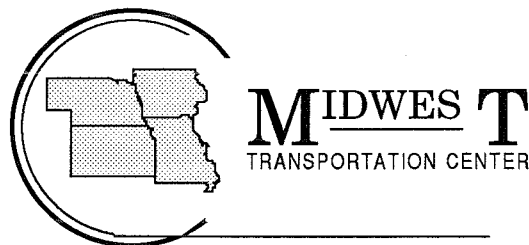


PUBLIC SECTOR PARTICIPATION IN LOCAL RAIL SERVICE PROJECTS WITH AN ECONOMIC DEVELOPMENT FOCUS

This report was prepared as a part of Year Two of the project, "The Changing Role of Freight Transportation Modes and Intermodal Freight," sponsored by the Midwest Transportation Center.

Midwest Transportation Center
June, 1992



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**Final Report
June, 1992**

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EXECUTIVE SUMMARY

This report is part of a two year research project which sought to document changes to midwestern surface freight industries and infrastructure, and to governmental regulation of the surface freight industry that occurred during the 1980s and early 1990s, and to recommend policy directions for the future. The first year of the project, "The Changing Role of Freight Transportation Modes and Intermodal Freight," produced a report which largely documents changes in and the condition of the motor carrier and railroad industries in Federal Region VII (Iowa, Kansas, Missouri, and Nebraska) during the 1980s. The first year's report covered a number of related issues and provided a substantial amount of background information. During the second year, the research team focused on two very specific issues:

- The role of public assistance in the promotion of local rail services for economic development purposes. More specifically, an investigation of public investments in midwestern shortline and intermodal facilities to determine criteria which may make these small and site-specific investments effective promoters of economic development.
- The condition and functions of intrastate regulation and the impacts of changes to intrastate regulation in Federal Region VII. During this portion of the project, a detailed investigation of intrastate regulation was conducted in each of Region VII's four states.

This report is devoted to the former topic. The latter issue is documented in a report available from the Midwest Transportation Center, "Economic Regulation of Intrastate Trucking: An In-Depth Examination of Iowa, Kansas, Missouri, and Nebraska."

Introduction

Throughout their history, railroads have been used as instruments to promote social and economic objectives. Railroads have been controlled to help achieve objectives through economic regulation, and economic promotion and subsidization. Given that economic regulation of the transportation industry has been reduced, issues dependent on economic regulation to promote economic development were not pursued. This report seeks to examine the most effective role for government in public promotion and subsidization of rail services.

During the 1800s promotion of the railroad industry was common and often necessary to develop agriculture and natural resource extraction industries. Because there were no

alternative land-based mechanized modes of transportation, economic development would have been impossible or extremely difficult without railroads. As an adequate highway system was built and the motor carrier industry developed, adequate alternatives to rail transportation became available, thus diminishing the argument that rail service is essential for economic development.

To investigate the role of public economic promotion and subsidization of rail projects for economic development purposes, two parallel activities were conducted. The first was to examine state rail plans to determine each state's stated objective for economic promotion of rail services. The second was to conduct case studies of local small scale midwestern rail services that were promoted for economic development purposes. Through the contribution of these efforts, attributes of successful economic development projects were identified.

State Rail Assistance Programs

During the 1970s and 80s, economic promotion and subsidization of rail transportation have been supported for two reasons: 1) preservation of railroads and industries that are dependent on rail services, and 2) economic development. A review of state rail plans found that most states with strong preservation objectives were states with economic interests in agriculture or resource extraction industries. These industries are associated with bulk goods which are most efficiently moved by rail. States with economic development objectives usually had larger industrial economic bases and considered economic promotion of rail service as a vital element for the delivery of manufacturing inputs, thus, making manufacturing at a specific location within the state financially attractive.

Case Studies of Local Rail Projects

Six case studies of local rail projects were conducted. They included:

- Columbia Terminal Railroad in Columbia, Missouri.
- Rochelle Industrial Spur in Rochelle, Illinois.
- Appanoose County Community Railroad in Centerville, Iowa.
- Quad Cities Container Terminal in Davenport, Iowa.

- Burr Oak Intermodal Facility in Chicago, Illinois.
- Newton Intermodal Facility in Newton, Iowa.

These projects were selected for the diversity of their funding sources, and project objectives and organization.

Success Attributes

Although public promotion of local rail services should be guided by traditional economic analysis, not all elements identifying a successful project can be measured as part of an economic analysis. Five elements which are indicative of successful local rail service projects were identified through the literature review, a review of state rail programs, and six case studies. Not all attributes are necessary for a particular project to be successful. However, the presence of several is likely to help a local rail service project achieve success. They are:

- The existence of stable core shipper.
- An entrepreneurial attitude where financial participants are willing to assume reasonable financial risks.
- Tight control of costs by rail service management.
- The identification of an appropriate market niche and focus on services to meet the transportation demands of that niche.
- Integration of local rail services with those of other carriers and third parties.

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CHAPTER I

INTRODUCTION

Throughout their history, railroads have been used as instruments to promote social and economic policies. Federal, state and local governments have used two tools to exert control over railroads to promote social or economic objectives: 1) economic promotion and subsidization, and 2) regulation of entry and exit, price and service.

In the 1800s, the United States was a developing country and railroads were the only land-based, mechanized mode for transporting large volumes of goods. Railroads were a key to the economic development of large portions of the U.S. and were essential for taking natural resources and bulk agricultural goods to markets. Clearly, governments had a strong interest in the promotion of the railroad industry for reasons of economic development. At the same time, the railroad industry had a technological monopoly over the land movement of large volumes of goods. Several individual rail companies possessed monopolies in local areas and regions. Hence, government's legitimate role in the economic regulation of the industry was to promote fairness in both pricing and service.

In the 1990s, those conditions no longer exist. Railroads are not the only land mode of freight transportation in the U.S. Alternative modes provide strong competition. Hence, through the regulatory reforms legislated by the Staggers Rail Act of 1980 and the ensuing interpretations of this act by the Interstate Commerce Commission and by the courts, economic regulation of rail has been substantially reduced.¹ This report focuses on the role in the 1990s of government's other tool for exerting control over railroads -- economic promotion and subsidization of railroads and rail facilities. Specifically, this study examines local rail investment and identifies attributes that make certain projects more desirable alternatives for the investment of public funds for economic development purposes. This issue is first examined by investigating the current state actions for promoting economic development through investment in rail facilities. This is accomplished through a review of state rail plans. Next, the study conducts six case studies of small scale rail or intermodal terminal facilities that were sponsored by governments to facilitate local economic development. From these case studies the researchers have identified attributes of successful local economic development projects. The

research does not investigate the role of economic regulation of rail service for the purpose of economic development.

Early Public Economic Promotion and Subsidization

In the 1830s, when railroad technology was first introduced, the philosophy of the administration of President Andrew Jackson rejected the notion of federal railroad ownership. With a few notable exceptions, the federal government stayed out of the business of owning and operating railroads.² However, in the nineteenth century the federal government promoted and subsidized railroads to further develop the West and agriculture. During the twentieth century the federal government promoted and subsidized railroads to protect and promote selected industries, especially agriculture, and to promote social goals such as energy conservation, and the reduction of air pollution and highway costs.

Economic Development Objectives

When a region is in its development stages, there is a clear link between economic development and transportation. That is, given a region whose development is held back because of the inability or inefficient means to obtain access to markets, promoting the creation or extension of a railroad may stimulate development. Clearly, during the nineteenth century, when the U.S. was developing and when there were no surface alternatives to railroad transportation for large volume and long distance movements, the provision of railroads tended to stimulate economic development. In the twentieth century, as other competing transportation modes became viable options, the linkage between railroads and economic development became less clear.

State and Local Governments

In the nineteenth century, several state and local governments chose direct involvement in railroads. They saw railroads as tools for economic development. Regions or communities engaged in the extraction of natural resources, production of bulk commodities, or heavy manufacturing, and without water transportation alternatives, required railroads for reaching

distant markets. Railroads provided economic development opportunities, and state and local governments were willing to invest in railroads, provide loans, and even build and operate railroads to allow shippers to gain access to markets. To facilitate the development of railroads, several states provided railroads with the power of eminent domain and the ability to incorporate without special action by the state legislature.³

The Federal Government

Although the federal government remained less directly involved in railroading than several state and local governments, the federal government provided substantial assistance to railroads during the second half of the nineteenth century. Assistance consisted primarily of providing eminent domain, granting rights of way through federal lands, and the right to use materials and timber along the right of way for construction purposes. In addition, the federal government provided loans to several transcontinental railroad construction projects. Most loans were never repaid.⁴

One of the most important forms of federal assistance to railroads was through land grants. Railroad companies building through federal lands were granted sections of land along the right-of-way. In all, 72 separate land grants were provided to railroads totalling roughly 130 million acres.⁵

Current Public Economic Promotion and Subsidization

The U.S. railroad network matured during the late 1800s and reached its peak of about 250,000 route miles in 1916. The system built during the 1800s provided a dense network of transportation services when there were no other economical options for volume surface movements of freight. By the 1920s, highway construction combined with an emerging motor carrier industry began providing viable competition. With additional competition from other modes, railroads' share of intercity freight transportation revenues shrank to 15.4 percent in 1988, while trucking captured almost 75 percent of the total revenues.⁶ Between the 1920s and the late 1980s rail's share of total intercity ton-miles carried dropped from 75 percent to 37 percent.⁷

The U.S rail system, developed predominately in the 1800s, was overbuilt in the face of transportation technology in the 1900s. Excess capacity was a major problem, and the railroads sought to abandon numerous unprofitable rail lines. By 1975, rail traffic was so concentrated that 66 percent of all freight was carried on just 20 percent of the lines. One-third of the route miles (over 70,000 miles) carried only 1 percent of the country's freight.⁸ In an effort to reduce capacity, rail carriers abandoned one-third of their railway miles and, by 1989, the entire U.S. rail network was about 175,000 miles.⁹

Because highway technology has produced viable competition to railroad transportation, it is much more difficult to build the case that railroad transportation is necessary to promote economic development. As a result, public investment in railroads for economic development has virtually ceased. Most public investment in the railroad industry has become more a matter of preserving the industries located on the lines rather than stimulating new economic activity.¹⁰

The Federal Government's Role In Rail Assistance

Between 1900 and 1970 there were a few examples of the federal government's providing railroads financial assistance. They included assistance to railroads through loans: 1) during and after World War I, 2) during the financial depression of the late 1920s and 30s, and 3) through the Transportation Act of 1958. In addition, the federal government relieved railroads of their intercity passenger service requirements through the creation of the National Railroad Passenger Corporation in 1970.

Modern public assistance to railroads began with the Regional Rail Reorganization Act of 1973 (3-R Act).

The 3-R Act was created as a result of the bankruptcy in 1970 of the Penn Central Railroad. The Penn Central had been the nation's largest railroad, with approximately ten percent of the total rail traffic (measured in ton-miles) in the U.S. and almost thirteen percent of the total rail revenue.¹¹ The areas served by the Penn Central included 55 percent of all manufacturing in the U.S. and 60 percent of all manufacturing employees. It was estimated that the loss of Penn Central's service would increase national unemployment by three percent and would severely disrupt the eastern U.S. economy.¹²

The objectives of the 3-R Act were to:¹³

1. Identify the rail system in the region (seventeen northeastern and midwestern states) which was adequate to meet the needs of the public.
2. Reorganize the railroads in the region into an economically viable system.
3. Establish the United States Railway Association (USRA) to carry out the planning of the act.
4. Establish the Consolidated Rail Corporation.
5. Assist states and others in preserving rail lines that would be terminated.
6. Accomplish these objectives at the minimum cost to the tax payers.

Objectives 1 through 4 were focused on salvaging rail service on the lines of the Penn Central Railroad and seven other bankrupt Eastern rail companies. The fifth objective, assisting states and others to preserve rail lines, provided the model for this and later rail line subsidization programs. The original congressional justification, as stated in the legislation itself, for assisting state and local governments to preserve rail service, was based on the following:¹⁴

1. The nation was facing energy shortages.
2. The energy efficiency of railroads and their related low pollution level.
3. The fact that abandonment would conflict with long term energy and environmental goals.
4. Under certain circumstances the cost to the taxpayers of rail service continuation subsidies would be less than the cost of abandonment of rail service in terms of lost jobs, energy shortages and degradation of the environment.

Only the fourth rationale addresses the role of railroads in the economy. The rail service continuation program was administered through the Federal Railroad Administration (FRA) and provided for operating subsidies, loans, and loan guarantees. To be eligible for assistance, the state must have completed a state rail plan and must have provided for the equitable distribution of the assistance.

The state eligibility for federal assistance and state planning requirements of the 3-R Act were made applicable nationwide by the Rail Revitalization and Regulatory Reform Act (4-R Act) which was signed into law on February 5, 1976.¹⁵ At roughly the same time, the FRA published its first guidelines for conducting state rail plans.¹⁶

The program to provide financial assistance to lines supported under the 3-R Act and the 4-R Act was felt to contain a serious defect: only lines that had been authorized for abandonment could receive assistance. The program was accused of squandering funds on lines which served no valid economic purpose rather than investing in those lines which might be marginally profitable, could be helped to survive, and serve a useful purpose with some economic assistance. The Local Rail Service Assistance Act (LRSA) of 1978 sought to alleviate this problem by authorizing that assistance be provided to lines that were carrying very low traffic volumes but may still be economically viable. In addition, LRSA provided funding for states to establish or continue to maintain their light-density rail line programs, thus assisting additional states to conduct rail planning. Further, Section 803(a) of the 1978 Act required that states develop "a methodology for determining the ratio of benefits to costs of projects which are proposed to be initiated" in the areas of acquisition, rehabilitation, substitute service, and new construction.¹⁷ Planning assistance and broadening the eligibility for assistance encouraged more states outside the affected northeast and midwest region to develop low density rail assistance programs.

