	CSB	18	Stream					0.02	0.05	0.02	0.08		0.16	
408	Butler-BPRR	SST	18	Butcher Run					0.02	0.05	0.02	0.08		0.16	

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24.0101	W&P-AVR	SST	18	Gillikson Rd					0.05	0.02	0.02	0.08		0.16	
3.1	LN-EPRR	CSB	16	Mail Route Rd					0.05	0.02	0.02	0.08		0.16	
34.68	Perk-EPRR	DPG	13.5	Quarry Road					0.05	0.02	0.02	0.08		0.16	
25.9	Pitts&West-BPRR	SST	17.3	Wolfe Run				0.05	0.02	0.05	0.02	0.08		0.16	
73.42	Allegheny-BPRR	SST	17	Stream					0.02	0.05	0.02	0.08		0.16	
49.48	CherryTree-RJCP	SST	25						0.02	0.02	0.05	0.08		0.16	
31.61	Cresson-RJCP	SST	19						0.02	0.02	0.03	0.10		0.16	
10.9	Tremont-RBMN		50						0.02	0.02	0.05	0.08		0.16	
15.601	Tremont-RBMN	SST	50						0.02	0.02	0.05	0.08		0.16	
52.49	CherryTree-RJCP	SST	24						0.02	0.02	0.04	0.08		0.16	
8.31	Radebaugh-SWP	CST	16	Wilson Run					0.02	0.05	0.01	0.08		0.16	
37.691	CherryTree-RJCP	DPG	24						0.02	0.02	0.04	0.08		0.16	
25.28	Agway-BPRR	SST	16	Stream					0.02	0.05	0.01	0.08		0.16	
43.77	CherryTree-RJCP	SST	24						0.02	0.02	0.04	0.08		0.16	
22.1	Pitts&West-BPRR	SST	16	Wolfe Run				0.04	0.02	0.05	0.01	0.08		0.16	
25.47	Agway-BPRR	SST	16	Stream					0.02	0.05	0.01	0.08		0.16	
32.7	Allegheny-BPRR	CSB	16	Slaughter Run					0.02	0.05	0.01	0.08		0.16	
33.72	Allegheny-BPRR	CSB	16	Lovell Run					0.02	0.05	0.01	0.08		0.16	
7.73	W&P-AVR	CST	16	Street's Run					0.02	0.05	0.01	0.08		0.16	
72.85	FM&P-SWP	CSB	15.75	Lick Run					0.02	0.05	0.01	0.08		0.16	
1.0501	CV-EPRR	DPG	15	Borough Line Rd					0.05	0.02	0.01	0.08		0.16	
62.13	Shawmut-BPRR	CAR	15	Pettigrew Run				0.05	0.02	0.05	0.01	0.08		0.16	
21.51	Shawmut-BPRR	CAR	15	Swamp Run					0.02	0.05	0.01	0.08		0.16	

Risk Evaluation with Known Parameters - No Assumed Values

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16.48	P&W-AVR	CSB	15	Willow Run				0.04	0.02	0.05	0.01	0.08		0.16	
5.751	Tremont-RBMN		68						0.02	0.02	0.04	0.08		0.16	
4.4001	LN-EPRR	DPG	13	Brook					0.02	0.05	0.01	0.08		0.16	
43.9	CherryTree-RJCP	MAR	32						0.02	0.02	0.04	0.08		0.16	
93.02	Buffalo-WNYP	CSB	14	Stream		0.23			0.02	0.05	0.01	0.08		0.16	
93.73	Buffalo-WNYP	CSB	14	Stream		0.23			0.02	0.05	0.01	0.08		0.16	
8.46	W&P-AVR	CST	14	Street's Run					0.02	0.05	0.01	0.08		0.16	
8.23	W&P-AVR	CST	14	Street's Run					0.02	0.05	0.01	0.08		0.16	
20.9	Allegheny-BPRR	CSB	14	Marauan Run					0.02	0.05	0.01	0.08		0.16	
38.65	Allegheny-BPRR	CSB	14	Winton Run					0.02	0.05	0.01	0.08		0.16	
96.27	Laurel-BPRR	MAR	14	Johnson Run				0.07	0.02	0.05	0.01	0.08		0.16	
13.4	Allegheny-AVR	CAR	14	Blacks Run					0.02	0.05	0.01	0.08		0.16	
414	Butler-BPRR	TST	14	Stream				0.04	0.02	0.05	0.01	0.08		0.16	
5.05	LN-EPRR	CSB	12	Brook					0.02	0.05	0.01	0.08		0.16	
5.5001	LN-EPRR	CSB	12	Brook					0.02	0.05	0.01	0.08		0.16	
4.75	LN-EPRR	DPG	12	Stream					0.02	0.05	0.01	0.08		0.16	
222.89	Main-BPRR	CST	28	Flood Plain				0.04	0.02	0.02	0.03	0.10		0.16	
5.84	LN-EPRR	CSB	11.5	Brook					0.02	0.05	0.01	0.08		0.16	
34.36	Rouseville-WNYP	CSB	12	Stream		0.23			0.02	0.05	0.01	0.08		0.16	
285.002	Butler-BPRR	TST	13	Stream				0.01	0.02	0.05	0.01	0.08		0.16	
80.85	Main-RBMN		13	Stream					0.02	0.05	0.01	0.08		0.16	
413	Butler-BPRR	TST	13	Stream				0.03	0.02	0.05	0.01	0.08		0.16	
0.23	Grandview-BPRR	SST	13	Stream					0.02	0.05	0.01	0.08		0.16	

Risk Evaluation with Known Parameters - No Assumed Values

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420	Northern-BPRR	TST	13	Stream				0.02	0.02	0.05	0.01	0.08		0.16	
6.54	LN-EPRR	CSB	11	Stream					0.02	0.05	0.01	0.08		0.15	
30.88	Perk-EPRR	CAR	12	Brook					0.02	0.05	0.01	0.08		0.15	
3.21	Main-NBER	CSB	12	Stream				0.05	0.02	0.05	0.01	0.08		0.15	
0.1	Adrian-BPRR	TST	12	Stream					0.02	0.05	0.01	0.08		0.15	
8.78	W&P-AVR	CST	12	Street's Run					0.02	0.05	0.01	0.08		0.15	
15.9801	P&W-AVR	CSB	12	Willow Run				0.05	0.02	0.05	0.01	0.08		0.15	
9.33	Allegheny-BPRR	SST	12	Stream					0.02	0.05	0.01	0.08		0.15	
54.86	Allegheny-BPRR	CSB	12	Stream					0.02	0.05	0.01	0.08		0.15	
80.4	Buffalo-WNYP	CSB	12	Stream		0.23			0.02	0.05	0.01	0.08		0.15	
30.24	Cresson-RJCP	CSB	14						0.02	0.02	0.02	0.10		0.15	
0.9101	Oil City-WNYP	DPG	25	Overflow		0.23			0.02	0.02	0.02	0.10		0.15	
14.67	P&W-AVR	CSB	11.75	Willow Run				0.04	0.02	0.05	0.01	0.08		0.15	
24.04	WBV-RJCP	CAR	22						0.02	0.02	0.04	0.08		0.15	
33.99	WBV-RJCP	DPG	22						0.02	0.02	0.04	0.08		0.15	
5.9	LN-EPRR	CSB	10	Dead Water					0.02	0.05	0.01	0.08		0.15	
25.3	Pitts&West-BPRR	SST	11.5	Stream				0.05	0.02	0.05	0.01	0.08		0.15	
15.05	P&W-AVR	CSB	11.5	Willow Run				0.04	0.02	0.05	0.01	0.08		0.15	
14.87	P&W-AVR	CSB	11.5	Willow Run				0.04	0.02	0.05	0.01	0.08		0.15	
52.89	Post-NBER	CSB	11	Stream				0.06	0.02	0.05	0.01	0.08		0.15	
30.941	Cresson-RJCP	SST	13						0.02	0.02	0.02	0.10		0.15	
19.04	C&M-RJCP	TPG	44						0.02	0.02	0.04	0.08		0.15	
39.391	CherryTree-RJCP	SST	18						0.02	0.02	0.04	0.08		0.15	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
166.9	Main-RBMN		0	Kellys Run					0.02	0.05	0.01	0.08		0.15	
20.3	Susquehanna-RBM		0	Mill Run					0.02	0.05	0.01	0.08		0.15	
1.95	Scranton-RBMN		0	Lonesome Rd					0.05	0.02	0.01	0.08		0.15	
0.081	MP-SWP	DPG	0	Galley Run					0.02	0.05	0.01	0.08		0.15	
88.2	Main-RBMN		0	watereway					0.02	0.05	0.01	0.08		0.15	
0.34	Greensburgh-SWP	DPG	0	Pittsburgh St				0.02	0.05	0.02	0.01	0.08		0.15	
64.85	Pennsy-RBMN		0	West Huller Lane					0.05	0.02	0.01	0.08		0.15	
83.45	Pottsville-RBMN		0	E Market St					0.05	0.02	0.01	0.08		0.15	
170.3	Main-RBMN	MAR	0	Gardner Run					0.02	0.05	0.01	0.08		0.15	
15.81	Radebaugh-SWP	DPG	0	Stauffer Run					0.02	0.05	0.01	0.08		0.15	
145.62	Main-RBMN		0	Susquehanna St					0.05	0.02	0.01	0.08		0.15	
13.95	Susquehanna-RBM		0	Creek Rd					0.05	0.02	0.01	0.08		0.15	
69.95	Pennsy-RBMN		0	Mohrsville Rd					0.05	0.02	0.01	0.08		0.15	
92.5	Pottsville-RBMN		0	Centre St					0.05	0.02	0.01	0.08		0.15	
124.15	M&S-RBMN		0	Big Run					0.02	0.05	0.01	0.08		0.15	
72.35	Pennsy-RBMN		0	Water St					0.05	0.02	0.01	0.08		0.15	
164.5	Main-RBMN		0	Laurel Run					0.02	0.05	0.01	0.08		0.15	
0.15	Scranton-RBMN		0	Main St					0.05	0.02	0.01	0.08		0.15	
62.801	Main-RBMN		0	Laurel Run					0.02	0.05	0.01	0.08		0.15	
65.2	Main-RBMN		0	Washington Rd					0.05	0.02	0.01	0.08		0.15	
169.5	Main-RBMN		0	Creek Rd					0.05	0.02	0.01	0.08		0.15	
87.56	Buffalo-WNYP	CSB	10	Stream		0.23			0.02	0.05	0.01	0.08		0.15	
166.45	Main-RBMN		0	W. Borrow Run					0.02	0.05	0.01	0.08		0.15	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
0.1501	Susquehanna-RBM		0	D&H Railway					0.05	0.02	0.01	0.08		0.15	
49.58	CherryTree-RJCP	SST	17						0.02	0.02	0.04	0.08		0.15	
35.17	Cresson-RJCP	SST	11						0.02	0.02	0.02	0.10		0.15	
18.36	Irvona-RJCP	DPG	33						0.02	0.02	0.04	0.08		0.15	
46.66	WBV-RJCP	CSB	18						0.02	0.02	0.04	0.08		0.15	
42.801	WBV-RJCP	SST	18						0.02	0.02	0.04	0.08		0.15	
169.7	Main-RBMN	MAR	0	Westminster Rd					0.05	0.02	0.01	0.08		0.15	
70.97	FM&P-SWP	TPG	40	Dry Span					0.02	0.02	0.04	0.08		0.15	
31.54	Wallaceton-RJCP	CSB	24						0.02	0.02	0.04	0.08		0.15	
48.07	Connellsville-WE	CAR	40	Willow Dr					0.02	0.02	0.04	0.08		0.15	
34.06	W&P-AVR	TPG	0	Dunn St				0.02	0.05	0.02	0.01	0.08		0.15	
34.64	W&P-AVR	CST	0	Stewart St					0.05	0.02	0.01	0.08		0.15	
4.671	Irvona-RJCP	DPG	30						0.02	0.02	0.03	0.08		0.15	
51.2	WBV-RJCP	SST	15						0.02	0.02	0.03	0.08		0.15	
138.17	Main-BPRR	CAR	19	Kushequa RR				0.05	0.02	0.02	0.02	0.10		0.15	
35.46	CherryTree-RJCP	SST	12						0.02	0.02	0.03	0.08		0.15	
47.24	WBV-RJCP	SST	14						0.02	0.02	0.03	0.08		0.15	
44.1	WBV-RJCP	CSB	14						0.02	0.02	0.03	0.08		0.15	
34.27	Wallaceton-RJCP	CSB	21						0.02	0.02	0.03	0.08		0.15	
46.99	WBV-RJCP	CSB	14						0.02	0.02	0.03	0.08		0.15	
46.56	WBV-RJCP	CSB	12						0.02	0.02	0.03	0.08		0.14	
16.38	Wallaceton-RJCP	SST	19						0.02	0.02	0.03	0.08		0.14	
8.751	Irvona-RJCP	CSB	24						0.02	0.02	0.03	0.08		0.14	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1.6	Main-MTC	CAR	30					0.05	0.02	0.02	0.03	0.08		0.14	
14.38	Irvona-RJCP	SST	23						0.02	0.02	0.03	0.08		0.14	
14	Tremont-RBMN		30						0.02	0.02	0.03	0.08		0.14	
17.601	Tremont-RBMN	SST	30						0.02	0.02	0.03	0.08		0.14	
8.15	Carbondale-DL	DPG	22						0.02	0.02	0.03	0.08		0.14	
16.65	Carbondale-DL	SST	22					0.05	0.02	0.02	0.03	0.08		0.14	
12.7002	Carbondale-DL	DPG	22						0.02	0.02	0.03	0.08		0.14	
12.12	Irvona-RJCP	CSB	20						0.02	0.02	0.03	0.08		0.14	
155.61	Main-BPRR	TOP	10	Cattle Pass				0.05	0.02	0.02	0.01	0.10		0.14	
255.34	Main-BPRR	CSB	10	Sewer				0.02	0.02	0.02	0.01	0.10		0.14	
30.39	Perk-EPRR	SST	24	Farm Pass					0.02	0.02	0.03	0.08		0.14	
10.81	Irvona-RJCP	SST	19						0.02	0.02	0.02	0.08		0.14	
15.42	W&P-AVR	CAR	27	Abandoned PV&C					0.02	0.02	0.02	0.08		0.14	
109.15	Main-RBMN		25						0.02	0.02	0.02	0.08		0.14	
12.8	MD & PAmain-YR	MAR	15			0.23			0.02	0.02	0.02	0.08		0.14	
10.19	Main-TCKR	CAR	25			0.15		0.05	0.02	0.02	0.02	0.08		0.14	
46.87	Connellsville-WE	SST	24.33	Private Rd				0.04	0.02	0.02	0.02	0.08		0.14	
1.29	Mifflin-WE	CAR	24						0.02	0.02	0.02	0.08		0.13	
13.76	WN-EPRR	CSB	15.25	Cattle Pass					0.02	0.02	0.02	0.08		0.13	
17.42	WN-EPRR	CSB	15	Cattle Pass					0.02	0.02	0.02	0.08		0.13	
41.7001	Oct-EPRR	CSB	20	Private Rd					0.02	0.02	0.02	0.08		0.13	
43.84	Oct-EPRR	DPG	20	Private Rd					0.02	0.02	0.02	0.08		0.13	
0.57	Mifflin-WE	CAR	23						0.02	0.02	0.02	0.08		0.13	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
28.83	Oct-EPRR	DPG	19	Mendenhall Drive					0.02	0.02	0.02	0.08		0.13	
28.5801	WN-EPRR	CSB	13.5	Cattel Pass					0.02	0.02	0.02	0.08		0.13	
41.0001	Quaker-EPRR	CSB	18	Pumping Sta Rd					0.02	0.02	0.02	0.08		0.13	
7.12	Irvona-RJCP	SST	13						0.02	0.02	0.02	0.08		0.13	
14.65	WN-EPRR	CSB	13	Cattle Pass					0.02	0.02	0.02	0.08		0.13	
39.86	Connellsville-WE	SST	21.33	Private Rd				0.04	0.02	0.02	0.02	0.08		0.13	
40.23	Connellsville-WE	SST	21.33	Private Rd				0.04	0.02	0.02	0.02	0.08		0.13	
48.62	Connellsville-WE	CAR	21	Private Dr.					0.02	0.02	0.02	0.08		0.13	
24.17	MD & PAmain-YR	TST	10	Dry		0.23			0.02	0.02	0.02	0.08		0.13	
27.46	WN-EPRR	CSB	11.5	Cattle Pass					0.02	0.02	0.02	0.08		0.13	
0.461	Hillman-RJCP	SST	18						0.02	0.02	0.02	0.08		0.13	
23.58	W&P-AVR	SST	18	Farm Pass					0.02	0.02	0.02	0.08		0.13	
47.14	Connellsville-WE	SST	18	Private Rd				0.04	0.02	0.02	0.02	0.08		0.13	
18.82	Allegheny-BPRR	CSB	18	Cattle Pass					0.02	0.02	0.02	0.08		0.13	
92.2	Main-RBMN		17	Private Rd					0.02	0.02	0.02	0.08		0.13	
108.6	Main-RBMN		16						0.02	0.02	0.01	0.08		0.13	
48.42	Connellsville-WE	CAR	16	Private Dr.					0.02	0.02	0.01	0.08		0.13	
35.86	Oct-EPRR	CSB	12	Cattle Pass					0.02	0.02	0.01	0.08		0.13	
54.25	Connellsville-WE	SST	15					0.03	0.02	0.02	0.01	0.08		0.13	
2.63	Mifflin-WE	CAR	15						0.02	0.02	0.01	0.08		0.13	
29.99	Oct-EPRR	CSB	10	Cattle Pass					0.02	0.02	0.01	0.08		0.13	
5.6	LN-EPRR	CSB	11.5	Flood Channel					0.02	0.02	0.01	0.08		0.13	
50.4	Pitts&West-BPRR	CSB	13	Private Rd					0.02	0.02	0.01	0.08		0.13	

Risk Evaluation with Known Parameters - No Assumed Values

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
3.1001	Kutz-EPRR	CSB	12	Private Road Crossi					0.02	0.02	0.01	0.08		0.12	
167.73	Winfield-UCI	MAR	12					0.05	0.02	0.02	0.01	0.08		0.12	
24.96	W&P-AVR	CST	10.83	Cattle Pass					0.02	0.02	0.01	0.08		0.12	
63.7	Main-RBMN		0						0.02	0.02	0.01	0.08		0.12	
145	Main-RBMN		0						0.02	0.02	0.01	0.08		0.12	
0.1801	Clairton-WE	CAR	10						0.02	0.02	0.01	0.08		0.12	
65.601	Pennsy-RBMN		0						0.02	0.02	0.01	0.08		0.12	
66.7	Pennsy-RBMN		0						0.02	0.02	0.01	0.08		0.12	
147.25	Main-RBMN		0						0.02	0.02	0.01	0.08		0.12	
173.8	Main-RBMN		0	Cork Lane					0.02	0.02	0.01	0.08		0.12	
107.3	Main-RBMN		0						0.02	0.02	0.01	0.08		0.12	

Appendix G

Risk Evaluation with Known and Assumed Parameters

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
23.01	Connellsville-WE	DTR	2770	Monongahela R., H	0.14	0.23	0.10	0.01	0.09	0.15	0.60	0.08	0.53	0.92	0.49
258.89	Main-BPRR	DTR	1665	Allegheny R	0.10	0.23	0.10	0.02	0.02	0.15	0.60	0.10	0.56	0.87	0.49
1022	Main-URR	TTR	5346	Monongahela R, UR	0.16	0.23	0.10	0.01	0.05	0.15	0.60	0.08	0.50	0.88	0.44
63.23	Shawmut-BPRR	TTR	1123	Allegheny R	0.09	0.23	0.10	0.02	0.02	0.15	0.51	0.08	0.57	0.76	0.43
213.86	Ant-LV	TTR	1128	Susquehanna River	0.09	0.23	0.10	0.02	0.02	0.15	0.50	0.08	0.57	0.75	0.43
5.13	W&P-AVR	TTR	2659	Monongahela R	0.09	0.23	0.10	0.02	0.02	0.15	0.47	0.08	0.57	0.71	0.41
1.3	P&W-AVR	TTR	4252	Allegheny R	0.10	0.23	0.10	0.01	0.02	0.15	0.47	0.08	0.56	0.71	0.40
0.68	Brilliant Ind-AVR	TTR	1838	Allegheny R	0.13	0.23	0.10	0.02	0.02	0.15	0.45	0.08	0.53	0.70	0.37
1090	Main-URR	CAR	1130	Peter's Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.60	0.08	0.46	0.79	0.37
13.97	Connellsville-WE	DPG	1812	Yougiogheny R, C&	0.16	0.23	0.15	0.02	0.02	0.12	0.59	0.08	0.45	0.80	0.36
0.09	Connellsville-WE	TTR	1498.5	Youghipgheny R., C	0.11	0.23	0.10	0.01	0.02	0.12	0.44	0.08	0.55	0.66	0.36
83.06	Main-WNYP	TTR	295	French Creek	0.03	0.15	0.10	0.02	0.02	0.09	0.31	0.10	0.70	0.51	0.36
191.99	CNY-NYSW	TTR	195	Susquehanna R	0.08	0.15	0.05	0.02	0.02	0.15	0.24	0.10	0.70	0.50	0.35
90.8401	CNY-NYSW	DTR	648	Delaware R	0.11	0.23	0.10	0.02	0.02	0.15	0.35	0.10	0.55	0.62	0.34
192.22	CNY-NYSW	TTR	636	Susquehanna R	0.12	0.23	0.10	0.01	0.02	0.15	0.35	0.10	0.54	0.61	0.33
198.04	Corning-LV	DPG	1290	Susq. River	0.16	0.23	0.10	0.02	0.02	0.15	0.39	0.08	0.50	0.64	0.32
30.12	Connellsville-WE	DPG	1607	Pigeon Creek Viadu	0.16	0.23	0.15	0.02	0.09	0.09	0.45	0.08	0.45	0.71	0.32
1087	Main-URR	DTR	889	Braddock Ave, Turtl	0.18	0.23	0.15	0.01	0.05	0.09	0.51	0.08	0.44	0.73	0.32
110.54	CNY-NYSW	DTR	474	Laxawaxen River	0.08	0.15	0.10	0.02	0.02	0.12	0.25	0.10	0.66	0.49	0.32
117.76	CNY-NYSW	TTR	536	Delaware R	0.10	0.23	0.10	0.02	0.02	0.15	0.30	0.10	0.56	0.57	0.32

