



U.S. Department
of Transportation

**Federal Railroad
Administration**

Project Plan

1-800 Toll-Free Emergency Notification System for Shortline Railroad Highway-Rail Crossings in the Commonwealth of Pennsylvania

A Joint Partnership Between:

**SEDA-COG Joint Rail Authority
North Shore Railroad and Affiliated Companies
Clinton County Communication Center
Commonwealth of Pennsylvania
Federal Railroad Administration**

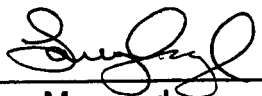
September 20, 2000

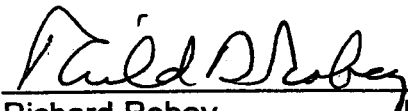
Memorandum of Understanding

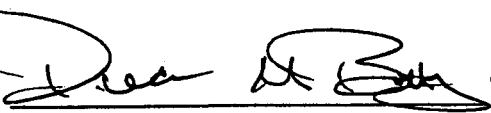
September 20, 2000

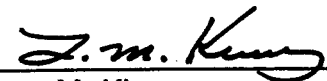
The Congress of the United States, by legislation entitled the "1994 Swift Rail Development Act" (Pub. L. 103-440, Title III, § 301(a), 49 U.S.C. § 20152), has instructed the Federal Railroad Administration to conduct a pilot program to demonstrate an emergency notification system using a toll-free telephone number for the public to report malfunctions and/or other safety problems at highway-rail grade crossings.

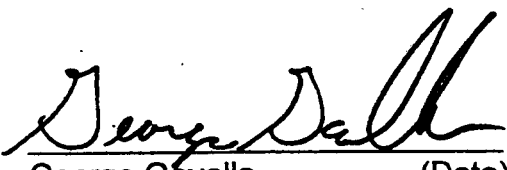
The following organizations and companies are in agreement to jointly participate in a 30 month pilot project for a 1-800 Toll-Free Emergency Notification System for Shortline Railroad Highway-Rail Crossings in the Commonwealth of Pennsylvania in accordance with the attached plan.


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SEDA-COG Joint Rail Authority


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1-800 Toll-Free Emergency Notification System for Shortline Railroad Highway-Rail Crossings in the Commonwealth of Pennsylvania

Overview

This Plan specifies the activities and schedule for developing and implementing a 1-800 Toll-Free Emergency Notification System (1-800-ENS) demonstration for eight shortline railroads in Pennsylvania. Five of these railroads are owned by the SEDA-COG Joint Rail Authority and three others are owned by other entities. The North Shore Railroad and Affiliated Companies (NSRAC) operate all eight railroads under contract.

The Federal Railroad Administration (FRA), in partnership with the Commonwealth of Pennsylvania, a group of eight shortline railroads within the State (SEDA-COG and NSRAC), and the 911 Clinton County Communication Center, will create an emergency and problem notification system for implementation at highway-rail intersections for eight shortline railroads. The Commonwealth of Pennsylvania is also very supportive and desirous of expanding this ENS system state-wide after the original project is established and in operation. The FRA will supply the 1-800 Emergency Notification System software which was developed for the State of Texas (after modifications to make it applicable for railroad use) and computer hardware. The State can provide funding for installation of the signs (Sec. 130 money) and it is anticipated that FRA will provide initial funding as described in the *Project Responsibilities* Section of this Plan to help establish the demonstration and operations in the call-in center. If successful, FRA will meet Congress' mandate for implementing a 1-800 number program in two pilot States and this will also initiate an effort to implement the 1-800 Program for crossings that do not belong to the Class 1 railroads.

Background

The June 1994 "*Rail-Highway Crossing Safety Action Plan*" established the need for a toll-free crossing automated trouble report system. In September 1994, a contract was awarded to develop a "Conceptual Design & Implementation Plan" which was completed in May 1995. However, in October 1994, the "*Swift Rail Development Act (Section 301)*," required the Secretary of Transportation to conduct a pilot program in two states to demonstrate an emergency notification system using a toll-free telephone number for the public to report malfunctions or other safety problems which might occur at highway-rail grade crossings.

However, the requirement for an emergency notification system was not compatible with the originally conceived Design Plan for an automated trouble report system. Because the *Swift Act* required emergency notification of problems at crossings, a 24-hour per day centralized staffed center, such as a police command center, emergency communications center, or a railroad operations dispatch center, would be necessary to receive such calls since that is the only way to achieve the goal of emergency notification.

In 1996, several major railroads, at their own expense, began to install their own 1-800 Emergency Telephone Number signs at crossings to report malfunctions and/or emergencies. The question remained, however, how to handle the smaller regional and shortline railroads.

Also in 1996, Congress appropriated funds for the development of software and hardware to support the demonstration of a toll free ENS system to report crossing safety problems and emergencies. This funding, however, does not provide for the installation of signs at crossings nor any public education on how to use the system. However, the Federal Highway Administration (FHWA) did approve the use of Surface Transportation Program (STP) Funds from the 10% Safety Set-Aside Funds (Section 130) by States for the required 1-800 Number signage.

In October 1998, FRA awarded a 3-year contract to design, develop and test a 1-800 Toll-Free Emergency Notification System (ENS) capable of allowing the reporting of problems at highway-rail intersections to centralized emergency response communication centers or railroad dispatch centers. This ENS System is being designed for and first tested in the State of Texas, where emergency response communication center personnel are knowledgeable with how such a system should properly operate. For liability reasons, special legislation may be required to implement such a system in a state to allow a state police center to perform this activity. However, current plans are to modify the software package so that it can operate from a railroad's perspective and then be offered to and installed on medium size and/or shortline railroads.

The *Action Plan* and *Swift Rail Development Act* requirements have been overtaken by events, and government intervention at this point with a state-centered system would be detrimental. The only way to achieve emergency notification is to establish a centralized staffed center to receive calls. This requires a 24-hour telephone system for receiving calls by trained professionals, and a computerized system (software and hardware) for fast, efficient and accurate identification of the crossing and its exact location (both on the operating railroad and on the highway grid).

FRA is currently evaluating a redirection of the program and the possibility of having the railroads totally assume this responsibility, since they are already moving in that direction, i.e., installing 1-800 signs that directly reach their own railroad operations center. FRA feels that a shift from the state-based approach to a railroad-based approach will allow for addressing emergencies at passively signed crossings as well as for malfunctions of automated warning systems. Currently, four major Class I railroads

have installed their own 1-800 Number Emergency Systems (ENS) and two states (Texas and Connecticut) have their systems to report emergency or routine problems. Using this approach, FRA believes that it is possible to implement such a system on a national scale rather than in just the two pilot states, thereby more efficiently and expeditiously achieving the goals of the *1994 Action Plan* and the *1994 Swift Rail Development Act*.

FRA is currently focusing future efforts on railroad-centered programs. With the developed ENS software for the State of Texas completed, FRA plans to modify the software for use by other state and railroad centered systems to support emergency management personnel in receiving calls by logging the problem being reported, accessing inventory files and notify the correct railroad operation's control center or emergency responders. The 1-800 ENS Software Package has the ability to log calls and access Inventory Files for quick crossing look-up based on the U.S. DOT/AAR National Highway-Rail Crossing Inventory Number. Future enhancements will incorporate a Geographical Information System (GIS) capability (display on a map). FRA also strongly encourages railroads and States with 1-800 systems to keep their Inventory up-to-date. A key component of a 1-800 system is to correctly identify the crossing number posted on-site.

Project Summary

The Federal Railroad Administration (FRA) has developed a 1-800 Toll-Free Emergency Notification System (ENS) software capable of allowing the reporting of emergencies and problems at highway-rail intersections to centralized emergency response communication centers or railroad dispatch centers. This system was developed in response to national legislation (Swift Rail Development Act of 1994) with the objectives of:

1. Improving highway-rail crossing safety by reducing the number of highway-rail crossing accidents and fatalities.
2. Providing a means to notify railroads and public safety officials of highway-rail crossing emergencies and problems.
3. Improving crossing data and research methods by building data bases that can be used for crossing problem notification and crossing safety evaluation.
4. Supporting requirements identified in the 1994 Rail-Highway Crossing Safety Action Plan.
5. Generating usable reports regarding highway-rail crossing malfunctions or problems.

The initial 1-800 ENS software was developed and deployed for the State of Texas, Department of Public Safety, Division of Emergency Management, where it is used in their state-wide emergency response communication center. The initial objective for the Pennsylvania program will be to modify and improve the Texas system so that it can be operated as a demonstration system in a 911 emergency communication's center to support eight selected shortline railroads, with capacity for expansion as additional railroads are encouraged to participate. A longer-term objective is to continue refinement, based on operating experience with the demonstration system, so that a system suitable for statewide usage by short-line railroads is realized.

The 1-800-ENS system will initially be developed for the SEDA-COG Joint Rail Authority in cooperation with its railroad operator, the North Shore Railroad and Affiliated Companies, which operates eight short-line railroads in Central and Northeastern area of the Commonwealth of Pennsylvania. The following lists the railroads which will be initially included in this project and a map showing their location within the State.

SEDA-COG Joint Rail Authority owned shortline railroads are:

- North Shore Railroad (NSHR)
- Nittany and Bald Eagle Railroad (NBER)
- Shamokin Valley Railroad (SVRR)
- Lycoming Valley Railroad (LVRR)
- Juniata Valley Railroad (JVRR)

North Shore and Affiliated Railroads operated by Richard Robey, in addition to the above are:

- Union County Industrial Railroad (UCIR)
- Stourbridge Railroad (SBRR)
- Wellsboro and Corning Railroad (WCOR)

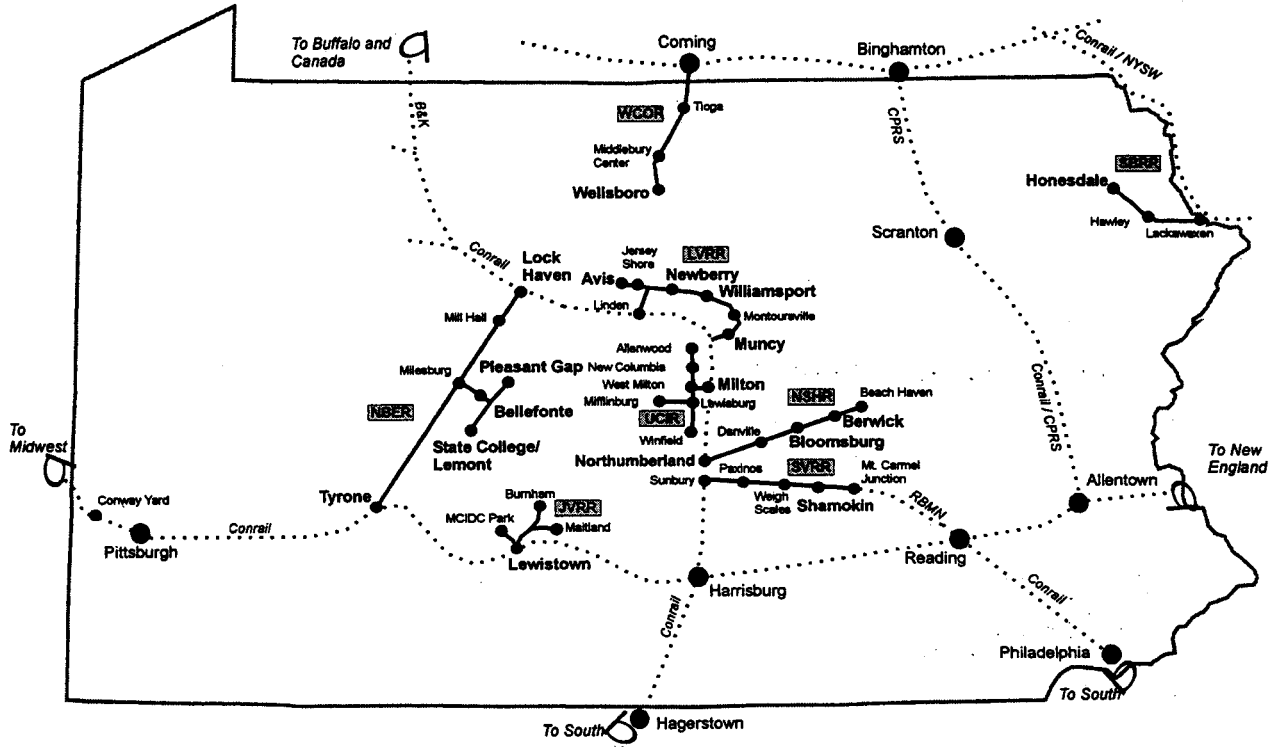
1-800 Crossing Problem Notification System Demonstration Commonwealth of Pennsylvania SEDA-COG Joint Rail Authority