The 3-R and 4-R Acts based their subsidy programs on the assumption that subsidies would help build traffic on unprofitable branch lines to profitable levels. The use of subsidies was seen as mitigating the impacts of abandonment by allowing rail users and others time to adjust to the loss of rail service. Generally, the notion that the subsidies would turn lines around and increase traffic was not based upon sound economic analysis. Lines that applied for abandonment were clearly poor locations for new shippers. Thus the notion that traffic would build generally proved to be not the case. It would make far more sense for a shipper to locate on a viable line, making that line even stronger. To some extent the LRSA allowed states to strengthen lines that were still viable and hence promoted economic activity. However, federal assistance programs and many of the state assistance programs reviewed (see summary included in the next chapter) were focused on line preservation rather than on economic development.

Even those states that have economic development perspectives look to rail investment as a means of prolonging or strengthening existing economic activity and preserving the industry base that would have been lost if the line were abandoned.¹⁸ Few states look at public investment in rail services for their economic development impacts in a more traditional sense, that is, to make incremental improvements in services or to create new services to foster economic development.¹⁹

LRSA funding by the federal government was reduced each year following 1980 and terminated in 1988.²⁰ In 1990 a parallel program began, entitled the Local Rail Freight Assistance Act.²¹ The bill provided fifteen million dollars in each of 1990 and 1991.²² The first five million dollars are to be used to fund state rail planning efforts and the remainder is allocated to assistance projects. The volume of project dollars available to states through this program is limited. For example, Iowa received 388,800 dollars and 386,640 dollars for rail projects in 1990 and 1991, respectively.²³ The Local Rail Freight Assistance Act also requires that all projects assisted have a benefit to cost ratio greater than one and generate at least 20 cars per mile per year. This requirement focuses the use of assistance funds on lines that are at least marginally viable rather than propping up failing lines.

Evaluating Projects for Economic Development Potential

The use of a benefit to cost ratio for evaluating public assistance to rail projects has been a cornerstone of federal and most state public assistance programs. Its use was a legislative requirement when Local Rail Service Assistance Act (of 1978) funds were used and is when Local Rail Freight Assistance Act (of 1989) funds are spent.²⁴ The benefit to cost ratio methodology used by states to compare projects and evaluate them for eligibility for financial assistance is based on sound economic principles, incorporating broad measures of benefits and costs, and accounts for present and future benefits and costs through discounting. The benefit to cost ratios provide an analytical basis for comparing competing projects.

There may be subjective criteria which should be considered in addition to the benefit to cost ratios. For instance, it is very difficult to project the long-term future effects of rail service discontinuation on a community's economic development, and the potential for industrial

recruitment. Also, with rail and trucking rate deregulation, analysts are unable to devise accurate predictive measures of future freight rates, the level of competition, and modal splits in a given local transportation market.

In addition, analytical methodologies may not fully value right-of-way preservation for future transportation. The level of community spirit, image and prestige may be strengthened by the existence of a particular infrastructure element, such as a highway, or in this case, a rail line. States and localities may be able to create a certain synergy for economic development which benefits the carriers, shippers, and the community by participating in projects which satisfy not only the appropriate benefit to cost ratio criteria, but which also take a number of subjective criteria into account. This report attempts to identify those attributes that may lead to successful economic development projects.

Report Organization

The next chapter summarizes state financial assistance programs. Some states tend to take a very proactive role and support rail assistance projects that represent both long-term economic development opportunities and financial risks. Other states are not at all involved in the financial support of rail projects. The third chapter summarizes six case studies of small scale rail line or terminal facility improvements. Five of the six case studies involved state financing of the projects. The sixth project contained minimum public assistance and was a cooperative effort of a shipper, a third party intermodal company, and the rail line. The six case studies are reviewed to derive attributes of economic development projects that make them predisposed for success. The last chapter identifies and discusses five attributes for success of public assistance projects that are intended to promote economic development.

ENDNOTES

1. For a discussion of federal and state economic regulatory policy, see T.H. Maze, Clyde K. Walter, Benjamin J. Allen, Nicole Fuller, Mark Hanson, Mark Maggio, Sheila McGinnis, Aymen G. Smadi, and Karin Sevdi, "The Changing Role of Freight Transportation Modes and Intermodal Freight" (Ames, Iowa: Midwest Transportation Center, 1990), Chapter III.
2. The primary examples of the federal government involving itself in the operation and ownership of railroads are the Alaska and the Panama Canal Railroads.
3. Donald V. Harper, Transportation in America: Users, Carriers, Government (Englewood Cliffs, New Jersey: Prentice-Hall, 1978), p. 353.
4. D. Philip Locklin, Economics of Transportation, 7th ed. (Homewood, Illinois: Richard D. Irwin, Inc., 1972), p. 133.
5. Robert S. Henry, "The Railroad Land Grant Legend in American History Texts," Mississippi Valley Historical Review, September, 1945.
6. Economics and Finance Department, Railroad Ten-Year Trends: 1979-1988 (Washington, D.C: Association of American Railroads, 1989), p. 18.
7. Railroad Facts: 1991 Edition, (Washington, D.C.: Association of American Railroads, 1992), p. 32.
8. Richard J. Barber, Railroads and Regulation: The Imperative Need for Change (Washington, D.C.: Barber & Associates, May 1979), p. 85.
9. Economics and Finance Department, Railroad Ten - Year Trends: 1979 - 1988 (Washington, D.C.: Association of American Railroads, 1989), p. 7.
10. A significant example of the use of building new railroad facilities to promote economic development was a Chicago and North Western Transportation Company line into the Powder River basin in eastern Wyoming. The line provides railroad access to coal producing areas along the basin. The Federal Railroad Administration provided indirect economic assistance for building the line through a 231 million dollar loan guarantee. The line is 107 miles long and was opened in 1984. In 1988 it handled over 35 million tons of coal. Source: "C&NW's James R. Wolf," Rail Age (April, 1988), p. 37.
11. The Penn Central and other Railroads: A Report to the Senate Committee on Commerce (Washington, D.C.: U.S. Government Printing Office, 1972).
12. Ibid.

13. William R. Black, Railroads For Rent: The Local Rail Service Assistance Program (Bloomington, Indiana: Indiana University Press, 1986), p. 13.
14. Public Law 93-236 (3-R Act) Title IV.
15. Black, p. 23.
16. Federal Railroad Administration, Rail Planning Procedures Report, prepared by the State of Wisconsin, Department of Transportation, report RFA-40025-75, September, 1975; and Federal Railroad Administration, Rail Planning Manual, Vol. I, Guide for Decision Makers, Vol. II, Guide for Planners, Reports FRA-RFA-76-06, FRA-RFA-78-01, prepared by JWK International Corp. and Roger Creighton Associates, Inc., December, 1976 and July, 1978.
17. Black, p. 163.
18. An example methodology for analyzing rail system investment to preserve local industrial bases is developed in: Richard S. Taylor, Kenneth L. Casavant, and J.C. Lenzi, "Rail Line Abandonment and Public Acquisition Impacts of Economic Development," Transportation Research Record, No. 1274 (1990), pp. 241-251.
19. This definition of investment is identified by Forkenbrock as the "Basic Investment Principal." See: David J. Forkenbrock, "Putting Transportation and Economic Development into Perspective," Transportation Research Record, No. 1274 (1990), p. 5.
20. Public Law 95-607, 92 Stat. 3059 (1978), Section 805(c).
21. "Bush Signs Rail Bill," Modern Railroads: Short Lines and Regionals, Vol. 45, No. 2 (January, 1990), p. 8.
22. "Congress Passes Late Railroad Bills," Rail News Update, No. 2537 (December 6, 1989), p. 1.
23. Telephone interview with Peggy A. Baer, Rail and Water Division, Iowa Department of Transportation, August, 1991.
24. Public Law 95-607; 92 Stat. 3059 (1978).

CHAPTER II SUMMARY OF STATE PROGRAMS

The practices of states were reviewed to better understand the local economic development role of public financial assistance to rail projects. Specifically, the research identified the states which have rail assistance programs supported at least in part through state funds. The rationales for the programs identified were investigated to determine if they included economic development objectives. A complete review of each state's efforts is included in Appendix A. This chapter's review focuses specifically on state efforts to foster economic development through rail assistance programs.

A study of state rail planning practices was recently conducted by the American Association of State Highway and Transportation Officials (AASHTO).¹ This study identified the funding levels and mechanisms used by states to fund rail projects. It did not investigate either the objectives utilized by the states for selecting projects or the intent of the state when it chose to be in the business of managing rail line assistance. Specifically, the AASHTO study did not identify the linkages the states have identified between their rail line assistance programs and local economic development.

Methodology

To initiate the review of state level rail financial assistance programs, each of the 48 contiguous states was contacted to identify one staff member of the appropriate state agency who was knowledgeable of his or her state's rail assistance activities. The Federal Railroad Administration's (April, 1990) list of state Local Rail Service Assistance contacts was used for this purpose. Once a contact was established the following information was obtained:

- Does the state have a rail assistance program using state monies or placing state resources at risk (e.g., loan guarantee programs)?

- If a state financed assistance program does not exist, why is there no program?

- If a program exists, what is the funding level, and what types of programs are utilized? This information was generally provided to the interviewer through written documentation. States most often provided a rail plan, including written documentation covering their programs.

The phone interviews served as a screening process. States without a state funded rail assistance program received no further analysis.

A summary of the major elements of each program was established for the states that had any type of funding program. States were categorized by the primary objectives of their rail assistance program. The most common objectives for rail assistance programs were economic development, rail service preservation, and substitute service (to replace service lost by rail line abandonment). In addition, the following aspects of the state programs were analyzed:

- Types of projects funded (rehabilitation, reconstruction, new construction).
- Eligibility requirements for assistance.
- Assistance type (loan, grant, tax relief).
- Level of funding by project type.
- Project evaluation methodology and selection criteria.²

Findings³

Results of the telephone interviews are listed in Table 2-1. The table simply identifies whether the state has a state funded financial assistance program. Twenty-four of the 48 states contacted did not have a current, formal state financial program for funding rail projects. The reasons given for not having a state rail financial assistance program ranged from being prohibited by the state's constitution from providing state funds to support private businesses (e.g., Alabama), to situations in which it was felt that the railroad industry in the state was strong and did not need state financial assistance (e.g., California).

The state rail plans were reviewed with the purpose of interpreting the underlying intent of the rail assistance programs. Researchers used subjective criteria for determining the underlying objectives of each rail plan and categorizing the policies utilized for defining

Table 2-1 Survey of State Programs

State	State Rail Assistance Program
Alabama	No programs using state funds.
Arizona	No programs using state funds.
Arkansas	No programs using state funds.
California	No programs using state funds.
Colorado	No programs using state funds.
Connecticut	Rail preservation, loading dock, and tax relief programs.
Delaware	No programs using state funds.
Florida	No programs using state funds.
Georgia	No programs using state funds.
Idaho	No programs using state funds.
Illinois	Rail line construction and rehabilitation programs.
Indiana	Industrial rail fund and low interest loan fund.
Iowa	Capital improvement and rehabilitation programs.
Kansas	Recently (1991) established loan guarantee program.
Kentucky	No programs using state funds.
Louisiana	No programs using state funds.
Maine	No state programs, uses federal money for rehabilitation projects.
Maryland	Short line subsidies and new construction programs.
Massachusetts	Rail preservation and rail banking programs.
Michigan	Rail line ownership, line rehabilitation, transfer facilities, and economic development programs.
Minnesota	Capital improvement and line rehabilitation programs.
Mississippi	Rail line rehabilitation.
Missouri	No programs using state funds.
Montana	State owns two short lines, but has no state programs.
Nebraska	No programs using state funds.

Table 2-1 Continued

State	State Rail Assistance Program
Nevada	No programs using state funds.
New Hampshire	State owns 200 miles of track.
New Jersey	Rail line rehabilitation, access and new facility construction programs.
New Mexico	No programs using state funds.
New York	Capital assistance for new construction to attract new industry, and clearance improvement programs.
North Carolina	Rail line rehabilitation and acquisition programs.
North Dakota	No programs using state funds.
Ohio	Rail line rehabilitation and new facility construction programs.
Oklahoma	No state programs, but state owns 700 miles of railway and leases it to a railroad operating company.
Oregon	No programs using state funds.
Pennsylvania	Rail line rehabilitation and new facility construction programs.
Rhode Island	No programs using state funds.
South Carolina	No programs using state funds.
South Dakota	No programs using state funds.
Tennessee	Rail line rehabilitation, no formal state programs.
Texas	No programs using state funds.
Utah	No programs using state funds.
Vermont	State owns and operates 300 miles of railway, and provide rail line rehabilitation assistance.
Virginia	Rail preservation and rehabilitation programs.
Washington	Rail preservation to assure access to ports.
West Virginia	No programs using state funds.
Wisconsin	Transportation economic assistance program.
Wyoming	No programs using state funds.

priorities for selected rail assistance projects. The types of projects financed by a state largely depended on the nature of the economic activity both in the state and in the area of the project. States with substantive manufacturing industries tended to concentrate on attracting new industries by providing economic and efficient rail service, mostly for movement of inputs to production. States with mining or agriculture as their main industries, however, tended to have rail preservation as their primary goal. This is because the movement of bulk commodities, in general, is economically feasible only by rail.