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
167.92	Main-BPRR	DTR	683	Clarion River	0.10	0.23	0.10	0.02	0.02	0.12	0.33	0.10	0.56	0.56	0.32
56.79	Struthers-BPRR	TTR	523	Allegheny R	0.09	0.23	0.10	0.02	0.02	0.15	0.29	0.08	0.57	0.54	0.31
33.67	Connellsville-WE	DPG	1790	Mingo Creek Viaduc	0.16	0.23	0.15	0.02	0.05	0.09	0.45	0.08	0.45	0.67	0.30
226.37	Main-BPRR	TTR	494	Big Mahoning Creek	0.08	0.23	0.15	0.02	0.02	0.09	0.35	0.10	0.53	0.55	0.29
0.10001	UMP-MSUU	TPG	900	Schuylkilll R	0.09	0.23	0.10	0.02	0.02	0.12	0.29	0.08	0.56	0.51	0.29
65.9	Allegheny-BPRR	TTR	465	Allegheny R	0.09	0.23	0.10	0.02	0.02	0.15	0.26	0.08	0.57	0.50	0.29
241.39	Main-BPRR	DTR	967	Little Mahoning Cre	0.10	0.23	0.15	0.02	0.02	0.09	0.36	0.10	0.51	0.56	0.29
27.051	Connellsville-WE	DPG	720	Maple Creek Viaduc	0.16	0.23	0.15	0.02	0.09	0.09	0.35	0.08	0.45	0.62	0.28
1.1	Southside-WNYP	TTR	730	Allegheny R.	0.10	0.23	0.10	0.02	0.02	0.15	0.25	0.08	0.56	0.50	0.28
1057	Main-URR	CAR	431	Curry Run, Curry H	0.12	0.23	0.15	0.05	0.05	0.05	0.42	0.08	0.46	0.60	0.27
62.02	Connellsville-WE	TTR	666	Miller's Run Rd, Mil	0.08	0.23	0.15	0.02	0.05	0.05	0.35	0.08	0.53	0.52	0.27
1062	Main-URR	TTR	601	Pine Run, Rt 837	0.16	0.23	0.15	0.01	0.09	0.05	0.39	0.08	0.45	0.61	0.27
180.87	Main-BPRR	DPG	228	Clarion R	0.12	0.23	0.10	0.02	0.02	0.12	0.27	0.10	0.53	0.50	0.27
59.42	Connellsville-WE	DTR	628.55	Chartier's Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.33	0.08	0.51	0.52	0.26
1015	Main-URR	DPG	1100	Streets	0.12	0.23	0.20	0.02	0.02	0.05	0.46	0.08	0.43	0.61	0.26
0.05	Tyrone-NBER	DPG	295	Little Juniata River	0.12	0.23	0.10	0.02	0.02	0.12	0.27	0.08	0.53	0.49	0.26
170.29	Milton-UCI	TPG	665	Susq. River	0.14	0.23	0.10	0.02	0.02	0.15	0.25	0.08	0.52	0.50	0.26
87.14	Main-WNYP	TTR	437	French Creek	0.12	0.23	0.15	0.01	0.02	0.09	0.32	0.10	0.50	0.52	0.26
35.29	Connellsville-WE	DTR	485	Froman Viaduct, Hw	0.13	0.23	0.15	0.01	0.09	0.05	0.31	0.08	0.48	0.53	0.26
167.0101	Main-BPRR	TPG	129	East Br. Clarion R.	0.11	0.23	0.10	0.02	0.02	0.12	0.23	0.10	0.55	0.47	0.26

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
23.991	Connellsville-WE	DPG	440	South Fork Maple C	0.16	0.23	0.15	0.02	0.09	0.09	0.30	0.08	0.45	0.56	0.25
60.26	Connellsville-WE	DTR	240	Chartier's Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.30	0.08	0.51	0.49	0.25
56.39	Connellsville-WE	DTR	798.13	Whiskey Run Viadu	0.10	0.23	0.15	0.02	0.02	0.05	0.35	0.08	0.51	0.49	0.25
238.89	Main-BPRR	DPG	614	Big Mahoning Creek	0.18	0.23	0.15	0.01	0.02	0.09	0.38	0.10	0.43	0.58	0.25
61.01	Connellsville-WE	TTR	150	Chartier's Creek	0.08	0.23	0.15	0.02	0.02	0.09	0.29	0.08	0.53	0.47	0.25
170.45	Milton-UCI	TPG	595	Susq. River	0.14	0.23	0.10	0.02	0.02	0.15	0.22	0.08	0.52	0.47	0.25
1097	Main-URR	CAR	350	Plum Creek	0.15	0.23	0.15	0.04	0.02	0.09	0.37	0.08	0.44	0.56	0.25
33.84	Main-NBER	DPG	454	Bald Eagle Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.32	0.08	0.49	0.51	0.25
263.45	Main-BPRR	DPG	460.5	Limestone Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.28	0.10	0.51	0.49	0.25
10.251	Connellsville-WE	DTR	480	Jacob's Creek	0.14	0.23	0.15	0.01	0.02	0.09	0.33	0.08	0.48	0.51	0.25
257.19	Main-BPRR	TTR	123	Pine Creek	0.08	0.23	0.15	0.02	0.02	0.09	0.26	0.10	0.53	0.47	0.25
255.85	Main-BPRR	TTR	123	Pine Creek	0.08	0.23	0.15	0.02	0.02	0.09	0.26	0.10	0.53	0.47	0.25
12.52	Connellsville-WE	DPG	1148.58	Perry Viaduct	0.16	0.23	0.15	0.02	0.02	0.05	0.40	0.08	0.45	0.54	0.25
256.92	Main-BPRR	TTR	123	Pine Creek	0.08	0.23	0.15	0.02	0.02	0.09	0.26	0.10	0.53	0.47	0.25
201.31	Main-BPRR	DPG	130	Falls Creek and Hig	0.13	0.23	0.15	0.02	0.09	0.09	0.23	0.10	0.48	0.51	0.24
1032	Main-URR	DPG	1611		0.18	0.23	0.20	0.01	0.02	0.02	0.52	0.08	0.38	0.64	0.24
5.7	Carbondale-DL	TTR	168	Lackawanna R	0.09	0.15	0.10	0.02	0.02	0.12	0.16	0.08	0.64	0.38	0.24
39.38	Connellsville-WE	DPG	745	Peters Creek Viaduc	0.16	0.23	0.15	0.02	0.02	0.09	0.34	0.08	0.45	0.53	0.24
26.2	Connellsville-WE	DPG	860	McCracken Viaduct,	0.16	0.23	0.15	0.02	0.05	0.05	0.36	0.08	0.45	0.53	0.24
6.73	Connellsville-WE	DPG	363	Jacob's Creek, Twp	0.16	0.23	0.15	0.02	0.05	0.09	0.31	0.08	0.45	0.53	0.24

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
270.88	Main-BPRR	DTR	124	Buffalo Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.26	0.10	0.51	0.47	0.24
1.78	Avis-LV	DPG	407	Pine Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.30	0.08	0.48	0.49	0.24
274.19	Main-BPRR	TPG	131	Buffalo Creek/SR 30	0.10	0.23	0.15	0.02	0.05	0.09	0.23	0.10	0.51	0.47	0.24
0.46	Mait-JVRR	TPG	616	Juniata River	0.12	0.23	0.10	0.02	0.02	0.12	0.22	0.08	0.54	0.44	0.24
59.51	FM&P-SWP	DPG	556	Youghiogheny R	0.12	0.23	0.10	0.02	0.02	0.12	0.22	0.08	0.54	0.44	0.23
1088	Main-URR	DPG	1601	Braddock Ave	0.21	0.23	0.20	0.01	0.05	0.02	0.52	0.08	0.35	0.67	0.23
97.28	Buffalo-WNYP	TPG	285	Allegheny River	0.11	0.23	0.10	0.02	0.02	0.15	0.18	0.08	0.55	0.43	0.23
35.55	W&P-AVR	TTR	711	West Maiden St, Cre	0.09	0.23	0.15	0.02	0.05	0.09	0.23	0.08	0.52	0.45	0.23
275.15	Main-BPRR	TPG	198.5	Buffalo Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.25	0.10	0.51	0.46	0.23
122.31	Main-BPRR	TPG	173.3	Tunungwant Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.26	0.10	0.50	0.47	0.23
226.29	Main-BPRR	TTR	140	Walston Branch	0.08	0.23	0.15	0.02	0.02	0.05	0.28	0.10	0.53	0.44	0.23
47.49	Connellsville-WE	DPG	869.5	Hwy 88	0.13	0.23	0.20	0.02	0.09	0.02	0.34	0.08	0.43	0.53	0.23
12.43	Indiana-BPRR	TTR	150	Little Mahoning Cre	0.08	0.23	0.15	0.02	0.02	0.09	0.23	0.10	0.53	0.43	0.23
82.61	Connellsville-WE	TTR	99.75	Cross Cr	0.08	0.23	0.15	0.02	0.02	0.09	0.24	0.08	0.53	0.43	0.22
125.65	Main-SBR	TPG	208.83	Middle Cr	0.10	0.15	0.15	0.02	0.02	0.09	0.19	0.09	0.58	0.39	0.22
26.66	Connellsville-WE	DPG	550	Warner Viaduct, Tw	0.13	0.23	0.15	0.02	0.05	0.02	0.33	0.08	0.48	0.47	0.22
59.96	Main-WNYP	TPG	60	Hare Creek	0.09	0.15	0.15	0.02	0.02	0.09	0.17	0.10	0.59	0.38	0.22
272.84	Main-BPRR	DPG	96	Buffalo Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.24	0.10	0.51	0.44	0.22
274.35	Main-BPRR	DPG	96	Buffalo Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.24	0.10	0.51	0.44	0.22
257.63	Main-BPRR	DPG	96	Pine Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.24	0.10	0.51	0.44	0.22

Risk Evaluation with Known and Assumed Parameters

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1068	Main-URR	TPG	147	Turtle Creek, URR tr	0.10	0.23	0.15	0.02	0.05	0.09	0.23	0.08	0.50	0.44	0.22
257.76	Main-BPRR	DPG	96	Pine Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.24	0.10	0.51	0.44	0.22
183.8	Main-BPRR	DPG	240	Little Toby Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.26	0.10	0.48	0.46	0.22
37.27	Connellsville-WE	DTR	200	Hwy	0.13	0.23	0.20	0.01	0.09	0.02	0.33	0.08	0.43	0.52	0.22
1008	Main-URR	CAR	349	Miller Run, Maint. R	0.11	0.23	0.15	0.05	0.02	0.05	0.33	0.08	0.47	0.47	0.22
8.98	Connellsville-WE	DPG	290	Jacob's Creek	0.16	0.23	0.15	0.02	0.02	0.09	0.30	0.08	0.45	0.49	0.22
262.51	Main-BPRR	DPG	482	McCrackin Run	0.10	0.23	0.15	0.02	0.02	0.05	0.28	0.10	0.51	0.44	0.22
122.84	Main-BPRR	TPG	96	Tunungwant Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.24	0.10	0.50	0.44	0.22
85.15	Connellsville-WE	DTR	100	Cross Cr	0.10	0.23	0.15	0.02	0.02	0.09	0.24	0.08	0.51	0.43	0.22
84.71	Connellsville-WE	DTR	100	Cross Cr	0.10	0.23	0.15	0.02	0.02	0.09	0.24	0.08	0.51	0.43	0.22
82.87	Connellsville-WE	DTR	100	Cross Cr	0.10	0.23	0.15	0.02	0.02	0.09	0.24	0.08	0.51	0.43	0.22
220.67	Main-BPRR	DPG	181	Big Mahoning Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.24	0.10	0.48	0.45	0.22
222.54	Main-BPRR	DPG	181	Big Mahoning Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.24	0.10	0.48	0.45	0.22
221.38	Main-BPRR	DPG	181	Big Mahoning Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.24	0.10	0.48	0.45	0.22
8.85	Carbondale-DL	TTR	170	Lackawanna R	0.08	0.23	0.10	0.02	0.02	0.12	0.16	0.08	0.57	0.38	0.22
9.58	Connellsville-WE	DPG	270	Jacob's Creek	0.16	0.23	0.15	0.02	0.02	0.09	0.29	0.08	0.45	0.48	0.22
189.46	CNY-NYSW	MAR	1200	Starruca Viaduct ove	0.07	0.23	0.15	0.08	0.02	0.02	0.32	0.10	0.48	0.45	0.22
281.15	Main-BPRR	DPG	312	Bonnie Brook	0.10	0.23	0.15	0.02	0.02	0.05	0.26	0.10	0.51	0.42	0.21
226.08	Main-BPRR	TTR	190	West Mahoning Flo	0.08	0.23	0.20	0.02	0.02	0.02	0.32	0.10	0.48	0.45	0.21
68.59	Connellsville-WE	DTR	200	Miller's Run, RR	0.10	0.23	0.15	0.02	0.02	0.05	0.28	0.08	0.51	0.42	0.21

Risk Evaluation with Known and Assumed Parameters

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23.21	Indiana-BPRR	TTR	125	Crooked Creek	0.08	0.23	0.15	0.02	0.02	0.09	0.20	0.10	0.52	0.41	0.21
252.19	Main-BPRR	TPG	74.5	Pine Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.22	0.10	0.51	0.42	0.21
51.21	Main-NBER	TPG	183	Fishing Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.25	0.08	0.49	0.43	0.21
20.9801	Shawmut-BPRR	DTR	784.5	Mahoning Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.24	0.08	0.50	0.42	0.21
196.21	Main-BPRR	DPG	68	McQueens Run & H	0.13	0.23	0.15	0.02	0.09	0.05	0.21	0.10	0.48	0.45	0.21
53.31	Connellsville-WE	DPG	487.34	Hwy	0.13	0.23	0.20	0.02	0.09	0.02	0.31	0.08	0.43	0.49	0.21
188.32	Corning-LV	TPG	360	Loyalsock Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.25	0.08	0.48	0.44	0.21
202.01	Main-BPRR	TPG	76.5	Falls Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.22	0.10	0.49	0.42	0.21
275.39	Main-BPRR	TPG	65	Little Buffalo Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.21	0.10	0.51	0.41	0.21
33.62	Bell-NBER	TPG	203	Spring Crk	0.12	0.23	0.15	0.02	0.02	0.09	0.24	0.08	0.49	0.43	0.21
1010	Main-URR	CAR	241	Thompson Run	0.11	0.23	0.15	0.05	0.02	0.05	0.30	0.08	0.47	0.45	0.21
29.73	Indiana-BPRR	DPG	40	McKees Run	0.12	0.08	0.05	0.02	0.02	0.05	0.13	0.10	0.73	0.29	0.21
57.81	Shawmut-BPRR	TTR	310.08	2nd Mahoning	0.09	0.23	0.15	0.02	0.05	0.02	0.26	0.08	0.52	0.40	0.21
16.75	Main-NBER	DPG	190	Bald Eagle Cr	0.13	0.23	0.15	0.02	0.02	0.09	0.25	0.08	0.47	0.44	0.21
431	Northern-BPRR	TST	482	Stream/SR68	0.10	0.08	0.15	0.05	0.09	0.05	0.09	0.10	0.63	0.33	0.21
179.14	Main-BPRR	DPG	80	Mill Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.22	0.10	0.48	0.43	0.21
1066	Main-URR	TPG	364	NS Track, Maint Rd	0.14	0.23	0.20	0.02	0.09	0.02	0.30	0.08	0.42	0.48	0.21
1003	Main-URR	CAR	180	Leek Run, Old Will.	0.10	0.23	0.15	0.05	0.05	0.05	0.26	0.08	0.47	0.44	0.21
57.6701	Main-WNYP	DPG	96	Straw Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.21	0.10	0.50	0.41	0.20
248	Main-BPRR	DPG	54.5	North Branch Pine C	0.10	0.23	0.15	0.02	0.02	0.09	0.20	0.10	0.51	0.40	0.20

Risk Evaluation with Known and Assumed Parameters

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248.93	Main-BPRR	TPG	54	Pine Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.20	0.10	0.51	0.40	0.20
97.03	Main-WNYP	DPG	95	Wood Cock Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.21	0.10	0.50	0.41	0.20
203.75	Main-BPRR	TPG	62.5	Sandy Lick Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.21	0.10	0.50	0.41	0.20
31.08	Bell-NBER	TPG	115	Bald Eagle Crk	0.11	0.23	0.15	0.02	0.02	0.09	0.22	0.08	0.49	0.41	0.20
55.43	Shawmut-BPRR	DTR	508.3	1st Mahoning	0.11	0.23	0.15	0.02	0.02	0.02	0.29	0.08	0.50	0.40	0.20
4.86	Connellsville-WE	DPG	516	Highway, C&O RR	0.16	0.23	0.20	0.02	0.09	0.02	0.31	0.08	0.40	0.50	0.20
52.41	Post-NBER	DPG	242	Bald Eagle Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.24	0.08	0.47	0.43	0.20
1058	Main-URR	CAR	178	Breick Hollow Rd,	0.12	0.23	0.15	0.05	0.05	0.05	0.26	0.08	0.46	0.44	0.20
155.2	Buffalo-WNYP	TTR	282	Driftwood Branch	0.11	0.23	0.15	0.02	0.02	0.09	0.21	0.08	0.50	0.40	0.20
108.66	Laurel-BPRR	TTR	324	Bennett Run	0.08	0.23	0.15	0.02	0.02	0.05	0.24	0.08	0.52	0.38	0.20
39	Cresson-RJCP	DTR	130	Chest Creek	0.11	0.23	0.05	0.02	0.02	0.09	0.13	0.10	0.60	0.33	0.20
85.72	Connellsville-WE	DPG	77.5	Cross Cr	0.12	0.23	0.15	0.02	0.02	0.09	0.22	0.08	0.49	0.41	0.20
211.71	Main-BPRR	DPG	60	Stump Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.20	0.10	0.48	0.41	0.20
211.47	Main-BPRR	DPG	60	Stump Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.20	0.10	0.48	0.41	0.20
121.68	Main-BPRR	TPG	50.5	Kendall Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.20	0.10	0.50	0.40	0.20
34.09	Bell-NBER	TPG	66	Spring Crk	0.11	0.23	0.15	0.02	0.02	0.09	0.21	0.08	0.50	0.40	0.20
18.27	C&M-RJCP	DTR	260	Anderson Creek	0.15	0.23	0.05	0.02	0.02	0.09	0.17	0.08	0.56	0.35	0.20
33.36	Connellsville-WE	DPG	274	De Croix Hollow, T	0.16	0.23	0.15	0.02	0.05	0.02	0.29	0.08	0.45	0.44	0.20
173.3	Main-BPRR	TPG	46	Little Mill Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.19	0.10	0.50	0.40	0.20
1006	Main-URR	CAR	191	Thompson Run	0.10	0.23	0.15	0.05	0.02	0.05	0.27	0.08	0.47	0.41	0.20

Risk Evaluation with Known and Assumed Parameters

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1054	Main-URR	TPG	114	Bull Run, Bettis Roa	0.15	0.23	0.15	0.02	0.05	0.05	0.25	0.08	0.46	0.43	0.19
33.37	Oct-EPRR	DPG	411	Red Clay Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.22	0.08	0.48	0.40	0.19
0.01	Indiana-BPRR	DPG	160	Big Mahoning Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.19	0.10	0.49	0.40	0.19
64.01	Connellsville-WE	DPG	170	Miller's Run	0.13	0.23	0.15	0.02	0.02	0.05	0.26	0.08	0.48	0.40	0.19
6.17	Main-NBER	TPG	51	L. Bald Eagle Cr	0.10	0.23	0.15	0.02	0.02	0.09	0.20	0.08	0.50	0.38	0.19
91.22	Main-WNYP	TPG	57	PA Route 6	0.13	0.15	0.20	0.01	0.09	0.02	0.17	0.10	0.51	0.38	0.19
15.6	Main-YRC	TTR	286	Stream	0.09	0.23	0.15	0.02	0.02	0.05	0.22	0.08	0.52	0.37	0.19
33.25	Rouseville-WNYP	TTR	290	Oil Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.19	0.08	0.51	0.37	0.19
45.6	Pitts&West-BPRR	DPG	557.3	Connoquenessing Cr	0.12	0.23	0.15	0.02	0.02	0.09	0.21	0.08	0.48	0.40	0.19
4.85	Main-NBER	TPG	54	L. Bald Eagle Cr	0.11	0.23	0.15	0.02	0.02	0.09	0.20	0.08	0.49	0.39	0.19
80.84	Connellsville-WE	DPG	58.17	Cross Cr	0.12	0.23	0.15	0.02	0.02	0.09	0.20	0.08	0.49	0.39	0.19
1063	Main-URR	TTR	244	State St, Railroad St,	0.16	0.23	0.20	0.01	0.09	0.02	0.28	0.08	0.41	0.47	0.19
6.79	Main-NBER	TPG	48	L. Bald Eagle Cr	0.11	0.23	0.15	0.02	0.02	0.09	0.19	0.08	0.50	0.38	0.19
4.68	Main-NBER	TPG	50	L. Bald Eagle Cr	0.11	0.23	0.15	0.02	0.02	0.09	0.20	0.08	0.49	0.38	0.19
1007	Main-URR	CAR	172	Rt 503	0.10	0.23	0.20	0.05	0.09	0.02	0.26	0.08	0.42	0.45	0.19
1045	Main-URR	CAR	120	Bull Run, Bull Run	0.10	0.23	0.15	0.05	0.05	0.05	0.23	0.08	0.47	0.40	0.19
21.68	Connellsville-WE	DPG	350	Hwy	0.16	0.23	0.20	0.02	0.09	0.02	0.28	0.08	0.40	0.47	0.19
0.3301	Oil City-WNYP	TPG	92	French Creek Trib	0.11	0.08	0.10	0.01	0.02	0.09	0.06	0.10	0.71	0.27	0.19
43.8	Pitts&West-BPRR	DTR	292	Connoquenessing Cr	0.10	0.23	0.15	0.02	0.02	0.09	0.18	0.08	0.50	0.37	0.19
234.65	Main-BPRR	DPG	24	Gamble Run	0.14	0.23	0.05	0.02	0.02	0.05	0.17	0.10	0.56	0.33	0.19