North Shore Railroad and Affiliated Companies

JUNIATA VALLEY RAILROAD (JVRR)
LYCOMING VALLEY RAILROAD (LVRR)
NORTH SHORE RAILROAD (NSHR)
NITTANY AND BALD EAGLE RAILROAD (NBER)

MAIN BUSINESS OFFICE
356 Priestly Avenue
Northumberland, PA 17857
Phone 717-473-7949
Fax 717-473-8432

SHAMOKIN VALLEY RAILROAD (SVRR)
STOURBRIDGE RAILROAD (SBRR)
WELLSBORO AND CORNING RAILROAD (WCOR)
UNION COUNTY INDUSTRIAL RAILROAD (UCIR)



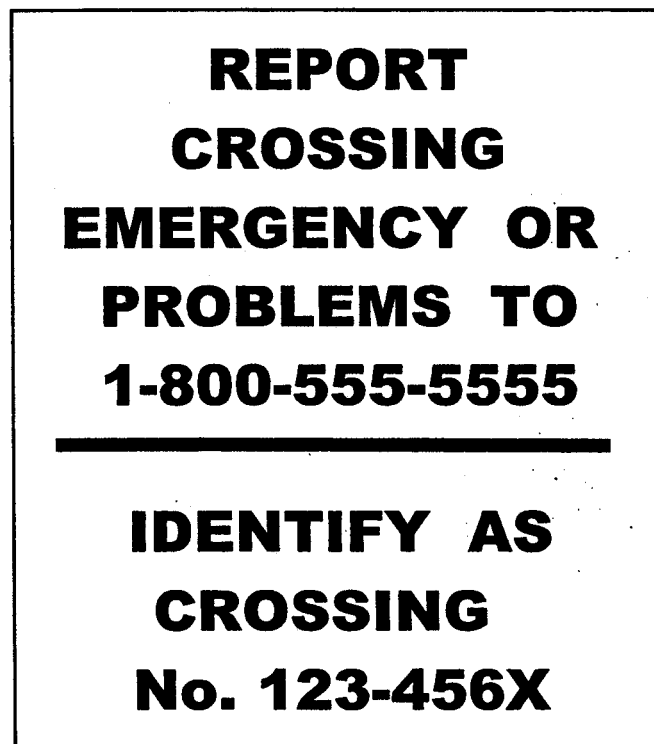
The total public and private at-grade crossings in the Commonwealth of Pennsylvania is 9,115 as recorded in the FRA National Inventory File on April 4, 2000. Of these, approximately two-thirds, or 6,041 crossings, will be signed with 1-800 emergency notification signs by the major railroads that currently have their own programs (which includes CSX Transportation, Norfolk Southern, Amtrak, Canadian Pacific and including the Conrail records which have not yet been changed in the Inventory File by NS and CSX). That leaves approximately one-third of the State's highway-rail crossings, or 3,074, which will not be covered in the ENS program unless, or until, they can be included in this project or something similar is implemented. Of these 3,074 crossings, the eight shortline railroads in this project have 476 at-grade highway-rail crossings at both public and private roadways, about 15%, which will have 1-800 ENS signs. However, the potential for inclusion in the project is one-third of the State's crossings or approximately 3,000 crossings. After the initial project becomes operational it is anticipated that other additional shortline railroads in the Commonwealth of Pennsylvania would be included in the demonstration with the potential of a total of

3,074 crossings included in the program if all shortlines within the State participate.
(See Appendix A)

<u>Breakdown of At-Grade Crossings</u>	Public	Private	Pedestrian	Total
Total for State	5594	3401	120	9115
Major Railroads: ATK, CR, CSX, NS	3698	2271	72	6041
All Other PA Railroads	1896	1130	48	3074
SEDA-COG Project Railroads	257	219	-	476

Currently, the railroads in the proposed study area cover 250± miles of railroad throughout central and northeastern Pennsylvania. It is anticipated that the system would receive approximately six to eight calls per week for these incidents.

The 1-800-ENS signage for all public crossings will be funded by the Commonwealth of Pennsylvania utilizing Section 130 funds. (STP Section 130, Highway-rail Crossings, funding for Pennsylvania for FY-2000 was \$5,804,390.) The signs will be installed at all public and private crossings by the railroads (see Appendix B). However, since every at-grade crossing (public and private) will have a sign posted with a 1-800-ENS number, funding for the private crossings will be provided by FRA. In order to meet the Manual on Unified Traffic Control Devices (MUTCD) requirements, the sign needs to be white text on a blue background with a white border. The proposed sign is shown below.



SEDA-COG Railroads' Proposed 1-800 Sign
Sign Size: 18" X 24" Font Size: 1¾" White Letters on Blue per MUTCD

It is extremely important that there is complete and accurate data available for all crossings which are covered under a 1-800 ENS system. Since this information is recorded in and obtained from the FRA National Highway-Rail Crossing Inventory File, it is extremely important that the involved railroads insure that all of the Inventory records for all of the railroad's crossings are updated and current with accurate data. Updating of the FRA National Crossing Inventory is a necessity for identifying the exact location and properties of a crossing with a posted crossing number and 1-800 ENS Number. (Currently, the Administration has a Bill before Congress, "Federal Railroad Safety Enhancement Act of 1999, Title V, Section 503, both S. 1496 and HR. 2683" which would require railroads and states to update Crossing Inventory records at least once every three years to insure that such emergency notification systems would have the most current and accurate data.)

The Commonwealth of Pennsylvania has a very extensive 911 Emergency call system in place. Therefore, it has been determined that the most efficient way to implement this most effectively is to partner with a willing 911 Communication Center, as reflected in this project plan. Start-up funding will be necessary to initiate a regional railroad 1-800 ENS call center for Pennsylvania's shortline railroads. Initially, it will also be necessary to provide annual funding to help supplement such operations.

When this project is completed, the FRA will have met Congress' mandate for implementing a 1-800 number program in two pilot states (Texas and Pennsylvania), and Pennsylvania, which currently has more shortline railroads than any other state, will have initiated a program to have one centralized call center for all of the State's shortline railroads.

Operation and Implementation

The SEDA-COG Joint Rail Authority in cooperation with its Railroad Operator, propose a pilot 1-800 Crossing Problem Notification System in Central and Northeastern Pennsylvania. Through this project, public notification signs will be posted at all public and a selected private at-grade crossings along eight short line railroads. The railroads would install a 1-800 sign at all public crossings and only those private crossings that are active enough to give cause to believe that there could be a problem. For example, a simple farm field crossing that may only be used only two or three times per year would not warrant the 1-800 signage.

Each crossing will have a sign posted with a 1-800 number to call to report problems or malfunctions at the crossing and the accompanying DOT# of the crossing (see sample sign attached). Typical problems are: lights flashing when there is no train approaching, gates down blocking the roadway, trespassing, vehicle stalled on the tracks, and other situations that would endanger public safety. It is expected that six to eight calls per week would be received for reporting incidents for the railroads in the proposed study area (which cover approximately 250 miles of railroad track).

A 1-800 Toll-Free Emergency Notification System for Highway-Rail Program consists of several major components, which include signs at the crossings, crossing and contact data, hardware and software, telecommunications, and communications personnel answering incoming calls.

Calls must be received by personnel who are trained in the handling of problems dealing with public safety and emergencies. To that end, the SEDA-COG Rail Authority and its operator have the cooperation of the 911 Clinton County Communications Center (Comm Center). The Comm Center has committed the resources of its 911 Operations Center, which is housed with the county emergency management agency. The Comm Center will install the necessary telecommunications infrastructure to allow for the 1-800-ENS number being used for the program to be directed to the Comm Center console. Situated next to the console would be the computer running the 1-800 ENS Software System, provided by the Federal Railroad Administration.

FRA will provide and setup a personal computer system (initially in a stand-alone configuration) at the Clinton County Communications Center. The computer will be an IBM/Compatible Personal Computer (with Pentium processor) with Windows NT/or 98, and can have internal fax/modem/e-mail/computer telephony integration capabilities, if required. The system will be programmed in Visual Basic 6.0. It will have disk storage for crossing information and contact data, and provide backup capability. Adequate power supplies and a printer will be needed. Recording devices may be needed to record incoming calls.

The 1-800 ENS software will assist the Comm Center personnel in logging-in problems at a crossing and record contacts made with and by the Comm Center. When a problem is identified at a crossing, the appropriate railroad contact person will be identified by name and phone number (including after hour contacts). Should a call come in that is an emergency, the trained personnel at the Comm Center would immediately transfer the call to the 911 Center or Public Safety Authority in the appropriate county. The 1-800 ENS Software package will perform the following general functions:

- Record Incident Report
 - Identify the Caller (such name, address, telephone number)
 - Identify the Crossing (number, street address)
 - Description of the Problem or Incident
- Notify Emergency/Problem Responders
 - Dispatch Report to Appropriate Officials by Voice or Electronic Means
 - Record Receipt of Report
 - Report Updates As Available
- Record Outcome
 - Receive/Record Outcome Report from Emergency/Problem Responders

- **Update Reference Data Base**
 - **Current Contacts for Emergency/Problem Responders**
 - **New Crossing Information**

- **Generate Reports For Analysis**
 - **Frequency of Incident Types**
 - **Incidents by Location**
 - **Incidents by Carrier**
 - **1-800-ENS Problem Reports**
 - **Ad Hoc Reports**

Since Pennsylvania has a comprehensive 911 emergency system, the intent of this demonstration project is not specifically for emergency purposes. A grade crossing accident or other catastrophe would normally be reported directly to the 911 Center for the jurisdiction in which the incident occurred. However, in the event that an emergency is reported via 1-800 ENS, provision need to be made to forward that information directly to the appropriate 911 Center or Public Safety Authority for action.

The demonstration 1-800-ENS will be installed in the Clinton County Communications Center (Comm Center) and will be evaluated over a 30-month period. At the conclusion of the demonstration, the SEDA-COG Joint Rail Authority will prepare a report of the impacts and benefits of the program and will provide interim reports including incident reports submitted.