Table 2-2 lists states with rail assistance programs and indicates the types of assistance provided by each state. Some of the most common forms of funding are low interest loans and grants. The terms of loans vary by state and by project type. States often offer loans for a portion of the total project cost, ranging from 30 to 50 percent for rehabilitation projects, and 70 to 90 percent for new construction projects. Other forms of funding include issuing general bonds and tax relief on revenues earned by operating railroads.

The states of Illinois, Michigan, Pennsylvania, and Washington have extensive economic development programs. These states have economic development in their policy statement regarding railroads. Illinois has the most extensive rail assistance program among all states and attracted 184.6 million dollars in private investment in rail projects between 1980 and 1989. The state and federal contribution to these projects was 27.8 million dollars. Illinois did not receive any federal funds in 1989, yet provided a total of 11 million dollars for various rail projects. Of these funds, 2.76 million dollars were spent on new facility construction, creating more than 1,100 new jobs.⁴

The projects of the states that promote economic development are grouped in two categories: capital intensive and small fund projects. Capital intensive projects usually involve major construction and have high capital requirements. States that fund large capital intensive projects tend to fund a small number of these projects, and usually state support is used as leverage to attract a much larger private sector investment. The small project group involves smaller expenditures on construction or improvement work. An example is the adding of a siding to an existing rail line to serve a new industry. The state bears a larger share of such project costs.

Table 2-2 Financing Available Through State Rail Programs

State	New Rail Facility Construction Program*	Other**
Connecticut	Yes: Low interest loan, grants, and tax relief	Yes
Florida	Yes: Loan and Grant	Yes
Illinois	Yes: Loan and Grant	Yes
Indiana	No	Yes
Iowa	Yes: Loan and Grant	Yes
Maryland	No	Yes
Massachusetts	Yes: Grant	Yes
Michigan	Yes: Loan and Grant	Yes
Minnesota	Yes: Loan	Yes
New Hampshire	No	Yes
New Jersey	Yes: Loan and Grant	Yes
Ohio	Yes: Grant	Yes
Pennsylvania	Yes: Grant	Yes
Vermont	Yes: Grant	Yes
Virginia	Yes: Grant	Yes
Washington	Yes: Loan	Yes
Wisconsin	Yes: Loan and Grant	Yes

* New construction projects with an economic development objective.
 ** Mainly track rehabilitation.

Endnotes

1. American Association of State Highway and Transportation Officials, State rail Program Survey (Washington, D.C.: National Conference of State Railway Officials, Shortline Task Force, August, 1989).
2. Details not delineated in this summary are described in Appendix A.
3. Statistics reported in this section were reported by state rail planners during telephone interviews or in state rail plans. State rail plans are cited in Appendix A.
4. Illinois statistics were tabulated from State of Illinois, State Rail Plan 1989, Illinois Department of Transportation, Springfield (1989), Table 2, pp. II-5 - II-10.

CHAPTER III CASE STUDIES

To further understand success attributes of rail assistance projects that promote economic development, six case studies were conducted. The main objective of each of the six projects was, in part or totally, to promote local and regional economic development. Three of the projects involved rail lines: two short lines and one long rail spur. The other three projects involved intermodal facilities. All six local rail projects are located in the Midwest (Iowa, Illinois, and Missouri). They were selected based on the diversity of their funding sources (federal, state, and local governments, and the private sector) and on the nature of the financial assistance (loans and grants).

Interviews were conducted during 1990 at each of the six facilities with the facilities' owners and operators and, in some cases, investors, shippers, and community members. The purpose of the interviews was to develop an accurate understanding of the local rail projects and their funding, to determine each project's success, and to identify those elements that are essential for successful projects. These success attributes were explored, and are synthesized and presented in Chapter IV.

The case studies reviewed are:

- Columbia Terminal Railroad in Columbia, Missouri.
- Rochelle Industrial Spur in Rochelle, Illinois.
- Appanoose County Community Railroad in Centerville, Iowa.
- Quad Cities Container Terminal in Davenport, Iowa.
- Burr Oak Intermodal Facility in Chicago, Illinois.
- Newton Intermodal Facility in Newton, Iowa.

The complete case study discussions are included in Appendix B. This chapter summarizes the case studies.

Columbia Terminal Railroad

The project started when the Norfolk and Western Railroad Company (a subsidiary of the Norfolk and Southern Corporation) expressed its desire to abandon the line from Columbia to Centralia, Missouri. This was a 22-mile branch line connecting with the Norfolk and Western Railroad's east-west mainline between Kansas City and St. Louis. The line generated fewer than 400 cars per year.

When it appeared that Columbia (population of approximately 65,000) was going to lose its rail service, the Chamber of Commerce began looking for a shortline operator. No one was found with an interest in the line because of its low traffic volumes. Next the Chamber approached the municipal utility (electric and water services) and asked if the utility would operate the railroad. The utility was concerned that the loss of the rail line would reduce the city's opportunity to attract additional industrial utility customers to the area and possibly cause some existing industrial utility users to relocate outside of Columbia. In addition, losing the line would leave the utility dependent on truck transportation for its coal.

The utility purchased the line for 325,000 dollars and later rehabilitated the line to 25 miles per hour safety standards at a cost of 500,000 dollars. The rehabilitation costs were funded from by a Local Rail Service Assistance Act (LRSA) grant. In 1987, the year the line was purchased, the traffic was at a low of 350 cars. The next year, under city operation, the traffic on the line increased to between 600 and 650 cars per year. In 1990, the city began receiving coal by rail and the traffic volume grew to over 1,000 cars per year. During its first few years of operation, the city subsidized the rail operation at roughly 50,000 dollars per year. With the added traffic, the city utility manager expects revenues to cover at least variable costs.

The city justified purchasing the line based on revenue received through the operation of the utility, reduced cost of transportation of coal to its electric power plant, and the opportunity gained for attracting future industry to the city's industrial park along the line's right-of-way. For example, one user of the line receives all its production inputs by rail and would probably move if rail service were unavailable. The factory operated by this rail user consumes in excess of 500,000 dollars of water and electricity services provided by the municipal utility. The utility managers felt that it was worth subsidizing the railroad to maintain the industrial base. In

addition, when the utility solicited bids for coal transportation from the St. Louis area to Columbia, the bid analyst believed the implied competition of rail service reduced the city's transportation cost, even when coal continued to be trucked to Columbia. These savings were estimated to be greater than the city's annual rail line subsidy.

The Columbia Terminal Railroad is viewed by the community, the city, and shippers as a successful economic development and industry preservation investment. Growth in rail traffic and the future role the railroad plays in attracting new business to locate in the city's industrial park are seen as strengths of the railroad. However, it is clear that the investment in the railroad would be unjustified if it were based on only the returns from the revenue generated by rail users. From the broader view of the city, the costs of preservation, rehabilitation, and subsidization of the rail line are more than justified by cost savings accrued to the city.

Rochelle Industrial Spur

Two Class I mainlines run through and cross in the City of Rochelle, Illinois. One is operated by the Chicago and North Western Transportation Company (CNW) and is the CNW's mainline between Omaha and Chicago. The other line is operated by the Burlington Northern Railroad Company (BN) and is the BN's mainline running from Chicago to Minneapolis and on to Seattle. Approximately 75 trains pass through Rochelle daily.

The city's Economic Development Agency saw the ability to access the two railroads as an asset. This was done by building a one and one-half mile spur between the two lines. The spur provides the two railroads access to the city's industrial park. The connection of the two mainlines has provided sufficient competition between the two Class I carriers to drive down rates to Rochelle.¹ While Rochelle is close to Chicago, traffic destined to Rochelle does not suffer the delays that are typical of heavily used Chicago yards.

In addition to being located just outside a major urban market (Chicago), Rochelle is located at the intersection of Interstate 88, running east and west, and Interstate 39, running north and south. Frequent rail service from two Class I competitors and excellent highway access provide Rochelle with advantages as a location for distribution facilities.

The total cost of the city's spur was 1.3 million dollars in 1987. Rochelle financially backed the project but the Economic Development Agency was responsible for fund raising. The project received a 400,000 dollar grant from the State of Illinois. The CNW provided the materials for the switch with their mainline but the BN was unwilling to cooperate with the project until they actually saw that the spur was going to come to fruition. At that point, the BN provided 187,000 dollars for the switch with its line.

The Economic Development Agency has been successful in locating firms along the spur. The largest business on the spur is Wiscold, Inc., which ships and receives 450 million pounds of food products per year from its Rochelle facility. Wiscold, Inc. currently operates 7.7 million cubic feet of storage and expects to grow to 20 million cubic feet.² Other businesses with smaller shipping volumes are located along the spur. The city is working on developing the public infrastructure to accommodate other shippers wanting to locate along the spur.

In addition to the economic benefits of the new businesses, the new industry has helped to reduce the average cost of the city's overbuilt public service infrastructure. For example, the city's electric power plant has benefitted from the large use rate created by the cold storage facilities. The cold storage facility is able to draw its peak load at night, during the power plant's off-peak. Thus, electricity prices are lower than those experienced by surrounding communities. Other examples that were identified included the strengthening of the tax base for the public school system and the recent paving of gravel roads.

The Rochelle industrial spur has resulted in net positive benefits for the community. The new spur has allowed the community to benefit from its competitive locational advantage.

Appanoose County Community Railroad

Centerville, Iowa, is a town with a population of 6,500 people in Appanoose County. It is located about ten miles north of the Missouri boarder. Centerville was served by two railroads in the 1970s, the Burlington Northern Railroad Company (BN) and the Chicago, Rock Island and Pacific Railroad Company (Rock Island). In the late 1970s, the BN received permission to abandon its line through Centerville. Shortly after, the Rock Island filed bankruptcy in 1980. The railroad's trustee was permitted to abandon the Rock Island's line.

Union Carbide Corporation, the town's largest employer, used the railroad to move plastic pellets, the inputs for its manufacturing of packaging for meats. Although the plastic pellets could be brought to the plant by truck, the unit cost was significantly higher and the opportunity for contamination was much greater. Based on the importance of rail transportation to Union Carbide Corporation and to other industries, community business leaders organized to regain rail service.

The Iowa Department of Transportation evaluated the project as a possible assistance candidate and arrived at a benefit to cost ratio of 0.38 and recommended against funding the project.³ However, the community stood determined to reinstate rail service. The availability of rail service was seen as a key element in future economic development. Losing rail service would severely reduce the city's attractiveness as a possible location for new industries.

After considering the option of having a shortline operator, the community leaders felt that operating the railroad itself would symbolize the community's dedication to maintaining railroad access to the community. Therefore they agreed to operate the railroad themselves through a non-profit corporation, the Appanoose County Community Railroad Company (ACCR).

An 8.6 mile alignment was chosen which included the purchase of 4.3 miles of BN railway and 5.7 miles of Rock Island railway. East of Centerville, the new line connects with the Norfolk and Western Railway Company line that runs from Moberly, Missouri to Des Moines, Iowa. The purchase of the right-of-way, materials and a used locomotive was financed through a number of sources. In 1982, the community raised 150,000 dollars in private small contributions which was matched by the Iowa Rail Financial Authority. In 1983, the community amassed an additional funding package which included 180,000 dollars in private contributions from Centerville citizens, a 550,000 dollar loan from the Farmers Home Administration, a 800,000 dollar Urban Development Action Grant, and a 300,000 dollar grant from the Iowa Department of Transportation's Rail Assistance Program.⁴ The first cars were originated on the line in 1984. Shortly after the ACCR started operation, the Rubbermaid Company located a 200,000 square-foot facility on the line.

The line currently handles about 200 cars per year carrying grain, plastic pellets and scrap metal.⁵ In addition to the revenue received from hauling freight, ACCR earns modest

receipts for maintenance work conducted on shipper sidings and fees for car storage. Despite the relatively low traffic volume, the ACCR was able to pay-off its loans and is attempting to build a cash reserve. The income on the railroad is modest, but by keeping its labor costs low through using local non-union labor, part-time employees, and through support of the community and shippers, the railroad is able to maintain a positive cash flow. Without the railroad, business leaders claim that they would have been unable to attract an industry like the Rubbermaid Company and would lose the opportunity to attract other industries.

Quad Cities Container Terminal

The Quad Cities Container Terminal Corporation built a mechanized intermodal facility in Davenport, Iowa and started service in 1989. The facility is located on the Soo Line Railroad Company (Soo) mainline running from Kansas City to Chicago. At that time, the Soo carried intermodal freight on stack trains into Chicago for the Southern Pacific Transportation Company (SP). Prior to the opening of the Quad Cities Container Terminal, several shippers in the Quad Cities were receiving intermodal shipments from the Pacific Rim that were routed through Davenport (which had no container facilities), off-loaded in Chicago, and drayed back to the Quad Cities area.

In developing the business plan for the facility, its investors entered into an agreement with the Soo. Once the facility was completed, the Soo would stop operating its own piggyback ramp in Davenport. The investors entered into a two year agreement with the Soo where the railroad would guarantee 14,000 lifts per year (roughly 7,000 containers or trailers per year).

Part of the financial package for the facility included a 750,000 dollar low interest loan from the State of Iowa using oil overcharge funds.⁶ The state is to be repaid over ten years and payments are made based on a usage rate of 1.50 dollars per trailer and 11.50 dollars per container.