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
10.55	P&W-AVR	DPG	77	Pine Creek	0.10	0.15	0.05	0.02	0.02	0.09	0.08	0.08	0.68	0.27	0.19
0.4	Clairton-WE	TTR	466.5	Peters Creek, RR	0.09	0.23	0.15	0.02	0.05	0.09	0.14	0.08	0.52	0.36	0.19
235.59	Main-BPRR	TPG	215	Big Mahoning Creek	0.22	0.23	0.15	0.01	0.02	0.09	0.26	0.10	0.40	0.47	0.18
182.34	Corning-LV	TPG	280	Lycoming Creek	0.21	0.23	0.15	0.01	0.02	0.09	0.27	0.08	0.41	0.45	0.18
18.4	Carbondale-DL	TTR	107	Lackawanna R	0.08	0.23	0.10	0.02	0.02	0.12	0.10	0.08	0.57	0.32	0.18
109.91	Allegheny-BPRR	DPG	260	Clarion R	0.13	0.23	0.10	0.02	0.02	0.12	0.13	0.08	0.52	0.35	0.18
217.03	Main-BPRR	DPG	75	Clover Run	0.12	0.23	0.15	0.02	0.02	0.05	0.22	0.10	0.48	0.38	0.18
217.46	Main-BPRR	DPG	75	Clover Run	0.12	0.23	0.15	0.02	0.02	0.05	0.22	0.10	0.48	0.38	0.18
196.33	Corning-LV	DPG	160	Muncy Creek	0.16	0.23	0.15	0.02	0.02	0.09	0.22	0.08	0.45	0.41	0.18
8.71	Indiana-BPRR	DPG	30	Broadhead Run	0.12	0.15	0.05	0.02	0.02	0.05	0.12	0.10	0.66	0.28	0.18
50.15	Connellsville-WE	TPG	160		0.11	0.23	0.20	0.02	0.02	0.02	0.29	0.08	0.45	0.41	0.18
79.64	Connellsville-WE	DPG	38.42	Cross Cr	0.12	0.23	0.15	0.02	0.02	0.09	0.18	0.08	0.49	0.37	0.18
277.36	Main-BPRR	MAR	16	Buffalo Creek	0.08	0.23	0.15	0.06	0.02	0.09	0.16	0.10	0.49	0.37	0.18
0.66	Pgap-NBER	DPG	107	SR 144	0.09	0.23	0.20	0.02	0.09	0.02	0.21	0.08	0.46	0.39	0.18
2.7101	Indiana-BPRR	TPG	70	Canoe Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.15	0.10	0.50	0.36	0.18
15.48	Connellsville-WE	DPG	580		0.16	0.23	0.20	0.02	0.02	0.02	0.33	0.08	0.40	0.45	0.18
68.77	Main-WNYP	TPG	40	Waid Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.16	0.10	0.50	0.36	0.18
25.88	Connellsville-WE	DPG	360	Maple Terrace Viad	0.16	0.23	0.15	0.02	0.02	0.02	0.28	0.08	0.45	0.40	0.18
2.52	Main-TCKR	DPG	108	Turtle Creek	0.08	0.15	0.05	0.02	0.02	0.09	0.07	0.08	0.70	0.26	0.18
32.4	Connellsville-WE	DTR	380	Country Rd	0.13	0.23	0.20	0.01	0.02	0.02	0.30	0.08	0.43	0.42	0.18

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
57.67	Connellsville-WE	DPG	371.5	Georges Run Viaduc	0.17	0.23	0.15	0.01	0.02	0.05	0.26	0.08	0.44	0.40	0.18
109.79	Laurel-BPRR	TPG	301	Driftwood Branch	0.10	0.23	0.15	0.02	0.02	0.09	0.17	0.08	0.50	0.35	0.18
8.51	Connellsville-WE	TTR	159.33	Twp Rd	0.11	0.23	0.20	0.01	0.05	0.02	0.25	0.08	0.45	0.39	0.18
0.8301	Tylerdale-AVR	TST	70	Chartiere's Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.18	0.08	0.49	0.36	0.18
7.76	Main-TCKR	DPG	75	Turtle Creek	0.09	0.15	0.05	0.02	0.02	0.09	0.07	0.08	0.69	0.26	0.18
0.73	Shawmut-BPRR	TPG	694.7	SR 219	0.10	0.23	0.20	0.02	0.09	0.02	0.20	0.08	0.45	0.39	0.18
171.46	Avis-LV	MAR	82	Larry Creek	0.08	0.23	0.15	0.05	0.02	0.09	0.17	0.08	0.49	0.36	0.18
35.77	Rouseville-WNYP	TPG	315	Oil Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.16	0.08	0.50	0.35	0.18
34.16	Rouseville-WNYP	TPG	315	Oil Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.16	0.08	0.50	0.35	0.18
1086	Main-URR	TTR	204	Conrail track	0.18	0.23	0.20	0.01	0.02	0.02	0.33	0.08	0.39	0.45	0.17
51.71	Connellsville-WE	TPG	295.25	W. Liberty Ave, Har	0.14	0.23	0.20	0.02	0.05	0.02	0.27	0.08	0.42	0.41	0.17
176.8	Main-BPRR	DPG	54.5	Aylworth Run/Road	0.12	0.23	0.15	0.02	0.02	0.05	0.20	0.10	0.48	0.36	0.17
42.36	Laurel-BPRR	DPG	265	Sandy Lick Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.17	0.08	0.49	0.36	0.17
92.64	Main-WNYP	DPG	75	Gravel Run Road	0.11	0.23	0.15	0.02	0.05	0.02	0.19	0.10	0.50	0.35	0.17
0.3401	Brilliant-AVR	MAR	590	Silver Lake Viaduct	0.10	0.23	0.15	0.05	0.02	0.05	0.22	0.08	0.47	0.37	0.17
84.25	Main-RBMN		215	Little Schuylkill Riv	0.13	0.23	0.10	0.05	0.02	0.12	0.13	0.08	0.50	0.35	0.17
8.19	Main-TCKR	DPG	55.5	Turtle Creek	0.06	0.15	0.05	0.02	0.02	0.09	0.05	0.08	0.71	0.24	0.17
21.46	Main-NBER	CSB	42	Adams Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.18	0.08	0.47	0.37	0.17
79.16	Connellsville-WE	SST	38.42	Cross Cr	0.12	0.23	0.15	0.05	0.02	0.09	0.18	0.08	0.45	0.37	0.17
61.44	Connellsville-WE	DPG	60	Miller's Run	0.12	0.23	0.15	0.02	0.02	0.05	0.20	0.08	0.49	0.35	0.17

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
47.95	Laurel-BPRR	DPG	246	Sandy Lick Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.16	0.08	0.49	0.35	0.17
0.33	Shawmut-BPRR	DPG	213.67	Toby Creek	0.14	0.23	0.15	0.02	0.02	0.09	0.17	0.08	0.47	0.36	0.17
76.08	Connellsville-WE	DPG	53.42	Hwy 50	0.12	0.23	0.20	0.02	0.09	0.02	0.20	0.08	0.44	0.39	0.17
126.17	Main-BPRR	TPG	34	Minard Run	0.11	0.23	0.15	0.02	0.02	0.05	0.18	0.10	0.50	0.34	0.17
24.801	Connellsville-WE	DPG	300	Trinder Viaduct	0.16	0.23	0.15	0.02	0.02	0.02	0.26	0.08	0.45	0.37	0.17
9.76	Main-NBER	CSB	28	Bald Eagle Cr	0.11	0.23	0.15	0.05	0.02	0.09	0.18	0.08	0.46	0.36	0.17
57.53	Main-WNYP	TPG	57	PA Route 6	0.11	0.23	0.20	0.02	0.09	0.02	0.17	0.10	0.45	0.38	0.17
50.78	Connellsville-WE	DPG	285	Timberland Ave, Ed	0.16	0.23	0.20	0.02	0.05	0.02	0.28	0.08	0.40	0.42	0.17
1.02	West End-WE	DPG	1050.6	Saw Mill Run	0.12	0.23	0.15	0.02	0.02	0.05	0.20	0.08	0.48	0.35	0.17
100	Main-MSUS	DTR	302.3	Canal, RR, Road	0.11	0.23	0.15	0.02	0.05	0.05	0.16	0.08	0.50	0.34	0.17
0.91	Indiana-BPRR	TTR	207	PRR	0.08	0.23	0.20	0.02	0.02	0.02	0.22	0.10	0.48	0.35	0.17
42.631	Connellsville-WE	TPG	108	C&O RR, Hwy	0.15	0.23	0.20	0.01	0.09	0.02	0.22	0.08	0.41	0.41	0.17
54.51	Laurel-BPRR	TPG	175	Sandy Lick Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.14	0.08	0.50	0.33	0.17
52.81	Connellsville-WE	DPG	150.75	Saw Mill Run Hwy	0.16	0.23	0.20	0.02	0.09	0.02	0.23	0.08	0.40	0.42	0.17
53.29	Laurel-BPRR	DPG	234	Sandy Lick Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.15	0.08	0.49	0.34	0.17
21.3601	Oil City-WNYP	TTR	130	Sugar Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.12	0.10	0.51	0.32	0.17
20.82	Connellsville-WE	DPG	140	Hwy Rt 71	0.16	0.23	0.20	0.02	0.09	0.02	0.22	0.08	0.40	0.41	0.17
44.21	Connellsville-WE	DPG	43.5	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.19	0.08	0.44	0.38	0.16
3.93	Main-NBER	TPG	46	Laurel Run	0.11	0.23	0.15	0.02	0.02	0.05	0.19	0.08	0.49	0.33	0.16
171.3	Avis-LV	TPG	101	Rt. 220	0.15	0.23	0.20	0.01	0.09	0.02	0.21	0.08	0.41	0.40	0.16

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1012	Main-URR	CAR	62	Jobe's Run	0.10	0.23	0.15	0.05	0.02	0.05	0.21	0.08	0.47	0.35	0.16
10.23	Main-WNYP	CAR	15	Swamp Equilizing	0.09	0.15	0.15	0.05	0.02	0.05	0.13	0.10	0.56	0.29	0.16
24.68	Main-NBER	TPG	45	Dick's Run	0.11	0.23	0.15	0.02	0.02	0.05	0.19	0.08	0.49	0.33	0.16
225.05	Main-BPRR	CST	64	Elk Run	0.11	0.23	0.15	0.05	0.02	0.05	0.19	0.10	0.47	0.35	0.16
1060	Main-URR	CAR	165	Camden Rd	0.12	0.23	0.20	0.05	0.05	0.02	0.26	0.08	0.41	0.40	0.16
604	Butler-BPRR	TPG	240	Connoquenessing Cr	0.11	0.23	0.15	0.02	0.02	0.09	0.14	0.08	0.50	0.33	0.16
15.35	Connellsville-WE	DPG	216.84	Twp Rd.	0.16	0.23	0.20	0.02	0.05	0.02	0.26	0.08	0.40	0.41	0.16
66.36	Connellsville-WE	DPG	38.5	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.18	0.08	0.44	0.37	0.16
65.79	Connellsville-WE	DPG	38.5	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.18	0.08	0.44	0.37	0.16
67.47	Connellsville-WE	DPG	38.42	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.18	0.08	0.44	0.37	0.16
6.26	Connellsville-WE	DPG	105.25	Highway	0.16	0.23	0.20	0.02	0.09	0.02	0.22	0.08	0.40	0.41	0.16
20.04	Indiana-BPRR	DPG	20	Stream	0.07	0.15	0.15	0.02	0.02	0.05	0.11	0.10	0.61	0.27	0.16
68.69	Connellsville-WE	DPG	36.5	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.18	0.08	0.44	0.37	0.16
64.92	Connellsville-WE	DPG	36.5	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.18	0.08	0.44	0.37	0.16
65.4	Main-RBMN		175	Stream & Road	0.13	0.23	0.15	0.05	0.05	0.05	0.19	0.08	0.45	0.36	0.16
51.68	Laurel-BPRR	DPG	220	Sandy Lick Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.14	0.08	0.49	0.33	0.16
200.7	CNY-NYSW	TPG	75	Tow Br. Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.13	0.10	0.49	0.33	0.16
104.75	Main-WNYP	CSB	104	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.19	0.10	0.47	0.35	0.16
33.97	Main-NBER	DPG	40	Bald Eagle Canal	0.11	0.23	0.15	0.02	0.02	0.05	0.19	0.08	0.49	0.33	0.16
27.79	Connellsville-WE	TPG	44.17	Hwy	0.13	0.23	0.20	0.02	0.09	0.02	0.19	0.08	0.43	0.38	0.16

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
0.25	BVRY-MSUB	DPG	150	Brandywine Creek	0.08	0.23	0.15	0.02	0.02	0.09	0.12	0.08	0.52	0.31	0.16
66.61	Main-WNYP	DPG	30	Lilley Creek	0.15	0.23	0.15	0.02	0.02	0.09	0.15	0.10	0.46	0.35	0.16
120.78	Main-BPRR	DPG	30	Foster Brook	0.13	0.23	0.15	0.02	0.02	0.05	0.18	0.10	0.48	0.34	0.16
25.75	Main-NBER	TPG	37	Dewitt's Run	0.11	0.23	0.15	0.02	0.02	0.05	0.18	0.08	0.49	0.33	0.16
174.83	Main-BPRR	DPG	29.5	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.18	0.10	0.48	0.34	0.16
42.63	Laurel-BPRR	DPG	173	Sandy Lick Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.14	0.08	0.49	0.33	0.16
107.32	Allegheny-BPRR	DPG	108	Clarion R	0.13	0.23	0.10	0.02	0.02	0.12	0.08	0.08	0.53	0.30	0.16
0.24	Tyrone-NBER	TPG	65	10th St.	0.10	0.23	0.20	0.02	0.05	0.02	0.21	0.08	0.45	0.35	0.16
5.43	Connellsville-WE	DPG	64	Highway	0.16	0.23	0.20	0.02	0.09	0.02	0.21	0.08	0.40	0.40	0.16
265.96	Main-BPRR	MAR	16	Glade Run	0.08	0.23	0.15	0.06	0.02	0.05	0.16	0.10	0.49	0.32	0.16
200.16	Main-BPRR	DPG	24	Smith Run	0.13	0.23	0.15	0.02	0.02	0.05	0.17	0.10	0.48	0.33	0.16
64.84	Connellsville-WE	DPG	26	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.17	0.08	0.44	0.36	0.16
9.24	Main-NBER	SST	16	L. Bald Eagle Cr	0.13	0.23	0.15	0.05	0.02	0.09	0.16	0.08	0.45	0.35	0.16
73.03	Connellsville-WE	DPG	25.5	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.17	0.08	0.44	0.36	0.16
17.95	Main-NBER	TPG	30	Fisher's Run	0.11	0.23	0.15	0.02	0.02	0.05	0.18	0.08	0.49	0.32	0.16
155.22	SVRR-SVRR	DPG	250	Shamokin Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.14	0.08	0.49	0.32	0.16
138.02	Main-BPRR	CSB	24	StateRoute 59	0.11	0.23	0.20	0.05	0.09	0.02	0.17	0.10	0.42	0.38	0.16
65.38	Connellsville-WE	DPG	151	RR	0.12	0.23	0.20	0.02	0.02	0.02	0.25	0.08	0.44	0.36	0.16
56.97	Allegheny-BPRR	TPG	306	Brokenstraw Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.13	0.08	0.50	0.32	0.16
65.36	Connellsville-WE	DPG	23	Hwy	0.12	0.23	0.20	0.02	0.09	0.02	0.17	0.08	0.44	0.36	0.16

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
0.75	West End-WE	TPG	365.6	Penn-Lincoln Parkw	0.11	0.23	0.20	0.02	0.09	0.02	0.16	0.08	0.45	0.35	0.16
89.31	Main-WNYP	DPG	39	Stream	0.11	0.23	0.15	0.02	0.02	0.05	0.16	0.10	0.50	0.32	0.16
79.74	Main-WNYP	TPG	40	West Center Street	0.14	0.15	0.20	0.01	0.05	0.02	0.16	0.10	0.49	0.32	0.16
1.98	Avis-LV	TPG	40	Hwy #2	0.10	0.23	0.20	0.02	0.09	0.02	0.16	0.08	0.45	0.34	0.16
17.01	Connellsville-WE	DPG	56	Hwy Rt 51	0.16	0.23	0.20	0.02	0.09	0.02	0.20	0.08	0.40	0.39	0.16
60.09	Allegheny-BPRR	TPG	213	Brokenstraw Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.13	0.08	0.50	0.31	0.16
0.83	Indiana-BPRR	MAR	60	Canoe Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.13	0.10	0.47	0.33	0.16
20.67	Main-NBER	TPG	24	Williams Run	0.11	0.23	0.15	0.02	0.02	0.05	0.17	0.08	0.50	0.31	0.16
1	Milroy-JVRR	TPG	204	Kishcoquilas Crk	0.11	0.23	0.15	0.02	0.02	0.09	0.13	0.08	0.49	0.32	0.16
53.91	Connellsville-WE	TPG	86.25	Independence St	0.14	0.23	0.20	0.02	0.05	0.02	0.23	0.08	0.42	0.37	0.16
60.45	Connellsville-WE	TPG	95.49	Washington Ave.	0.10	0.23	0.20	0.02	0.05	0.02	0.20	0.08	0.45	0.34	0.16
264.53	Main-BPRR	DPG	34	Twp Rd	0.10	0.23	0.20	0.02	0.05	0.02	0.18	0.10	0.46	0.34	0.16
267.64	Main-BPRR	DPG	34	Twp Rd 416	0.10	0.23	0.20	0.02	0.05	0.02	0.18	0.10	0.46	0.34	0.16
4.6801	Indiana-BPRR	DPG	30	Smiths Run	0.14	0.23	0.05	0.02	0.02	0.05	0.12	0.10	0.56	0.28	0.16
0.9	Connellsville-WE	CSB	54	Highway	0.14	0.23	0.20	0.04	0.09	0.02	0.20	0.08	0.40	0.39	0.15
1048	Main-URR	DPG	58	Second Ave	0.11	0.23	0.20	0.02	0.05	0.02	0.20	0.08	0.45	0.35	0.15
29.39	Main-NBER	CSB	61	Wallace Run	0.11	0.23	0.15	0.05	0.02	0.05	0.19	0.08	0.46	0.33	0.15
53.5	Laurel-BPRR	DPG	154	Sandy Lick Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.13	0.08	0.49	0.32	0.15
244.39	Main-BPRR	DPG	25	Glade Run	0.14	0.23	0.15	0.02	0.02	0.05	0.17	0.10	0.46	0.33	0.15
99.34	Main-WNYP	TPG	30	Stream	0.11	0.23	0.15	0.02	0.02	0.05	0.15	0.10	0.50	0.31	0.15

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
7.63	WBV-RJCP	DPG	603		0.13	0.23	0.20	0.02	0.02	0.02	0.24	0.08	0.43	0.36	0.15
58.88	Cresson-RJCP	DPG	855		0.13	0.23	0.20	0.02	0.02	0.02	0.22	0.10	0.43	0.35	0.15
204.28	Main-BPRR	SST	33.5	Pentz Run	0.13	0.23	0.15	0.05	0.02	0.05	0.18	0.10	0.45	0.34	0.15
65.6	Cresson-RJCP	TTR	350		0.09	0.23	0.20	0.02	0.02	0.02	0.19	0.10	0.47	0.32	0.15
203.27	Main-BPRR	SST	27	Clear Run	0.12	0.23	0.15	0.05	0.02	0.05	0.17	0.10	0.45	0.33	0.15
105.79	CNY-NYSW	DPG	249	Shohola Creek	0.23	0.23	0.15	0.01	0.02	0.09	0.19	0.10	0.38	0.39	0.15
3.91	Main-WNYP	CAR	50	Swamp equalizing	0.11	0.23	0.15	0.05	0.02	0.05	0.17	0.10	0.47	0.33	0.15
52.71	Connellsville-WE	DPG	50	Saw Mill Run	0.16	0.23	0.15	0.02	0.02	0.05	0.20	0.08	0.45	0.34	0.15
36.9	Bell-NBER	DPG	27	Logan Run	0.13	0.23	0.15	0.02	0.02	0.05	0.17	0.08	0.48	0.32	0.15
123.01	Main-BPRR	CST	74	Tunungwant Creek	0.22	0.23	0.15	0.03	0.02	0.09	0.19	0.10	0.38	0.39	0.15
222.35	Main-BPRR	SST	26	Jackson Run	0.12	0.23	0.15	0.05	0.02	0.05	0.17	0.10	0.45	0.33	0.15
1082	Main-URR	DPG	161	Turtle Creek, URR tr	0.28	0.23	0.15	0.01	0.05	0.09	0.23	0.08	0.33	0.45	0.15
102.7	Main-WNYP	DPG	38	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.15	0.10	0.48	0.31	0.15
92.85	Main-RBMN	DPG	40	Little Schuylkill Riv	0.13	0.23	0.10	0.02	0.02	0.12	0.07	0.08	0.53	0.28	0.15
91.75	Main-RBMN	DPG	40	Little Schuylkill Riv	0.13	0.23	0.10	0.02	0.02	0.12	0.07	0.08	0.53	0.28	0.15
36	Pitts&West-BPRR	DPG	151.75	Connoquenessing Cr	0.13	0.23	0.15	0.02	0.02	0.09	0.13	0.08	0.48	0.31	0.15
82.46	Main-WNYP	DPG	24	Stream	0.11	0.23	0.15	0.02	0.02	0.05	0.14	0.10	0.50	0.30	0.15
44.75	Oct-EPRR	DPG	892	Elkview Trestle	0.13	0.23	0.20	0.02	0.02	0.02	0.23	0.08	0.43	0.35	0.15
18.08	Connellsville-WE	DPG	150	Twp Rd	0.16	0.23	0.20	0.02	0.05	0.02	0.23	0.08	0.40	0.37	0.15
46.57	Connellsville-WE	DPG	37.67	Hwy	0.16	0.23	0.20	0.02	0.09	0.02	0.18	0.08	0.40	0.37	0.15

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
36.92	Connellsville-WE	DPG	72	Greens Crossing	0.16	0.23	0.15	0.02	0.02	0.02	0.21	0.08	0.45	0.33	0.15
49.5	CherryTree-RJCP	DPG	40	Creek	0.12	0.23	0.05	0.02	0.02	0.09	0.06	0.09	0.58	0.26	0.15
29.06	Indiana-BPRR	TPG	50	McKees Run	0.10	0.23	0.15	0.02	0.02	0.05	0.14	0.10	0.50	0.30	0.15
55.31	Laurel-BPRR	DPG	136	Sandy Lick Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.12	0.08	0.49	0.30	0.15
201.52	CNY-NYSW	DPG	44	Thomas Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.10	0.10	0.49	0.30	0.15
122.2	Main-SBR	CAR	83	PP&L Outflow	0.10	0.15	0.15	0.04	0.02	0.05	0.11	0.09	0.56	0.26	0.15
61.71	Connellsville-WE	DPG	50	Verner St.	0.12	0.23	0.20	0.02	0.05	0.02	0.20	0.08	0.44	0.34	0.15
121.2	Main-RBMN	TTR	190		0.09	0.23	0.20	0.02	0.02	0.02	0.20	0.08	0.47	0.31	0.15
195.46	CNY-NYSW	TPG	44	Denton Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.10	0.10	0.48	0.30	0.15
198.52	CNY-NYSW	TPG	44	New Mans Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.10	0.10	0.48	0.30	0.15
96.5	Main-WNYP	TPG	56	South Street	0.11	0.23	0.20	0.02	0.05	0.02	0.17	0.10	0.45	0.33	0.15
96.19	Main-WNYP	TPG	56	Erie Street	0.11	0.23	0.20	0.02	0.05	0.02	0.17	0.10	0.45	0.33	0.15
28.04	Main-NBER	CSB	28	Egypt Run	0.11	0.23	0.15	0.05	0.02	0.05	0.18	0.08	0.46	0.32	0.15
33.1	Bell-NBER	CSB	40	Buffalo Run	0.12	0.23	0.15	0.05	0.02	0.05	0.18	0.08	0.46	0.32	0.15
60.85	Connellsville-WE	TPG	35	Villars Ave	0.10	0.23	0.20	0.02	0.05	0.02	0.18	0.08	0.45	0.32	0.15
205.6	Main-BPRR	SST	15.5	Pentz Run	0.12	0.23	0.15	0.05	0.02	0.05	0.16	0.10	0.45	0.32	0.15
215.53	Main-BPRR	SST	16	Stream	0.12	0.23	0.15	0.05	0.02	0.05	0.16	0.10	0.45	0.32	0.15
213.82	Main-BPRR	SST	16	Stream	0.12	0.23	0.15	0.05	0.02	0.05	0.16	0.10	0.45	0.32	0.15
1024	Main-URR	TPG	102	NS track, private Rd	0.22	0.23	0.20	0.02	0.09	0.02	0.24	0.08	0.34	0.43	0.15
23.24	Allegheny-BPRR	TPG	195	Little French Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.12	0.08	0.48	0.30	0.15