Project Responsibilities

Implementation of the 1-800 ENS demonstration system will require participation and coordination among the identified partner governmental organizations and railroad companies. Basic responsibilities are as follows:

Federal Railroad Administration and Contractor AMB Associates

- Provide the 1-800 ENS software and computer hardware.
- Provide \$65K direct funding, from available authorized funds, for private crossing signage, Communication Center start-up and monthly operation support, project report preparation, and separate FRA Contractor Support for 1-800 ENS Software development activities.
- Define, through meetings with interested parties (SEDA-COG Joint Rail Authority, Richard Robey representatives, PENN DOT, and Clinton County Communications Center), the systems functional and performance requirements.
- Modify and improve the Texas version of the 1-800-ENS computer system to meet the expected functional and performance requirements.
- Insure that the system is compatible with ITS Architecture.
- Install and validate the baseline data base of crossing information.
- Perform pre-delivery test of the developed system.
- Update existing user/operator documentation for the demonstration system.
- Provide user/operator training at Clinton County Communication Center location.
- Provide briefing and documentation material.
- Install and demonstrate the system at the Clinton County Communications Ctr.
- Provide system support for resolution of software problems.
- Meet with SEDA-COG Joint Rail Authority, Richard Robey representatives, PENN DOT, and Clinton County Communications Center personnel as required.

SEDA-COG Rail Authority

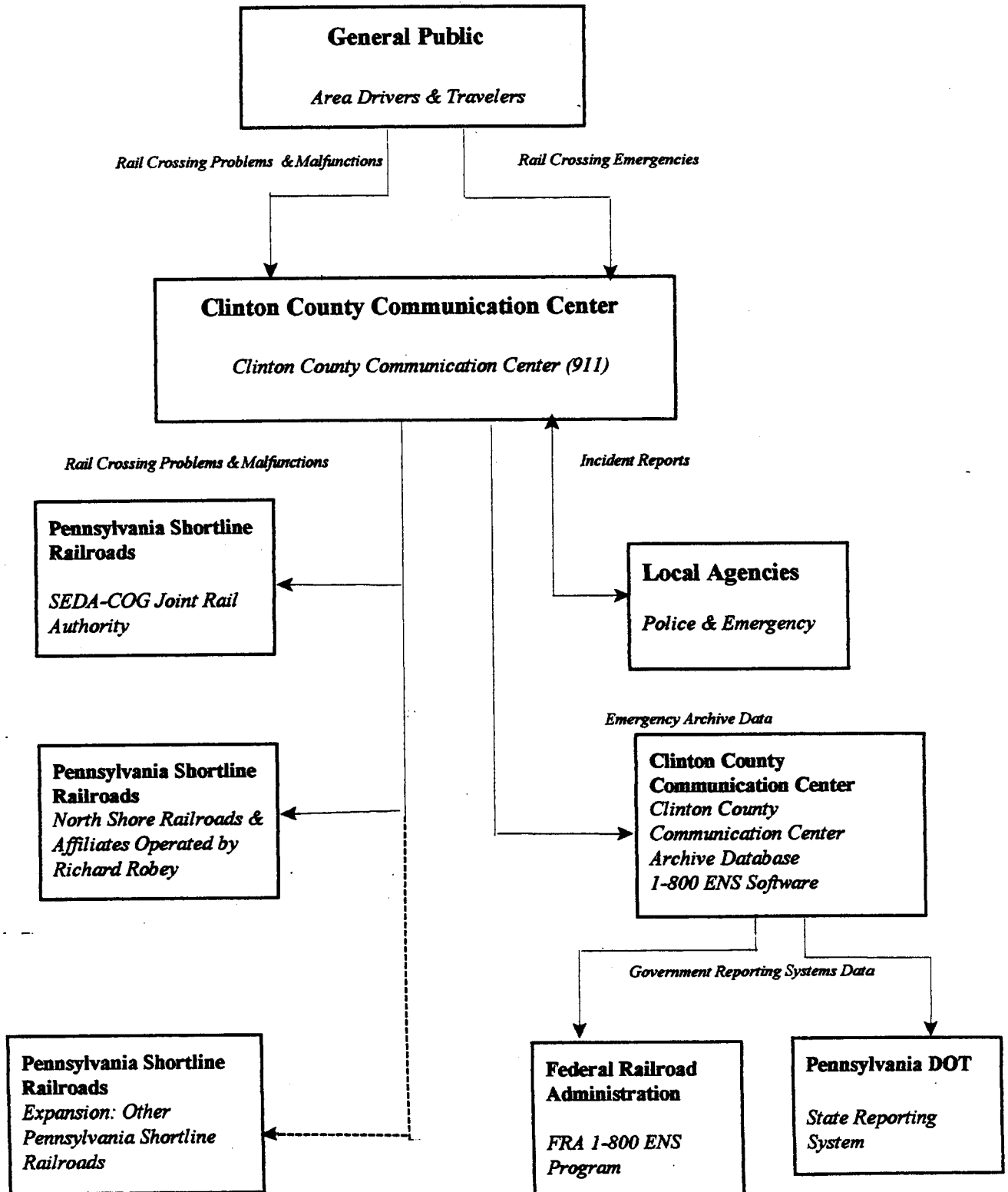
SEDA-COG will act as the principal coordinating authority for Pennsylvania-based entities involved in implementation of this project and will be responsible for the following:

- Provide appropriate personnel to review and comment on system performance and functional requirements.
- Coordinate the design and installation of 1-800 signage at all public and private at-grade highway-rail crossings.
- Coordinate FRA contractor access to Clinton County Communications Center facilities for the purpose of system installation and test as needed.
- Provide summaries of incident reports provided by the Clinton County Communications Center to FRA.
- Provide an evaluation report, including actual cost data, of the system during the demonstration period to FRA after 6, 12, 18, 24 and 30 months .
- Serve as a focal point for the collection of system improvement recommendations.

North Shore Railroad and Affiliated Companies (NSRAC)

- Provide \$3K direct funding for Communication Center monthly service.
- Identify and obtain toll free numbers for all member railroads for (1) the Primary Contact for operational problems, (2) Back-up in case the Prime can not be reached, and (3) a Fax for non-emergency problems.
- Provide appropriate personnel to review and comment on system performance and functional requirements of SEDA-COG demonstration.
- Serve as a focal point for the affiliated companies.

ITS Architecture Interconnect Diagram for Project SEDA-COG 1-800 Highway-Rail Crossing Emergency Notification System



Commonwealth of Pennsylvania DOT

- Provide \$60K funding for 1-800 Toll-Free Emergency Notification System for 1-800 Highway-Rail Crossing Signage at public crossings.
- Encourage and coordinate the inclusion of other short-line railroad into the system.
- Provide appropriate personnel to review and comment on system performance and functional requirements of SEDA-COG demonstration.
- Update the National Inventory to correctly identify the railroads operating within the State and resolve the proper ownership of crossings.

Clinton County Communications Center

The Clinton County Communication Center will be the operational base for the demonstration system and will be responsible for the following:

- Provide information on interfaces required for their operations.
- Provide appropriate telecommunications infrastructure to receive 1-800-ENS calls and recording devices, if desired.
- Provide personnel for training.
- Provide facilities to house the demonstration system.
- Provide operational personnel to man the 1-800-ENS system.
- Provide evaluation of the demonstration system 6, 12, 18, 24, and 30 months period to SEDA-COG using reports from the 1-800 ENS Software.

Intelligent Transportation Systems - Implications and Compatibility

Intelligent Transportation Systems (ITS) is the application of new methods of communications, computer, and sensor technology to highways, rail, and transit systems and the careful integration of system functions to provide more efficient, effective, and safe solutions to nation's multi-modal transportation infrastructure. Development of a National Architecture, the framework that addresses all ITS User Services (projects), defines the subsystems and data flows (information that must be shared between subsystems) required to make ITS work and has been the first step in achieving this vision. In particular, the National Architecture defines the technologies and operations needed for a transportation system that will satisfy the requirements of the 31 User Services. Three User Services that relate to this 1-800 ENS project are Highway-Rail Intersections (HRI), Incident Management, and Emergency Notification and Personal Security.

The ITS integration of the railroad operating systems, including emergency notification systems (ENS), with traffic management systems through the ITS Architecture is an important step which will insure the interoperability of both rail and highway systems. The current effort in the HRI ITS Program is development of the standards necessary for implementing ITS projects at highway-rail intersections (grade crossings) nationwide which will tie grade crossing warning systems (including emergency notification) to local traffic management systems to improve safety for both motor vehicle users and rail passengers and employees. Eventually, some of these standards will be turned into regulations for the purpose of funding decisions and, in the future, no Federal funds will be used for HRI projects which do not meet such standards.

Coordination will take place with the State highway departments so that these grade crossing projects are properly integrated with other ITS projects. For example, warnings to motorists of oncoming trains, as well as advice on alternate routes to avoid blocked crossings, could be transmitted through dedicated short-range communications systems and displayed on standardized in-vehicle information displays and roadside variable-message signs. Emergency notification systems can advise rail operation centers and traffic management centers of road vehicles which have become disabled at a crossing so that trains can be slowed or stopped to avoid collision. They can also advise of any other problems at a crossing which would affect the safety at a crossing such as an inoperable gate arm or faulty flashing warning lights. This demonstration project with SEDA-COG and the Commonwealth of Pennsylvania undertakes the deployment of applicable technologies that can be a model for other such projects involving crossings throughout the nation. Thus, it is important that this project meet the current criteria for the application of ITS.

The following diagram was produced using a new computer program "Turbo-Architecture" for development of ITS compatible systems. It shows the various components and subsystems of an HRI Emergency Notification System and the interrelationship of the stakeholders and users involved. This demonstrates that this project meets the conditions for ITS requirements as currently defined.

ITS Architecture Element Inventory
for
Project SEDA-COG 1-800 Emergency Notification System

- 1. Area Drivers & Travelers**
Status: Existing
Stakeholder: General Public
Mapped to Entity: Traveler
Mapped to Entity: Driver
- 2. Clinton County Communication Center (911)**
Status: Existing
Stakeholder: Clinton County Communication Center
Mapped to Entity: Other Archives
Mapped to Entity: Archived Data Management Subsystems
- 3. SEDA-COG Joint Rail Authority**
Status: Existing
Stakeholder: Pennsylvania Shortline Railroads
Mapped to Entity: Rail Operations
- 4. North Shore & Affiliated Railroads operated by Richard Robey**
Status: Existing
Stakeholder: Pennsylvania Shortline Railroads
Mapped to Entity: Rail Operations
- 5. Expansion: Other Pennsylvania Shortline Railroads**
Status: Planned
Stakeholder: Pennsylvania shortline Railroads
Mapped to Entity: Rail Operations
- 6. Police & Emergency Responders**
Status: Existing
Stakeholder: Local Agencies
Mapped to Entity: Other Emergency Responders
Mapped to Entity: Emergency Management
- 7. Clinton County Communication Center Archive Database**
Status: Planned
Stakeholder: Clinton County Communication Center
Mapped to Entity: Other Archives
Mapped to Entity: Archived Data Management Subsystems
- 8. FRA 1-800 ENS Program**
Status: Existing
Stakeholder: Federal Railroad Administration
Mapped to Entity: Government Reporting Systems
- 9. State Reporting Systems**
Status: Existing
Stakeholder: Pennsylvania Department of Transportation
Mapped to Entity: Government Reporting Systems

Activities and Schedule

A description of the Activities for the planned project to develop, install, and implement the 1-800 ENS demonstration system are provided below and are followed by a estimated time-line schedule.

Activity 1 – Establish System Requirements – Develop the operational and functional system requirements and databases required to implement the 1-800 ENS Software for this demonstration project. Identify the representatives that will participate in a requirements review meeting.

Activity 2 – Design and Procure Signage – SEDA-COG and NSRAC, in cooperation with FRA and the Commonwealth of Pennsylvania, will design the 1-800 sign to be used at all crossings which will be included in the project. (The respective railroads will begin installation at the point in time when the system is ready to become operational. An example of the sign used by the BNSF Railroad is in Appendix C. The expected duration for installation is no more than 30 days.)