Although several large Quad Cities area shippers that trade internationally had expressed a desire to use the facility, by mid-1990 the number of lifts was significantly below the projected volume. In 1989, the number of lifts fell 5,000 below the 14,000 lifts promised and ten to twenty percent below volumes experienced at the Soo's piggyback ramp prior to its closure.

Shippers and the terminal facility's operator gave several reasons for lower than expected traffic volumes. The central reason was the Soo's impending sale of its line between Kansas City and Chicago to the SP. Ultimately, an agreement to purchase the line was not reached and SP was able to access Chicago through an agreement with the Burlington Northern Railroad Company (BN) using BN's line. During the interim, however, the Soo's attention was focused on preparation for the purchase of the line by the SP. As a result, marketing efforts by the Soo were deemed to be less than necessary for the success of the facility, and pricing and frequency of service offered by the Soo were not attractive. By early 1991, once the agreement between the Soo and the SP had fallen through, the marketing of the service and traffic over the ramp had increased.⁷ Another reason given for the service not reaching its projected traffic volumes was the Container Terminal Corporation's limited integration into transportation services. Specifically, the terminal operator's only transportation interest is the operation of the terminal. Although it may enter into relationships with steamship lines, railroads, and third parties, it is not involved in the actual arrangement or provision of the transportation services. Thus the facility will always be dependent on the pricing and marketing of services by others. For example, one of the shippers interviewed wanted to receive freight through the Davenport ramp but could not because the transportation of inbound freight from Asia was handled by the shipper's headquarters in Japan. The Japanese firm deals with a steamship line for door-to-door service; the steamship company will continue to route its shipments through its own facilities and the facilities of its partners in Chicago.

Newton Intermodal Facility

Newton was served by the Chicago, Rock Island and Pacific Railroad Company (Rock Island) until the railroad went bankrupt in 1980. The line was the Rock Island's mainline between Chicago and Omaha. After it went bankrupt, service over the Rock Island network was briefly provided by the Kansas City Terminal Railroad. Later, service along the Rock Island mainline between Chicago and Omaha was provided by the Chicago and North Western Transportation Company (CNW) and by the Chicago, Milwaukee, St. Paul and Pacific Railroad Company (Milwaukee Road). In late 1981, the Iowa Railroad Company leased the line from

the Rock Island trustee and commenced operation from Council Bluffs, Iowa to Bureau, Illinois. In 1984, the Heartland Rail Corporation purchased the line.

Heartland Rail Corporation is a group of shippers organized to preserve the Rock Island mainline between Chicago and Omaha. After Heartland purchased the line it entered into a lease-purchase agreement with the Iowa Interstate Railroad Ltd. (the Interstate). Newton-based Maytag Company was an original member of the Heartland Rail Corporation and has had a strong and mutually beneficial relationship with the Interstate. Maytag has traditionally shipped a large portion of its products by rail and currently ships about 35 percent of its outbound traffic by rail, exclusively in containers and trailers.⁸

The Newton intermodal facility is operated by a third party, Interdom, Inc. Interdom operates the intermodal yard and is the seller of stack-train services at the Interstate's facility in Newton. However, in other markets, Chicago for example, both Interdom and the Interstate market intermodal service over the Interstate's lines.

Interdom opened a relatively low cost facility in the Rock Island's Newton yard in 1986. The only public funds used to build the facility were the City of Newton's expenses in paving and resurfacing the streets approaching the yard. The packer is leased and non-union labor works in the yard under flexible hours. The facility currently handles about 10,000 lifts per year.

Maytag has a very important role in the intermodal activity along the Interstate's line. Maytag's position has been that its traffic will act as the seed to generate additional traffic for the Interstate and for Interdom. For example, when Interdom started marketing intermodal service to Seattle, 80 percent of the initial traffic was Maytag freight. As Interdom has expanded its traffic into Seattle, Maytag's proportion has fallen. Currently, about 75 percent of the intermodal traffic over the Newton ramp is Maytag freight and the volume originating from other sources is increasing.

As an anchor shipper, Maytag sees itself in the position of providing Interdom with the leverage to enter into new intermodal traffic lanes. Maytag views the expansion of Interdom's service coverage as an advantage to Maytag by opening up stack-train service to more locations. When Interdom started business, Maytag was its only intermodal customer. Now Maytag freight comprises about fifteen percent of Interdom's traffic and twenty percent of its revenue.

Clearly, other intermodal shippers using the Newton ramp have benefitted from close proximity to a high volume intermodal anchor shipper.

Burr Oak Intermodal Facility

The Burr Oak Intermodal Facility began operation in October, 1989. It is intended to provide the Iowa Interstate better intermodal access in the Chicago area. Before the Burr Oak facility was opened, the Interstate's Chicago yard, the Evans Yard, was congested and could not handle the increase in intermodal traffic being experienced.

The Burr Oak Intermodal Facility was a former Rock Island yard. To operate as an intermodal facility required rehabilitating the tracks and improvements to the yard area. The total costs of yard and rail improvements was about 1.4 million dollars with additional investments required in equipment. The State of Illinois provided the Interstate with a 1.2 million dollar low interest loan.⁹

In comparison with the Newton intermodal facility, the Burr Oak facility is spacious, with 24 acres of yard space. The yard has ample room to position containers and trailers and to maneuver the packer. The yard is operated by a contractor for the Interstate. Interdom has a sales office and management personnel within the yard but has no role in managing the yard.

By the summer of 1990, traffic through the facility had increased to roughly 26,000 lifts per year.¹⁰ Through the facility traffic has grown quickly. The Interstate is examining increasing its capacity by adding a second packer, computerizing the gate, and making other improvements. The Interstate's intermodal traffic is carried on manifest freight trains, which operate at slower speeds than unit stack-trains. Thus the Interstate's intermodal traffic focuses on a market niche for traffic which is either destined to or originates along the Interstate's line or is less time sensitive while in transit. The impressive traffic volumes through the Burr Oak facility and positive traffic projections indicate that the Interstate's intermodal service occupies a viable niche.

Summary

Each of the six cases has been reviewed to identify attributes which indicate a successful project. These projects provide a diverse set of scenarios for analysis of local projects conducted for economic development purposes. For example, the ACCR was promoted as a community service project. Although the ACCR's ability to generate a positive cash flow on its own is important, it is secondary to the community's commitment to existing and potential industry located in the community. On the other hand, some projects are based solely on the ability to provide reasonable rates of return due to their own cash flows, regardless of positive or negative benefits received to the local economies. For example, the Quad Cities Container Terminal Corporation has to be able to service its debt and provide a competitive return to investors regardless of the positive local economic development the facility has on the Quad Cities area and the energy saved by reducing the drayage of freight from Chicago.

From this diverse set of scenarios, the next chapter identifies attributes that, when present, facilitate a project's success.

Endnotes

1. The difference in rates is from an interview with Mr. K. Wise, Director, Chamber of Commerce, Rochelle, Illinois, August 29, 1990.
2. Interview with Mr. K. Bence, Plant Manager, Rochelle Cold Storage, Division of Wicold, Inc., August 29, 1990.
3. Iowa Department of Transportation, 1982 Iowa Railroad Analysis Update, prepared by Planning and Research Division in cooperation with the Railroad Division and the Transportation Regulation Authority (Ames, Iowa: July, 1982), p. 129.
4. 1985 Iowa Railroad Analysis Update, Iowa Department of Transportation, Planning and Research Division and Rail and Water Division (Ames, Iowa: 1986), p. 146.
5. Interview with Mr. D. Morrow, Manager, Appanoose County Community Railroad, Centerville, Iowa, July 3, 1990.
6. Oil Overcharge funds were derived from settlements between the U.S. government and petroleum companies. The petroleum companies were charged with violating price controls on petroleum products. The settlements with each of the petroleum companies varied in rules for distribution of the settlement. However, the funds were distributed back to the states and the states were to use the funds as reparations to the petroleum users that were overcharged originally. In the case of the Quad Cities Container Terminal, reparations were to be made to users through energy savings resulting from not moving containers through Davenport to Chicago and draying them back into the Quad Cities area.
7. Interview with Mr. Craig Severance, Rail and Water Division, Iowa Department of Transportation, Ames, Iowa, February, 1991.
8. Interview with Mr. A. Roberts, Traffic Planner, Maytag Company, Newton, Iowa, June 14, 1990.
9. Illinois Department of Transportation, Illinois Rail Plan: 1989 Update (Springfield, Illinois: December, 1989), p. II-12.
10. Interview with Mr R. Muilenburg, Director of Terminal Service, Iowa Interstate Railroad, Chicago, August 29, 1990.

CHAPTER IV SUCCESS ATTRIBUTES

This chapter utilizes what was learned from the case studies in Chapter III and from reviewing the literature to determine attributes that help to identify a project's likelihood for success. The discussion considers only small scale local rail projects, such as those reviewed, and addresses the issue from the viewpoint of evaluating projects that are candidates for public investment and public financial assistance. Before discussing success attributes for public investments, traditional evaluation factors are reviewed to establish a point of departure. The discussion of traditional factors provide a contrast to the more intangible success attributes.

Traditional Project Evaluation Factors

Decisions regarding public assistance to rail projects should be clearly guided by prudent business principles and take into account the projects attributes to identify their ability to produce positive net benefits. For example, the Rochelle Spur project is an example of a successful project, primarily because of its natural locational attributes. Rochelle is 90 miles outside of downtown Chicago and has close access to two Interstate highways, making it an attractive location for a distribution facility. In addition, the city is located on the mainlines of two competing Class I railroads. The combination of these locational attributes are properties that make the project an attractive choice from a business standpoint. Projects that do not have similar business potential are likely to be less efficient choices for public investment.

However, the investment of public funds should not be considered in the same light as private investment, for two specific reasons:

- **Treatment of Risk** A private investor must take into account the risk of each investment. The rate of return on riskier projects should be higher than on more certain projects to compensate for potential loss. In addition, the greater the number of investments, the more the risk is spread, hence reducing the risk of the entire investment portfolio. The public sector invests in a broader and larger number of projects than would a single investor and, therefore, government should be less adverse or neutral to the risk of any

single project.¹ Because of the public sector's greater tolerance for single project risks, a public project should require a lower rate of return.²

- External Benefits A public body should take the viewpoint of the economy as a whole.³ The allocation of funds by a private investor should be guided by internal costs and gains accrued to the investor. A public agency should extend its view to the whole community, taking into account both the internal and external gains and losses. For example, if a local rail project causes reduced highway maintenance costs, these costs should be included in the analysis even though highway maintenance costs are not internal to the cost of providing rail services to a community. However, highway maintenance costs are part of the overall cost of providing transportation service.

Issues central to the total accounting of the external benefits are: 1) who pays for a project, and 2) what gains accrued by which groups are counted as benefits? The reduced costs of producing transportation services are almost always counted as benefits. For example, suppose a manufacturing company is located in a community because it believes that its production and distribution costs would be higher elsewhere. In addition, the inputs to the production process are bulky and are delivered by rail. If rail service were unavailable, the higher shipping costs of receiving materials by truck would diminish the cost advantage of the town's location and might cause the owners to move the plant to another location. Assume also that in the past, the railroad serving the community developed plans to abandon rail services. Realizing that the plant would close (the community's largest employer), the community developed a financial package to rehabilitate the line and retain rail services. The reason the company stayed at its current location is due to the reduced transportation cost resulting from the availability of rail service. Thus, the reduced cost of transportation is a benefit of investing in the project.

Clearly, the community also benefits by retaining its largest employer. Because the company is located in the community, its employees continue to own homes, thus supporting local property values, and the company and its employees purchase goods and services from local merchants.

On the other hand, if the company moves, local property values at its new location would increase and local merchants at the new location would benefit. Therefore, if the company moves, the non-transportation benefits are transferred to the community at its new location. Thus, when viewed broadly, the non-transportation benefits are not lost, they are simply transferred from one community to the next. From the perspective of society as a whole, to count transfer benefits and also count reduced transportation costs as benefits would be double-counting -- a methodological error.⁴

The transfer benefits a community receives from a project are nevertheless real. Therefore, using only the viewpoint of the first community, the non-transportation benefits (transfer benefits) due to retaining the company are benefits to the local economy. In the broader context (perhaps statewide or nationwide), the local non-transportation benefits are only a transfer from one community to the next. Whether the local non-transportation benefits are counted in the analysis is a function of whether the analysis is conducted from a local or broader perspective.

The decision determining which benefits to count is tied to who paid for the project. For example, if the project is paid for through federal funds, then no transfer effects should be counted and only transportation benefits (reduction in transportation costs, including accelerated maintenance costs on adjacent roadways if a rail line is closed) should be examined. However, if the project is financed by a community, the community will view economic transfers as a benefit. From an efficiency standpoint, if the investments of each community were guided by maximizing the net benefits within its own jurisdiction, society as a whole could lose due to sub-optimization creating a misallocation of resources throughout the entire economy. Regardless of the inefficiencies created by summing the net benefits across only the investing jurisdiction, investment decisions should be analyzed by counting the benefits and the costs accrued by the group that pays for the project.

The counting of non-transportation benefits in evaluating investments generates a related issue in estimating benefits. For most services and goods there exists a market which determines their value. However, for projects that accomplish social objectives, where no market exists for the intended gains of the project, there may be no means of placing an economical value on the project's benefits. For example, there is clearly a value associated with the promotion of

highways that do not obstruct the view of residents near the highway. The estimation of the value of an unobstructed view may be difficult and costly to determine, however. Similarly, a rail line or an intermodal facility may be seen as a portion of a community's infrastructure that is considered important to the community's future economic well being, where the intangible benefits cannot be easily or completely measured using standard benefit accounting. However, the community can express the value it associates with a rail facility through its willingness to pay (using locally derived funds) for the facility or to forego another investment. For example, the business community in Centerville, Iowa was willing to band together and utilize its own resources to establish a rail line through its industrial park to symbolize the community's commitment to industry. In the case of Centerville, the benefits of the project (a commitment to industry) are worth the costs assumed by the community (a commitment to service debt).