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
34.32	Main-NBER	CSB	20	Stream	0.10	0.23	0.15	0.06	0.02	0.05	0.17	0.08	0.47	0.31	0.15
124.54	Main-BPRR	SST	20	Rutherford Run	0.13	0.23	0.15	0.05	0.02	0.05	0.17	0.10	0.45	0.33	0.15
27.07	Main-NBER	CSB	26	Hays Run	0.11	0.23	0.15	0.05	0.02	0.05	0.17	0.08	0.46	0.32	0.15
407	Butler-BPRR	DPG	160	Connoquenessing Cr	0.13	0.23	0.15	0.02	0.02	0.09	0.12	0.08	0.48	0.31	0.15
33.65	Main-NBER	CSB	18	Stream	0.10	0.23	0.15	0.06	0.02	0.05	0.17	0.08	0.47	0.31	0.15
19.5	Main-NBER	CSB	24	Mudlick Run	0.11	0.23	0.15	0.05	0.02	0.05	0.17	0.08	0.46	0.31	0.15
37.3	Bell-NBER	DPG	12	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.16	0.08	0.48	0.30	0.15
30.94	Main-NBER	CSB	23	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.17	0.08	0.46	0.31	0.15
1.7	Tyrone-NBER	DPG	18	Decker's Run	0.14	0.23	0.15	0.02	0.02	0.05	0.17	0.08	0.47	0.31	0.15
199.6	Main-BPRR	SST	16	Harvey Run	0.13	0.23	0.15	0.05	0.02	0.05	0.16	0.10	0.45	0.32	0.15
14.93	SVRR-SVRR	TPG	156	Shamokin Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.10	0.08	0.50	0.29	0.15
1093	Main-URR	DPG	800	Thompson Run, Chu	0.35	0.23	0.15	0.01	0.05	0.05	0.38	0.08	0.26	0.55	0.14
78.53	Connellsville-WE	SST	22.25	Hwy	0.12	0.23	0.20	0.05	0.09	0.02	0.17	0.08	0.40	0.36	0.14
77.43	Connellsville-WE	SST	22.25	Hwy	0.12	0.23	0.20	0.05	0.09	0.02	0.17	0.08	0.40	0.36	0.14
80.5	Connellsville-WE	SST	22.25	Hwy	0.12	0.23	0.20	0.05	0.09	0.02	0.17	0.08	0.40	0.36	0.14
608	Butler-BPRR	DPG	220	Connoquenessing Cr	0.13	0.23	0.15	0.02	0.02	0.09	0.11	0.08	0.48	0.30	0.14
2003	Bradford-BPRR	TPG	110.25	Tunungant Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.11	0.08	0.48	0.30	0.14
19.03	Main-NBER	CSB	18	Shingleton's Run	0.11	0.23	0.15	0.05	0.02	0.05	0.17	0.08	0.47	0.31	0.14
179.44	Ant-LV	TPG	94	Wmspt Ind	0.10	0.23	0.20	0.02	0.02	0.02	0.20	0.08	0.45	0.32	0.14
62.64	Laurel-BPRR	TPG	76	Falls Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.10	0.08	0.50	0.29	0.14

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
103.79	Allegheny-BPRR	DPG	153	Owl Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.11	0.08	0.48	0.30	0.14
54.01	Post-NBER	CSB	20	Stream	0.12	0.23	0.15	0.05	0.02	0.05	0.17	0.08	0.46	0.31	0.14
50.65	Main-NBER	CSB	52	NYC	0.11	0.23	0.15	0.05	0.02	0.02	0.20	0.08	0.46	0.31	0.14
17.13	Main-NBER	CSB	18	Thompson Run	0.11	0.23	0.15	0.05	0.02	0.05	0.17	0.08	0.46	0.31	0.14
81.3	Connellsville-WE	SST	23.67	Hwy	0.13	0.23	0.20	0.05	0.09	0.02	0.17	0.08	0.40	0.36	0.14
1.84	Tyrone-NBER	CSB	19	Spring Run	0.12	0.23	0.15	0.05	0.02	0.05	0.17	0.08	0.46	0.31	0.14
24.01	Main-NBER	CSB	15	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.47	0.31	0.14
58.3	Connellsville-WE	MAR	40	Washington Pike	0.09	0.23	0.20	0.05	0.05	0.02	0.19	0.08	0.44	0.33	0.14
29.07	Main-NBER	CSB	17	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.17	0.08	0.46	0.31	0.14
52.89	Post-NBER	CSB	11	Stream	0.10	0.23	0.15	0.06	0.02	0.05	0.16	0.08	0.47	0.30	0.14
69.94	Shawmut-BPRR	DPG	108	Limestone Run	0.13	0.23	0.15	0.02	0.02	0.05	0.16	0.08	0.48	0.30	0.14
30.95	Bell-NBER	CSB	14	Moose Run	0.11	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.47	0.31	0.14
39.671	Connellsville-WE	CAR	25	Lick Run	0.13	0.23	0.15	0.04	0.02	0.05	0.17	0.08	0.45	0.32	0.14
85.69	Laurel-BPRR	DTR	119	Bennett Branch	0.10	0.23	0.15	0.02	0.02	0.05	0.14	0.08	0.51	0.28	0.14
24.72	Allegheny-BPRR	TPG	92	Little French Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.10	0.08	0.50	0.29	0.14
31.13	Indiana-BPRR	CAR	12	Stream	0.20	0.15	0.05	0.05	0.02	0.05	0.10	0.10	0.54	0.26	0.14
26.01	Main-NBER	CSB	13	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.46	0.31	0.14
11.6	MP-SWP	DPG	301	SR 981	0.13	0.23	0.20	0.02	0.09	0.02	0.14	0.08	0.43	0.33	0.14
3.21	Main-NBER	CSB	12	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.46	0.30	0.14
74.41	Main-WNYP	DPG	40	Town Line Road	0.11	0.23	0.20	0.02	0.05	0.02	0.16	0.10	0.45	0.32	0.14

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
26.59	Main-NBER	CSB	11	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.47	0.30	0.14
1052	Main-URR	DPG	232	Delwar Rd	0.19	0.23	0.20	0.02	0.05	0.02	0.24	0.08	0.37	0.39	0.14
26.35	Allegheny-BPRR	TPG	134	Little French Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.10	0.08	0.49	0.29	0.14
1.0002	BVRY-MSUB	CST	150	Brandywine Creek	0.08	0.23	0.15	0.05	0.02	0.09	0.10	0.08	0.49	0.29	0.14
5	BVRY-MSUB	CAR	150	Brandywine Creek	0.08	0.23	0.15	0.05	0.02	0.09	0.10	0.08	0.49	0.29	0.14
5.57	Main-NBER	CSB	12	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.46	0.30	0.14
32.11	Main-NBER	SST	18	Shope's Run	0.11	0.23	0.15	0.06	0.02	0.05	0.17	0.08	0.46	0.31	0.14
166.54	Winfield-UCI	DPG	139	Buffalo Creek	0.14	0.23	0.15	0.02	0.02	0.09	0.11	0.08	0.47	0.30	0.14
0.64	Tyrone-NBER	CSB	13	Stream	0.12	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.46	0.31	0.14
22.55	Main-NBER	CSB	18	Yeager's Run	0.13	0.23	0.15	0.04	0.02	0.05	0.17	0.08	0.45	0.31	0.14
228.5	Main-BPRR	DPG	34	State Route 3010	0.14	0.23	0.20	0.02	0.05	0.02	0.18	0.10	0.41	0.34	0.14
50.36	Connellsville-WE	DPG	31.67	Whited St	0.12	0.23	0.20	0.02	0.05	0.02	0.18	0.08	0.44	0.32	0.14
53.321	WBV-RJCP	TPG	400		0.11	0.23	0.20	0.02	0.02	0.02	0.20	0.08	0.45	0.31	0.14
22.73	Indiana-BPRR	DPG	30	SR110	0.12	0.23	0.20	0.02	0.09	0.02	0.12	0.10	0.44	0.32	0.14
6.86	Wallaceton-RJCP	DPG	626		0.13	0.23	0.20	0.02	0.02	0.02	0.21	0.08	0.43	0.33	0.14
32.43	W&P-AVR	DPG	66	Vance Station rd, Cr	0.13	0.23	0.15	0.02	0.05	0.09	0.07	0.08	0.48	0.29	0.14
260.03	Main-BPRR	SST	23	SR 4021	0.10	0.23	0.20	0.06	0.05	0.02	0.17	0.10	0.42	0.33	0.14
222.89	Main-BPRR	CST	28	Flood Plain	0.12	0.23	0.15	0.04	0.02	0.02	0.18	0.10	0.46	0.31	0.14
13.52	MD & PAmain-YR	TPG	217.67	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.15	0.08	0.48	0.29	0.14
7.2601	Radebaugh-SWP	DPG	107	Sewickley Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.10	0.08	0.48	0.29	0.14

Risk Evaluation with Known and Assumed Parameters

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93.76	Main-WNYP	CAR	20	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.14	0.10	0.47	0.30	0.14
93.47	Main-WNYP	CAR	20	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.14	0.10	0.47	0.30	0.14
230.96	Main-BPRR	DPG	30	SR 3013	0.14	0.23	0.20	0.02	0.05	0.02	0.18	0.10	0.41	0.34	0.14
150.05	Buffalo-WNYP	TPG	166	Portage Run	0.11	0.23	0.15	0.02	0.02	0.05	0.14	0.08	0.50	0.28	0.14
1.51	Mait-JVRR	DPG	159	Kishcoquilas Crk	0.13	0.23	0.15	0.02	0.02	0.09	0.11	0.08	0.47	0.29	0.14
1043	Main-URR	DPG	66	Thompson Run	0.22	0.23	0.15	0.01	0.02	0.05	0.21	0.08	0.39	0.35	0.14
124.901	Main-RBMN		320		0.13	0.23	0.20	0.05	0.02	0.02	0.23	0.08	0.40	0.35	0.14
1020	Main-URR	TPG	196	Abandoned Track	0.21	0.23	0.20	0.01	0.02	0.02	0.27	0.08	0.36	0.39	0.14
85.5	Pocono-DL		106	Broadheads Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.12	0.08	0.45	0.31	0.14
12.25	Oil City-WNYP	TTR	121	Stream	0.10	0.23	0.15	0.02	0.02	0.05	0.11	0.10	0.51	0.27	0.14
5.16	Main-WNYP	CAR	24	Swamp equalizing	0.11	0.23	0.15	0.05	0.02	0.05	0.14	0.10	0.47	0.30	0.14
177.2	Avis-LV	MAR	19	Stream	0.07	0.23	0.15	0.06	0.02	0.05	0.14	0.08	0.49	0.28	0.14
122.3	M&S-RBMN		180	Mahanoy Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.12	0.08	0.45	0.31	0.14
0.51	Milroy-JVRR	TPG	118	Kishcoquilas Crk	0.10	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.27	0.14
3.25	Milroy-JVRR	DPG	153	Kishcoquilas Crk	0.13	0.23	0.15	0.02	0.02	0.09	0.10	0.08	0.47	0.29	0.14
113.91	Main-SBR	DPG	29.41	Mill Cr	0.12	0.23	0.15	0.02	0.02	0.09	0.09	0.09	0.48	0.28	0.14
4.06	P&W-AVR	TPG	80	Pine Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.09	0.08	0.50	0.28	0.14
240.73	Main-BPRR	DPG	23	SR 4026 Goodville	0.14	0.23	0.20	0.02	0.05	0.02	0.17	0.10	0.41	0.33	0.14
246.18	Main-BPRR	DPG	23	T 748	0.14	0.23	0.20	0.02	0.05	0.02	0.17	0.10	0.41	0.33	0.14
53.24	Post-NBER	CSB	34	Race	0.11	0.23	0.15	0.05	0.02	0.02	0.18	0.08	0.46	0.29	0.14

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
4.76	P&W-AVR	TPG	86	Pine Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.09	0.08	0.48	0.28	0.14
168.67	Avis-LV	MAR	15	Lawshe Run	0.07	0.23	0.15	0.06	0.02	0.05	0.13	0.08	0.49	0.28	0.14
23.06	Main-NBER	SST	14	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.44	0.31	0.14
37.69	Bell-NBER	SST	10	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.16	0.08	0.45	0.30	0.14
1.93	West End-WE	DPG	679	West Carson St	0.13	0.23	0.20	0.02	0.05	0.02	0.17	0.08	0.43	0.32	0.14
43.75	Connellsville-WE	DPG	94.84	Brownsville Rd.	0.18	0.23	0.20	0.01	0.05	0.02	0.21	0.08	0.38	0.35	0.14
32.93	Quaker-EPRR	MAR	20	Mill Creek	0.05	0.15	0.10	0.05	0.02	0.09	0.02	0.08	0.65	0.21	0.14
2.02	WBV-RJCP	DPG	402		0.13	0.23	0.20	0.02	0.02	0.02	0.20	0.08	0.43	0.31	0.14
179.72	Corning-LV	MAR	15	Dougherty Run	0.08	0.23	0.15	0.05	0.02	0.05	0.13	0.08	0.49	0.28	0.14
60.57	FM&P-SWP	TPG	75	Dunbar Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.27	0.14
185.87	Corning-LV	DPG	16	McClure Run	0.12	0.23	0.15	0.02	0.02	0.05	0.13	0.08	0.49	0.28	0.13
59.18	Connellsville-WE	CAR	30	Rd	0.10	0.23	0.20	0.05	0.05	0.02	0.18	0.08	0.42	0.32	0.13
49.43	Connellsville-WE	CAR	33	Glenbury St.	0.11	0.23	0.20	0.05	0.05	0.02	0.18	0.08	0.42	0.32	0.13
25.97	Allegheny-BPRR	TPG	106	Little French Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.27	0.13
195.84	Corning-LV	MAR	12	Wolf Run	0.07	0.23	0.15	0.07	0.02	0.05	0.13	0.08	0.49	0.27	0.13
60.83	FM&P-SWP	TPG	73	Dunbar Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.27	0.13
91.65	Buffalo-WNYP	TPG	57	Annin Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.27	0.13
605	Butler-BPRR	DPG	120	Connoquenessing Cr	0.13	0.23	0.15	0.02	0.02	0.09	0.09	0.08	0.48	0.28	0.13
1.94	Yukon-SWP	DPG	98	Sewickley Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.09	0.08	0.48	0.28	0.13
71.25	Main-RBMN	MAR	64	Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.09	0.08	0.49	0.28	0.13

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
95.29	Buffalo-WNYP	TPG	55	Two Mile creek	0.11	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.27	0.13
3.9	Main-YRC	DPG	298.5	Stream	0.16	0.23	0.15	0.02	0.02	0.05	0.15	0.08	0.45	0.30	0.13
13.03	P&W-AVR	TPG	66.75	Pine Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.26	0.13
135.15	Main-RBMN		84	Drakes Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.11	0.08	0.45	0.29	0.13
7.65	P&W-AVR	TPG	69	Pine Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.27	0.13
190.13	CNY-NYSW	CAR	280	SR 296	0.16	0.23	0.20	0.04	0.09	0.02	0.14	0.10	0.38	0.35	0.13
11.49	P&W-AVR	TPG	66	Pine Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.50	0.26	0.13
23.14	Bullskin-SWP	DPG	155	Mounts Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.09	0.08	0.48	0.27	0.13
48.93	Connellsville-WE	CAR	24	McNeilly Rd	0.11	0.23	0.20	0.05	0.05	0.02	0.17	0.08	0.42	0.31	0.13
45.38	Connellsville-WE	CAR	24	Rd	0.11	0.23	0.20	0.05	0.05	0.02	0.17	0.08	0.42	0.31	0.13
188.23	Corning-LV	DPG	94	Pond	0.21	0.23	0.15	0.01	0.02	0.05	0.18	0.08	0.41	0.32	0.13
85.24	Laurel-BPRR	DPG	152	Bennett Branch	0.12	0.23	0.15	0.02	0.02	0.05	0.13	0.08	0.49	0.27	0.13
58.36	Cresson-RJCP	DPG	365		0.13	0.23	0.20	0.02	0.02	0.02	0.18	0.10	0.43	0.31	0.13
42.09	Connellsville-WE	CAR	20	Rd	0.10	0.23	0.20	0.05	0.05	0.02	0.17	0.08	0.42	0.31	0.13
68.1	Connellsville-WE	CAR	20	Rd	0.10	0.23	0.20	0.05	0.05	0.02	0.17	0.08	0.42	0.31	0.13
41.14	Allegheny-BPRR	TPG	106	Brokenstraw Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.48	0.27	0.13
97.07	Buffalo-WNYP	TPG	50	Lille Brook Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.50	0.26	0.13
4.41	P&W-AVR	DPG	77	Pine Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.48	0.27	0.13
6.19	W&P-AVR	TPG	212	Irwin St	0.11	0.23	0.20	0.02	0.05	0.02	0.15	0.08	0.45	0.29	0.13
3.64	WBV-RJCP	DPG	422		0.13	0.23	0.20	0.02	0.02	0.02	0.19	0.08	0.43	0.30	0.13

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
118.86	Allegheny-BPRR	DPG	108	Elk Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.48	0.27	0.13
19.61	CherryTree-RJCP	DPG	372		0.13	0.23	0.20	0.02	0.02	0.02	0.19	0.08	0.43	0.30	0.13
285.001	Butler-BPRR	TPG	65	Connoquenessing Cr	0.11	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.50	0.26	0.13
91.16	CNY-NYSW	MAR	15	Bush Kill Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.07	0.10	0.47	0.28	0.13
1.74	West End-WE	DPG	443.8	Saw Mill Run	0.12	0.23	0.15	0.02	0.02	0.05	0.13	0.08	0.48	0.27	0.13
120.32	Allegheny-BPRR	DPG	106	Elk Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.48	0.27	0.13
53.59	Allegheny-BPRR	TPG	104	Little Brokenstraw C	0.13	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.48	0.27	0.13
26.54	CherryTree-RJCP	TTR	155		0.09	0.23	0.20	0.02	0.02	0.02	0.16	0.08	0.47	0.28	0.13
18.47	C&M-RJCP	TTR	180		0.09	0.23	0.20	0.02	0.02	0.02	0.16	0.08	0.47	0.28	0.13
90.21	Laurel-BPRR	DPG	88	Medix Run	0.09	0.23	0.15	0.02	0.02	0.05	0.11	0.08	0.51	0.25	0.13
27.3001	Pitts&West-BPRR	DPG	55.7	Breakneck Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.48	0.27	0.13
104.95	Buffalo-WNYP	DPG	45	Allegeny Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.50	0.26	0.13
56.98	Connellsville-WE	DPG	40	Allen St.	0.17	0.23	0.20	0.01	0.05	0.02	0.19	0.08	0.39	0.33	0.13
130.9	Main-RBMN		0	Lehigh River	0.13	0.23	0.10	0.05	0.02	0.12	0.04	0.08	0.50	0.26	0.13
100.4	Main-RBMN		0	Little Schuylkill Riv	0.13	0.23	0.10	0.05	0.02	0.12	0.04	0.08	0.50	0.26	0.13
78.45	Main-RBMN		0	Little Schuylkill Riv	0.13	0.23	0.10	0.05	0.02	0.12	0.04	0.08	0.50	0.26	0.13
89.15	Main-RBMN		0	Little Schuylkill Riv	0.13	0.23	0.10	0.05	0.02	0.12	0.04	0.08	0.50	0.26	0.13
100.2	Main-RBMN		0	Little Schuylkill Riv	0.13	0.23	0.10	0.05	0.02	0.12	0.04	0.08	0.50	0.26	0.13
14.05	P&W-AVR	TPG	57.5	Pine Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.50	0.26	0.13
0.501	Main-YRC	TPG	80	Stream	0.11	0.23	0.15	0.02	0.02	0.05	0.11	0.08	0.50	0.26	0.13

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
52.16	Connellsville-WE	SST	26	Crane Ave	0.12	0.23	0.20	0.05	0.05	0.02	0.17	0.08	0.40	0.32	0.13
8.35	P&W-AVR	TPG	60	Pine Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.50	0.26	0.13
607	Butler-BPRR	DPG	100	Connoquenessing Cr	0.13	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.48	0.27	0.13
142.75	Main-RBMN	MAR	50	Hayes Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.08	0.08	0.49	0.26	0.13
27.6	Pitts&West-BPRR	DPG	63	Breakneck Creek	0.14	0.23	0.15	0.02	0.02	0.09	0.09	0.08	0.46	0.28	0.13
27.05	Allegheny-BPRR	DPG	70	Little French Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.48	0.27	0.13
201.35	NS-NSHR	DPG	23	Sechlers Creek	0.12	0.23	0.15	0.02	0.05	0.09	0.04	0.08	0.49	0.26	0.13
39.16	Connellsville-WE	CAR	25	Twp Rd	0.13	0.23	0.20	0.04	0.05	0.02	0.17	0.08	0.40	0.32	0.13
37.85	Connellsville-WE	CAR	25	Twp Rd	0.13	0.23	0.20	0.04	0.05	0.02	0.17	0.08	0.40	0.32	0.13
31.71	Connellsville-WE	CAR	25	Twp Rd	0.13	0.23	0.20	0.04	0.05	0.02	0.17	0.08	0.40	0.32	0.13
90.22	Buffalo-WNYP	DPG	40	Newell Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.50	0.25	0.13
120	M&S-RBMN		100	Mahanoy Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.09	0.08	0.45	0.28	0.13
78.48	FM&P-SWP	TPG	60	George Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.49	0.26	0.13
71.08	FM&P-SWP	TPG	60	Redstone Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.49	0.26	0.13
1047	Main-URR	DPG	96	Buttermilk Hollow R	0.23	0.23	0.20	0.01	0.05	0.02	0.24	0.08	0.33	0.38	0.13
22.901	Bullskin-SWP	DPG	108	Mounts Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.48	0.26	0.13
17.54	Radebaugh-SWP	TPG	93	Jacob Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.50	0.25	0.13
50.75	Connellsville-WE	SST	154		0.13	0.23	0.20	0.05	0.02	0.02	0.20	0.08	0.40	0.32	0.13
121.55	M&S-RBMN		140	Mahanoy Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.09	0.08	0.45	0.28	0.13
144.9	Main-RBMN		0	Lehigh River	0.13	0.23	0.10	0.05	0.02	0.12	0.03	0.08	0.50	0.25	0.13