Activity 3 – Database Construction – FRA's Contractor (AMB) will construct the ENS databases needed to operate the 1-800 ENS Software with the assistance of SEDA-COG and the other entities involved in this Project. The sources for obtaining crossing data and required contact information will be identified. The most important source is the FRA National Highway-Rail Crossing Inventory. SEDA-COG and NSRAC must update and verify the National Crossing Inventory File database for all crossings included in the project, including providing actual GIS measurement information.

Activity 4 – Software Modification – FRA's Contractor (AMB) will modify and improve the Texas ENS software to meet the SEDA-COG and Commonwealth of Pennsylvania ENS functional and performance requirements.

Activity 5 - Establish Communication Center Infrastructure – Clinton County Communication Center infrastructure will be established to handle highway-rail crossing 1-800 ENS calls from travelers, area drivers, police and emergency personnel.

Activity 6 – User Documentation – Operator Manuals for the 1-800-ENS Software package and a problem/incident reporting process will be developed in cooperation with the system operator by using the Texas 1-800 ENS as a model.

Activity 7 – User Training – User Training will be provided just before the Beta Test system is installed at the Clinton County Communication Center.

Activity 8 - Beta Test - An initial operational test of the 1-800 ENS system will be conducted over a two-week period at the Clinton County Communications Center. Clinton County Communication Center staff will operate the 1-800 ENS in an operational environment and report problems encountered and performance shortfalls to FRA's Contractor (AMB Corp.).

Activity 9 - Install Signs - The SEDA-COG and NSRAC shortline railroads, or their contractor, will install signs on all public and private at-grade highway-rail crossings which will provide the ENS telephone number and crossing number.

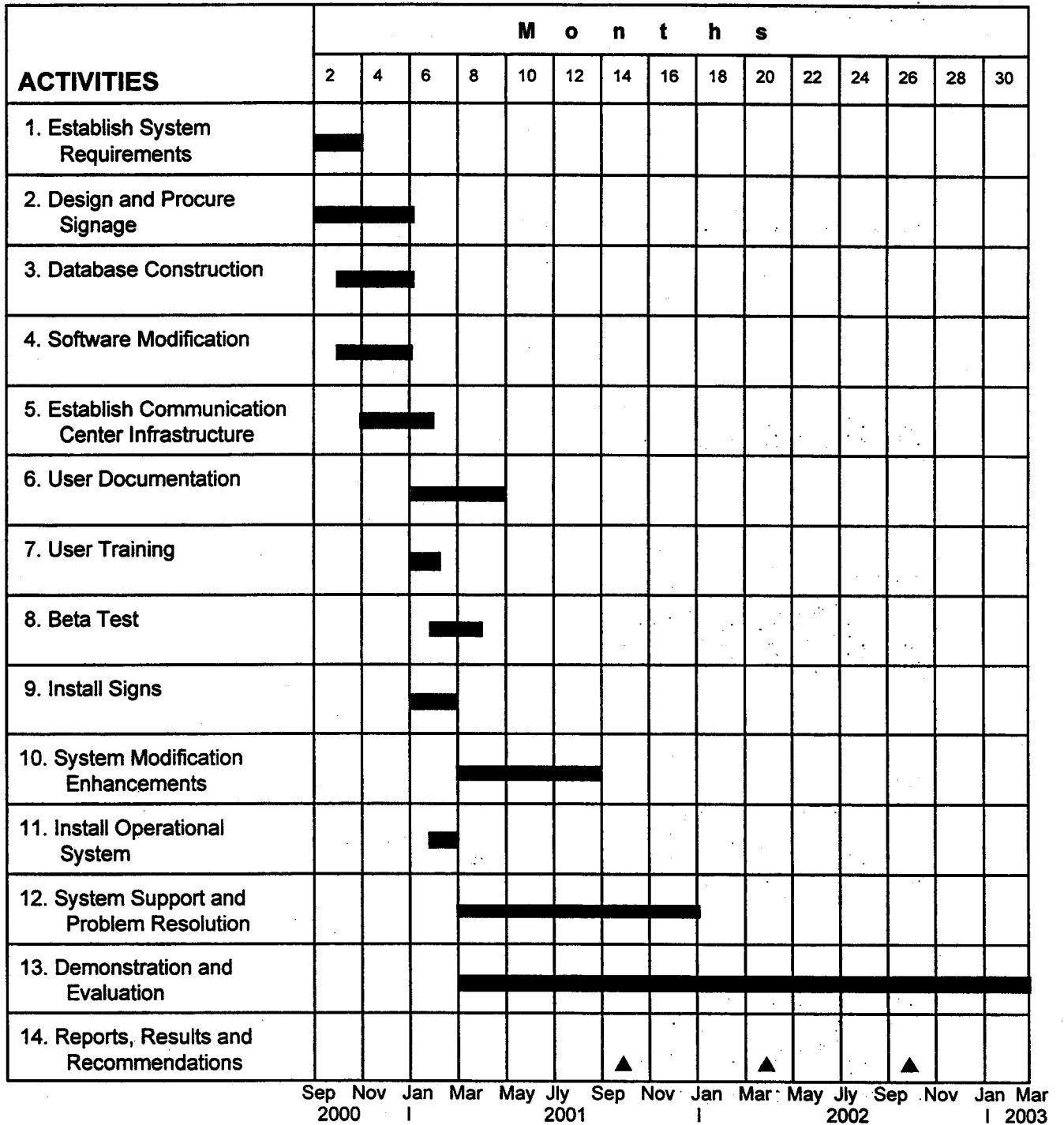
Activity 10 - System Modification - The 1-800 ENS will be modified based on the comments received by resolving problems encountered during Beta Test and prepared for full operational use.

Activity 11 - Install Operational System - The fully operational 1-800 ENS will be installed at the Clinton County Communication Center and refresher training will be provided to the operational staff.

Activity 12 - System Support and Problem Resolution - FRA's Contractor (AMB) will provide on-call support of the operational system after the final system installation.

Activity 13- Demonstration and Evaluation - The operational system will be demonstrated and evaluated for a period of 30 months. During this time, the Commonwealth of Pennsylvania will actively seek and encourage other shortline railroads in the State to join and participate in the demonstration project. This would necessitate that the databases be updated as each new railroad goes through the process described above.

Activity 14- Results and Recommendations Report - SEDA-COG, in cooperation with the Clinton County Communications Center, will provide reports at 6, 12, 18, and 24 months intervals, and final report at 30 months from the start of the demonstration. These reports will list the number and types of calls received, the problems reported and the action taken, actual expense and cost data, and any suggested improvements and recommendations for the 1-800 ENS software and/or the operation process.



1-800 ENS Development and Implementation Schedule

Estimated Costs and Funding

Below is a projected budget for both the 1-800 Toll-Free Emergency Notification System for Shortline Railroad Highway-Rail Crossings in the Commonwealth of Pennsylvania demonstration project. The Pennsylvania Department of Transportation will provide Section 130 funding for sign procurement and installation. Upon the conclusion of the 30-month demonstration period, the SEDA-COG Joint Rail Authority will prepare a report of the impacts and benefits of the program. Interim reports will also be made available at 6, 12, 18, 24, 30 months.

Estimated Budget - 30 Month Period							
	Total	FRA	FRA Contractor	NSRAC. Operator	SEDA-COG	Clinton Co. Comm. Center	PennDOT Sec 130 Funding
Communications Center Operations Monthly Service Cost (\$450 x 30)	\$13,500	\$10,500		\$3,000 ²			
Communications Center Start-Up Infrastructure	\$9,500	\$8,000				\$1,500 ¹	
1-800 ENS Software Development	\$80,000		\$80,000 ³				
Computer & Hardware for Comm. Center	\$7,500		\$7,500 ³				
Project Evaluation Reports	\$16,000	\$10,500		\$1,500 ¹	\$3,000 ¹	\$1,000 ¹	
Installation of Signs at Private Crossings 176 @ \$200 per	\$35,200	\$35,200					
Installation of Signs at Public Crossings 300 @ \$200 per	\$60,000						\$60,000 ²
Total	\$221,700	\$64,200²	\$87,500³	\$4,500	\$3,000¹	\$2,500¹	\$60,000²

¹ In-Kind Contribution (staff, equipment, support materials, and overhead)

² Direct Funding Required 3 FRA Contract Funded

³ FRA Contract Funded

End Product and Future Enhancements

This joint effort between SEDA-COG, FRA, the Commonwealth of Pennsylvania, and the other partners, will provide a model for the implementation of a 1-800 Toll-Free Emergency Notification System for Highway-Rail Crossing for shortline railroads. While, the 1-800 signage will be installed at only 476 crossings on eight different shortline railroads within the Commonwealth of Pennsylvania, additional shortline railroads in the State can be added to the system since the Communication Center has the capability to handle the additional capacity, thereby lowering the overall cost per crossing to provide this service. The Clinton County Communication Center could eventually handle all shortline railroad 1-800 calls (a total of 3,000+ crossings) in the Commonwealth of Pennsylvania. If that happens, and because two-thirds of the State's crossings are currently included in a 1-800 ENS by the major railroads, the State will then have all of their at-grade crossings included in a 1-800 ENS system.

FRA will receive a summary of the incident reports which will be catalogued and reported on a six month's basis, and a final summary report at the end of the 30-month demonstration. When this project is completed, the FRA will have met Congress' mandate for implementing a 1-800 number program in two pilot states (Texas and Pennsylvania), and Pennsylvania, which currently has more shortline railroads than any other state, will have initiated a program to have one centralized call center for all of the State's shortline railroads.

APPENDIX A

Count of Highway-Rail Crossings for the Commonwealth of Pennsylvania Sorted by Railroad as of April 4, 2000