Not all elements that make a rail project a successful investment can be measured through traditional economic analysis. For example, when the Iowa Department of Transportation evaluated the Centerville project, the analysis determined that the costs of the project would exceed the transportation benefits. However, the project is operating and is able to service its debt financing.⁵

Success Attributes

Five elements have been identified which are indicative of successful local rail service projects. These five elements are based upon a review of the literature, the planning rail plans of twenty-one states, and the six case studies included herein. These five elements, or success attributes, deal largely with intangible factors and should not be viewed as substitutes for basing investment decisions by sound business principals with a long-term investment strategy.

Core Freight Shipper

Just as shopping centers need "anchor" tenants, it appears that rail oriented investments have similar requirements. That is, investors are more likely to commit start-up funds if there is a matching commitment by a core shipper or shippers. Furthermore, while commitments from small users would be welcomed and vital for long term viability, many small shippers

would be necessary to match the revenues generated by one anchor shipper. A clear example of this principal is the Newton intermodal project where the Maytag Company serves as the anchor shipper. Without Maytag's investment, promotion, and traffic volume, there would be little likelihood of the Newton intermodal facility being built.

In a study of recently spunoff shortline and regional railroads that compared those lines that failed with those that survived, Due identifies "adequate traffic" as a requirement for success.⁶ In the case studies conducted for the research reported here, it was found that on light density projects there is a need for core, preferably non-agricultural, shippers. To provide a stable anchor for the project, a major shipper must have a strong stake in the project's survival. Given the small scale of the projects reviewed, it is less likely that the project can depend on "adequate traffic" from a variety of potential customers.

Entrepreneurial Attitude

In all the projects reviewed, the participants were willing to assume reasonable risks and to make financial commitments. An entrepreneurial attitude does not imply that participants are willing to assume unwise risks. They do expect to accrue long term positive benefits. By contrast, Due notes that some local projects have been promoted, financed and managed by railfans, where their entrepreneurial attitude was throttled by nostalgia rather than by a sound analysis of the risks of investing.⁷ Here, an entrepreneurial attitude refers to the willingness to identify opportunities and to take reasonable risks.

An entrepreneurial attitude has been observed as a desirable attribute for participants in local rail projects. For example, several of the parties associated with the Newton intermodal facility demonstrated an entrepreneurial spirit in obtaining the parcels of land necessary for loading and unloading operations, and for parking and staging trailers and containers. Similarly, the Interdom leadership began a new business in apparent competition with large international companies such as American President Lines. Also, the Iowa Interstate was a risk-taker in terms of turning over the marketing of intermodal transportation to a third party.

Cost Control

All the case study projects had management which was frugal in their use of resources. Most operated from modest facilities and utilized non-union labor. For example Interdom's operations at the Newton facility are run by Container Services, providing a cost structure that is nearly all variable on a time basis. That is, costs are incurred either monthly or in other short time periods. Labor costs must be tightly controlled and should be scheduled as traffic demands, providing a good match with revenues.

Appropriate Market Niche

Each local rail service operator must identify and define the niche it fills, and ask why another carrier is not in that niche, and what characteristics of the niche have kept other carriers out. The research team found that the more narrow the market niche, the more likely the operator was to meet its goals. For example, the Newton intermodal facility's niche is the provision of low cost regional double-stack and TOFC service from central Iowa. Central Iowa does not generate enough traffic to support a capital intensive intermodal hub facility but it does support a low cost operation like the Newton ramp. Another example is the Rochelle Industrial Spur. The spur is an attractive location for distribution facilities and hence its location is its unique niche. The Appanoose County Community Railroad's niche is clearly to carry deliver rail cars of plastic pellets to Centerville. Although the railroad does haul other commodities, its primary purpose is the movement of plastic pellets.

Transportation Service Integration

The business plan for the facility needs to recognize its role within the total transportation system. For example, the Columbia Terminal Railroad recognized that it had to do more than just operate the community owned rail line. It also had to organize marketing activities. Other integration may take the form of developing alliances with carriers and third parties. The need for strategic alliances is most clearly defined in the case of intermodal services. The shipper of a container is likely to be more concerned with the overall performance of the total transportation service and less concerned with the operation of any particular step of the service.

Therefore, it is important to identify and develop strategic alliances with organizations that control other portions of the transportation service.

Service integration may also be viewed as a means for promoting transportation service options. For example, the Quad Cities Container Terminal is dependent on the railroad company owning the adjacent line (the Soo Line) for direct service. The number of containers shipped through the terminal has not reached the operator's expectations partially due to the terminal being captive to the pricing and services of the adjacent rail line. Clearly, competition can be provided through drayage to alternate ramps and through truckload services. For shortline services, Due similarly defines as desirable greater integration through access to more than one connecting carrier.⁸

Conclusions

There are attributes that may lead to success for a local rail assistance project that are not taken into account in a standard economic analysis. Five such success attributes are identified in this chapter:

- The presence of a core freight shipper.
- An entrepreneurial management attitude.
- Tight control over costs.
- An appropriate market niche.
- Integration of transportation services with other carriers and third parties.

This does not mean that standard economic analysis should be ignored. On the contrary, investments should be evaluated before investment decisions are made. The intangible attributes identified here, however, should be taken into account when public investment determination is partially based on the discretion of the decision maker.

The list of five success attributes is not all-inclusive; there may be others that were present but not identified. Similarly, these five attributes will not guarantee success; economic conditions and competitive actions might very well negate even a carefully designed program. They do, however, provide insight for planners and investors in defining which projects have a greater likelihood for success and should be more enthusiastically pursued.

Endnotes

1. Risk neutral means that no premium is placed on an investment for the avoidance of risk.
2. The argument made here is not whether risk should be taken into account when calculating the social discount rate used to evaluate a project. This is an allied issue and is covered in: Richard de Neufville, Applied Systems Analysis: Engineering Planning and Technology Management (New York: McGraw-Publishing Company, 1990), pp.230-232.
3. Kuhn, T.E., Public Enterprise Economics and Transport Problems (Berkeley, California: University of California Press, 1962), p. 13.
4. Zettle, R. M., "Highway Transportation Economic," Public Roads, Vol. 17, No. 3 (1952), pp. 37-49.
5. In 1991, after the case studies were completed, the Norfolk and Western Railway applied to abandon its mainline running east of Centerville. The Appanoose County Community Railroad connects with the line proposed for abandonment. Centerville community leaders were evaluating options for the continued provision of rail services to the community.
6. Due, J.F., "New Railroad Companies Formed to Take Over Abandoned or Spun-Off Lines," Transportation Journal, Vol. 24, No. 1 (Fall, 1984), p. 39.
7. Ibid. p. 38.
8. Ibid. p. 40.

APPENDIX A SURVEY OF STATE PROGRAMS FOR RAIL ASSISTANCE

While state programs on rail project participation vary considerably, state policies related to public investment in rail projects are generally based on concepts established in federal law, the 1978 Local Rail Service Assistance Act (LRSA). The LRSA was initially designed to help preserve rail service on low-density rail lines. Communities faced the loss of rail abandonment on these light traffic lines, threatening the loss of businesses using rail service. No matter how small these businesses are, their relocation translates to lost jobs and reduced income for the community.

The LRSA funds resulted in rehabilitating many branch and light-density rail lines. In addition, a considerable number of local, short-line, and regional railroads were assisted, with public ownership of many of these lines. Some of these rail lines were leased to private carriers to operate, while repaying the state or public agency funds from their operating revenues. Another type of public involvement in the rail business has been the construction of rail facilities, such as intermodal transfer stations, loading and unloading facilities, and sidings and spurs for industrial parks. Operators of these facilities may be private carriers and shipper groups. It should be noted, however, that although some states assisted with capital expenditure, the states in general did not operate lines, and did not subsidize line operations.

LRSA funds from the federal government were reduced in each year starting in the early 1980's and funding under this program ended in 1988. Under a similar program, modest funding continued in 1990 and 1991 under the Local Rail Freight Assistance Act. Faced with reduced federal funds, many states responded by adopting at least one of three rail development strategies:

- Establish a state funding program to preserve rail service and support private interest in obtaining rail service if proven to be economical and efficient.
- Provide supervisory help in implementing rail projects by managing funds from private carriers, shippers and local communities. In some instances, the state may participate in funding individual projects from its general fund or from a discretionary transportation fund.

- Provide no financial assistance for rail projects, but develop statewide transportation planning documents.

The type of programs adopted by a state to assist railroad projects depends on the nature of the economic activity in the state. States with a significant manufacturing sector seem to concentrate on attracting new industries by providing cost-effective rail service, primarily for moving the manufacturing inputs. States with mining or agriculture as their main industries tend to have rail preservation as their primary goal. The long-haul movement of bulk commodities, in general, is economically feasible only if rail transportation is available.

Description of State Programs

Each of the forty-eight contiguous states was contacted in writing in mid-1990 to ascertain whether it had a program pertaining to the development of its rail route structure. After telephone follow-up calls, responses from 21 states (shown in Table I) were evaluated. They included the four states in federal Region VII. Findings for each state's program(s) are summarized in the following section.

Table A-1 States Whose Rail Assistance Plans Are Summarized

Alabama	Missouri
Connecticut	Nebraska
Florida	New Hampshire
Illinois	New Jersey
Indiana	Ohio
Iowa	Pennsylvania
Kansas	Vermont
Maryland	Virginia
Massachusetts	Washington
Michigan	Wisconsin
Minnesota	

Alabama¹

Alabama's general policies and related goals in the area of rail assistance include:

- Maintain a viable freight and passenger rail system that is essential to the economic viability of the state.
- Ensure the maintenance of efficient rail service by promoting and depending on privately owned and operated railroads.
- Use public funds from the 4-R Act of 1976 and the LRSA Act of 1978 to assist economically viable projects, when such assistance will lead to a long-term solution that will be financially sufficient without public money, and of value to the economic well-being of the state, its localities, and its residents, and only when all other alternatives prove impractical.
- Recognize the importance of rail to the economic development of the state.

The state's programs for financial assistance to railroad projects are for the most part of a rehabilitation nature, on lines with low traffic density. All projects listed in the "1988 State Rail Plan Update" are examples of rail preservation projects, rather than economic development projects. Economic development is not the primary purpose of this assistance, but it is still considered a benefit.

In selecting rail lines for assistance, the state uses economic analysis to arrive at a benefit-to-cost ratio taking into account the following impacts:

- Railroad profits and losses: annual attributable costs and revenues.
- Shipper impact: annual transportation costs and other additional costs.
- Community impact: annual personal income, annual property tax, annual unemployment impact.
- Energy and environmental impacts.

Connecticut²

The state has three rail assistance programs; the Rail Preservation and Improvement Program, the Public Loading Dock Improvement Program, and the Railroad Tax Relief Program.

The Rail Preservation and Improvement Program was established in 1983 as a rail capital grant assistance program to replace federal funds which had been available under the LRSA program. The program allows the state to provide 70 percent of the cost of eligible capital projects while the railroad covers the remaining 30 percent. Eligible for funding under this program are rail preservation-type projects and acquisition of abandoned rail lines. Projects are then evaluated, and only those projects with a benefit-to-cost ratio greater than one are considered for funding.

Projects completed under this program include the rehabilitation of Conrail's bridge over the Housatonic River. The total cost was 2 million dollars, paid 70 percent by Connecticut and 30 percent by Conrail. Another 2 million dollar bridge (70 percent state funded) spanned Poquetannuck Cove in Ledyard for the Providence and Worcester Railroad (P&W). The P&W's run-around track in the Plainfield Yard received 70 percent state funding of its 230,000 dollar cost. Central Vermont Railroad's (CV) installation of six miles of continuously welded rail cost 780,000 dollar, shared equally by the state and the CV. Other projects included a CV passing siding, completed at a cost of 160,000 dollars with 70 percent state funding and 30 percent from CV. Track rehabilitation of Guilford Transportation Industries' Waterbury-Berlin Line received 70 percent state support of its 1.4 million dollar cost.

The Public Loading Dock Improvement Program is a capital grant program intended for low-cost projects. If a railroad and a locality agree to build or improve a public loading dock or team track, the project is eligible for state funds. The state provides 90 percent of project cost, up to a maximum of 75,000 dollars. The remaining costs are provided by non-state sources, including railroads, shippers, or municipalities.

The Railroad Tax Relief Program adopted in 1978 recognized that improvement of rail lines in the state was a public purpose. Under this program, a railroad is relieved from its tax obligations if it spends an amount of money equal to or greater than its tax liability on a rail improvement project approved by the Connecticut Department of Transportation.

Florida³

Florida has identified and established several goals and objectives in its plans related to rail assistance. They include:

- Implement branch line continuance projects to preserve essential rail service and facilities.
- Coordinate transportation investments made by the state, local governments, and the private sector.
- Promote the rehabilitation and reuse of existing facilities as an alternative for new construction.