Risk Evaluation with Known and Assumed Parameters

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26.78	Allegheny-BPRR	DPG	64	Little French Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.48	0.26	0.12
48.07	Connellsville-WE	CAR	40	Willow Dr	0.11	0.23	0.20	0.05	0.02	0.02	0.19	0.08	0.42	0.30	0.12
66.23	Main-WNYP	TPG	31	Elgin Street	0.16	0.23	0.20	0.01	0.05	0.02	0.15	0.10	0.40	0.31	0.12
9.88	Indiana-BPRR	CAR	16	Leisure Run	0.10	0.23	0.15	0.05	0.02	0.05	0.10	0.10	0.47	0.26	0.12
13.81	Indiana-BPRR	CAR	16	Pickering Run	0.10	0.23	0.15	0.05	0.02	0.05	0.10	0.10	0.47	0.26	0.12
13.46	P&W-AVR	TPG	50	Pine Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.50	0.25	0.12
35.53	Indiana-BPRR	CAR	16	McCortney Run	0.10	0.23	0.15	0.05	0.02	0.05	0.10	0.10	0.47	0.26	0.12
161.41	Buffalo-WNYP	TPG	300	Tunnel Hill	0.11	0.23	0.20	0.02	0.02	0.02	0.17	0.08	0.45	0.28	0.12
10.96	MP-SWP	DPG	156	SR 2007	0.13	0.23	0.20	0.02	0.05	0.02	0.15	0.08	0.43	0.29	0.12
37.73	Oct-EPRR	TPG	65	White Clay Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.50	0.25	0.12
174.48	Avis-LV	SST	25	Pine Run	0.15	0.23	0.15	0.04	0.02	0.05	0.14	0.08	0.43	0.29	0.12
138.17	Main-BPRR	CAR	19	Kushequa RR	0.11	0.23	0.20	0.05	0.02	0.02	0.17	0.10	0.42	0.30	0.12
37.04	W&P-AVR	DPG	40	Interatate 70	0.13	0.23	0.20	0.02	0.15	0.02	0.04	0.08	0.43	0.29	0.12
22.88	CherryTree-RJCP	DPG	379		0.13	0.23	0.20	0.02	0.02	0.02	0.18	0.08	0.43	0.29	0.12
199.34	CNY-NYSW	DPG	39	Stream	0.12	0.23	0.15	0.02	0.02	0.05	0.10	0.10	0.48	0.26	0.12
191.52	NS-NSHR	DPG	135	Fishing Creek	0.17	0.23	0.15	0.01	0.02	0.09	0.09	0.08	0.44	0.28	0.12
17.08	Allegheny-AVR	DPG	70	Pucketa Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.48	0.26	0.12
15.73	Connellsville-WE	SST	36.5	Twp Rd.	0.16	0.23	0.20	0.04	0.05	0.02	0.18	0.08	0.38	0.33	0.12
162.88	Winfield-UCI	DPG	65	Turtle Creek	0.15	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.46	0.27	0.12
23.02	Bullskin-SWP	DPG	98	Mounts Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.48	0.26	0.12

Risk Evaluation with Known and Assumed Parameters

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190.21	CNY-NYSW	CAR	25	Cananacta Creek	0.16	0.23	0.15	0.04	0.02	0.09	0.08	0.10	0.43	0.29	0.12
113.06	CNY-NYSW	TPG	120	Holderts Creek	0.12	0.23	0.15	0.02	0.02	0.02	0.12	0.10	0.49	0.25	0.12
4.53	Mait-JVRR	DPG	96	Jacks Creek	0.14	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.47	0.26	0.12
21.34	Connellsville-WE	SST	33.5	Twp Rd	0.16	0.23	0.20	0.04	0.05	0.02	0.18	0.08	0.38	0.32	0.12
158.7	Buffalo-WNYP	TPG	80	Sterling Run	0.11	0.23	0.15	0.02	0.02	0.05	0.10	0.08	0.50	0.25	0.12
38.95	Oct-EPRR	TPG	60	White Clay Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.50	0.25	0.12
404	Butler-BPRR	DPG	80	Connoquenessing Cr	0.13	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.48	0.25	0.12
11.38	Indiana-BPRR	SST	20	Elders Run	0.12	0.23	0.15	0.05	0.02	0.05	0.11	0.10	0.45	0.27	0.12
70.821	FM&P-SWP	TPG	50	Redstone Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.49	0.25	0.12
33.8201	Indiana-BPRR	SST	20	Whites Run	0.12	0.23	0.15	0.05	0.02	0.05	0.11	0.10	0.45	0.27	0.12
34.0601	Indiana-BPRR	SST	20	Whites Run	0.12	0.23	0.15	0.05	0.02	0.05	0.11	0.10	0.45	0.27	0.12
11.17	Indiana-BPRR	SST	20	Parsons Run	0.12	0.23	0.15	0.05	0.02	0.05	0.11	0.10	0.45	0.27	0.12
44.78	Cresson-RJCP	DPG	272		0.13	0.23	0.20	0.02	0.02	0.02	0.15	0.10	0.43	0.28	0.12
28.23	Allegheny-BPRR	DPG	55	Little French Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.48	0.25	0.12
16.89	W&P-AVR	DPG	72	Peter's Creek	0.16	0.23	0.15	0.02	0.02	0.09	0.08	0.08	0.45	0.27	0.12
105.49	Laurel-BPRR	DPG	84	Mix Run	0.12	0.23	0.15	0.02	0.02	0.05	0.11	0.08	0.49	0.25	0.12
103.64	Laurel-BPRR	DPG	84	Millers Run	0.12	0.23	0.15	0.02	0.02	0.05	0.11	0.08	0.49	0.25	0.12
116.28	Buffalo-WNYP	DPG	110	Sizer Run	0.11	0.23	0.15	0.02	0.02	0.05	0.10	0.08	0.50	0.24	0.12
84.6	Pottsville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.02	0.08	0.50	0.24	0.12
82.45	Pottsville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.02	0.08	0.50	0.24	0.12

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
85.7	Pottsville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.02	0.08	0.50	0.24	0.12
88.95	Pottsville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.02	0.08	0.50	0.24	0.12
82.1	Pottsville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.02	0.08	0.50	0.24	0.12
98.45	Pottsville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.02	0.08	0.50	0.24	0.12
87.8	Pottsville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.02	0.08	0.50	0.24	0.12
78.92	Shawmut-BPRR	DPG	56.33	Glade Run	0.13	0.23	0.15	0.02	0.02	0.05	0.11	0.08	0.48	0.25	0.12
169.68	Avis-LV	MAR	16	Twp Rd	0.09	0.23	0.20	0.05	0.05	0.02	0.13	0.08	0.44	0.28	0.12
6.32	Indiana-BPRR	DPG	30	SR 1045	0.12	0.23	0.20	0.02	0.05	0.02	0.12	0.10	0.44	0.28	0.12
191.24	CNY-NYSW	DPG	96	Exchange St.	0.13	0.23	0.20	0.02	0.05	0.02	0.12	0.10	0.43	0.28	0.12
34.34	Oct-EPRR	DPG	67	Red Clay Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.48	0.25	0.12
22.79	Bullskin-SWP	DPG	90	Mounts Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.48	0.25	0.12
186.18	Corning-LV	CSB	58	Millers Run	0.17	0.23	0.15	0.03	0.02	0.05	0.14	0.08	0.42	0.29	0.12
23.95	Shawmut-BPRR	DPG	52	Hunters Run	0.13	0.23	0.15	0.02	0.02	0.05	0.11	0.08	0.48	0.25	0.12
68.42	Laurel-BPRR	DPG	20	Narrows Creek	0.10	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.51	0.24	0.12
46.9901	Oct-EPRR	DPG	92	Big Elk Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.48	0.25	0.12
154.84	SVRR-SVRR	DPG	68	Little Shamokin Crk	0.14	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.47	0.25	0.12
121.8	M&S-RBMN	MAR	60	Mahanoy Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.06	0.08	0.49	0.25	0.12
180.55	NS-NSHR	DPG	54	Briar Creek	0.15	0.23	0.15	0.02	0.02	0.09	0.07	0.08	0.46	0.26	0.12
19.22	Indiana-BPRR	SST	20	Stream	0.14	0.23	0.15	0.05	0.02	0.05	0.11	0.10	0.44	0.27	0.12
18.07	Indiana-BPRR	SST	20	Stream	0.14	0.23	0.15	0.05	0.02	0.05	0.11	0.10	0.44	0.27	0.12

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
21.96	CherryTree-RJCP	DPG	563		0.13	0.23	0.20	0.02	0.02	0.02	0.16	0.08	0.43	0.28	0.12
161.8	Winfield-UCI	DPG	45	Winfield Creek	0.14	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.47	0.25	0.12
0.27	Tyrone-NBER	SST	11	11th St.	0.14	0.23	0.20	0.05	0.05	0.02	0.16	0.08	0.39	0.30	0.12
33.13	Allegheny-BPRR	CSB	96	Little French Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.06	0.08	0.47	0.25	0.12
133.85	Main-RBMN		50	Stoney Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.08	0.08	0.45	0.26	0.12
35.97	Indiana-BPRR	DPG	38	Old US 119	0.14	0.23	0.20	0.02	0.05	0.02	0.12	0.10	0.42	0.28	0.12
86.97	Laurel-BPRR	DPG	77	Laurel Run	0.12	0.23	0.15	0.02	0.02	0.05	0.10	0.08	0.49	0.24	0.12
324.05	P&W-AVR	DPG	316	Dock Access Rd	0.13	0.23	0.20	0.02	0.05	0.02	0.13	0.08	0.43	0.27	0.12
48.62	Connellsville-WE	CAR	21	Private Dr.	0.11	0.23	0.20	0.05	0.02	0.02	0.17	0.08	0.42	0.28	0.12
1095	Main-URR	DPG	528	Brown Ave, Hunter	0.32	0.23	0.20	0.01	0.05	0.02	0.34	0.08	0.24	0.49	0.12
194.34	Corning-LV	DPG	28	Stream	0.21	0.23	0.15	0.01	0.02	0.05	0.15	0.08	0.41	0.29	0.12
39.19	Oct-EPRR	TPG	49	White Clay Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.50	0.24	0.12
433	Northern-BPRR	TST	529	Stream/Rd	0.09	0.23	0.20	0.05	0.05	0.05	0.10	0.08	0.44	0.27	0.12
28.58	W&P-AVR	DPG	64	Little Chartier's Cree	0.13	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.48	0.24	0.12
51.1	Allegheny-BPRR	DPG	45	Blue Eye Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.06	0.08	0.48	0.24	0.12
33.3	Quaker-EPRR	CAR	171	Perkiomen Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.06	0.08	0.47	0.25	0.12
2.74	Radebaugh-SWP	DPG	54	Slate Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.48	0.24	0.12
1.2	Farmers-WNYP	TTR	300	Stream	0.10	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.51	0.23	0.12
27.45	Oil City-WNYP	DPG	80	2-Mile Run	0.11	0.23	0.15	0.02	0.02	0.05	0.07	0.10	0.50	0.23	0.12
48.42	Connellsville-WE	CAR	16	Private Dr.	0.11	0.23	0.20	0.05	0.02	0.02	0.16	0.08	0.42	0.28	0.12

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
38.32	Oct-EPRR	DPG	56	White Clay Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.48	0.24	0.12
10.75	Allegheny-AVR	DPG	52.5	Plum Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.48	0.24	0.12
79.62	Main-WNYP	CAR	13	Stream	0.20	0.23	0.15	0.03	0.02	0.05	0.13	0.10	0.40	0.29	0.12
12.7	MP-SWP	DPG	230	T 752	0.13	0.23	0.20	0.02	0.05	0.02	0.13	0.08	0.43	0.27	0.12
61.48	FM&P-SWP	SST	84	Dunbar Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.07	0.08	0.45	0.26	0.12
155.61	Main-BPRR	TOP	10	Cattle Pass	0.13	0.23	0.20	0.05	0.02	0.02	0.16	0.10	0.40	0.29	0.12
1029	Main-URR	DPG	36	private Rd.	0.17	0.23	0.20	0.02	0.02	0.02	0.18	0.08	0.39	0.30	0.12
7.651	Minersville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
5.3	Minersville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
3.85	Susquehanna-RBM		0	Lackawanna R	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
6.701	Scranton-RBMN		0	Lackawanna R	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
3.2	Minersville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
2.8	Minersville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
99.45	Middleport-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
98.9	Middleport-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
5.75	Minersville-RBMN		0	Schuylkill River	0.13	0.23	0.10	0.05	0.02	0.12	0.01	0.08	0.50	0.23	0.11
41.0101	Oct-EPRR	DPG	75	White Clay Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.48	0.24	0.11
197.91	Corning-LV	CSB	25	Dewart Rd.	0.14	0.23	0.20	0.04	0.05	0.02	0.14	0.08	0.40	0.29	0.11
39.05	Cresson-RJCP	DPG	460	Flood Plane	0.13	0.23	0.20	0.02	0.02	0.02	0.14	0.10	0.43	0.27	0.11
114.35	M&S-RBMN		70	Mahanoy Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.07	0.08	0.45	0.25	0.11

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
86.1	Main-RBMN		40	Rausch's Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.07	0.08	0.45	0.25	0.11
7.68	Oil City-WNYP	TPG	107	Stream	0.11	0.23	0.15	0.02	0.02	0.05	0.07	0.10	0.50	0.23	0.11
14.69	Allegheny-BPRR	CSB	64	LeBoeuf Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.06	0.08	0.47	0.24	0.11
18.23	Allegheny-BPRR	CSB	64	Leboeuf Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.06	0.08	0.47	0.24	0.11
100.26	Pocono-DL		81	Route 611	0.13	0.23	0.20	0.05	0.09	0.02	0.10	0.08	0.40	0.29	0.11
202.07	NS-NSHR	DPG	45	Mahoning Creek	0.12	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.49	0.23	0.11
86.19	Buffalo-WNYP	CSB	28	Carpenter Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.06	0.08	0.47	0.24	0.11
0.0101	Brilliant-AVR	TPG	158.5	Hamilton Ave	0.10	0.23	0.20	0.02	0.05	0.02	0.11	0.08	0.45	0.25	0.11
87.05	Main-RBMN		37	Koenig Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.06	0.08	0.45	0.25	0.11
6.25	Carbondale-DL	TPG	35	Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.04	0.08	0.50	0.23	0.11
141	Main-RBMN		85	Hickory Run	0.13	0.23	0.15	0.05	0.02	0.05	0.11	0.08	0.45	0.25	0.11
101.28	Allegheny-BPRR	CSB	40	Owl Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.05	0.08	0.47	0.24	0.11
5.53	Farmers-WNYP	TST	100	Swamp equalizing	0.07	0.15	0.15	0.05	0.02	0.05	0.05	0.08	0.58	0.19	0.11
28.43	WN-EPRR	CSB	126.5	Brandywine Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.05	0.08	0.47	0.24	0.11
74.6	Shawmut-BPRR	DPG	34.5	Whiskey Hollow Ru	0.13	0.23	0.15	0.02	0.02	0.05	0.09	0.08	0.48	0.23	0.11
2.62	Wallaceton-RJCP	TTR	242		0.09	0.23	0.20	0.02	0.02	0.02	0.12	0.08	0.47	0.24	0.11
2.7001	Carbondale-DL	TPG	116	Roaring Brook	0.11	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.50	0.22	0.11
18.57	C&M-RJCP	TTR	140	Rail Trail	0.09	0.23	0.20	0.02	0.02	0.02	0.13	0.08	0.46	0.24	0.11
34.94	W&P-AVR	TPG	100	East Maiden St, Rt 4	0.12	0.23	0.20	0.02	0.09	0.02	0.07	0.08	0.43	0.26	0.11
85.66	Buffalo-WNYP	CSB	21	Canfield Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.05	0.08	0.47	0.24	0.11

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
115.22	Buffalo-WNYP	TPG	55	Cowley Run	0.11	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.50	0.22	0.11
38.0401	Oct-EPRR	DPG	44	White Clay Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.04	0.08	0.48	0.23	0.11
18.28	C&M-RJCP	DPG	661		0.13	0.23	0.20	0.02	0.02	0.02	0.14	0.08	0.43	0.26	0.11
2.65	Radebaugh-SWP	DPG	70	US Rt 119	0.13	0.23	0.20	0.02	0.09	0.02	0.07	0.08	0.43	0.26	0.11
144	Main-RBMN	CAR	20	Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.05	0.08	0.47	0.24	0.11
2.9	Radebaugh-SWP	DPG	40	Slate Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.04	0.08	0.48	0.23	0.11
3.55	Radebaugh-SWP	DPG	40	Slate Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.04	0.08	0.48	0.23	0.11
17.39	SVRR-SVRR	CSB	28	Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.05	0.08	0.47	0.24	0.11
37.6	Pitts&West-BPRR	TPG	52	Camp Run	0.10	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.50	0.22	0.11
440	Northern-BPRR	TST	36.5	So. Branch Bear Cre	0.09	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.49	0.23	0.11
447	Northern-BPRR	DPG	30	So. Branch Bear Cre	0.13	0.23	0.15	0.02	0.02	0.09	0.04	0.08	0.48	0.23	0.11
115.62	Main-SBR	DPG	29	Grassy Is. Cr	0.15	0.23	0.15	0.02	0.02	0.05	0.09	0.09	0.46	0.24	0.11
83.65	Main-RBMN		28	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.06	0.08	0.45	0.24	0.11
130.73	Pocono-DL	TPG	66	Roaring Brook	0.13	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.48	0.23	0.11
409	Butler-BPRR	DPG	100	Connoquenessing Cr	0.20	0.23	0.15	0.01	0.02	0.09	0.08	0.08	0.41	0.27	0.11
29.26	W&P-AVR	DPG	34	Little Chartier's Cree	0.14	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.47	0.23	0.11
4.71	Main-YRC	TPG	318.5	Dry	0.14	0.23	0.20	0.02	0.02	0.02	0.14	0.08	0.42	0.26	0.11
191.37	NS-NSHR	MAR	15	Hemlock Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.49	0.22	0.11
39.1	Cresson-RJCP	TTR	98	Gravel Access Road	0.08	0.23	0.20	0.02	0.02	0.02	0.10	0.10	0.47	0.23	0.11
101.75	Buffalo-WNYP	CSB	16	Hamilton Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.47	0.23	0.11

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
72.02	Main-WNYP	CAR	11	Cattle Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.13	0.10	0.42	0.26	0.11
30.26	W&P-AVR	DPG	34	Little Chartier's Cree	0.14	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.46	0.23	0.11
0.08	Carbon-SVRR	SST	82	Shamokin Creek	0.14	0.23	0.15	0.04	0.02	0.09	0.06	0.08	0.44	0.25	0.11
139	Main-RBMN		75	Mud Run	0.13	0.23	0.15	0.05	0.02	0.05	0.10	0.08	0.45	0.24	0.11
179.65	Corning-LV	MAR	15	Farmer crossing	0.08	0.23	0.20	0.05	0.02	0.02	0.13	0.08	0.44	0.25	0.11
23.7	Pitts&West-BPRR	SST	22	Kaufman Creek	0.12	0.23	0.15	0.05	0.02	0.09	0.05	0.08	0.45	0.24	0.11
9.53	LN-EPRR	TPG	30	Cocalico Creek	0.11	0.23	0.15	0.02	0.02	0.09	0.03	0.08	0.50	0.22	0.11
15.69	W&P-AVR	CAR	30	Peter's Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.47	0.23	0.11
37.01	W&P-AVR	CAR	30	Chartiere's Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.47	0.23	0.11
58.46	Shawmut-BPRR	DPG	23.33	Rainy Run	0.13	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.48	0.22	0.11
63	Shawmut-BPRR	DPG	23.33	Wild Cat Run	0.13	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.48	0.22	0.11
3.06	Farmers-WNYP	TPG	37	Swamp equalizing	0.08	0.15	0.15	0.02	0.02	0.05	0.04	0.08	0.60	0.18	0.11
182.88	Corning-LV	DPG	42	Rose St.	0.21	0.23	0.20	0.01	0.05	0.02	0.16	0.08	0.36	0.30	0.11
46.87	Connellsville-WE	SST	24.33	Private Rd	0.16	0.23	0.20	0.04	0.02	0.02	0.17	0.08	0.38	0.29	0.11
71.62	FM&P-SWP	SST	55	Redstone Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.05	0.08	0.45	0.24	0.11
136.65	SVRR-SVRR	DPG	52	Shamokin Creek	0.20	0.23	0.15	0.01	0.02	0.09	0.07	0.08	0.42	0.26	0.11
28.8	Pitts&West-BPRR	SST	22	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.05	0.08	0.45	0.24	0.11
17.73	WN-EPRR	CSB	52	Pocopson Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.47	0.23	0.11
109.39	Allegheny-BPRR	CSB	28	Silver Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.47	0.23	0.11
84.72	Buffalo-WNYP	DPG	45	Barden Brook	0.11	0.23	0.15	0.02	0.02	0.05	0.07	0.08	0.50	0.21	0.11