Data Source: FRA National Inventory File

04/04/2000

COUNT OF TOTAL CROSSINGS FOR THE COMMONWEALTH OF PENNSYLVANIA
SORTED BY RAILROAD

CODE	RAILROAD NAME	PUBLIC		PRIVATE		PEDESTRIAN		TOTAL
		AT-GRADE	SEPARATED	AT-GRADE	SEPARATED	AT-GRADE	SEPARATED	
ALQS	ALIQUIPPA & SOUTHERN RAILROAD	0	3	0	0	0	0	3
ALY	ALLEGHENY AND EASTERN RAILROAD	106	12	82	2	3	1	206
AMHR	THE LANDISVILLE RAILROAD INC.	10	0	0	0	0	0	10
ATK	AMTRAK	13	293	3	4	1	27	341
ATRW	ANTHRACITE RAILWAY INC.	3	0	0	0	0	0	3
BIDZ	BERWICK INDUSTRIAL DEVELOPMENT	4	0	0	0	0	0	4
BITY	BRISTOL INDUSTRIAL TERMINAL RWY	0	1	0	0	1	0	2
BLE	BESSEMER & LAKE ERIE RAILROAD	135	82	92	3	2	0	314
BMRG	BLUE MOUNTAIN & READING RR	5	0	9	1	0	0	15
BPRR	BUFFALO & PITTSBURGH RAILROAD INC	238	75	169	12	6	0	500
CBL	CONEMAUGH & BLACK LICK RAILROAD	5	4	7	0	0	0	16
CHR	CHESTNUT RIDGE RAILWAY COMPANY	2	5	10	0	0	0	17
CI	CAMBRIA & INDIANA RR CO	15	11	20	0	0	0	46
CR	CONSOLIDATED RAIL CORP.	2034	916	1073	55	47	26	4151
CRPZ	CENTRAL RAILROAD COMPANY OF	1	0	0	0	0	0	1
CRSH	CONRAIL SHARED ASSETS	2	0	0	0	0	0	2
CSX	CSX TRANSPORTATION	410	221	218	13	8	17	887
DH	DELAWARE & HUDSON RAILWAY COMPANY	39	20	31	2	0	1	93
DL	DELAWARE LACKAWANNA RAILROAD CO.	22	16	2	2	0	2	44
DOD	DEPARTMENT OF DEFENSE	0	0	12	0	0	0	12
EBT	EAST BROADTOP RAILROAD & COAL	3	1	0	1	0	0	5
EEC	EAST ERIE COMMERCIAL RAILROAD	1	0	7	0	0	0	8
EV	EVERETT RR CO	2	0	0	0	0	0	2
GETY	GETTYSBURG RAILROAD CO.	6	2	9	0	0	0	17
IDCZ	INDUSTRIAL DEVELOPMENT CO-OP	1	0	0	0	0	0	1
IRN	IRONTON RAILROAD COMPANY	2	4	6	0	0	0	12
JSC	JOHNSTOWN AND STONY CREEK RAILROAD	4	0	0	0	0	0	4
KKRR	KNOX AND KANE RAILROAD	57	1	45	2	0	0	105
LASB	LACKAWAXEN AND STOURBRIDGE RAILROAD	11	1	14	1	3	1	31
LCRA	LACKAWANNA COUNTY RAILROAD	18	0	0	0	0	0	18
LEF	LAKE ERIE, FRANKLIN AND CLARION RR	17	2	26	0	0	0	45
LNE	LEHIGH AND NEW ENGLAND RW CO	0	10	12	0	1	0	23

04/04/2000

**COUNT OF TOTAL CROSSINGS FOR THE COMMONWEALTH OF PENNSYLVANIA
SORTED BY RAILROAD**

CODE	RAILROAD NAME	PUBLIC		PRIVATE		PEDESTRIAN		TOTAL
		AT-GRADE	SEPARATED	AT-GRADE	SEPARATED	AT-GRADE	SEPARATED	
SRC	STRASBOURG RAILROAD COMPANY	6	0	6	1	1	0	14
SUB	STATE SUBSIDY	76	11	13	6	0	0	106
TMSS	TOWANDA MONROETON SHIPPERS LIFELINE	6	0	0	0	0	0	6
TRRX	THREE RIVERS RAILWAY COMPANY	0	0	1	0	0	0	1
UMP	UPPER MERION AND PLYMOUTH RR CO	4	6	0	0	0	0	10
UNI	UNITY RAILWAYS COMPANY	1	6	0	0	0	0	7
URR	UNION RAILROAD	14	54	39	8	6	8	129
WE	WHEELING & LAKE ERIE RY CO.	25	112	54	6	7	5	209
WMCZ	WESTMORELAND COAL COMPANY	17	2	9	0	0	0	28
WTSE	WEST SHORE RAILROAD	30	0	0	0	0	0	30
YKR	YORKRAIL, INC.	37	5	30	0	0	0	72
YS	YOUNGSTOWN & SOUTHERN RY CO	11	0	11	0	0	0	22
TOTAL FOR STATE		5594	3408	3401	237	120	197	12957

Breakdown of At-Grade Crossings

Total for State	5594	3401	120	9115
Major Railroads: ATK, CR, CSX, NS	3698	2271	72	6041
All Other PA Railroads	1896	1130	48	3074
SEDA-COG Project Railroads	257	219	-	476

\\1-800\седа-cog\PA Xing Counts.wpd

APPENDIX B

SEDA-COG Joint Rail Authority and North Shore Railroad Affiliated Companies Highway-Rail At-Grade Crossings as of March 7, 2000

Data Source: Individual Railroads

Appendix-B

**SEDA-COG Joint Rail Authority and NSRAC Highway-Rail At-Grade Crossings
as of 7 March 2000**

Railroad: SEDA-COG owned (operated by R. Robey)	# of Public Grade Crossings	Warning Devices at Public Crossings	# of Private Grade Crossings
Juniata Valley Railroad (11.4 miles)	24	6-signal 2-gated 15-X bucs 1-stop sign	6
Lycoming Valley Railroad (32 Miles)	56	20-signal 7-gated 29-X bucs	79
Nittany Bald Eagle Railroad (70 Miles)	48	19-signal 3-gated 26-X bucs	37
North Shore Railroad (36.5 Miles)	41	24-signal 2-gated 15-X bucs	36
Shamokin Valley Railroad (27 Miles)	45	21-signal 4-gated 20-X bucs	34
Total	214		192

Railroad: NSRAC shortlines (operated by R. Robey)	# of Public Grade Crossings	Warning Devices at Public Crossings	# of Private Grade Crossings
Union County Industrial Railroad (12 Miles)	14	11-signal 2-gated 1-X bucs	6
Stourbridge Railroad (20 Miles)	12	2-signal 5-gated 6-X bucs	9
Wellsboro & Corning Railroad (42 Miles)	17	5-signal 4-gated 8-X bucs	12
Total	43		27

APPENDIX C

1-800 Sign Used by the Burlington Northern Santa Fe Railroad

EXAMPLE

SIGNS:

NO. 81 - "1-800-888-8488"
 PLACE TOP OF SIGN 30" BELOW TOP OF POST.
 MOUNT HORIZONTALLY AND LETTER AS SHOWN
 IN EXAMPLE. BGS NUMBER AS SHOWN, S.O.I.
 NUMBERS ARE UNIQUE AND ASSIGNED TO EACH
 PUBLIC CROSSING.

HOLES:
 1. THE HOLES LISTED IN THIS PLAN IS 1 1/2" X 3/8" HOLES
 WITH UNDER BACKWASHED AND BLANK
 LETTERING, ONE HOLE, SMOOTH AND ONE
 LETTERING AND ONE HOLES, SMOOTH AND ONE
 LETTERING WITH BLANK BACKWASHED. ALL HOLES
 MUST BE BLANK BORDERS AND NOT MARKED.

BILL OF MATERIALS

QUANTITY	ITEM NAME
1 EA.	SIGN NO. 83-EMERGENCY 800 NUMBER (REV. NO. 04770049)
2 EA.	1/4" X 1 1/2" X 1 1/2" H.E. HEAD LAG AND 1/4" FLAT WILSON WASHERS FOR ALL WOOD POSTS.
<u>OPTIONAL INFORMATION</u>	
2 EA.	1/4" X 5" X 1/2" U-BOLTS W/ MACHINE NUT AND 1/4" FLAT WILSON WASHER FOR ALL PIPE POSTS.
2 EA.	1/4" X 5" X 1/2" U-BOLTS W/ MACHINE NUT AND 1/4" FLAT WILSON WASHER FOR ALL CONCRETE POSTS.

REVISIONS

NO.	DATE	BY	DESCRIPTION

(1" X 1/2")

DATE: 11/14/87	SCALE: NONE
DWG. NO. 3063	SHEET NO. 01
REV. NO.	REV. NO. 00

APPENDIX D

1994 Swift Rail Development Act - Title 49 U.S.C.A. § 20152

49 U.S.C.A. § 20152

UNITED STATES CODE ANNOTATED
TITLE 49. TRANSPORTATION
SUBTITLE V--RAIL PROGRAMS
PART A--SAFETY
CHAPTER 201--GENERAL
SUBCHAPTER II--PARTICULAR ASPECTS OF SAFETY

Current through Pub.L. 106-180, approved 3-17-2000

§ 20152. Emergency Notification of Grade Crossing Problems

(a) Pilot programs.--The Secretary of Transportation shall conduct a pilot program to demonstrate an emergency notification system utilizing a toll free telephone number that the public can use to convey to railroad carriers, either directly or through public safety personnel, information about malfunctions or other safety problems at railroad-highway grade crossings. The pilot program, at a minimum--

- (1) shall include railroad-highway grade crossings in at least 2 States;
- (2) shall include provisions for public education and awareness of the program;
and
- (3) shall require information to be posted at the railroad-highway grade crossing describing the emergency notification system and instructions on how to use the system.

The Secretary may, by grant, provide funding for the expense of information signs and public awareness campaigns necessary to demonstrate the notification system.

(b) Report.--The Secretary shall complete the pilot program not later than 24 months after November 2, 1994, and shall submit to the Congress not later than 30 months after November 2, 1994, an evaluation of the pilot program, together with findings as to the effectiveness of such emergency notification systems. The report shall compare and contrast the structure, cost, and effectiveness of the pilot program with other emergency notification systems in effect within other States. Such evaluation shall include analyses of the safety benefits derived from the programs, cost effectiveness, and the burdens on participants, including railroad carriers and law enforcement personnel.

CREDIT(S): 1996 Main Volume: (Added Pub.L. 103-440, Title III, § 301(a), Nov. 2, 1994, 108 Stat. 4626.)

2000 Electronic Update: (As amended Pub.L. 104-287, § 5(50), Oct. 11, 1996, 110 Stat. 3393.)

APPENDIX E

SEDA-COG Joint Rail Authority

The SEDA-Council of Governments (SEDA-COG) is a regional multi-county development agency which, under the guidance of a public policy board, provides leadership, expertise, and service to communities, businesses, institutions, and residents. The SEDA-COG name was originally formed from the name, Susquehanna Economic Development Association - Council Of Governments. For over 40 years, Central Pennsylvania has addressed many of these issues through the SEDA-Council of Governments, a public organization created by the region's eleven counties: Centre, Clinton, Columbia, Juniata, Lycoming, Mifflin, Montour, Northumberland, Perry, Snyder, and Union. The organization is overseen by a Board made up of County Commissioners, business people, and local elected officials. SEDA-COG's staff is composed of professionals with expertise in a wide range of fields, working with Central Pennsylvania's counties, communities, companies, and individuals "to make things happen."

The SEDA-COG Joint Rail Authority (JRA) is a Pennsylvania Municipal Authority which owns 260 miles of a regional rail system in Central Pennsylvania. The SEDA-COG JRA serves the seven counties of Centre, Clinton, Columbia, Lycoming, Montour, Northumberland and Union Counties with five shortline railroads; namely, the Nittany & Bald Eagle Railroad, the North Shore Railroad, the Juniata Valley Railroad, the Shamokin Valley Railroad, and the Lycoming Valley Railroad.

The railroad operator, Mr. Richard Robey, is President of the North Shore Railroad and Affiliated Companies, a privately owned company, and operates all five of the SEDA-COG JRA railroads plus three additional shortline railroads belonging to other owners, thus operating a total of eight railroads.

Historical Background

The SEDA-COG Joint Rail Authority was formed in July 1983, through the SEDA Council of Governments Board of Directors to pursue a strategy resulting in the public ownership of rail lines which Conrail had decided to abandon. The seven-county (Centre, Clinton, Columbia, Lycoming, Montour, Northumberland and Union) municipal authority specifically seeks to preserve service to rail-dependant industries through shortline rail operations, thereby, preserving rail line service in Central Pennsylvania.

In 1984, the SEDA-COG Joint Rail Authority purchased 82 miles of Conrail lines which was serving 22 industries. The goal was to preserve not only the rail service, but also the 3000 jobs provided by the affected industries. Funding sources at the federal, state and local levels were utilized to develop the project. The \$4.1 million needed to acquire and rehabilitate the lines was provided by the U.S. Economic Development Administration, Federal Railroad Administration, Commonwealth of Pennsylvania,

Centre County Commissioners, Columbia County Industrial Development Authority, and most importantly, the rail-dependant industries. Over \$400,000 of the total project cost was contributed locally. The lines were renamed the North Shore and Nittany & Bald Eagle Railroads.