Eligible rail lines must generally meet the Local Rail Service Assistance (LRSA) criteria: abandoned since October 1, 1978; listed in categories 1, 2, and 3; and carrying light-density traffic (less than 3 million gross ton-miles per mile annually).⁴

Four types of programs are utilized in Florida; including acquisition, rehabilitation, substitute service, and rail facilities construction. Acquisition programs provide funds for purchasing or leasing a rail facility. Rehabilitation programs provide funding to upgrade or replace rail lines. They are available for abandoned lines and light density lines (as defined in the LRSA traffic density criteria).

Funding for substitute service is designed to reduce the impact of rail abandonment by:

- Construction or improvement of alternative facilities.
- Provide substitute freight service, truck in place of rail.
- Assist in costs of relocating rail users.

Rail facility construction programs assist in funding construction projects. Examples include new connections between existing lines, intermodal freight terminals, and relocating existing rail lines.

A rigorous process of line selection is employed to select lines for detailed analysis.⁵ The process starts with all eligible lines meeting the initial requirements, then uses several criteria to eliminate lines from further consideration. Projects serving only one private user

cannot be funded. Lines previously evaluated will not be considered unless conditions have changed considerably.

Lines considered for assistance must meet eligibility criteria. First, for previously abandoned lines, a preliminary criterion is whether the right-of-way and track are intact; if not, replacement may prove to be too expensive and the project is dropped. Second, for rail lines suggested for abandonment, there must be a test to determine whether projected profits of the rail line could pay for the project without public assistance. Third, projects for preserving rail service should be tested against the provision of a substitute service or facility. Finally, all projects must demonstrate railroad and shipper interest.

Lines are selected for implementation using economic analysis which complies with Federal Railroad Agency (FRA) guidelines. Data requirements include:

- Railroad Data--physical condition of the line and operational characteristics, timetables, track charts, description of service.
- Financial characteristics--traffic and revenue information.
- User Data--a survey of rail users is conducted to determine the nature and size of adjacent businesses, rail facilities used, quantities of shipments, dependence on rail service, alternative transport modes and costs, and willingness to participate in financial assistance.
- Community Data--relationship of rail line to employment in the community, relationship of line to other elements of the transportation system, line relationship to the environment, development opportunities along the line.
- Line Inspection Data--current condition of the line and deficiencies based on traffic demand.

A net present value (NPV) for each project is then calculated, which is the present value of benefits minus the present value of costs. It must be greater than or equal to zero to justify a project. A discount rate in the range of four to ten percent is used in the NPV calculation. For projects involving continuation of rail service, project life is set equal to the period through which the operating railroad agrees to provide service, up to ten years.

A ranking process assigns priorities to all projects that yield a positive NPV. The ranking criteria are based on an indexing procedure, obtained from the FRA Planning Manual.⁶

The impacts of each project are listed by category (e.g., acquisition, rehabilitation) and standard deviations for each category are calculated and set against the impact value of each project to obtain a ratio. This ratio represents the value of each project relative to other projects. The relative values are weighted according to Florida Department of Transportation criteria shown in Table A-2.⁷

Table A-2 Florida Department of Transportation, Criteria and Weights

	<u>Criteria</u>	<u>Weight</u>
1.	Potential for future economic viability	24
2.	Transportation efficiency benefits	20
3.	Percentage of local and private share in financial assistance	16
4.	Community impacts	20
	Loss of employment	
	Loss of property taxes	
	Availability of other transportation modes	
	Is the county economically distressed	
5.	Safety	17
	Degree the line is a safety hazard	
	Safety impacts of line abandonment (truck/rail shift).	
6.	<u>Condition of track structure</u>	<u>4</u>
	Total	101

Illinois⁸

Rail projects are selected for Illinois state assistance according to three general guidelines. The first priority is for lines with the greatest potential for economic development or retention, as measured by the number and type of businesses, jobs and traffic (annual carloads) that would be affected by the project. The second guideline targets rail lines with the greatest potential for improving market access for Illinois products. The third area of participation would be lines where the state will leverage private investment, to improve the state's economic growth and foster solutions to rail service problems.

The Illinois State Rail Plan lists projects, ranging from rehabilitation of lines to constructing new rail facilities, completed under the State Rail Freight Program. The purpose of the investment falls in two streams, enhancing existing economic activity, and attracting new economic activities. The 1989 State Rail Plan lists two types of projects: 1) projects already implemented and either completed or pending completion, and 2) projects submitted to the FRA for approval. Table A-3 gives detailed information on Illinois projects completed or under construction.⁹

Table A-3 Projects in Illinois

Location	Own	Optr	Year	Pub. Fund	Pvt. Fund	L/G	Job	Ind.	Project Description
Rochelle	city	BN/ CNW	1987	400	7000	G	47	1	Construct 3800' spur
Chatsworth	Shp	BLOL	1987	350	223	G	0	20	1400' connection to ATSF
Nashville	city	UP	1987	400	44000	G	600	1	Construct 4760' spur
Shelbyville	SIRS		1988	172	7350	G	250	1	Construct 2000' spur
Paris	CR		1988	82	70	G	150	1	Construct 600' spur
Villa-Park	Shp	CC	1989	185	1700	L	30	1	Construct 1240' of new track and relocate 870' of existing track to serve industry expansion
Arthur	Shp	UPS	1989	108	9000	G	275	1	Construct 850' spur
Harvey	Shp	IC	1989	240	2750	GL	118	1	Construct 2615' spur to serve new regional distribution center
Kankakee	Shp	CR	1989	100	9194	G	40	1	Construct 2700' of new track to serve expanding industry

Abbreviations used:

Location (project location), Own (Owner), Optr (Line Operator), Year (Year of completion), Pub. Fund (State and federal funds in thousands of dollars), Pvt. Fund (Private funding in thousands of dollars), L/G (Loan or grant), Job (Number of jobs created or saved), Ind. (Number of industries benefiting from project).

The Illinois methodology for analyzing rail line projects proceeds in two phases, line viability and economic analysis. The line viability phase addresses itself to whether the line makes a positive net contribution to the operations.

The economic analysis compares the potential investment with the no-investment option. The present worth of benefits and costs are used, calculated with a ten percent discount rate, and a project life of usually five years, and not more than ten years. Transportation benefits, economic benefits, and public benefits are separately calculated. The former are those costs that would be saved by the investment, equal to the difference in transportation costs of the affected traffic from origin to destination using the investment proposal and the no-investment option. The comparisons are usually comprised of rail costs (the proposal) and truck costs (the "do nothing" option).

Economic benefits of the proposed investment center on the retention of employment base or the benefits of creating new jobs. In addition, the use of local raw materials and production assets is also included. Public benefits are the savings in governmental expenditures and the reduction in other costs to the public. Costs included in the analysis are the net project costs which include capital and labor costs minus the salvage value of the project at the end of its life.

Indiana¹⁰

The State of Indiana does not participate in the acquisition of railroad properties for rail uses, but encourages construction of rail facilities by their users with private funds. Public and private financial assistance may be used to maintain rail service to a "core" station for not more than two years. Short-line railroads and port authorities may be provided with low interest loans. State provision of loans or matching grants will be for projects which guarantee viable rail service. These projects are evaluated using the criteria set by the state.

Indiana uses the project's benefit-to-cost ratio and projected economic benefits as their funding criteria. The long-term viability of rail service and long-term commitments of rail users are both included.

The "core" system consists of rail stations which are essential parts of the state's rail network and of considerable importance to the state's economy. Criteria for inclusion in the

"core" system include handling at least 800 carloads per year, or producing one million dollars in annual revenue traffic.

The first funding mechanism was LRSA money established in 1978. The State of Indiana established an Industrial Rail Service Fund in 1982 to provide low interest loans to short-line railroads and ports. It also provides grants for railroad-highway crossing demonstration projects. One example of a state-funded project was the shifting of rail lines to areas outside the City of Lafayette.

The applicant must demonstrate the importance of the project to the state transportation network. Indications of the railroad's long-term viability and astute management are also required, along with a description of the relationship of the railroad to long-term shipping needs.

Rehabilitation projects are deemed to have an expected life of eight years. The useful life for an acquisition of right-of-way is set at 20 years. The discount rate is based on the yield of Federal Treasury Bonds and is adjusted every six months. Limits on the state's share of funding are, for acquisitions, the lesser of 60 percent or 800,000 dollars of project costs, and for rehabilitation projects, the lesser of 60 percent or 500,000 dollars of the costs. The applicant must not exceed a three-to-one debt-to-equity ratio anytime during the life of the loan.

Between 1976 and 1978, 1.55 million dollars in total assistance was provided, with 500,000 dollars of this coming from state sources. Another 2.3 million dollars in assistance was distributed from 1979 to 1981, the state's share was 500,000 dollars. Furthermore, 6.5 million dollars in assistance was provided through LRSA rehabilitation projects between 1981 and 1986. Since 1982, 2.9 million dollars has been dispersed through the state's Industrial Railroad Service Fund.

Iowa¹¹

The State of Iowa currently operates the Iowa Rail Finance Authority (IRFA).¹² Contributions to this fund were initially intended to come from taxes on railroads. However, this was invalidated by the prohibition against discriminatory railroad taxes found in the 1976 rail revitalization law.¹³ But in 1983-1984, railroad property taxes which were more than 60 days delinquent started coming to the State of Iowa, rather than to the counties. With the

Chicago, Milwaukee, St. Paul and Pacific Railroad Company (Milwaukee Road) and the Chicago, Rock Island and Pacific Railroad Company (Rock Island) in bankruptcy, owing millions of dollars in property taxes, collections were centralized at the state level. Two and one-half million dollars accrued to the State from these delinquent property taxes.

Subsequently, the Iowa Legislature loaned 15 million dollars to IRFA to assist in Heartland Rail's purchase of the Rock Island line linking Chicago and Omaha, Nebraska. The source of these funds was the use tax (sales tax) on motor vehicles. The loan was intended to be re-paid to the State over a 30-year term. However, in 1988, it was allowed to be rolled over, and is loaned out again as payments come in. Due to a 1991 shortage in the Iowa General Fund, all residual IRFA funds were transferred to the Iowa General Fund and only repayment monies are now available for lending.¹⁴

IRFA has the authority to issue revenue bonds if there is a clear revenue generation source which can be used for repayment.¹⁵ In 1988, the State agreed to place a two million dollar guarantee behind such bonds, and the state has estimated that the issuance of ten to twelve million dollars in bonds would be feasible, depending on a project's viability. The State has not issued any such bonds, to date.

The State of Iowa also established the Rail Assistance Program (RAP). Established prior to IRFA, it was originally funded in 1973 for rail renovation, and may now also be used for rail acquisition. It has been used to upgrade over 1,000 miles of Iowa railroads. This money comes from the general fund, and usually goes out as matching grants, generally with one-third state, one-third shipper, and one-third railroad support. Federal funds from the LRSA of 1978 are channelled through the RAP. There have been no new funds from the Iowa Legislature for about five years.¹⁶

In 1991, the Iowa General Assembly directed that IRFA funds and RAP funds be returned to the state's general fund for deficit reduction purposes. The future of these programs is now unclear.

Kansas¹⁷

Kansas experienced some 600 miles of branch line rail abandonment between 1980 and 1989. Significant additional abandonment is expected. At the end of 1988, Kansas had 6,355 Class I route miles, about half of which is light-density, and 481 miles owned by the regionals and shortlines (Class III). Kansas has developed a number of successful programs to provide alternatives to railroad line abandonment.

Kansas has also received slightly more than six million dollars through LRSA (Section 803 funds) since its inception. Eligible rail projects may use funds for acquisition, rehabilitation, or construction of rail facilities. The state uses a benefit-to-cost ratio in the economic analysis of the project to prioritize projects, also taking into account the distinction between private and public benefits and costs.¹⁸

The State of Kansas also views the creation of shortline and regional railroads as alternatives to abandonment, and sees a role for the shortlines in economic development. A portion of the old Rock Island line operated by the Kyle Railroad Co. (Kyle) is owned by the Mid-States Port Authority (the Port Authority). The Port Authority purchased the Rock Island line running from Fairway, Nebraska (south of Lincoln), south to Kansas and across the northern part of Kansas to Limon, Colorado. The Port Authority was created by the Kansas legislature to restore the line and operate rail service. Members of the Port Authority include representatives from the 14 counties across northern Kansas (one county has dropped out). The Port Authority acquired about 320 miles of track in Kansas.

The Port Authority acquired a loan from the Federal Railroad Administration to purchase and restore the line. The State of Kansas provided a partial guarantee for the loan. In case the Port Authority defaults, the state is liable for half the balance. The line in Kansas is currently operated by the Kyle Railroad under a lease-purchase arrangement.¹⁹

Because the Federal Railroad Administration's local assistance program was phased out of existence, there are now no federal funds for rail line assistance and implicitly no rail assistance funds from the state (aside from loan guarantees). Prior to 1980, the State of Kansas was prohibited from participating in the improvement of facilities other than those dealing with highways and water resources. In 1980, the Kansas constitution was amended by a public vote

to allow the state to become directly involved in subsidizing operations, construction, or maintenance of railroads or their facilities.²⁰ The current policy is tied to federal assistance to rail carriers, and provides for "...contributing any state funds appropriated in accordance with law for such purpose in any amount not exceeding the amount received from the Federal Government for such improvements."²¹ In other words, the state can only contribute funds when they are matched by federal funds.