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
39.86	Connellsville-WE	SST	21.33	Private Rd	0.16	0.23	0.20	0.04	0.02	0.02	0.17	0.08	0.38	0.28	0.11
40.23	Connellsville-WE	SST	21.33	Private Rd	0.16	0.23	0.20	0.04	0.02	0.02	0.17	0.08	0.38	0.28	0.11
0.14	Brilliant-AVR	TPG	134	Frankstown Ave	0.10	0.23	0.20	0.02	0.05	0.02	0.09	0.08	0.45	0.23	0.11
130.22	Pocono-DL	TPG	58.8	Roaring Brook	0.13	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.48	0.22	0.11
38.47	Oct-EPRR	DPG	33	White Clay Creek	0.13	0.23	0.15	0.02	0.02	0.09	0.03	0.08	0.48	0.22	0.11
130.89	Pocono-DL	TPG	58.5	Roaring Brook	0.13	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.48	0.22	0.11
30.1201	W&P-AVR	DPG	34	Little Chartier's Cree	0.16	0.23	0.15	0.02	0.02	0.09	0.05	0.08	0.45	0.23	0.11
126.8	Allegheny-BPRR	MAR	16	Silver Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.49	0.22	0.11
44.25	Wharton-BPRR	TST	71.5	Sandy Lick Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.49	0.22	0.11
0.0902	Brilliant-AVR	TPG	132	Kelly St	0.10	0.23	0.20	0.02	0.05	0.02	0.09	0.08	0.45	0.23	0.11
1.65	Brilliant-AVR	TPG	166	Allegheny River Blv	0.11	0.23	0.20	0.02	0.05	0.02	0.09	0.08	0.45	0.24	0.11
47.14	Connellsville-WE	SST	18	Private Rd	0.16	0.23	0.20	0.04	0.02	0.02	0.17	0.08	0.38	0.28	0.11
15.45	W&P-AVR	CAR	40	Piney Fork Road &	0.11	0.23	0.15	0.05	0.05	0.05	0.05	0.08	0.47	0.22	0.10
8.76	Allegheny-AVR	CAR	33.25	Sandy Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.47	0.22	0.10
149.9	Main-RBMN	CAR	36	Rt. 437	0.11	0.23	0.20	0.05	0.09	0.02	0.06	0.08	0.42	0.25	0.10
105.99	CNY-NYSW	CSB	30	SR 434	0.18	0.23	0.20	0.03	0.09	0.02	0.09	0.10	0.36	0.29	0.10
155.1	SVRR-SVRR	DPG	34	Rt 61	0.12	0.23	0.20	0.02	0.09	0.02	0.05	0.08	0.43	0.24	0.10
20.1	W&P-AVR	CST	30	Peter's Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.22	0.10
197.16	CNY-NYSW	TOP	12	Stream	0.12	0.23	0.15	0.05	0.02	0.05	0.07	0.10	0.45	0.23	0.10
20.71	MD & PAmain-YR	DPG	54.5	Rd & Stream	0.13	0.23	0.15	0.02	0.05	0.05	0.04	0.08	0.48	0.22	0.10

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
16.2	Main-YRC	SST	50	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.09	0.08	0.45	0.23	0.10
28.6	Pitts&West-BPRR	SST	20	Creek	0.14	0.23	0.15	0.04	0.02	0.09	0.05	0.08	0.44	0.24	0.10
127	Pocono-DL		70	Roaring Brook	0.13	0.23	0.15	0.05	0.02	0.05	0.09	0.08	0.45	0.23	0.10
81.6	Shawmut-BPRR	CAR	20	Nicholson Run	0.11	0.23	0.15	0.05	0.02	0.05	0.08	0.08	0.47	0.22	0.10
35.96	Allegheny-BPRR	CAR	20	Oil Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.22	0.10
20.74	W&P-AVR	CST	20	Peter's Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.22	0.10
7.53	LN-EPRR	TPG	20	Little Cocalico Cree	0.11	0.23	0.15	0.02	0.02	0.09	0.02	0.08	0.50	0.21	0.10
0.0901	River-AVR	TST	847	P&W bridge approa	0.09	0.23	0.20	0.05	0.05	0.02	0.09	0.08	0.44	0.24	0.10
107.4001	Pocono-DL	TPG	18	Highway Underpass	0.10	0.23	0.20	0.02	0.09	0.02	0.04	0.08	0.45	0.23	0.10
439	Northern-BPRR	TST	24	So. Branch Bear Cre	0.11	0.23	0.15	0.04	0.02	0.09	0.03	0.08	0.47	0.22	0.10
14.3	WN-EPRR	CSB	27.5	Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.22	0.10
1.05	Greensburgh-SWP	TPG	90	Mount Pleasant St	0.11	0.23	0.20	0.02	0.05	0.02	0.09	0.08	0.45	0.23	0.10
36.68	W&P-AVR	TPG	50	Route 40	0.15	0.23	0.20	0.01	0.09	0.02	0.06	0.08	0.41	0.25	0.10
61.95	Main-WNYP	DPG	45	French Creek	0.34	0.23	0.15	0.01	0.02	0.09	0.16	0.10	0.28	0.37	0.10
20.27	W&P-AVR	SST	28	Peter's Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10
6.38	W&P-AVR	CST	18	Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.22	0.10
72.2	FM&P-SWP	CAR	18	Redstone Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.22	0.10
115.36	Main-SBR	DPG	24.5	Kirkham Cr	0.17	0.23	0.15	0.02	0.02	0.05	0.08	0.09	0.44	0.23	0.10
29.58	W&P-AVR	SST	27	Little Chartier's Cree	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10
67.55	Main-RBMN		0	Irish Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
72.55	Main-RBMN		0	Mill Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10
100.75	Main-RBMN		0	Pine Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10
102.701	Main-RBMN		0	Pine Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10
155.6	Main-RBMN		0	Wapwallow Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10
129.5	Main-RBMN		0	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10
98.1	Main-RBMN		0	Wabash Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.23	0.10
184.27	Corning-LV	CAR	11	sewer	0.11	0.23	0.20	0.05	0.02	0.02	0.13	0.08	0.42	0.24	0.10
21.51	Shawmut-BPRR	CAR	15	Swamp Run	0.11	0.23	0.15	0.05	0.02	0.05	0.07	0.08	0.47	0.22	0.10
62.13	Shawmut-BPRR	CAR	15	Pettigrew Run	0.11	0.23	0.15	0.05	0.02	0.05	0.07	0.08	0.47	0.22	0.10
47.29	Oct-EPRR	CSB	28	Big Elk Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.22	0.10
68.91	Allegheny-BPRR	MAR	20	Rodger's Run & Rd	0.06	0.23	0.15	0.08	0.05	0.05	0.03	0.08	0.49	0.21	0.10
104.85	Allegheny-BPRR	SST	24	Oil Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.22	0.10
325.39	P&W-AVR	DPG	148	Boundary St	0.13	0.23	0.20	0.02	0.05	0.02	0.09	0.08	0.43	0.24	0.10
6.7	MP-SWP	SST	75.5	Jacob's Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.22	0.10
12.7001	P&W-AVR	CSB	14	Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.22	0.10
18.78	W&P-AVR	SST	22.83	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.04	0.08	0.45	0.22	0.10
98.4	Pocono-DL		43	Route 940	0.13	0.23	0.20	0.05	0.09	0.02	0.06	0.08	0.40	0.25	0.10
76.9	Allegheny-BPRR	TPG	48	Four Mile Run	0.11	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.50	0.20	0.10
62.08	FM&P-SWP	TPG	48	Gist Run	0.11	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.50	0.20	0.10
75.15	Allegheny-BPRR	TPG	48	Six Mile Run	0.11	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.50	0.20	0.10

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
20.72	Shawmut-BPRR	DPG	33.33	Road	0.13	0.23	0.20	0.02	0.05	0.02	0.09	0.08	0.43	0.23	0.10
7.36	W&P-AVR	CST	12	Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.21	0.10
11.41	Allegheny-BPRR	CSB	12	Walnut Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.47	0.21	0.10
211.27	NS-NSHR	DPG	68	Johnson Run	0.17	0.23	0.15	0.01	0.02	0.05	0.08	0.08	0.44	0.23	0.10
71.05	Main-RBMN	MAR	36	Stream	0.09	0.23	0.15	0.05	0.02	0.05	0.06	0.08	0.49	0.21	0.10
2.92	P&W-AVR	CSB	65	Norfolk Southern U	0.13	0.23	0.20	0.04	0.09	0.02	0.06	0.08	0.41	0.24	0.10
53.66	Laurel-BPRR	DPG	26	School House Run	0.10	0.23	0.15	0.02	0.02	0.05	0.05	0.08	0.51	0.20	0.10
438	Northern-BPRR	TST	23	So. Branch Bear Cre	0.14	0.23	0.15	0.03	0.02	0.09	0.03	0.08	0.46	0.22	0.10
1.85	Farmers-WNYP	DPG	22	Swamp equalizing	0.08	0.15	0.15	0.02	0.02	0.05	0.02	0.08	0.60	0.17	0.10
70.46	Laurel-BPRR	DPG	34	Sabula Run	0.12	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.49	0.20	0.10
82.65	Allegheny-BPRR	DPG	76	Two Mile Run	0.13	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.48	0.21	0.10
115	Allegheny-BPRR	TPG	103	Ridgeway Wye Trac	0.11	0.23	0.20	0.02	0.02	0.02	0.11	0.08	0.45	0.22	0.10
129.89	Allegheny-BPRR	SST	26	Elk Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.45	0.22	0.10
11.46	W&P-AVR	SST	18	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.45	0.22	0.10
52.74	Laurel-BPRR	DPG	24	O'Donnel Run	0.10	0.23	0.15	0.02	0.02	0.05	0.05	0.08	0.51	0.19	0.10
33.64	Perk-EPRR	MAR	12	Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.49	0.20	0.10
324.47	P&W-AVR	DPG	274	Mon Con RR	0.13	0.23	0.20	0.02	0.02	0.02	0.12	0.08	0.43	0.23	0.10
37.87	Quaker-EPRR	MAR	12	Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.49	0.20	0.10
172.38	Newco-UCI	DPG	52	Stream	0.15	0.23	0.15	0.02	0.02	0.05	0.07	0.08	0.46	0.21	0.10
24.98	MD & PAmain-YR	TPG	58	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.48	0.20	0.10

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
55.25	MD & PAncb-YRC	TPG	90	Road	0.13	0.23	0.20	0.02	0.05	0.02	0.08	0.08	0.43	0.23	0.10
39.17	Quaker-EPRR	CST	20	Morgan Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.02	0.08	0.47	0.21	0.10
25.08	Perk-EPRR	TPG	30	State Route 29	0.11	0.23	0.20	0.02	0.09	0.02	0.03	0.08	0.45	0.22	0.10
11.23	W&P-AVR	SST	16	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.45	0.22	0.10
76.76	FM&P-SWP	SST	16	George Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.45	0.22	0.10
34.05	Quaker-EPRR	MAR	11	Creek	0.09	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.49	0.20	0.10
63.11	Laurel-BPRR	DPG	30	Slab Rub	0.12	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.49	0.20	0.10
64.35	Laurel-BPRR	DPG	30	Clear Run	0.12	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.49	0.20	0.10
252.93	Main-BPRR	SST	23	Stream	0.31	0.23	0.15	0.02	0.02	0.05	0.17	0.10	0.30	0.33	0.10
75.3	Main-RBMN	CST	95	State Street	0.11	0.23	0.20	0.05	0.05	0.02	0.09	0.08	0.42	0.23	0.10
0.11	West End-WE	DPG	50	Saw Mill Run	0.13	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.48	0.20	0.10
9.83	W&P-AVR	SST	15	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.03	0.08	0.45	0.22	0.10
170.2	Milton-UCI	TPG	68	Front St.	0.13	0.23	0.20	0.02	0.05	0.02	0.08	0.08	0.43	0.23	0.10
54.25	Connellsville-WE	SST	15		0.19	0.23	0.20	0.03	0.02	0.02	0.16	0.08	0.35	0.28	0.10
196.62	Corning-LV	CSB	32	Farm Road	0.17	0.23	0.20	0.03	0.02	0.02	0.15	0.08	0.37	0.26	0.10
0.22	West End-WE	DPG	48.5	Saw Mill Run	0.13	0.23	0.15	0.02	0.02	0.05	0.06	0.08	0.48	0.20	0.10
2.83	Allegheny-BPRR	CSB	75	US Route 20	0.16	0.23	0.20	0.03	0.09	0.02	0.06	0.08	0.38	0.25	0.10
13.35	Oil City-WNYP	DPG	36	McCune Run	0.11	0.23	0.15	0.02	0.02	0.05	0.03	0.10	0.50	0.19	0.10
47.79	Oct-EPRR	CSB	16	Big Elk Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.02	0.08	0.47	0.21	0.10
3.69	Main-TCKR	DPG	104		0.09	0.23	0.20	0.02	0.02	0.02	0.09	0.08	0.46	0.21	0.10

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
9.99	Oil City-WNYP	CSB	10	Stream	0.09	0.15	0.15	0.05	0.02	0.05	0.01	0.10	0.56	0.17	0.10
1.82	LN-EPRR	CSB	16	Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.02	0.08	0.47	0.20	0.10
80.7	Pottsville-RBMN		0	Stoney Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.02	0.08	0.45	0.21	0.10
5.4	Carbondale-DL		99	Market St	0.13	0.23	0.20	0.05	0.05	0.02	0.10	0.08	0.40	0.24	0.10
28.08	Cresson-RJCP	TPG	112		0.11	0.23	0.20	0.02	0.02	0.02	0.08	0.10	0.45	0.21	0.10
66.18	Main-WNYP	DPG	30	Stream	0.31	0.23	0.15	0.01	0.02	0.05	0.15	0.10	0.31	0.31	0.10
120.49	Pocono-DL		49	Roaring Brook	0.13	0.23	0.15	0.05	0.02	0.05	0.07	0.08	0.45	0.21	0.09
255.34	Main-BPRR	CSB	10	Sewer	0.27	0.23	0.15	0.02	0.02	0.02	0.16	0.10	0.33	0.29	0.09
17.67	C&M-RJCP	TPG	155		0.11	0.23	0.20	0.02	0.02	0.02	0.10	0.08	0.45	0.21	0.09
102.31	CNY-NYSW	MAR	20	Parkers Glen	0.20	0.23	0.15	0.03	0.02	0.05	0.08	0.10	0.40	0.24	0.09
104.78	CNY-NYSW	MAR	20	Waterway	0.20	0.23	0.15	0.03	0.02	0.05	0.08	0.10	0.40	0.24	0.09
40	Main-NBER	CSB	20	Lick Run	0.30	0.23	0.15	0.02	0.02	0.05	0.17	0.08	0.30	0.31	0.09
44.33	Main-NBER	CSB	20	Frank's Run	0.30	0.23	0.15	0.02	0.02	0.05	0.17	0.08	0.30	0.31	0.09
40.9	Indiana-BPRR	SST	178	Cherry Run	0.33	0.23	0.15	0.02	0.02	0.05	0.18	0.10	0.28	0.34	0.09
23.93	WBV-RJCP	SST	114		0.13	0.23	0.20	0.05	0.02	0.02	0.12	0.08	0.40	0.24	0.09
39.57	Oct-EPRR	CSB	12	White Clay Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.47	0.20	0.09
90.93	Buffalo-WNYP	CSB	64	Rock Run	0.11	0.23	0.15	0.05	0.02	0.05	0.06	0.08	0.47	0.20	0.09
7.22	Allegheny-BPRR	SST	36	PA Route 8	0.13	0.23	0.20	0.05	0.09	0.02	0.05	0.08	0.40	0.24	0.09
107.05	Pocono-DL		31	Stream	0.10	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.48	0.20	0.09
4.82	Farmers-WNYP	TST	16	Swamp equalizing	0.07	0.15	0.15	0.05	0.02	0.05	0.02	0.08	0.58	0.16	0.09

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1.24	Brilliant-AVR	MAR	185	Leach Farm Road	0.09	0.23	0.20	0.05	0.02	0.02	0.10	0.08	0.44	0.22	0.09
48.05	Oct-EPRR	CSB	10	Big Elk Creek	0.11	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.47	0.20	0.09
5.01	Carbondale-DL		94	Green Ridge St	0.13	0.23	0.20	0.05	0.05	0.02	0.09	0.08	0.40	0.23	0.09
25.73	WN-EPRR	SST	19	Brandywine Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.02	0.08	0.45	0.21	0.09
4.0601	LN-EPRR	CSB	11	Little Cocalico Cree	0.11	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.47	0.20	0.09
1096	Main-URR	DPG	50	Leechburg Rd	0.28	0.23	0.20	0.01	0.05	0.02	0.20	0.08	0.28	0.34	0.09
62.81	Cresson-RJCP	TPG	74		0.11	0.23	0.20	0.02	0.02	0.02	0.08	0.10	0.45	0.21	0.09
65.29	Cresson-RJCP	TPG	74		0.11	0.23	0.20	0.02	0.02	0.02	0.08	0.10	0.45	0.21	0.09
61.16	Cresson-RJCP	TPG	74		0.11	0.23	0.20	0.02	0.02	0.02	0.08	0.10	0.45	0.21	0.09
17.65	Allegheny-BPRR	CSB	64	Benson Run	0.11	0.23	0.15	0.05	0.02	0.05	0.06	0.08	0.47	0.20	0.09
17.23	Wallaceton-RJCP	TPG	124		0.11	0.23	0.20	0.02	0.02	0.02	0.09	0.08	0.45	0.21	0.09
258.77	Main-BPRR	SST	44	Ditch	0.31	0.23	0.15	0.02	0.02	0.02	0.19	0.10	0.29	0.32	0.09
5.67	Oil City-WNYP	DPG	27	Stream	0.11	0.23	0.15	0.02	0.02	0.05	0.03	0.10	0.50	0.19	0.09
11.3101	Oil City-WNYP	DPG	27	Stream	0.11	0.23	0.15	0.02	0.02	0.05	0.03	0.10	0.50	0.19	0.09
430	Northern-BPRR	TST	79	Stream/Driveway	0.09	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.49	0.19	0.09
2.91	Mifflin-WE	TPG	86.5		0.11	0.23	0.20	0.02	0.02	0.02	0.09	0.08	0.45	0.21	0.09
12.14	W&P-AVR	DPG	34	Lick Run	0.22	0.23	0.05	0.02	0.02	0.05	0.05	0.08	0.49	0.19	0.09
68.49	FM&P-SWP	DPG	37	Cove Run	0.13	0.23	0.15	0.02	0.02	0.05	0.05	0.08	0.48	0.19	0.09
34.15	YSRR-YSE	TST	12	Creek	0.12	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.46	0.20	0.09
405	Butler-BPRR	SST	50	Powder Mill Run	0.13	0.23	0.15	0.05	0.02	0.05	0.06	0.08	0.45	0.20	0.09

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
96.27	Laurel-BPRR	MAR	14	Johnson Run	0.07	0.23	0.15	0.07	0.02	0.05	0.04	0.08	0.49	0.19	0.09
58.31	Struthers-BPRR	CSB	58	Glade Run	0.11	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.47	0.20	0.09
50.61	CherryTree-RJCP	DPG	120		0.13	0.23	0.20	0.02	0.02	0.02	0.10	0.08	0.43	0.21	0.09
2.12	Milroy-JVRR	CSB	48	Buck Run	0.11	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.46	0.20	0.09
169.99	Milton-UCI	TPG	52	Cameron Ave.	0.13	0.23	0.20	0.02	0.05	0.02	0.07	0.08	0.43	0.21	0.09
109.24	Laurel-BPRR	SST	20	Meadow Run	0.09	0.23	0.15	0.06	0.02	0.05	0.05	0.08	0.47	0.19	0.09
62.3	Main-RBMN		0	Rt 61	0.13	0.23	0.20	0.05	0.09	0.02	0.04	0.08	0.40	0.23	0.09
47.68	Laurel-BPRR	SST	20	Emerick Run	0.09	0.23	0.15	0.06	0.02	0.05	0.05	0.08	0.47	0.19	0.09
17.93	Wallaceton-RJCP	TPG	118		0.11	0.23	0.20	0.02	0.02	0.02	0.09	0.08	0.45	0.20	0.09
37.8	WBV-RJCP	TPG	108		0.11	0.23	0.20	0.02	0.02	0.02	0.09	0.08	0.45	0.20	0.09
170.3	Main-RBMN	MAR	15	Gardner Run	0.09	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.49	0.19	0.09
8.82	Radebaugh-SWP	CST	16	Nelson Run	0.11	0.23	0.15	0.05	0.05	0.05	0.02	0.08	0.47	0.19	0.09
27.85	MD & PAmain-YR	DPG	40.5	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.05	0.08	0.48	0.19	0.09
410	Butler-BPRR	SST	114.5	Connoquenessing Cr	0.25	0.23	0.15	0.03	0.02	0.09	0.07	0.08	0.34	0.26	0.09
2.7	Main-YRC	SST	16.5	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.06	0.08	0.45	0.20	0.09
118.03	Buffalo-WNYP	CSB	22	Four Mile Run	0.11	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.47	0.19	0.09
0.401	Main-YRC	SST	16	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.06	0.08	0.45	0.20	0.09
602	Butler-BPRR	SST	107	Breakneck Creek	0.25	0.23	0.15	0.03	0.02	0.09	0.07	0.08	0.35	0.26	0.09
18.59	Cresson-RJCP	DPG	76		0.13	0.23	0.20	0.02	0.02	0.02	0.08	0.10	0.43	0.21	0.09
17.6	Susquehanna-RBM		0	Wilseys Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
6.9	Susquehanna-RBM		0	Stouts Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
11.9	Susquehanna-RBM		0	Keeler Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
24.5	Susquehanna-RBM		0	Tunkhannock Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
14.301	Susquehanna-RBM		0	Bowmans Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
14.5	Susquehanna-RBM		0	Smith Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
7.652	Susquehanna-RBM		0	Gardner Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
97.8	Middleport-RBMN		0	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
95.9	Middleport-RBMN		0	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
2.2	Minersville-RBMN		0	Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
21	Susquehanna-RBM		0	Jenkins Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
30.05	Susquehanna-RBM		0	Tagues Creek	0.13	0.23	0.15	0.05	0.02	0.09	0.01	0.08	0.45	0.20	0.09
165.58	Winfield-UCI	TPG	52	St. George St.	0.14	0.23	0.20	0.02	0.05	0.02	0.07	0.08	0.42	0.21	0.09
6.4	Main-YRC	SST	15	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.06	0.08	0.45	0.20	0.09
47.2	Pitts&West-BPRR	CSB	19	Spanglers Run	0.10	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.47	0.19	0.09
108.35	Pocono-DL		52.5	Highway	0.22	0.23	0.20	0.01	0.09	0.02	0.07	0.08	0.34	0.26	0.09
59.41	Shawmut-BPRR	SST	23	Deep Hollow Road	0.13	0.23	0.20	0.05	0.05	0.02	0.08	0.08	0.40	0.22	0.09
62.33	Shawmut-BPRR	SST	23	Road	0.13	0.23	0.20	0.05	0.05	0.02	0.08	0.08	0.40	0.22	0.09
12.31	Main-YRC	TOP	14	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.06	0.08	0.45	0.20	0.09
10	Main-TMSS	SST	20	Creek	0.14	0.23	0.15	0.05	0.02	0.09	0.02	0.08	0.43	0.21	0.09
20	Main-TMSS	SST	20	Creek	0.14	0.23	0.15	0.05	0.02	0.09	0.02	0.08	0.43	0.21	0.09