Since the acquisition and rehabilitation of these two railroads, the Authority has addressed preserving other rail lines. In late 1985, the Shamokin area of southern Northumberland County learned that Conrail intended to abandon lines in this community. The affected industries called upon the Authority for assistance and efforts went forward to assemble a financial package to fund the acquisition and rehabilitation of the Shamokin Cluster (33 miles). In mid-1987, the Commonwealth of Pennsylvania, through its Capital Budget, made a commitment to provide most of the funding to acquire these lines and preserve service to six industries. Contributions matching the state funding were secured from the rail users, area municipalities, Northumberland County Commissioners and the county industrial development authority. The lines, now known as the Shamokin Valley Railroad, were ultimately acquired in December 1989.

Concurrent with the effort to secure funding for the Shamokin lines, the Authority recognized the need to expand the Nittany and Bald Eagle Railroad to include the Bald Eagle Branch from Milesburg to Mill Hall. This connection allows for shipments to the north and to the northwest from Centre County industries. This acquisition provided for an interchange with Conrail at Lock Haven in addition to the interchange at Vail near Tyrone.

Because economic pressures during the 1990's, many companies were forced to re-evaluate their operational philosophies and priorities. The railroad industry was no exception, and, downsizing and streamlining took place. Motivated by the realization of increased profits, many railroads downsized while many railroads merged. Downsizing often meant selling lines that produced little or no profit.

In January of 1996, Conrail announced that it was selling 1,800 miles of rail lines, some of which was within the SEDA-COG JRA region. Some of these lines, namely Conrail's Williamsport Cluster, had extremely high traffic while others such as Conrail's Lewistown Cluster, had very low amounts of traffic. Both clusters however were strategic to the economic health of the region and as such, the JRA acquired these lines from Conrail in August of 1996 to guarantee rail service to the rail dependant industries in that area. As a result of the merger of Conrail with NS and CSX, JRA now has access to NS and CSX in Harrisburg and with the St. Lawrence and Hudson Railroad in Sunbury, PA. As a result, JRA's customers will receive better service and reduced rates.

SEDA-COG Joint Rail Authority Board Members

Mr. Larry Maynard, Chairman, (Union County)
Mr. William Rumberger, Vice-Chairman, (Centre County)
Mr. Barry Ashenfelder, Treasurer, (Montour County)
Mr. James (Bud) Webb, Assistant Treasurer, (Clinton County)
Mr. Donald Kramer, Secretary, (Clinton County)
Mr. George Henry, Assistant Secretary, (Columbia County)
Mr. Michael Redin, (Centre County)
Mr. James Webb, (Clinton County)
Mr. Timothy Bergerstock, (Columbia County)
Mr. Thomas E. Herman, Commissioner, (Montour County)
Mr. Jerry Walls, (Lycoming County)
Mr. Jack Shultz, (Lycoming County)
Mr. David Hoopengardner, (Northumberland County)
Mr. William Clark, (Northumberland County)
Mr. David Reed, (Union County)

SEDA-COG Joint Rail Authority Staff

Mr. Jeffery K. Stover, Executive Director
Mr. James J. McAllister, Transportation Planning Manager
Ms. Denise Pyers, Property Manager
Ms. Sandra Holcomb, Program Assistant

The principal offices of the SEDA-COG Joint Rail Authority are located at:

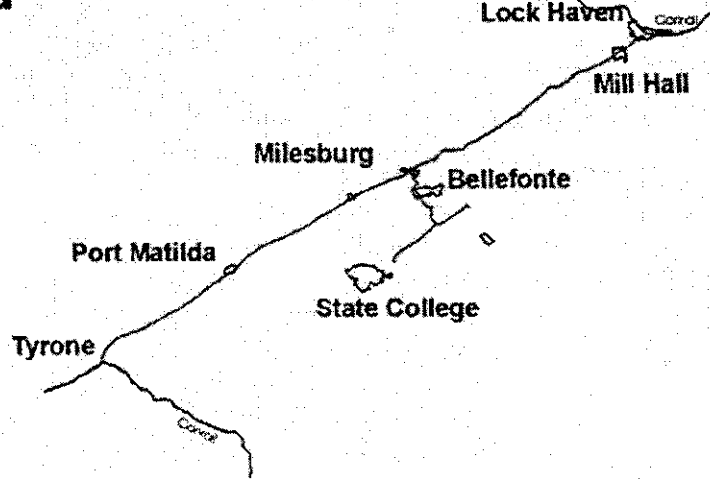
SEDA Council of Governments
RR1 Box 372
Lewisburg, PA 17837
Telephone: 570-524-4491
Fax: 570-524-9190
Website: <http://ira.seda-cog.org>

SEDA-COG Joint Rail Authority Operator

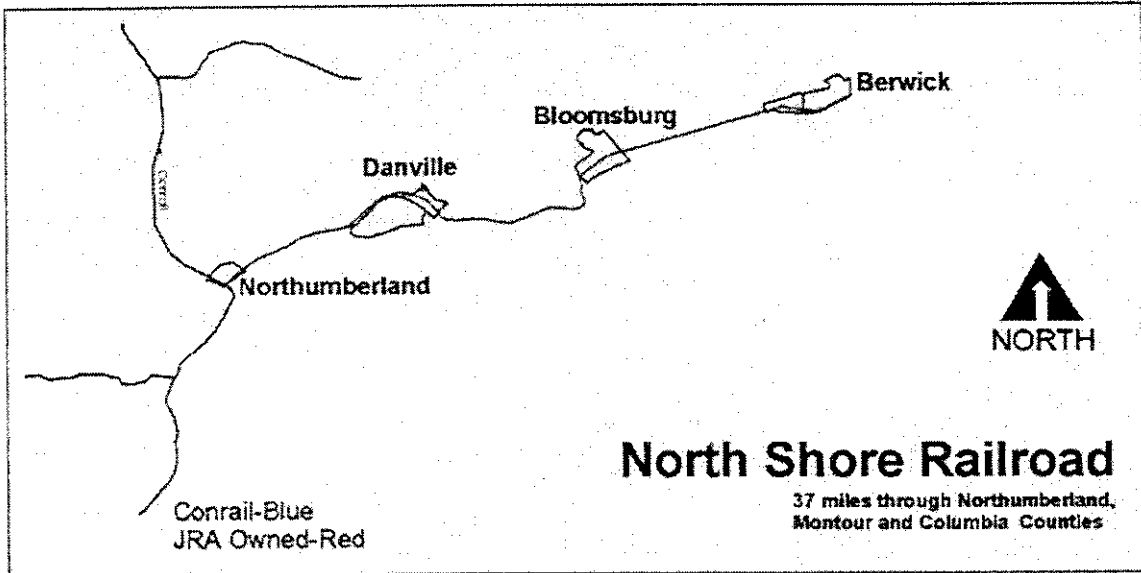
Mr. Richard Robey, President
North Shore Railroad and Affiliated Operating Companies
356 Priestley Avenue
Northumberland, PA 17857
Telephone: 570-473-7949
Fax: 570-473-5414
email: nshrinfo@nshr.com
Website: <http://www.nshr.com>

Nittany and Bald Eagle Railroad

70 miles through Blair, Centre and Clinton Counties



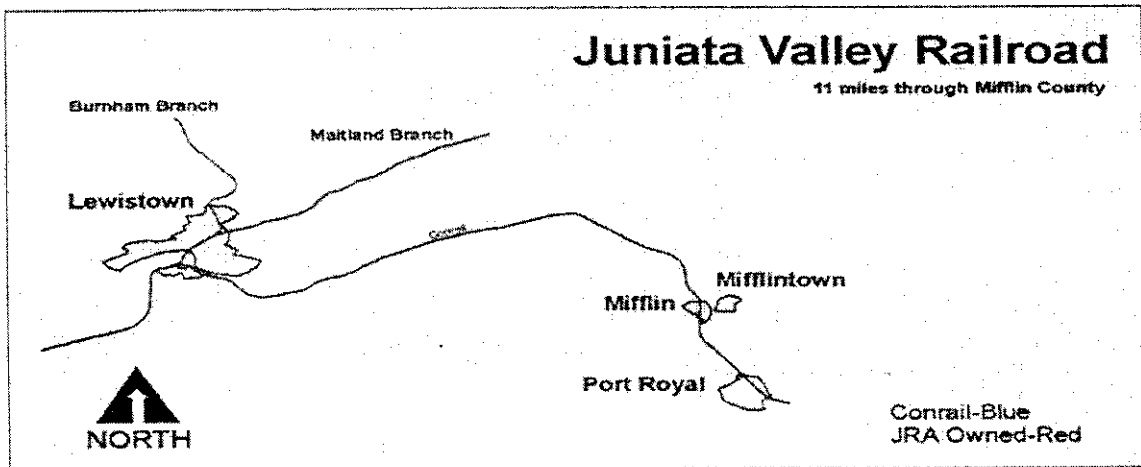
Conrail-Blue
JRA Owned-Red



North Shore Railroad

37 miles through Northumberland, Montour and Columbia Counties

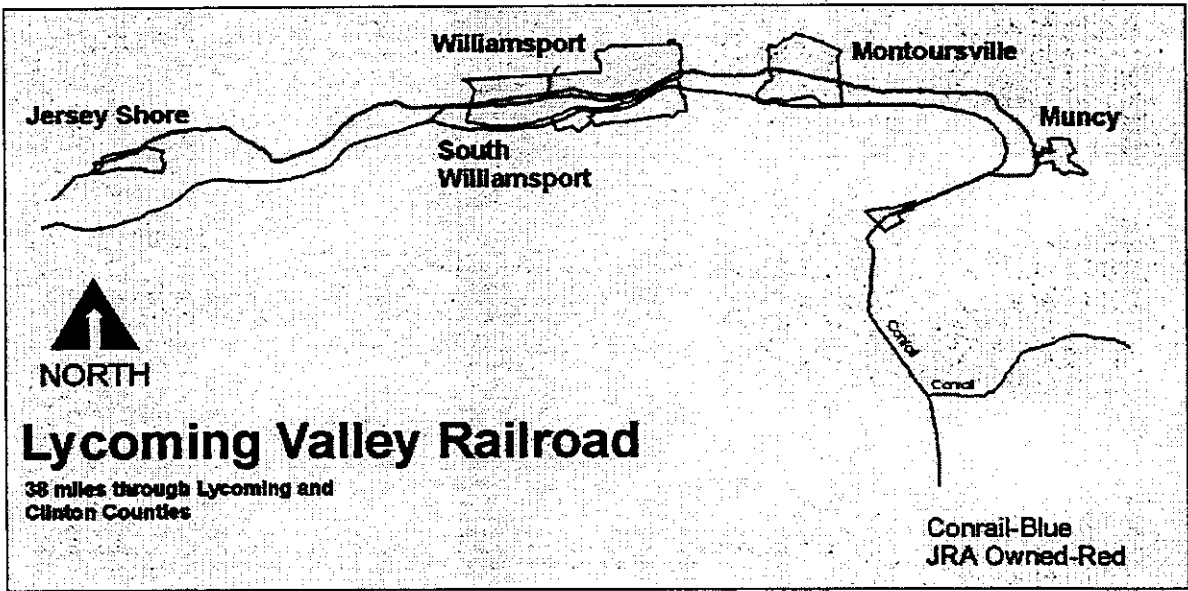
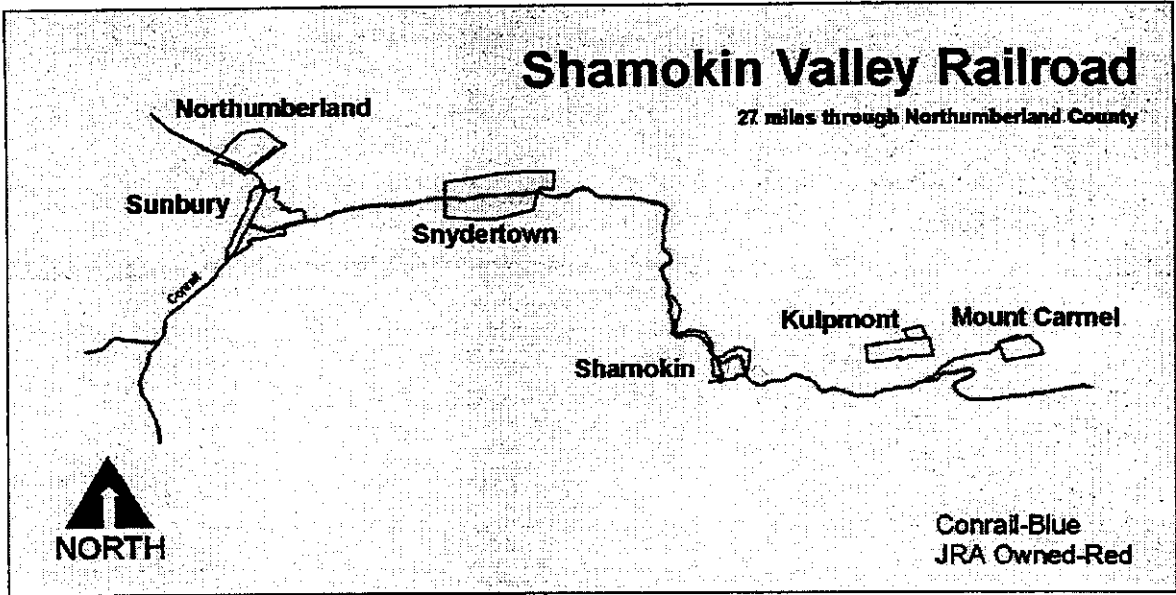
Conrail-Blue
JRA Owned-Red