The first state action to preserve and revitalize Kansas railways was signed into law on May 20, 1991, and establishes the Rail Service Improvement Fund and the Rail Service Assistance Program Loan Guarantee Fund. Although still prohibited from acquiring any lines, the state may now guarantee rail acquisition and improvement loans of up to five million dollars annually, to a maximum of 20 million dollars.²²

Maryland²³

Maryland's rail assistance policy consists of two parts. The first is rail system preservation, described as maintaining and improving currently operated state-owned lines, where such improvements are cost effective. Projects include rehabilitating and replacing rail facilities and equipment to assure continued freight operations.

The second part of Maryland's policy refers to economic development. Specific goals are to maintain and enhance economic development whenever cost effective, while leaving the operation of rail lines to the private sector. Essential rail freight service is preserved and subsidized when no alternative mode of transport exists and where such service is cost effective. One requirement for receiving state assistance is the continued financial commitment by the users. Maryland favors economic development along its supported rail lines to attract new traffic, which may increase line revenues, and decrease the need for public support.

The State Rail Administration (SRA) was established as part of the Maryland Department of Transportation in 1978. The SRA is responsible for coordinating state policies to preserve, improve, and continue rail service.

Maryland's Local Rail Service Assistance Program (LRSA) had invested some 34.9 million dollars through fiscal year 1988. Rehabilitation of lines accounted for 38 percent of

these funds; acquisition of light density lines, 28 percent; operations, 22 percent; and leases, 12 percent.²⁴ Of the total, the state provided 62 percent, federal sources provided 33 percent, while local and private sources provided five percent.²⁵

The SRA conducts an economic analysis of proposed rail project to develop a benefit-to-cost ratio. The SRA also considers other factors, such as a project's benefits in enhancing economic development.

The procedure used for the economic analysis is similar to that of the FRA. The benefits include reduced transport costs, greater payrolls, avoiding the purchase of additional equipment, and averting business relocation. Project costs include the state's share of the railroad operating costs and expected rehabilitation costs. The salvage value of the track and equipment is considered as a negative cost in the analysis. Maryland uses a five-year project life.

State Owned Lines. After the creation of Conrail, 240 miles of branch lines in Maryland were proposed for abandonment. The state initially continued service on 105 miles of these lines. By 1989, Maryland operated only 109 miles with federal, state, and local financial assistance. The state now owns 202 miles of branch line right-of-way.

Massachusetts²⁶

The Massachusetts Rail Assistance Program was established in 1976 in response to the bankruptcies of two major railroads, the Penn Central Railroad and the Boston and Maine Railroad. Funding for the program was initially accomplished through the FRA's Federal Rail Assistance Program, for the period ending in 1981. Faced with dwindling federal support for rail projects, the commonwealth developed a variety of funding programs to assure continuation of rail freight service. Principally, service was subsidized on seven important branch lines. Nine objectives of the rail assistance program were identified:

- Preserve essential rail freight transportation service. Between 1976 and 1982, the state subsidized freight service on six branch lines abandoned by the Penn Central; rail freight service preservation on these lines prevented adverse impacts on local economies and shipper groups.

- Improve the physical condition of branch lines to improve service and reduce operating and maintenance costs.
- Encourage businesses to continue their use of rail transportation whenever this use proves efficient.
- Preserve abandoned right-of-way which has potential for transportation or other future public use.
- Minimize the loss of existing jobs and encourage creation of new jobs, especially in economically distressed areas (an economic development objective).
- Retain operation of rail lines in the private sector.
- Assist rail users to meet the challenges caused by line abandonments.
- State investment in rail facility rehabilitation is possible only when such facilities and right-of-way are publicly owned.
- Administer the allocation of public funds to assure maximum overall benefits.

Massachusetts started efforts to preserve rail service as early as 1973. Currently, the Executive Office of Transportation and Construction (EOTC) has the responsibility for rail planning and public rail assistance programs. An act passed in 1975 authorized and directed the EOTC to use state funds for "... acquisition, preservation, rehabilitation, and reconstruction of rail rights-of-way, facilities and equipment directly, jointly, or under contract with another party."²⁷ The act authorized the EOTC to acquire Penn-Central rights-of-way that were being considered for abandonment. The state treasurer was authorized to issue 19.5 million dollars in bonds, 4.5 million dollars of which were for rail freight projects, through fiscal year 1982.

The 1975 Act (Massachusetts Chapter 637) was extended to June 30, 1983 while the 1979 Act (Chapter 480) increased the amount of financial assistance to rail projects, on non-state-owned lines, from 150,000 to 500,000 dollars. In addition, the 1979 Act appropriated ten million dollars from the Rail Freight Fund for acquisition and rehabilitation of freight lines.

An additional five million dollars in state Freight Fund Bond Issue proceeds was authorized for rail freight service improvement projects by the 1983 Act (Chapter 811). An additional 500,000 dollars was appropriated for rail freight financial assistance.

A 1988 Act of the Massachusetts legislature authorized 22.5 million dollars for rail freight service projects, six million dollars of which was to be spent on bridge clearance improvements for freight lines to improve access for double-stack trains.

Michigan²⁸

The goals established for Michigan's rail freight program are to maintain and enhance the development of industries and commerce in the state, by developing and maintaining essential rail corridors. For rail corridors owned by the state, the freight program will improve and expand the infrastructure to attract more traffic, and create more revenues until separation of the line to the private sector is profitable. The program will assist privately-owned corridors in maintaining the economic viability of rail lines, while continuing the private ownership. The plan supports economic development by participating in rail infrastructure finance projects.

Funding Programs, State Ownership. The state will own facilities only in those corridors where private involvement has ceased and there exists a need and local commitment for the purchase and operation of the line. The state provides 50 percent of the project costs, or up to 100 percent if the following criteria are met:

- The line directly connects or creates access for a state-owned line.
- The line generates at least 20 carloads per mile per year.

Project priorities are based on funds availability and operating costs, as well as the importance of the project in terms of safety, traffic volume, time sensitivity of the commodities, and the function of the segment as an essential rail corridor. The state will return ownership of lines to the private sector when there is assurance that the purchaser will protect the state's investment by maintaining it at or above current service levels.

Corridors not included in operating contracts will be "railbanked." Facilities banked for three years without potential for reasonable operations will be eliminated from the railbank system, salvaged, and returned to the Department of Natural Resources.

Funding Programs, Private Ownership. Michigan's plan provides for capital loans to private railroads for improvement and expansion. A loan may be for up to 30 percent of total project costs, at an interest rate two percentage points below the prime rate. Applicants who

are non-transport businesses (or local government) may receive loans or grants for economic development projects along supported rail corridors. At least 50 percent of the total project cost must be provided by non-state sources.

Minnesota²⁹

Minnesota's goals for public participation are to provide a safe, economic, and energy-efficient transportation system, one that is responsive to public needs. There is a desire to guide public investment in rail, by evaluating eligible projects based on financial, marketing and economic analyses. Specific objectives are to assist in revitalizing rail lines in the state which show evidence for future profitability and to improve the quality of service to rail users.³⁰

The Minnesota Department of Transportation (Mn DOT) will consider rail projects which are financially viable (assuming public funds), have shipper financial participation, and have the potential to increase rail use. The Mn DOT will provide up to 75 percent of the acquisition costs to Regional Railroad Authorities for approved projects. However, operating subsidies will not be provided. The Mn DOT may guarantee loans to rail users for new facilities, improved access, or to mitigate the adverse impacts of abandonments.

The initial departmental criteria for support is traffic density. Lines with traffic density of less than five million gross ton-miles per mile of track will be subjected to three types of analysis:

- **Financial analysis:** To estimate the financial viability of branch lines, on-branch and off-branch costs are subtracted from revenues to find profit or deficit of the line. On-branch costs include labor, equipment, opportunity costs, maintenance and tax costs to the line's owner and operator. Off-branch costs include expenses incurred after traffic exits the line until it reaches its final destination
- **Marketing analysis:** Applied to lines that show a deficit as a result of the financial analysis. A survey of shippers is used to examine additional shipping potential. This additional traffic, if any, is added to line costs and benefits, and the line is then analyzed once again to see if it may achieve financial viability.
- **Rehabilitation needs assessment:** Lines selected using the financial and marketing conditions above are then examined to determine physical condition of the line and the status of its owners. Lines are eliminated from further consideration if the rail is 90

pounds or heavier, the line is FRA Class II or higher, or if the owner has an upgrading program underway.

The Mn DOT also administers a State Rail Bank, a Capital Improvement Program, and a Rail User Loan Guarantee Program. The purpose of the rail bank is to acquire and preserve abandoned rail lines for future public-oriented uses. The capital improvement program provides interest-free loans so rail users may assist in upgrading lines. Line purchases, rehabilitation, construction and reconstruction of physical facilities, and the purchase of equipment are all eligible. The state may provide up to 100 percent of the total project cost.

The Rail User Loan Guarantee Program was designed to assist rail users in obtaining loans and guaranteeing (through local governments) revenue bonds to cover the user's share of the total project cost. Eligible types of projects include the rehabilitation of rail lines, capital improvement costs to reduce the impact of abandonment, and capital improvement costs to improve rail service. Up to 90 percent of any loan may be guaranteed under this program.

Missouri³¹

The Missouri State Rail Preservation Act specifically prohibits the use of state funds, property, or credit to assist in the funding of rail assistance programs. However, in a public referendum in 1982, Missouri voters authorized the issuance of 600 million dollars in state bonds. The main purpose of the referendum, the Third State Building Fund, was to assist projects that would encourage economic development.

Rail-related funds appropriated from the Third State Building Fund were administered through the Missouri Rail Facility Improvement Authority. The funds were granted to three organizations. The City of West Plains received funds to build an industrial spur. The Jackson and Southern shortline received funds to rehabilitate its line. The Green Hills Development, Inc. received funds to buy the track for its shortline from the Wabash Railway Company. The Third State Building Fund was a one-time funding source that has been depleted. Without changing the law or without another public referendum, Missouri has no mechanism to provide further financial assistance.³²

Missouri has participated in the LRSA program, but federal funds are extremely limited, and over 2,000 miles are eligible for federal assistance in Missouri. To evaluate lines for

financial assistance, in addition to benefit-to-cost analysis, Missouri uses other analyses, including economic growth potential, environment, energy, and public needs considerations. Using an outside consultant, the state has developed a comprehensive quantitative and qualitative project evaluation methodology.³³

Nebraska³⁴

Prior to 1980, the State of Nebraska was forbidden from granting or loaning funds for private sector activities. This included the granting or loaning of funds by the state government even if the funds were originally granted or loaned to the state by the Federal Government. The state law reads: "The credit of the State shall never be given or loaned in aid of an individual, association, or corporation except that the State may guarantee or make long-term, low interest loans to Nebraska residents seeking adult or post high school education of any public or private institution in this state."³⁵

In 1980, the Nebraska legislature passed a bill permitting the use of public funds for rail revitalization. In this case, the term "public funds" meant only federal or local public funds. The bill, the Agricultural and Industrial Branch Rail Revitalization Act of 1980, established a seven-member council to oversee state railroad revitalization activities. The council has the authority to issue bonds but does not possess taxing authority and may not use state tax revenues on rail line assistance projects. Local entities may form regional rail councils and will ultimately be responsible for each line revitalization project. Because there are no federal funds for the state to administer, the state currently has no rail assistance program.³⁶

With a large number of lines that are potential abandonment candidates, and without an assistance program, the State of Nebraska's local rail service system sits in a fairly tenuous position. In 1989, the state commissioned a study to investigate the status of almost 2,000 miles of low-density and branch lines in the state.³⁷ The study categorized the lines as follows: (1) profitable lines, (2) borderline profitability, but where the Nebraska Department of Roads has determined that the lines are not in jeopardy, (3) lines which could qualify for assistance based on benefit-to-cost ratio analysis which takes into account social costs of abandonment, and (4) lines which do not have a benefit-to-cost ratio that warrants financial assistance. Based on the

analysis, 412 miles are in the third category and 621 miles fall into the fourth category. Given the current lack of financial assistance, a majority of the third and fourth category lines are likely to be abandoned, very few being viable candidates for local or regional railroads.

Although Nebraska still has no rail assistance program, efforts were made in 1991 to appropriate funds from the state's General Fund to purchase a line.³⁸ The proposal was to buy the 317-mile line from Fremont to Chadron from the Chicago and North Western Railroad. The two-year appropriation would provide five million dollars for line purchase in year one, and five million dollars for line rehabilitation in year two. A shortline operator would contract with the State and lease-to-own the line over a 25 year period.³⁹

New Hampshire⁴⁰

The initial funding for rail assistance in New Hampshire was through the LRSA in 1978. However, after 1982, funds received by the state from the FRA were reduced greatly. The last LRSA rehabilitation loan received by New Hampshire was in 1983.

The agency responsible for rail planning activities is the Bureau of Railroads within the recently established (1986) New Hampshire Department of Transportation (NH DOT). The state recognizes that "rail freight service is indispensable to certain areas of New Hampshire. This assumption requires a commitment from the state to assure that rail service will be maintained in areas where necessary..."⁴¹ Supporting this commitment, New Hampshire's Rail Plan seeks to:

- Provide and maintain an efficient rail network within New Hampshire, which is essential to preserve the stability of its economic health and retain and extend employment.
- Develop and implement a program of railroad investment based on an economic analysis calculating benefits and costs, and assure continued safe and quality service.
- Encourage businesses to continue their use of rail transportation whenever it results in greater resource efficiency and better economic growth.
- Minimize adverse social and economic impacts of changes in rail service.