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
36.31	Rouseville-WNYP	DPG	39	Cherry Run	0.11	0.23	0.15	0.02	0.02	0.05	0.04	0.08	0.50	0.18	0.09
57.78	Laurel-BPRR	SST	25	Panther Run	0.12	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.45	0.20	0.09
21.43	Shawmut-BPRR	SST	21.17	Road	0.12	0.23	0.20	0.05	0.05	0.02	0.08	0.08	0.40	0.22	0.09
34.2	Pitts&West-BPRR	SST	26	Muntz Run	0.12	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.45	0.20	0.09
0.081	MP-SWP	DPG	40	Galley Run	0.13	0.23	0.15	0.02	0.02	0.05	0.04	0.08	0.48	0.19	0.09
15.81	Radebaugh-SWP	DPG	40	Stauffer Run	0.13	0.23	0.15	0.02	0.02	0.05	0.04	0.08	0.48	0.19	0.09
20.48	Oil City-WNYP	DPG	19	Stream	0.11	0.23	0.15	0.02	0.02	0.05	0.02	0.10	0.50	0.18	0.09
22.52	Oil City-WNYP	DPG	19	Patchen Run	0.11	0.23	0.15	0.02	0.02	0.05	0.02	0.10	0.50	0.18	0.09
0.4701	Brilliant-AVR	TPG	54	Lincoln Ave	0.11	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.45	0.20	0.09
1.111	Main-YRC	SST	12	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.45	0.20	0.09
52.33	CherryTree-RJCP	DPG	110		0.13	0.23	0.20	0.02	0.02	0.02	0.09	0.08	0.43	0.21	0.09
16.25	Carbondale-DL	TPG	52	Walnut St	0.11	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.45	0.20	0.09
10.35	Carbondale-DL	DPG	60	Constitution Ave	0.12	0.23	0.20	0.02	0.05	0.02	0.06	0.08	0.43	0.20	0.09
68.64	FM&P-SWP	DPG	28	Cove Run	0.13	0.23	0.15	0.02	0.02	0.05	0.04	0.08	0.48	0.18	0.09
149.53	SVRR-SVRR	CSB	27	Stream	0.12	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.46	0.19	0.09
606	Butler-BPRR	DPG	35	Stream	0.14	0.23	0.15	0.02	0.02	0.05	0.05	0.08	0.46	0.19	0.09
19.06	Wallaceton-RJCP	DPG	120		0.13	0.23	0.20	0.02	0.02	0.02	0.09	0.08	0.43	0.20	0.09
110.82	Allegheny-BPRR	CSB	32	Power Run	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.19	0.09
16.35	Carbondale-DL	TPG	50	Chestnut St	0.11	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.45	0.19	0.09
13	Carbondale-DL	TPG	50	Wayne St	0.11	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.45	0.19	0.09

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
46.09	Allegheny-BPRR	CSB	31	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.19	0.09
93.02	Buffalo-WNYP	CSB	14	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.19	0.09
93.73	Buffalo-WNYP	CSB	14	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.19	0.09
0.07	Grandview-BPRR	DPG	35	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.04	0.08	0.48	0.18	0.09
16.05	Carbondale-DL	TPG	48	Pine St	0.11	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.45	0.19	0.09
39.7	Pitts&West-BPRR	SST	19.8	Soap Run	0.12	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.45	0.19	0.09
191.48	NS-NSHR	TPG	30	Rupert Road	0.11	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.45	0.19	0.09
16.31	Cresson-RJCP	DPG	66		0.13	0.23	0.20	0.02	0.02	0.02	0.07	0.10	0.43	0.20	0.09
36.2	Pitts&West-BPRR	SST	21	Bessor Rd	0.13	0.23	0.15	0.05	0.05	0.02	0.05	0.08	0.45	0.19	0.09
80.4	Buffalo-WNYP	CSB	12	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.18	0.09
16.151	Cresson-RJCP	DPG	65		0.13	0.23	0.20	0.02	0.02	0.02	0.07	0.10	0.43	0.20	0.09
50.46	CherryTree-RJCP	DPG	100		0.13	0.23	0.20	0.02	0.02	0.02	0.09	0.08	0.43	0.20	0.09
7.26	Allegheny-BPRR	MAR	20	Stream	0.09	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.49	0.18	0.09
79.56	Allegheny-BPRR	CSB	27	Deer Lick Run	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.18	0.09
85.8	Pocono-DL		85		0.13	0.23	0.20	0.05	0.02	0.02	0.10	0.08	0.40	0.21	0.09
87.56	Buffalo-WNYP	CSB	10	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.18	0.09
151.82	SVRR-SVRR	MAR	12	Stream	0.10	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.48	0.18	0.09
23.61	MD & PAmain-YR	DPG	28	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.03	0.08	0.48	0.18	0.09
75.5	Main-RBMN		44	Swamp Rd	0.13	0.23	0.20	0.05	0.05	0.02	0.07	0.08	0.40	0.21	0.08
118.93	Pocono-DL	TPG	24	Market St	0.10	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.45	0.19	0.08

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
419	Northern-BPRR	TST	44	Bonnie Brook	0.11	0.23	0.15	0.04	0.02	0.05	0.03	0.08	0.48	0.18	0.08
9.25	W&P-AVR	SST	34	Street's Run	0.13	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.45	0.19	0.08
13.34	SVRR-SVRR	TPG	28	Stream	0.17	0.23	0.15	0.01	0.02	0.05	0.05	0.08	0.44	0.19	0.08
25.9	Pitts&West-BPRR	SST	17.3	Wolfe Run	0.13	0.23	0.15	0.05	0.02	0.05	0.05	0.08	0.45	0.19	0.08
8.28	MP-SWP	TST	56	Sulphur Run	0.09	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.49	0.17	0.08
109.1	M&S-RBMN		105	Main St	0.13	0.23	0.20	0.05	0.05	0.02	0.07	0.08	0.40	0.21	0.08
33.52	Quaker-EPRR	TPG	46.25	Maple St	0.11	0.23	0.20	0.02	0.05	0.02	0.04	0.08	0.45	0.19	0.08
67.22	FM&P-SWP	CSB	34	Cove Run	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.18	0.08
31.37	Allegheny-BPRR	CSB	24	Beaver Run	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.18	0.08
106.78	Allegheny-BPRR	SST	32	Milford Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.19	0.08
325.08	P&W-AVR	CSB	83	GreenField Ave	0.11	0.23	0.20	0.05	0.05	0.02	0.06	0.08	0.42	0.20	0.08
28.14	Perk-EPRR	MAR	29	Indian Creek Arch	0.09	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.49	0.17	0.08
111.1	M&S-RBMN		45	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.19	0.08
60.39	Allegheny-BPRR	SST	54	Irvine Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.19	0.08
15.46	WN-EPRR	MAR	24	Darlington Run	0.09	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.49	0.17	0.08
12.05	W&P-AVR	CST	30	Lick Run	0.13	0.23	0.15	0.04	0.02	0.05	0.04	0.08	0.45	0.19	0.08
15.71	Allegheny-BPRR	CSB	23	Banksons Run	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.18	0.08
27.3	Allegheny-BPRR	CSB	23	Bently Run	0.11	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.47	0.18	0.08
432	Northern-BPRR	TST	144	Grove St	0.09	0.23	0.20	0.05	0.05	0.02	0.05	0.08	0.44	0.19	0.08
2.68	Radebaugh-SWP	MAR	25	Jack's Run	0.09	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.49	0.17	0.08

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
69.47	FM&P-SWP	SST	30	Cove Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.19	0.08
25.3	Pitts&West-BPRR	SST	11.5	Stream	0.12	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
25.4	Perk-EPRR	DPG	52	Hosensack Road	0.13	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.43	0.19	0.08
69.74	FM&P-SWP	SST	29.67	Cove Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.19	0.08
80.85	Main-RBMN		13	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.19	0.08
117.8	Pocono-DL	DPG	28	Jubilee Rd	0.12	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.43	0.19	0.08
0.18	Carbon-SVRR	SST	38	Carbon Run	0.14	0.23	0.15	0.04	0.02	0.05	0.05	0.08	0.44	0.19	0.08
412	Butler-BPRR	TST	50.5	Bonnie Brook	0.13	0.23	0.15	0.03	0.02	0.05	0.04	0.08	0.46	0.18	0.08
6.87	W&P-AVR	CST	26	Street's Run	0.13	0.23	0.15	0.04	0.02	0.05	0.04	0.08	0.46	0.18	0.08
188.5	NS-NSHR	CSB	18	Stream	0.13	0.23	0.15	0.04	0.02	0.05	0.04	0.08	0.45	0.18	0.08
2.84	P&W-AVR	CAR	25	Girty's Run	0.12	0.23	0.15	0.04	0.02	0.05	0.04	0.08	0.46	0.18	0.08
112.8	M&S-RBMN		42	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
22.69	WBV-RJCP	DPG	65		0.13	0.23	0.20	0.02	0.02	0.02	0.08	0.08	0.43	0.19	0.08
17.5001	W&P-AVR	SST	28	Smith's Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
422	Northern-BPRR	TST	25	Bonnie Brook	0.14	0.23	0.15	0.03	0.02	0.05	0.04	0.08	0.46	0.18	0.08
34.06	W&P-AVR	TPG	50	Dunn St	0.11	0.23	0.20	0.02	0.05	0.02	0.04	0.08	0.45	0.18	0.08
34.41	Allegheny-BPRR	CSB	20	Deer Lick Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.18	0.08
35.12	W&P-AVR	DPG	79	College St	0.14	0.23	0.20	0.02	0.05	0.02	0.06	0.08	0.41	0.20	0.08
22.1	Pitts&West-BPRR	SST	16	Wolfe Run	0.14	0.23	0.15	0.04	0.02	0.05	0.04	0.08	0.44	0.19	0.08
201.66	NS-NSHR	CSB	11	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.18	0.08

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
62.801	Main-RBMN		0	Laurel Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
164.5	Main-RBMN		0	Laurel Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
166.9	Main-RBMN		0	Kellys Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
88.2	Main-RBMN		0	watereway	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
166.45	Main-RBMN		0	W. Borrow Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
31.431	WBV-RJCP	DPG	89		0.13	0.23	0.20	0.02	0.02	0.02	0.08	0.08	0.43	0.19	0.08
25.7301	Indiana-BPRR	SST	30	Getty Run	0.31	0.23	0.15	0.02	0.02	0.05	0.12	0.10	0.30	0.28	0.08
62.78	FM&P-SWP	CSB	18.5	Gist Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
0.54	MP-SWP	DPG	23.5	Galley Run	0.13	0.23	0.15	0.02	0.02	0.05	0.03	0.08	0.48	0.17	0.08
0.92	Brilliant Ind-AVR	DPG	60	Allegheny R Blvd	0.16	0.23	0.20	0.02	0.05	0.02	0.06	0.08	0.40	0.20	0.08
25.05	Allegheny-BPRR	CSB	18	Malvin Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
9.74	Allegheny-BPRR	CSB	18	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
62.8	Allegheny-BPRR	CSB	18	Jackson Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
61.36	Allegheny-BPRR	CSB	18	Scotts Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
35.05	W&P-AVR	DPG	35	Lincoln St	0.13	0.23	0.20	0.02	0.05	0.02	0.05	0.08	0.43	0.19	0.08
1.0001	NEPIP-EPRR	DPG	25	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.03	0.08	0.48	0.17	0.08
0.19	MP-SWP	DPG	22.5	Galley Run	0.13	0.23	0.15	0.02	0.02	0.05	0.03	0.08	0.48	0.17	0.08
31.63	W&P-AVR	SST	25	Cattle Pass, Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
62.87	FM&P-SWP	SST	25	Gist Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
42.56	Allegheny-BPRR	SST	25	Damon Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
12.39	W&P-AVR	DPG	41	Lick Run	0.29	0.23	0.05	0.02	0.02	0.05	0.05	0.08	0.42	0.20	0.08
2.7201	P&W-AVR	CSB	40	Bridge St	0.11	0.23	0.20	0.05	0.05	0.02	0.05	0.08	0.42	0.19	0.08
204.9	NS-NSHR	SST	14	Stream	0.12	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
15.85	P&W-AVR	CSB	20	Willow Run	0.12	0.23	0.15	0.04	0.02	0.05	0.03	0.08	0.46	0.18	0.08
57.62	Cresson-RJCP	DPG	52		0.13	0.23	0.20	0.02	0.02	0.02	0.06	0.10	0.43	0.19	0.08
12.68	WN-EPRR	CSB	24.5	Dillsworth Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
44.6001	Pitts&West-BPRR	SST	66	5th Street	0.13	0.23	0.20	0.05	0.05	0.02	0.06	0.08	0.40	0.20	0.08
32.7	Allegheny-BPRR	CSB	16	Slaughter Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
7.73	W&P-AVR	CST	16	Street's Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
33.72	Allegheny-BPRR	CSB	16	Lovell Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
72.85	FM&P-SWP	CSB	15.75	Lick Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
186.1801	NS-NSHR	SST	15	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
18.65	C&M-RJCP	TPG	74		0.11	0.23	0.20	0.02	0.02	0.02	0.07	0.08	0.45	0.18	0.08
18.52	C&M-RJCP	TPG	74		0.11	0.23	0.20	0.02	0.02	0.02	0.07	0.08	0.45	0.18	0.08
56.28	Allegheny-BPRR	SST	23	Mead Run	0.13	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.45	0.18	0.08
24.55	WN-EPRR	CSB	23.5	Lawrence Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
0.34	Greensburgh-SWP	DPG	40	Pittsburgh St	0.12	0.23	0.20	0.02	0.05	0.02	0.04	0.08	0.43	0.19	0.08
43.1	Pitts&West-BPRR	SST	18.2	New Brighton Road	0.10	0.23	0.20	0.06	0.05	0.02	0.05	0.08	0.42	0.19	0.08
0.471	Brockway-BPRR	TST	36	Walbrun Run	0.09	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.49	0.17	0.08
0.47	Brockway-BPRR	TST	36	Walbrun Run	0.09	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.49	0.17	0.08

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
446	Northern-BPRR	TST	43	So. Branch Bear Cre	0.24	0.23	0.15	0.02	0.02	0.09	0.03	0.08	0.36	0.22	0.08
63.38	FM&P-SWP	SST	22	Gist Run	0.13	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.45	0.18	0.08
1.0502	Minersville-RBMN		0	Rt 183	0.13	0.23	0.20	0.05	0.09	0.02	0.01	0.08	0.40	0.20	0.08
64.56	Pennsy-RBMN		0	Rt 222	0.13	0.23	0.20	0.05	0.09	0.02	0.01	0.08	0.40	0.20	0.08
64.95	Pennsy-RBMN		0	Rt 61	0.13	0.23	0.20	0.05	0.09	0.02	0.01	0.08	0.40	0.20	0.08
17.26	WN-EPRR	CSB	22.5	Puseys Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
36.14	Quaker-EPRR	MAR	20	Three Mile Run	0.09	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.49	0.16	0.08
38.65	Allegheny-BPRR	CSB	14	Winton Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
8.23	W&P-AVR	CST	14	Street's Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
8.46	W&P-AVR	CST	14	Street's Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
20.9	Allegheny-BPRR	CSB	14	Marauan Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
444	Northern-BPRR	TST	26	So. Branch Bear Cre	0.24	0.23	0.15	0.02	0.02	0.09	0.03	0.08	0.36	0.22	0.08
45.57	Cresson-RJCP	SST	112		0.13	0.23	0.20	0.05	0.02	0.02	0.07	0.10	0.40	0.20	0.08
169.7	Main-RBMN	MAR	15	Westminster Rd	0.09	0.23	0.20	0.05	0.05	0.02	0.04	0.08	0.44	0.18	0.08
67.91	FM&P-SWP	SST	20.75	Cove Run	0.13	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.45	0.18	0.08
0.26	Yukon-SWP	TPG	34	SR 3089	0.11	0.23	0.20	0.02	0.05	0.02	0.03	0.08	0.45	0.18	0.08
15.9801	P&W-AVR	CSB	12	Willow Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
21.35	WN-EPRR	CSB	20.5	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
8.78	W&P-AVR	CST	12	Street's Run	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08
54.86	Allegheny-BPRR	CSB	12	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.47	0.17	0.08

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
414	Butler-BPRR	TST	14	Stream	0.13	0.23	0.15	0.04	0.02	0.05	0.03	0.08	0.46	0.17	0.08
16.48	P&W-AVR	CSB	15	Willow Run	0.12	0.23	0.15	0.04	0.02	0.05	0.03	0.08	0.46	0.17	0.08
190.85	M&S-RBMN		90		0.13	0.23	0.20	0.05	0.02	0.02	0.08	0.08	0.40	0.20	0.08
18.56	WBV-RJCP	DPG	55		0.13	0.23	0.20	0.02	0.02	0.02	0.07	0.08	0.43	0.18	0.08
185.4	NS-NSHR	SST	14	Stream	0.14	0.23	0.15	0.05	0.02	0.05	0.04	0.08	0.44	0.18	0.08
36.09	Quaker-EPRR	CST	24	Three Mile Run Rd	0.11	0.23	0.15	0.05	0.05	0.02	0.02	0.08	0.47	0.17	0.08
18.04	MD & PAmain-YR	CSB	25	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.45	0.17	0.08
40.47	Quaker-EPRR	CSB	25.5	Channel	0.12	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.46	0.17	0.08
408	Butler-BPRR	SST	18	Butcher Run	0.13	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.45	0.17	0.08
15	Carbondale-DL	TPG	28	Delaware St	0.11	0.23	0.20	0.02	0.05	0.02	0.03	0.08	0.45	0.17	0.08
1094	Main-URR	DPG	44	Negley Ave	0.33	0.23	0.20	0.01	0.05	0.02	0.19	0.08	0.23	0.33	0.08
73.42	Allegheny-BPRR	SST	17	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.45	0.17	0.08
108.65	M&S-RBMN	CST	45	South 8th Street	0.11	0.23	0.20	0.05	0.05	0.02	0.04	0.08	0.42	0.19	0.08
45.37	WBV-RJCP	DPG	73		0.13	0.23	0.20	0.02	0.02	0.02	0.07	0.08	0.43	0.18	0.08
16.16	Radebaugh-SWP	CSB	18	Stauffer Run	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.17	0.08
14.67	P&W-AVR	CSB	11.75	Willow Run	0.12	0.23	0.15	0.04	0.02	0.05	0.03	0.08	0.46	0.17	0.08
55.87	MD & PAncb-YRC	MAR	20	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.17	0.08
15.05	P&W-AVR	CSB	11.5	Willow Run	0.12	0.23	0.15	0.04	0.02	0.05	0.03	0.08	0.46	0.17	0.08
14.87	P&W-AVR	CSB	11.5	Willow Run	0.12	0.23	0.15	0.04	0.02	0.05	0.03	0.08	0.46	0.17	0.08
19.91	WN-EPRR	CSB	15.25	Faucett's Run	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.08

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1.38	Mait-JVRR	DPG	50	Driveway	0.13	0.23	0.20	0.02	0.02	0.02	0.07	0.08	0.42	0.18	0.08
0.9101	Oil City-WNYP	DPG	25	Overflow	0.11	0.23	0.15	0.02	0.02	0.02	0.02	0.10	0.50	0.15	0.08
27.69	Cresson-RJCP	TPG	33		0.11	0.23	0.20	0.02	0.02	0.02	0.04	0.10	0.45	0.17	0.08
8.31	Radebaugh-SWP	CST	16	Wilson Run	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.08
441	Northern-BPRR	SST	26.5	So. Branch Bear Cre	0.26	0.23	0.15	0.03	0.02	0.09	0.04	0.08	0.34	0.23	0.08
0.1	Adrian-BPRR	TST	12	Stream	0.09	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.49	0.16	0.08
22.04	WN-EPRR	CSB	13.5	Cattle Pass/Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.08
21.36	MD & PAmain-YR	SST	19	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.45	0.17	0.08
413	Butler-BPRR	TST	13	Stream	0.15	0.23	0.15	0.03	0.02	0.05	0.03	0.08	0.45	0.17	0.08
9.33	Allegheny-BPRR	SST	12	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.45	0.17	0.08
36.04	CherryTree-RJCP	DPG	45		0.13	0.23	0.20	0.02	0.02	0.02	0.06	0.08	0.43	0.18	0.08
15.21	W&P-AVR	SST	35	Snowden Rd Underp	0.13	0.23	0.20	0.05	0.05	0.02	0.05	0.08	0.40	0.19	0.08
73.38	FM&P-SWP	SST	23	Stream	0.16	0.23	0.15	0.04	0.02	0.05	0.04	0.08	0.42	0.18	0.08
28.05	MD & PAmain-YR	SST	18	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.03	0.08	0.45	0.17	0.08
0.59	Clairton-WE	DPG	30	Public Road	0.13	0.23	0.20	0.02	0.05	0.02	0.03	0.08	0.43	0.18	0.08
13.4	Allegheny-AVR	CAR	14	Blacks Run	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.08
33.77	CherryTree-RJCP	TPG	36		0.11	0.23	0.20	0.02	0.02	0.02	0.06	0.08	0.45	0.17	0.08
39.24	WBV-RJCP	DPG	46		0.13	0.23	0.20	0.02	0.02	0.02	0.06	0.08	0.43	0.18	0.08
16.55	W&P-AVR	CAR	24.5	Snee rd, Twp 844	0.11	0.23	0.20	0.05	0.05	0.02	0.04	0.08	0.42	0.18	0.08
0.16	Grandview-BPRR	SST	20	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.45	0.17	0.08

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1.03	MP-SWP	SST	20	Galley Run	0.13	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.45	0.17	0.08
5.83	Main-TCKR	DPG	55.5		0.09	0.23	0.20	0.02	0.02	0.02	0.05	0.08	0.46	0.16	0.08
56.09	MD & PAncb-YRC	MAR	15	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.08
16.24	WN-EPRR	CSB	11	Brandywine Ck Trib	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.08
4.4001	LN-EPRR	DPG	13	Brook	0.13	0.23	0.15	0.02	0.02	0.05	0.01	0.08	0.48	0.16	0.07
40.0001	Quaker-EPRR	CST	15	Beaver Run	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.07
54.17	MD & PAncb-YRC	DPG	30	Road	0.13	0.23	0.20	0.02	0.05	0.02	0.03	0.08	0.43	0.17	0.07
34.64	W&P-AVR	CST	40	Stewart St	0.11	0.23	0.20	0.05	0.05	0.02	0.04	0.08	0.42	0.18	0.07
23.57	WN-EPRR	CSB	10	Spring Run	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.07
20.37	WN-EPRR	CSB	10	Faucett's Run	0.11	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.47	0.16	0.07
4.75	LN-EPRR	DPG	12	Stream	0.13	0.23	0.15	0.02	0.02	0.05	0.01	0.08	0.48	0.16	0.07
0.72	Cresson-RJCP	CSB	41		0.11	0.23	0.20	0.05	0.02	0.02	0.05	0.10	0.42	0.18	0.07
123.9	M&S-RBMN		44	Public Rd	0.13	0.23	0.20	0.05	0.05	0.02	0.04	0.08	0.40	0.19	0.07
10.19	Main-TCKR	CAR	25		0.05	0.15	0.20	0.05	0.02	0.02	0.02	0.08	0.55	0.14	0.07
115.55	CNY-NYSW	DPG	92	Mast Hope Creek	0.39	0.23	0.15	0.01	0.02	0.09	0.12	0.10	0.23	0.32	0.07
3	Main-TCKR	SST	24	Trib Creek	0.26	0.23	0.05	0.02	0.02	0.05	0.02	0.08	0.45	0.17	0.07
30.88	Perk-EPRR	CAR	12	Brook	0.11	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.47	0.16	0.07
70.97	FM&P-SWP	TPG	40	Dry Span	0.11	0.23	0.20	0.02	0.02	0.02	0.05	0.08	0.45	0.16	0.07
14.02	W&P-AVR	CAR	20	Rigg's Rd Underpass	0.11	0.23	0.20	0.05	0.05	0.02	0.03	0.08	0.42	0.18	0.07
7.9	Carbondale-DL	DPG	57		0.13	0.23	0.20	0.02	0.02	0.02	0.06	0.08	0.43	0.17	0.07