Juniata Valley Railroad

11 miles through Mifflin County

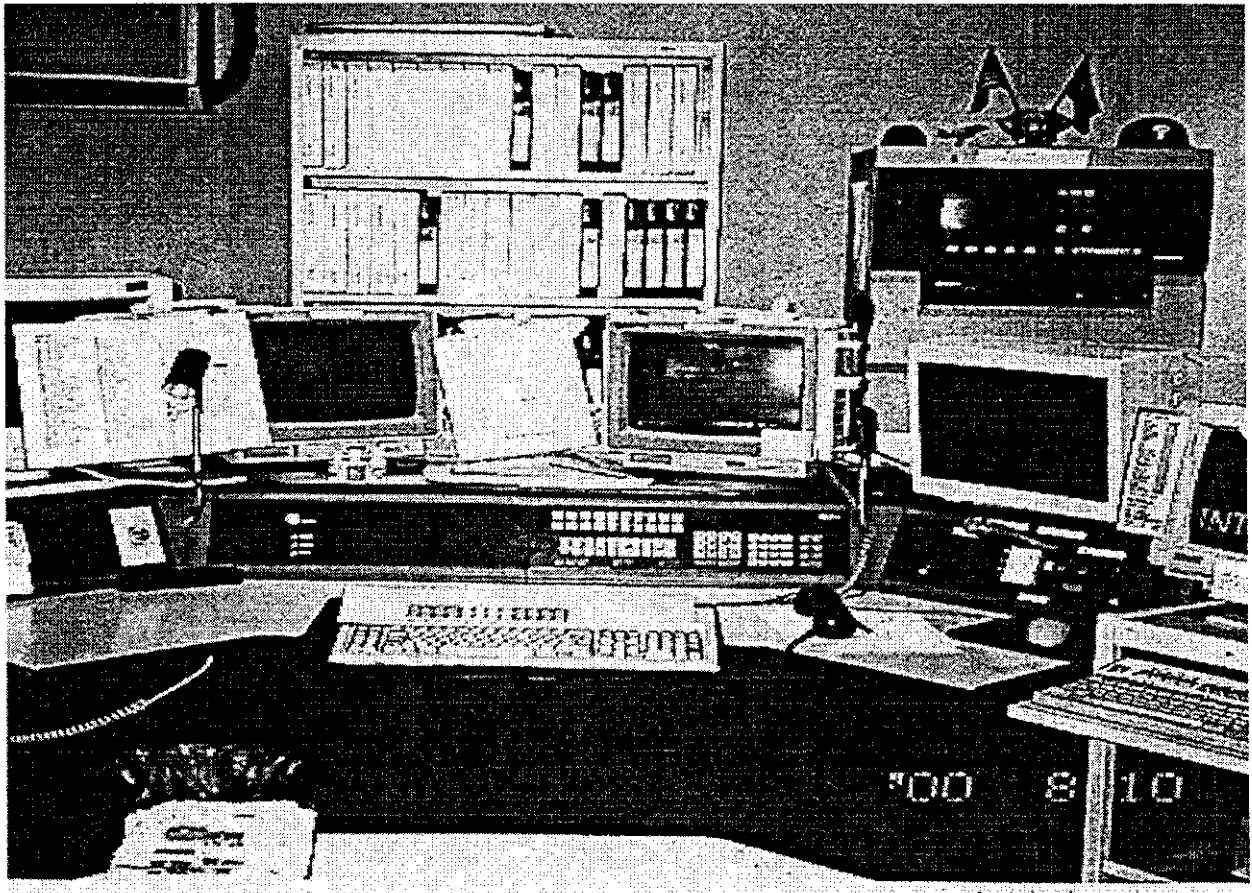
Conrail-Blue
JRA Owned-Red



APPENDIX F

Clinton County Communication Center

The 911 Clinton County Communications Center located at the Susque View County Home, Lock Haven, PA, was established in 1973. It serves a population of 37,182 people in central Pennsylvania with 22,855 telephone lines including 29 Municipalities, 21 Townships, 1 City, 7 Boroughs and covering 892 square miles of land. The Communication Center has 10 full time and one part-time dispatcher. It is manned 24 hours a day, seven days a week. A duplicate communication center is located two miles from the Center at the Clinton County Courthouse which has a backup facility in case the present location becomes inoperable. The picture below shows one of the three consoles in the Center used for handling calls and communications.



The Center is housed in a secure area and is equipped with a 9-1-1 enhanced telecommunications system provided by Verizon which allows the dispatcher to identify the location of the caller when a call is received. The center also uses a Computer-Aided Dispatch (CAD) system that operates on an IBM AS400. The CAD System is a relational database programmed to provide instantaneous response data for the various agencies which accommodates multitask and multi-jurisdictional capabilities for the dispatcher. A redundant AS400 system is housed in the backup facility located in the Courthouse which has all of the same stored data. CAD access to the backup AS400 is via personal computers installed at the Center.

There are three identical console positions which allow division of dispatch operation responsibilities between agencies. For example, Console #2 is used for fire and EMS, Console #3 for police communications, and Console #1 is used for either or both activities. Console #1 is also used for training. There are Dictaphone and Eyretel recorders which are used for recording all calls and radio transmissions. In case of primary power failure, all equipment can be powered by a backup battery system which can power the center equipment for 30 minutes and also by an Onan generator which will start 0.4 seconds after the primary power is lost.

The Center provides dispatch service for the entire county which includes, 19 fire stations, five ambulance services, one paramedic station, and 13 police departments, including the County Sheriff's Department. The Center also handles 'after hours' paging for numerous agencies in the County including PennDOT, Children and Youth Domestic Relations Agencies, Probation and Sheriff's Departments, Water/Sewer Department, and for local road crews.

Dispatchers must complete 320 hours of training before being certified and permitted to work without a trainer. In addition, each dispatcher also completes CPR and Emergency Dispatcher Certification. Along with having APCO (Association of Public Communications Officers) 40-hour certification, dispatchers are State certified by the Pennsylvania Emergency Management Agency (PEMA). Dispatchers are also periodically provided with updated training.

The center receives approximately 16,400 emergency calls per year and about 52,000 non-emergency calls. Most of the emergency calls are for medical assistance, police, and fire services, in that order.

APPENDIX G

1-800 ENS Software Computer Program

This Appendix displays the typical screens from the 1-800 Toll-Free Emergency Notification System (ENS) software as developed for the State of Texas. This ENS System was designed for and first tested in the State of Texas during 1999. This software is capable of receiving calls from travelers, safety officials, police officers, and emergency personnel. It logs the data as shown in Figure 1 (***Crossing Problem Log***), including received call information including time, crossing identification, problem, caller telephone number, and railroad telephone number to contact. It also records administrative details such as problem completed date, operator's initials, and type of action taken.

Figure 2 shows the geographical information about the crossing including the state, county, city, and street name. This screen is obtained by clicking on **Search/Info** button at the bottom of the ***Crossing Problem Log*** Screen (see Figure 1). The location data is stored in the database. In this screen, additional crossing information can be inserted. Also, a map can be provided to help identify the location.

By clicking the **Select** button, the ***Crossing Information Record*** (see Figure 3) can be obtained. Additional information about the crossing can be entered such as a new railroad name, detail location information, and information on the warning devices. To save this information, click the **Save** button at the bottom of the screen.

Figure 4 screen is then displayed as shown. In this screen, the ***Crossing Problem Log***, the problem is logged and appropriate officials can now be notified by telephone or by facsimile.

There are also various reports available for review and analysis. Figure 5 shows the screen for the ***Crossings Called In*** report. This report provides the crossing identification, date and time the call was received, main and subcategory of the problem, and location by county, city, and street. These reports can be obtained for a specific period such as a day, week, month, or year.

The history of calls for a specific crossing can be obtained by clicking on report menu. Figure 6 displays the screen for the ***Crossing History Report*** for a typical crossing. For the selected crossing, it provides the date, time, county, city, street, railroad, and the main and subcategory of the problem.

A report can also be obtained for the problems recorded on a particular date as shown in Figure 7, ***Calls by Location with Listing***. This report displays the calls received, date, time, crossing identification, and problem.

A malfunctions report can be provided by selecting the report menu and clicking on the **Railroad Malfunction Log** (see Figure 8). This report provides the information on calls received such as the date, time received, crossing identification, caller origin (e.g. public, law enforcement, city employee, etc.), state, county, city, street, malfunction, railroad, and the date that the problem was completed.

Figure 9 provides a summary report of the **Type and Number of Problems Called in**. This includes the problem type such as "Accident-Pedestrian(s) Hit by Car," the crossing identification number, and the total number of calls.

Figure 10 displays planned enhancements that will provide the dispatcher the capability of viewing a geographical display (map) of the area and crossing where the problem is being reported. The dispatcher will be able to view the general location of the crossing and surrounding area for positive identification and location of the subject crossing, make any necessary decisions about the emergency, and notify the appropriate officials.

Crossing Information is Added. Complete Caller and Railroad Information

Crossing Problem Log
21.28

Crossing Problem Log

TX Dept. of Public Safety, Dept. of Emergency Management

Information on Incident or Problem

Crossing (DOT) ID:

Location of Incident (as provided by Caller or other):

Date Problem Observed:

Time Problem Observed:

Caller's Telephone #:

Caller Origin:

Problem:

Additional Description of Problem:

Location data on file for this Crossing ID:

State: County: City:

Highway: Street:

RR Name as Cule:

Administrative Detail

Call Received:

Problem Completed:

Operator's Initials:

Action Taken

Stop trains on line? Yes No N/A

Emergency Action taken by DCM:

Railroad Contacted:

Railroad Number Called:

Number of attempts to call Railroad:

DCM Contacted Railroad:

** There are currently 2 Pending Calls!

Contact

Trouble Report

Search/Info

Mapping

Save

Save/New Log

Figure 1. Crossing Problem Log

Click on County/City/Street Menu

Search for Crossing

SEARCH FOR CROSSING BY

Updated Data Search

State: County: City:

These data are from Crossing Info database.

Street Name:

Wildcard
 Positional

Crossing	County	City	Street	Highway
4323220	HOUSTON	CROCKETT	N AUSTIN STREET	ST 0000
432315W	HOUSTON	CROCKETT	*PRIVATE	
4323160	HOUSTON	CROCKETT	*PRIVATE	
432317K	HOUSTON	CROCKETT	*PRIVATE	
432318S	HOUSTON	CROCKETT	*PRIVATE	
432327R	HOUSTON	CROCKETT	*PRIVATE	
432328T	HOUSTON	CROCKETT	*PUBLIC TX 405	TX 405
432323N	HOUSTON	CROCKETT	BELL AVENUE	ST 0000
448515D	HOUSTON	CROCKETT	RFI AVENUE	ST 0000
448516K	HOUSTON	CROCKETT	BELL AVENUE	ST 0000
432326J	HOUSTON	CROCKETT	HIGHWAY 7 21	HW 7 21
432325C	HOUSTON	CROCKETT	HOUSTON AVENUE	ST 0000

See Info

Add Crossing

Clear Search

Mapping

Close

Figure 2. County, City, State Menu

Specific Crossing Information is Displayed. When Complete, Hit the Select Bottom on the Menu

Crossing Info Record

CROSSING INFORMATION RECORD

Railroad Location and Warning Device(s)	Comments	Call History	Update History																																				
Railroad Location Information Crossing (DOT) Number: 432308L Existing Update <table style="width: 100%; border-collapse: collapse;"> <tr> <td>Railroad: UNION PACIFIC RAILR</td> <td></td> <td></td> </tr> <tr> <td>State: TX</td> <td></td> <td></td> </tr> <tr> <td>County: HOUSTON</td> <td></td> <td></td> </tr> <tr> <td>City: LOVELADY</td> <td></td> <td></td> </tr> <tr> <td>Street: N LOVELADY</td> <td></td> <td></td> </tr> <tr> <td>Highway: CO 0000</td> <td></td> <td></td> </tr> <tr> <td>RR Division: PALESTINE</td> <td></td> <td></td> </tr> <tr> <td>RR Subdivision: TRINITY</td> <td></td> <td></td> </tr> <tr> <td>RR Branch or Line:</td> <td></td> <td></td> </tr> <tr> <td>Crossing Type: PUBLIC</td> <td></td> <td></td> </tr> <tr> <td>Crossing Position: AT GRADE</td> <td></td> <td></td> </tr> <tr> <td>Milepost: 0133.10</td> <td></td> <td></td> </tr> </table>	Railroad: UNION PACIFIC RAILR			State: TX			County: HOUSTON			City: LOVELADY			Street: N LOVELADY			Highway: CO 0000			RR Division: PALESTINE			RR Subdivision: TRINITY			RR Branch or Line:			Crossing Type: PUBLIC			Crossing Position: AT GRADE			Milepost: 0133.10					
Railroad: UNION PACIFIC RAILR																																							
State: TX																																							
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Street: N LOVELADY																																							
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RR Subdivision: TRINITY																																							
RR Branch or Line:																																							
Crossing Type: PUBLIC																																							
Crossing Position: AT GRADE																																							
Milepost: 0133.10																																							
Railroad Detail Location Info Nearest RR Timetable Station: LOVELADY Latitude: 31.5549270 Longitude: -95.8777240 Map Ref: 01 Hwy System:		Warning Devices Train Activated Devices (Public): Signs (Public): Special Warning Device (M/T) Train Activated (Public): Signs/Signals: There is at least one sign or signal. Sign/Signal (Priv.): Enter updates to warning devices:																																					
<div style="display: flex; justify-content: space-around;"> ✓ Select Save Mapping History Report Info. Report Update Report Close </div>																																							

Figure 3. Crossing Information Record

Problem Log is Ready to Save

Crossing Problem Log

Crossing Problem Log

TX Dept. of Public Safety, Dept. of Emergency Management

Information on Incident or Problem Crossing (DOT) ID: 432323N Location of Incident (as provided by Caller or other): Date Problem Observed: 8 / 5 / 2000 Time Problem Observed: hr min Caller's Telephone #:		Administrative Detail Date Time Call Received: 8 / 5 / 2000 Problem Completed: 8 / 5 / 2000 Operator's Initials:	
Caller Origin: CITY EMPLOYEE Problem: BELLS & LIGHT(S) Additional Description of Problem: NO LIGHT		Action Taken Stop trains on line? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A Emergency Action taken by DEM: CALLED RR POLICE Railroad Contacted: YES Railroad Number Called: YFS Number of attempts to call Railroad: 2 DEM Contacted Railroad: 8 / 5 / 2000 22:51	
Location data on file for this Crossing ID: State: TX County: HOUSTON City: CROCKETT Highway: ST 0000 Street: RFI1 AVFNIF RR Name or Code: UNION PACIFIC RAILROAD			
** There are currently 3 Pending Calls!			
<div style="display: flex; justify-content: space-around;"> Contact Train Report Search/Info Mapping Save Save/Print Log </div>			

Figure 4. Crossing Problem Log Ready to Save

Report for All Crossing Calls

Texas Department of Public Safety, Division of Emergency Management
1-800 Highway-Rail Crossing Emergency Notification System

CROSSINGS CALLED IN

From: 3/5/2000 To: 8/5/2000

8/5/2000

Page 1 of 1

Crossing I.D.	Date/ Time Call Received	Problem (Main Category/ Subcategory)	Location		
			County	City	Street
432306	8/5/2000 21:27:28	ACCIDENT PEDESTRIAN(S) HIT BY CAR	HOUSTON	LOVELADY	N LOVELADY
432323N	8/5/2000 14:12:00	BELLS & LIGHT(S)-ACTIVATE TOO LATE	HOUSTON	CROCKETT	BELL AVENUE
432323N	8/5/2000 14:18:28	CAR(S)-STALLED ON TRACKS	HOUSTON	CROCKETT	BELL AVENUE

Total Crossings Called in: 3

Figure 5. Report on Crossing Called in

Typical Report for Selected Crossing

Texas Department of Public Safety, Division of Emergency Management
1-800 Highway-Rail Crossing Emergency Notification System

CROSSING HISTORY REPORT

From: 8/5/2000 To: 8/5/2000

8/5/2000

Page 1 of 1

Crossing I.D.	Date	Time	County	City	Street
432323N	8/5/2000	14:12:00	HOUSTON	CROCKETT	BELL AVENUE
			Current Railroad data: UNION PACIFIC RAILROAD		
			Problem (Main Category/ Subcategory)		
	8/5/2000	14:12:00	BELLS & LIGHT(S)-ACTIVATE TOO LATE		
	8/5/2000	14:18:28	CAR(S)-STALLED ON TRACKS		

Total Calls for this crossing during this period: 2

Figure 6. Typical report for Selected Crossing

Typical Report of Calls by Location

Texas Department of Public Safety, Division of Emergency Management
1-800 Highway-Rail Crossing Emergency Notification System

Calls by Location with Listing

From: 05/2000 To: 05/2000

05/2000

Between 05/2000 and 05/2000, TX Department of Public Safety, Division of
Emergency Management, received 0 calls for crossings located in
HOUSTON City

Call Received		Crossing ID	Problem
Date	Time		
7/23/2000	14:03:37	432323N	CROSSING-TOO HIGH
05/2000	14:12:00	432323N	BELLS & LIGHT(S)-ACTIVATE TOO LATE
05/2000	14:16:28	432323N	CAR(S)-STALLED ON TRACKS
05/2000	21:26:50	432308L	ACCIDENT PEDESTRIAN(S) HIT BY CAR
05/2000	22:58:42	432323N	BELLS & LIGHT(S)

Figure 7. Typical Report of Calls by Location

Typical Malfunctions Report

Railroad Malfunction Log

Railroad Malfunction Log

From: 05/2000 To: 05/2000

DATE RECEIVED	TIME RECEIVED	CROSSING	CALLER ORIGIN	STATE	COUNTY	CITY	STREET	MALFUNCTION	RAILROAD	DATE COMPLETED
05/2000	21:25:54	432308L	PUBLIC	TX	HOUSTON	LOVELADY	N LOVELADY	ACCIDENT-PEDESTRIAN	UNION PACIFIC RAILROAD	05/2000
05/2000	14:16:28	432323N	LAW ENFORCEMENT	TX	HOUSTON	CROCKETT	BELL AVENUE	CAR(S)-STALLED ON TRACKS	UNION PACIFIC RAILROAD	05/2000
05/2000	14:17:00	432323N	CITY EMPLOYEE	TX	HOUSTON	CROCKETT	BELL AVENUE	BELLS & LIGHT(S)-ACTIVATE TOO LATE	UNION PACIFIC RAILROAD	05/2000

* These Crossing numbers are invalid.

Update

Delete

Report

Close

Figure 8. Railroad Malfunction Log Report

Typical Summary Report

Texas Department of Public Safety, Division of Emergency Management
 1-800 Highway-Rail Crossing Emergency Notification System

TYPE AND NUMBER OF PROBLEMS CALLED IN

(Summary)

From: 05/27/00 To: 06/27/00

Problem	Crossing I.D.	Total
ACCIDENT / PASSENGER / FREIGHT TRAIN	62720 W	1
Sub Total:		1
DETECT & ALLOTTOR / ACTIVATE TOO LATE	63272 W	1
Sub Total:		1
DAMAGE / MISC / ON TRACK	102220 W	1
Sub Total:		1
Total:		3

Figure 9. Typical Summary Report

Enhancement - Map to Locate Crossing Added

The screenshot shows the 'Crossing Problem Log' application window. At the top, it displays 'TX Dept. of Public Safety, Dept. of Emergency Management'. The interface includes several data entry fields:

- Location of Problem:** Includes 'Crossing (DOT) No.', 'Location of Problem (as provided by Caller or User)', 'Date Problem Observed', and 'Time Problem Observed'.
- Caller Origin:** Fields for 'Problem', 'Address', 'Description', and 'Number'.
- Location of Crossing:** Fields for 'State', 'County', 'City', 'Highway', and 'Street'.
- Call Details:** Fields for 'Call Description', 'Date', 'Time', 'Address Completed', 'Operator's Initials', and 'Action Taken'.
- Emergency Action:** A section for 'Emergency Action Taken by RPS'.
- Additional Info:** Fields for 'Railroad Customer', 'National Number Label', 'Number of Attempts to Call Railroad', and 'R/W Connected to Street'.

Below the form fields is a toolbar with icons for 'Contact', 'Trouble Report', 'Search/Info', 'Mapping', 'Save', and 'Spec/News Log'. The 'Mapping' icon is highlighted, and a map is displayed below the toolbar. The map shows a street grid with labels for 'W. Glenhurst Dr.', 'N. Alabaster St.', 'S. Braker St.', and 'Hessman St.'. A red marker is placed on the map to indicate the location of the crossing.

Figure 10. Enhancement for Locating Crossing