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
26.6601	Perk-EPRR	DPG	26.66	Treichler Road	0.13	0.23	0.20	0.02	0.05	0.02	0.03	0.08	0.43	0.17	0.07
21.73	CherryTree-RJCP	TPG	30		0.11	0.23	0.20	0.02	0.02	0.02	0.05	0.08	0.45	0.16	0.07
21.291	CherryTree-RJCP	TPG	30		0.11	0.23	0.20	0.02	0.02	0.02	0.05	0.08	0.45	0.16	0.07
38.05	WBV-RJCP	DPG	56		0.13	0.23	0.20	0.02	0.02	0.02	0.06	0.08	0.43	0.17	0.07
65.2	Main-RBMN		0	Washington Rd	0.13	0.23	0.20	0.05	0.05	0.02	0.04	0.08	0.40	0.18	0.07
145.62	Main-RBMN		0	Susquehanna St	0.13	0.23	0.20	0.05	0.05	0.02	0.04	0.08	0.40	0.18	0.07
169.5	Main-RBMN		0	Creek Rd	0.13	0.23	0.20	0.05	0.05	0.02	0.04	0.08	0.40	0.18	0.07
5.05	LN-EPRR	CSB	12	Brook	0.11	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.47	0.16	0.07
5.5001	LN-EPRR	CSB	12	Brook	0.11	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.47	0.16	0.07
5.84	LN-EPRR	CSB	11.5	Brook	0.11	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.47	0.16	0.07
10.9	Tremont-RBMN		50		0.13	0.23	0.15	0.05	0.02	0.02	0.05	0.08	0.45	0.16	0.07
34.36	Rouseville-WNYP	CSB	12	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.47	0.16	0.07
0.23	Grandview-BPRR	SST	13	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.45	0.16	0.07
6.54	LN-EPRR	CSB	11	Stream	0.11	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.47	0.15	0.07
25.28	Agway-BPRR	SST	16	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.45	0.16	0.07
25.47	Agway-BPRR	SST	16	Stream	0.13	0.23	0.15	0.05	0.02	0.05	0.02	0.08	0.45	0.16	0.07
5.9	LN-EPRR	CSB	10	Dead Water	0.11	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.47	0.15	0.07
61.68	FM&P-SWP	SST	24	Gist Run	0.19	0.23	0.15	0.03	0.02	0.05	0.04	0.08	0.40	0.18	0.07
11.31	Cresson-RJCP	CSB	34		0.11	0.23	0.20	0.05	0.02	0.02	0.04	0.10	0.42	0.17	0.07
1.8	LN-EPRR	DPG	24	Chapel Hill Road	0.13	0.23	0.20	0.02	0.05	0.02	0.02	0.08	0.43	0.17	0.07

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
31	Oct-EPRR	CSB	27	Hillendale Road	0.11	0.23	0.20	0.05	0.05	0.02	0.03	0.08	0.42	0.17	0.07
13.15	WN-EPRR	CSB	21.5	Pyles Road	0.11	0.23	0.20	0.05	0.05	0.02	0.03	0.08	0.42	0.17	0.07
21.7	CherryTree-RJCP	MAR	30		0.09	0.23	0.20	0.05	0.02	0.02	0.05	0.08	0.44	0.16	0.07
23.51	Perk-EPRR	DPG	20	Third St	0.13	0.23	0.20	0.02	0.05	0.02	0.02	0.08	0.43	0.16	0.07
63.77	FM&P-SWP	SST	20	Laurel Run	0.19	0.23	0.15	0.03	0.02	0.05	0.03	0.08	0.40	0.18	0.07
63.1101	FM&P-SWP	SST	20	Gist Run	0.19	0.23	0.15	0.03	0.02	0.05	0.03	0.08	0.40	0.18	0.07
29.84	CherryTree-RJCP	DPG	31		0.13	0.23	0.20	0.02	0.02	0.02	0.05	0.08	0.43	0.16	0.07
23.9301	Perk-EPRR	CSB	24	Sixth Ave	0.11	0.23	0.20	0.05	0.05	0.02	0.03	0.08	0.42	0.17	0.07
37.67	Quaker-EPRR	CST	24	Rich Hill Rd	0.11	0.23	0.20	0.05	0.05	0.02	0.02	0.08	0.42	0.17	0.07
35.26	Quaker-EPRR	CST	24	Eight St	0.11	0.23	0.20	0.05	0.05	0.02	0.02	0.08	0.42	0.17	0.07
113.52	Pocono-DL	DPG	26		0.12	0.23	0.20	0.02	0.02	0.02	0.05	0.08	0.44	0.16	0.07
24.7	Cresson-RJCP	DPG	24		0.13	0.23	0.20	0.02	0.02	0.02	0.03	0.10	0.43	0.16	0.07
20.3	Susquehanna-RBM		0	Mill Run	0.13	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.45	0.16	0.07
124.15	M&S-RBMN		0	Big Run	0.13	0.23	0.15	0.05	0.02	0.05	0.01	0.08	0.45	0.16	0.07
24.0101	W&P-AVR	SST	18	Gillikson Rd	0.13	0.23	0.20	0.05	0.05	0.02	0.03	0.08	0.40	0.17	0.07
31.99	CherryTree-RJCP	DPG	28		0.13	0.23	0.20	0.02	0.02	0.02	0.05	0.08	0.43	0.16	0.07
19.04	C&M-RJCP	TPG	44		0.11	0.23	0.20	0.02	0.02	0.02	0.04	0.08	0.45	0.15	0.07
34.68	Perk-EPRR	DPG	13.5	Quarry Road	0.13	0.23	0.20	0.02	0.05	0.02	0.02	0.08	0.43	0.16	0.07
43.9	CherryTree-RJCP	MAR	32		0.09	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.44	0.16	0.07
37.05	Cresson-RJCP	CSB	24		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.10	0.42	0.16	0.07

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
37.691	CherryTree-RJCP	DPG	24		0.13	0.23	0.20	0.02	0.02	0.02	0.04	0.08	0.43	0.16	0.07
10.03	Cresson-RJCP	CSB	23		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.10	0.42	0.16	0.07
15.29	Cresson-RJCP	CSB	23		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.10	0.42	0.16	0.07
442	Northern-BPRR	TST	33.75	Stream	0.22	0.23	0.15	0.03	0.02	0.05	0.03	0.08	0.38	0.18	0.07
18.82	Allegheny-BPRR	CSB	18	Cattle Pass	0.11	0.23	0.15	0.05	0.02	0.02	0.03	0.08	0.47	0.14	0.07
19.4	Pitts&West-BPRR	SST	22.5	Twp Rd	0.19	0.23	0.20	0.03	0.05	0.02	0.05	0.08	0.35	0.19	0.07
1.0501	CV-EPRR	DPG	15	Borough Line Rd	0.13	0.23	0.20	0.02	0.05	0.02	0.01	0.08	0.43	0.16	0.07
18.02	Cresson-RJCP	CSB	22		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.10	0.42	0.16	0.07
2001	Bradford-BPRR	TPG	164.67	Tunungant Creek	0.40	0.23	0.15	0.01	0.02	0.09	0.12	0.08	0.22	0.31	0.07
37.08	Perk-EPRR	CSB	15	Second Street	0.11	0.23	0.20	0.05	0.05	0.02	0.02	0.08	0.42	0.16	0.07
25.44	Perk-EPRR	SST	23	Hosensack Road	0.13	0.23	0.20	0.05	0.05	0.02	0.02	0.08	0.40	0.17	0.07
92.5	Pottsville-RBMN		0	Centre St	0.13	0.23	0.20	0.05	0.05	0.02	0.02	0.08	0.40	0.17	0.07
83.45	Pottsville-RBMN		0	E Market St	0.13	0.23	0.20	0.05	0.05	0.02	0.02	0.08	0.40	0.17	0.07
198.91	Corning-LV	SST	33	Turkey Run	0.38	0.23	0.15	0.02	0.02	0.05	0.15	0.08	0.23	0.29	0.07
3.1	LN-EPRR	CSB	16	Mail Route Rd	0.11	0.23	0.20	0.05	0.05	0.02	0.02	0.08	0.42	0.16	0.07
12.74	Cresson-RJCP	SST	39		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.10	0.40	0.17	0.07
109.15	Main-RBMN		25		0.13	0.23	0.20	0.05	0.02	0.02	0.05	0.08	0.40	0.17	0.07
33.99	WBV-RJCP	DPG	22		0.13	0.23	0.20	0.02	0.02	0.02	0.04	0.08	0.43	0.15	0.07
147.25	Main-RBMN		0		0.13	0.23	0.20	0.02	0.02	0.02	0.04	0.08	0.43	0.15	0.07
85.6	Pocono-DL		28		0.13	0.23	0.20	0.05	0.02	0.02	0.05	0.08	0.40	0.16	0.06

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
18.36	Irvona-RJCP	DPG	33		0.13	0.23	0.20	0.02	0.02	0.02	0.04	0.08	0.43	0.15	0.06
50.4	Pitts&West-BPRR	CSB	13	Private Rd	0.11	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.42	0.16	0.06
15.601	Tremont-RBMN	SST	50		0.13	0.23	0.20	0.05	0.02	0.02	0.05	0.08	0.40	0.16	0.06
30.24	Cresson-RJCP	CSB	14		0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.10	0.42	0.15	0.06
24.04	WBV-RJCP	CAR	22		0.11	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.42	0.15	0.06
5.751	Tremont-RBMN		68		0.13	0.23	0.20	0.05	0.02	0.02	0.05	0.08	0.40	0.16	0.06
15.42	W&P-AVR	CAR	27	Abandoned PV&C	0.11	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.42	0.15	0.06
4.671	Irvona-RJCP	DPG	30		0.13	0.23	0.20	0.02	0.02	0.02	0.03	0.08	0.43	0.15	0.06
92.2	Main-RBMN		17	Private Rd	0.13	0.23	0.20	0.05	0.02	0.02	0.05	0.08	0.40	0.16	0.06
49.48	CherryTree-RJCP	SST	25		0.13	0.23	0.20	0.05	0.02	0.02	0.05	0.08	0.40	0.16	0.06
31.61	Cresson-RJCP	SST	19		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.10	0.40	0.16	0.06
167.73	Winfield-UCI	MAR	12		0.10	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.43	0.15	0.06
43.77	CherryTree-RJCP	SST	24		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.16	0.06
108.6	Main-RBMN		16		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.16	0.06
52.49	CherryTree-RJCP	SST	24		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.16	0.06
46.66	WBV-RJCP	CSB	18		0.11	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.42	0.15	0.06
1.29	Mifflin-WE	CAR	24		0.11	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.42	0.15	0.06
31.54	Wallaceton-RJCP	CSB	24		0.11	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.42	0.15	0.06
424	Northern-BPRR	SST	30	Bonnie Brook	0.26	0.23	0.15	0.03	0.02	0.05	0.04	0.08	0.34	0.19	0.06
0.57	Mifflin-WE	CAR	23		0.11	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.42	0.15	0.06

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1.95	Scranton-RBMN		0	Lonesome Rd	0.13	0.23	0.20	0.05	0.05	0.02	0.01	0.08	0.40	0.16	0.06
64.85	Pennsy-RBMN		0	West Huller Lane	0.13	0.23	0.20	0.05	0.05	0.02	0.01	0.08	0.40	0.16	0.06
69.95	Pennsy-RBMN		0	Mohrsville Rd	0.13	0.23	0.20	0.05	0.05	0.02	0.01	0.08	0.40	0.16	0.06
72.35	Pennsy-RBMN		0	Water St	0.13	0.23	0.20	0.05	0.05	0.02	0.01	0.08	0.40	0.16	0.06
0.15	Scranton-RBMN		0	Main St	0.13	0.23	0.20	0.05	0.05	0.02	0.01	0.08	0.40	0.16	0.06
0.1501	Susquehanna-RBM		0	D&H Railway	0.13	0.23	0.20	0.05	0.05	0.02	0.01	0.08	0.40	0.16	0.06
13.95	Susquehanna-RBM		0	Creek Rd	0.13	0.23	0.20	0.05	0.05	0.02	0.01	0.08	0.40	0.16	0.06
420	Northern-BPRR	TST	13	Stream	0.24	0.23	0.15	0.02	0.02	0.05	0.03	0.08	0.36	0.17	0.06
34.27	Wallaceton-RJCP	CSB	21		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.42	0.15	0.06
46.99	WBV-RJCP	CSB	14		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.42	0.15	0.06
44.1	WBV-RJCP	CSB	14		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.42	0.15	0.06
30.941	Cresson-RJCP	SST	13		0.13	0.23	0.20	0.05	0.02	0.02	0.02	0.10	0.40	0.15	0.06
107.3	Main-RBMN		0		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.15	0.06
63.7	Main-RBMN		0		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.15	0.06
39.391	CherryTree-RJCP	SST	18		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.15	0.06
145	Main-RBMN		0		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.15	0.06
173.8	Main-RBMN		0	Cork Lane	0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.15	0.06
49.58	CherryTree-RJCP	SST	17		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.15	0.06
283.79	Butler-BPRR	SST	24	Stream	0.26	0.23	0.15	0.03	0.02	0.05	0.04	0.08	0.34	0.18	0.06
46.56	WBV-RJCP	CSB	12		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.42	0.14	0.06

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
35.17	Cresson-RJCP	SST	11		0.13	0.23	0.20	0.05	0.02	0.02	0.02	0.10	0.40	0.15	0.06
117.51	Main-SBR	DPG	100	Blooming Grove Cr	0.52	0.15	0.15	0.00	0.02	0.09	0.15	0.09	0.17	0.35	0.06
42.801	WBV-RJCP	SST	18		0.13	0.23	0.20	0.05	0.02	0.02	0.04	0.08	0.40	0.15	0.06
12.7002	Carbondale-DL	DPG	22		0.13	0.23	0.20	0.02	0.02	0.02	0.03	0.08	0.43	0.14	0.06
8.15	Carbondale-DL	DPG	22		0.13	0.23	0.20	0.02	0.02	0.02	0.03	0.08	0.43	0.14	0.06
284.13	Butler-BPRR	SST	22	Stream	0.26	0.23	0.15	0.03	0.02	0.05	0.03	0.08	0.34	0.18	0.06
8.751	Irvona-RJCP	CSB	24		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.42	0.14	0.06
2.63	Mifflin-WE	CAR	15		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.42	0.14	0.06
51.2	WBV-RJCP	SST	15		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.15	0.06
35.46	CherryTree-RJCP	SST	12		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.15	0.06
47.24	WBV-RJCP	SST	14		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.15	0.06
5.6	LN-EPRR	CSB	11.5	Flood Channel	0.11	0.23	0.15	0.05	0.02	0.02	0.01	0.08	0.47	0.13	0.06
12.12	Irvona-RJCP	CSB	20		0.11	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.42	0.14	0.06
16.38	Wallaceton-RJCP	SST	19		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.14	0.06
23.58	W&P-AVR	SST	18	Farm Pass	0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.14	0.06
43.84	Oct-EPRR	DPG	20	Private Rd	0.13	0.23	0.20	0.02	0.02	0.02	0.02	0.08	0.43	0.13	0.06
24.96	W&P-AVR	CST	10.83	Cattle Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.14	0.06
28.83	Oct-EPRR	DPG	19	Mendenhall Drive	0.13	0.23	0.20	0.02	0.02	0.02	0.02	0.08	0.43	0.13	0.06
14	Tremont-RBMN		30		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.14	0.06
17.601	Tremont-RBMN	SST	30		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.14	0.06

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
1.6	Main-MTC	CAR	30		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.14	0.06
12.8	MD & PAmain-YR	MAR	15		0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.14	0.06
14.38	Irvona-RJCP	SST	23		0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.14	0.06
13.76	WN-EPRR	CSB	15.25	Cattle Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.13	0.06
17.42	WN-EPRR	CSB	15	Cattle Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.13	0.06
41.7001	Oct-EPRR	CSB	20	Private Rd	0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.13	0.06
16.65	Carbondale-DL	SST	22		0.12	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.14	0.06
28.5801	WN-EPRR	CSB	13.5	Cattel Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.13	0.06
41.0001	Quaker-EPRR	CSB	18	Pumping Sta Rd	0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.13	0.06
30.39	Perk-EPRR	SST	24	Farm Pass	0.13	0.23	0.20	0.05	0.02	0.02	0.03	0.08	0.40	0.14	0.06
14.65	WN-EPRR	CSB	13	Cattle Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.13	0.06
10.81	Irvona-RJCP	SST	19		0.13	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.40	0.14	0.06
70.62	Shawmut-BPRR	SST	23.33	Tarrtown Run	0.36	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.25	0.22	0.05
70.82	Shawmut-BPRR	SST	23.33	Logtown Run	0.36	0.23	0.15	0.02	0.02	0.05	0.08	0.08	0.25	0.22	0.05
27.46	WN-EPRR	CSB	11.5	Cattle Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.13	0.05
2.35	Carbondale-DL	DPG	28.5	Concrete Lined Cha	0.32	0.15	0.20	0.02	0.02	0.05	0.03	0.08	0.31	0.18	0.05
0.1801	Clairton-WE	CAR	10		0.11	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.42	0.13	0.05
35.86	Oct-EPRR	CSB	12	Cattle Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.01	0.08	0.42	0.13	0.05
7.12	Irvona-RJCP	SST	13		0.13	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.40	0.13	0.05
24.17	MD & PAmain-YR	TST	10	Dry	0.13	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.40	0.13	0.05

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
29.99	Oct-EPRR	CSB	10	Cattle Pass	0.11	0.23	0.20	0.05	0.02	0.02	0.01	0.08	0.42	0.13	0.05
3.1001	Kutz-EPRR	CSB	12	Private Road Crossi	0.11	0.23	0.20	0.05	0.02	0.02	0.01	0.08	0.42	0.12	0.05
0.461	Hillman-RJCP	SST	18		0.13	0.23	0.20	0.05	0.02	0.02	0.02	0.08	0.40	0.13	0.05
193.73	Main-BPRR	SST	16	Stream	0.45	0.23	0.15	0.02	0.02	0.05	0.16	0.10	0.16	0.32	0.05
65.601	Pennsy-RBMN		0		0.13	0.23	0.20	0.05	0.02	0.02	0.01	0.08	0.40	0.13	0.05
66.7	Pennsy-RBMN		0		0.13	0.23	0.20	0.05	0.02	0.02	0.01	0.08	0.40	0.13	0.05
43.4	Pitts&West-BPRR	TPG	151.2	Route 288	0.42	0.23	0.20	0.01	0.09	0.02	0.13	0.08	0.14	0.31	0.05
2002	Bradford-BPRR	CSB	28	Bolivar Run	0.35	0.23	0.15	0.02	0.02	0.05	0.03	0.08	0.26	0.18	0.05
102.9	Pocono-DL	TPG	16	Stream	0.40	0.23	0.15	0.01	0.02	0.05	0.04	0.08	0.22	0.18	0.04
17	Carbondale-DL	DPG	45	Erie St	0.33	0.30	0.20	0.01	0.05	0.02	0.05	0.08	0.16	0.19	0.03
59.21	Shawmut-BPRR	DPG	23.33	Powell Run	0.42	0.30	0.15	0.01	0.02	0.05	0.08	0.08	0.12	0.22	0.03
12.4	Main-YRC	SST	26.33	Stream	0.50	0.23	0.15	0.01	0.02	0.05	0.07	0.08	0.11	0.21	0.02
50.76	Laurel-BPRR	DPG	37	Camp Run	0.48	0.30	0.15	0.01	0.02	0.05	0.06	0.08	0.06	0.21	0.01
124.9	Main-SBR	DPG	105	Wallenpaupack Cr	8.28	0.30	0.15	0.00	0.02	0.09	0.13	0.09	-7.73	0.32	0.00
35.41	Indiana-BPRR	TPG	50	T 411	0.63	0.23	0.20	0.00	0.05	0.02	0.14	0.10	-0.06	0.30	0.00
44.15	Wharton-BPRR	TST	70.83	Laborde Branch	6.00	0.23	0.15	0.00	0.02	0.05	0.03	0.08	-5.38	0.17	0.00
255	Main-BPRR	CSB	18	Bever Run	1.80	0.30	0.15	0.00	0.02	0.05	0.17	0.10	-1.25	0.33	0.00
133.29	Pocono-DL		70	Cedar Ave	0.58	0.23	0.20	0.01	0.05	0.02	0.09	0.08	-0.01	0.23	0.00
229.16	Main-BPRR	CSB	18	Stream	1.80	0.30	0.15	0.00	0.02	0.05	0.17	0.10	-1.25	0.33	0.00
16.51	Indiana-BPRR	CSB	30	Pine Run	9.00	0.30	0.15	0.00	0.02	0.05	0.12	0.10	-8.45	0.28	0.00

Risk Evaluation with Known and Assumed Parameters

Bridge ID	Branch-SLRR	Br Type	Total Length (ft)	Over	WR/N	WSb/N	WSc/N	WF/N	WHu/N	WEn/N	WEc/N	WRc/N	Prob of Failure	Conseq of Failure	Risk Score
86.14	Shawmut-BPRR	CSB	24	Knapps Run	2.57	0.30	0.15	0.00	0.02	0.05	0.08	0.08	-2.02	0.22	0.00
5.4301	P&W-AVR	TPG	70	Pine Creek	9.00	0.23	0.15	0.00	0.02	0.09	0.08	0.08	-8.38	0.27	0.00
285.002	Butler-BPRR	TST	13	Stream	1.16	0.23	0.15	0.01	0.02	0.05	0.03	0.08	-0.54	0.17	0.00
252.12	Main-BPRR	CSB	24	Pine Creek	1.80	0.30	0.15	0.00	0.02	0.09	0.17	0.10	-1.25	0.38	0.00