- Preserve abandoned rail lines that may have public uses.⁴²

Rail rehabilitation projects in New Hampshire may be financed subject to the following conditions:

- Benefit-to-cost ratio from the economic analysis is greater than 1.
- Twenty percent of the project cost must be covered by shippers, users, or the owning railroad.
- Continued shippers' commitment, set period of time.
- Commitment of the owning railroad to maintain service on the line at a prescribed FRA classification level.
- The state must be given a ten year lien on the line.
- Environmental, energy, and social aspects will be considered in accordance with federal regulations.

In accordance with FRA requirements, each state receiving federal rail assistance through the LRSA is required to conduct an economic analysis for projects being considered. The state of New Hampshire applies the following methodology:

- Establish the project and null alternatives: rehabilitation versus abandonment (for lines operating at a deficit); rehabilitation versus operation as is (for marginal lines that, if upgraded, may be more profitable); new construction versus operation in its current condition.
- Establish the planning horizon for the project.
- Determine project costs. The total costs of each alternative include project costs and implementation costs. Salvage value of material and equipment after the life of the project is subtracted from its total cost.
- Determine benefits, consisting of reduced or avoidable costs to shippers and the carrier, and secondary benefits to the community.
- Calculate the benefit-to-cost ratio, by dividing the project revenues by its costs.

As an example, one project supported in New Hampshire is the Ossipee and Conway Branch in Rochester. Completed in 1990, industrial siding was provided at a cost of 250,000 dollars in state funds and 50,000 dollars in local funds.

New Jersey⁴³

New Jersey's State Rail Assistance Program received a three million dollar appropriation in 1989. The state has identified distinct goals for the assistant program. They are:

- Economic goal. Preserve and improve the freight transportation system which supports and promotes economic activity in New Jersey.
 - Minimize the negative employment impacts of rail freight service abandonments.
 - Increase employment potential with new/improved rail freight services or facilities.
 - Minimize increases in transportation costs for industries located on lines scheduled for abandonment.
 - Protect the Core System.
- Efficient freight distribution goal. Ensure freight movement within the state is accomplished in an efficient and expeditious manner.
 - Promote rail services that exhibit potential for long-term economic viability.
 - Support competitive freight transportation services where economically viable.
- Land use goal. Promote an appropriate balance between land development and each component of the freight system to maintain consistency with available state, regional, and local development goals as articulated in the State's Transportation Plan.
 - Promote rail freight projects which complement the guidelines for regional and local development.
 - Promote the adaptive re-use of existing urban rail freight facilities.
 - encourage the clustering of economic activity in the development of new rural and suburban rail freight facilities.
- Energy goal. Maximize the conservation of energy by promoting the use of freight systems which will provide the necessary service at the lowest energy cost.
 - Promote energy efficient aspects of rail freight transportation.
 - Promote rail freight services that minimize detrimental environmental impacts.
- Environmental goal. Advise and counsel on an overall freight transportation system which complements the State's desire for a clean, healthful, and pleasant living environment.
 - Promote rail freight services that minimize detrimental environmental impacts.

- Responsive freight transportation system goal. Provide transportation facilities that satisfy the requirements of freight shippers and the industries they serve.

- Promote joint private and public funding and rail freight improvement projects.

The highest priority in New Jersey's assistance plan went to projects which had been previously implemented and phased in over a number of years. Next were acquisitions of core rail lines, followed by newly-identified rehabilitation or construction projects.

As is the case with a number of other states, New Jersey requires that the economic analysis of projects results in a benefit to cost ratio greater than one, and be part of the core rail system. The commitment from both users and the railroad is required. For core system projects, the state's share could be 70 percent and the sponsor's share would be 30 percent. Non-core projects have a 50-50 split between the state and the sponsor.

New Jersey was entitled to 3.6 million dollars annually in federal funding, and received a total of eight million dollars. FRA funding decreased considerably in 1982. Table 4 presents the schedule of federal and state funds earmarked for rail assistance in New Jersey from 1982 through 1989.

Table A-4 New Jersey Funding

<u>Year</u>	<u>Federal Funds</u>	<u>State Funds</u>
1982	\$350,000	NA
1983	\$200,000	NA
1984	\$125,000	\$1.0 Million
1985	NA	\$2.0 Million
1986	NA	\$2.0 Million
1987	\$400,000	\$3.0 Million
1988	\$960,000	\$3.0 Million
1989	NA	\$3.0 Million

The state of New Jersey uses an economic analysis to screen projects. Benefits include the direct impacts of the project on employment, personal income, changes in transportation costs to local commerce, and changes in railroad costs and revenues. Costs are the total costs of implementing the project over a life of five years. New Jersey uses a discount rate of four percent, established in consultation with Rutgers University (the State University of New Jersey).

An example of a notable rail assistance project in New Jersey is the Cloverleaf Industrial Track in Middlesex County, owned and operated by Conrail. Completed in 1989, five businesses were identified with potential traffic of 500 carloads annually. This project cost 135,000 dollars, and the state's share was 94,000 dollars. With transportation cost savings of 1,574,100 dollars annually, the benefit to cost ratio was 12.8-to-one.

Pennsylvania⁴⁴

The state of Pennsylvania is one of the more active states in rail assistance programs, not only in the number of such programs, but, more importantly, in the amount of funds available for rail assistance. This is largely due to the rapid and extensive abandonments which threatened the state's rail network in mid-1970's. After the 4-R Act of 1976, the state enacted legislation to allow its Department of Transportation (Pa DOT) to effectively participate in the federal rail subsidy program.

Between 1976 and 1983, Pennsylvania purchased 180 miles of track. Funding was primarily from federal sources, through the Rail Line Acquisition Program. The state's intent was to return ownership of these lines to the private sector after the lines became financially viable. By 1990, the state still owned 136 miles of the original 180 miles.

The Rail Line Acquisition Program expired in 1983; subsequent to this program the state did not purchase any rail lines. By 1984, the state responded to rail assistance needs by passing Act 119, the Rail Freight Preservation and Improvement Act. It created a 13-member Rail Freight Policy Committee and authorized a comprehensive rail freight study. The study, which began in 1985, evaluated state policies and programs, and the role of each rail line within the rail network. The study recommended programs to best serve the state's goals in maintaining an essential rail network and attracting new industries.

Pennsylvania uses funds from state, local, and private sources to support rail freight projects, as long as there is strong support and commitment at the local level. Generally, grants awarded through the General Fund Rail Assistance Program are 80 percent state-funded, with 20 percent local or private funds. All projects are required to have a minimum operating life of five years. Rail programs of two basic types are described in the following.

General Fund Programs. This program provides assistance for three types of non-capital investments. The investment types include:

- **Accelerated Maintenance.** Aimed at preserving essential rail freight service on non-state-owned lines. Work is targeted at branch lines and shortlines that had deferred maintenance by previous Class I operators. Accelerated maintenance will bring lines up to FRA Class I standards. Shippers and manufacturers using these lines are then able to stay competitive, creating economic stability and greater potential to attract new rail-dependent businesses to the state, thereby fostering economic development.
- **Program Maintenance.** Currently the state reserves one million dollars per year to maintain its 136 miles of state-owned rail. Private sources (75 users) provide 20 percent of the program's cost.
- **Rail Operating Assistance.** State-owned lines may receive up to 50 percent of their operating deficits, with the remainder from rail shippers who need the continued service. This program has a 300,000 dollar annual budget.

General Fund Program assistance amounted to some 4.5 million dollars during 1989-1990, whereas 4.55 million dollars was budgeted for the 1990-1991 projects.

Capital Budget Programs. Rail freight assistance under this program was intended for rail projects with large capital requirements. The goal was to ensure an efficient rail freight network to meet the transportation and economic development needs of Pennsylvania. Completed projects of this type include track relocation and rehabilitation, construction of intermodal facilities, freight yards, and bridge clearance projects. By providing capital assistance, the state aims to create better transportation options, thus decreasing shipping costs, attract new industries, and decrease highway maintenance costs by reducing truck traffic.

Funds for this program are made available through the sale of general obligation bonds. The twelve-year (1988-2000) program of funds may provide a total of 84 million dollars for capital projects. The amounts of funds by category are shown in Table A-5.

Table A-5 Pennsylvania Program of Funds, 1988 to 2000

<u>Activity</u>	<u>Millions of Dollars Allocated</u>
New Facility Construction	10.232
Clearance Improvements	39.293
Track Rehabilitation	29.509

Project Prioritization. All projects proposed for state assistance must be evaluated utilizing economic analysis to provide a benefit-to-cost ratio for the project. Projects which are found to have a benefit to cost ratio greater than one are placed in a pool of eligible projects. They are then ranked according to their positive impact on employment. Higher priority is given to projects with more jobs saved or created relative to project cost; i.e., cost per employee or job.

Vermont⁴⁵

Vermont's goal is to promote a balanced and integrated transportation system by maintaining adequate rail service to meet the needs of its people and industries and by improving rail service whenever possible. The first objective of the plan is to maintain existing rail service to attract new industries, thus creating new jobs and improving the economic health of the state. Other objectives include maintaining rail service on the level necessary to serve existing rail users' needs, developing policies to guide future decisions regarding public involvement in rail service, and ensuring equitable and effective use of public funds invested in rail projects. Rail corridors which may be needed to support future development are railbanked.

Under the railroad capital improvement program, state funds are appropriated as needed for the acquisition of rail facilities, rehabilitation of rail lines, and for subsidizing state-owned rail lines. The LRSA has been another source of funds.

An economic analysis of projects is conducted to determine those with a benefit to cost ratio greater than one, whether a significant number of shippers will benefit, and prospects for improving the railroad's operating efficiency. Highest priority in the selection of projects is given to rail service preservation, defined as rehabilitation projects on abandoned lines.

Progressively lower priorities are assigned to rehabilitation or new construction on state owned lines, and for rehabilitation projects where the railroad or shippers are interested in providing the non-federal share of project costs. Projects are also ranked by decreasing benefit to cost ratios.

Virginia⁴⁶

The Commonwealth has adopted policies which will provide assistance for maintaining vital and financially viable rail service. The policies provide for:

- Localities to promote the use of light-density rail lines.
- Financial assistance for acquisition and rehabilitation of rail lines threatened by abandonment.
- Financial assistance for improvement of the physical plant of marginally profitable branch lines.
- Preservation of abandoned rights-of-way which may have potential for future uses.

Rail assistance projects in Virginia may be funded through a variety of revenue mechanisms, including gasoline taxes, railroad corporate taxes, lottery proceeds, railroad fuel taxes, and a special transportation trust fund.

A maximum two percent of the retail value of gasoline may be collected by the state. These taxes are collected by the Department of Taxation and then returned to proper jurisdictions for transportation purposes. The revenues are administered by a Transportation District Commission. A portion of railroad corporate tax may be used for financial assistance purposes. In 1990, the corporate tax was six percent on net income, totaling about ten million dollars that year.

A portion of lottery proceeds may be allocated by the general assembly for rail financial assistance programs. A retail tax may be placed on fuel purchased by railroads operating in Virginia. Finally, a Special Transportation Trust Fund has been established, a portion of which may be appropriated for railroad programs; one percent of this fund is 4.7 million dollars.

Washington⁴⁷

The 1983 Legislature enacted the Rail Freight Service statute which included the Essential Rail Assistance Account (ERAA) to help county rail and port districts to acquire, maintain, and improve essential rail service, and to operate railroad equipment to maintain essential rail service.

The Rail Bank System was added in 1985. This system was prompted by the need to mitigate line abandonments. The bankruptcy of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company (Milwaukee Road) in the late 1970's resulted in the abandonment of 446 miles in the State of Washington. Many of the abandonments had little or no impact on the local economy since there were redundant rail lines or existing economic transportation alternatives. However, in some locations, rail abandonments had adverse impacts on the local economy, and the communities requested state and federal assistance to continue service.

Wisconsin⁴⁸

The purpose of the Transportation Economic Assistance Program is to increase the number of jobs in the state of Wisconsin by assisting economic development projects in their transportation needs, when transport is essential to the project. The program assists local governments in preserving freight rail service as part of a balanced transportation network for the benefit of the local economy through capital assistance to rail line rehabilitation projects.

The state has three transportation assistance programs. The first is the Transportation Economic Assistance (TEA) program, intended to help new businesses in Wisconsin by funding transportation improvements, which include rail and non-rail transportation access. Under the program, the state will pay up to 50 percent of a project's cost. Projects must meet seven criteria for eligibility. The seven criteria are the following:

- The business development will create new jobs.
- The business development is contingent upon a certain transportation improvement.
- The business development does not involve transferring jobs from one part of the state to another.

- There is commitment from parties involved that the development is certain.
- There is no other means for financing the needed transportation improvement.
- The cost (to the state) per job created does not exceed 5,000 dollars.
- The applicant must submit a job guarantee, that the expected number of directly created jobs will be realized within three years of the starting date.

Under the TEA program, the state pays up to 50 percent of project costs, provided the cost per job created does not exceed 5,000 dollars. The total state share should not exceed one million dollars. The private business or local government applicant provides the rest of the project costs using private funds, federal funds, and in-kind services. Priorities are assigned (in descending order of importance) on the basis of the cost to the state per job created or retained, transportation efficiency benefits associated with the project, the unemployment rate in the county where the project is located, and whether or not a TEA project has been funded in the region during the preceding two years.

The second program is called Advance Capital Administrative Guidelines. Its purpose is to assist local government in preserving rail service through line rehabilitation projects. To be eligible, the project must be within the state of Wisconsin and the benefits (transportation efficiency and economic development) must exceed costs. The rehabilitation work must be performed on line elements located in the track zone, which includes road bed and main track.

The state will provide a loan or grant for a portion of the project cost depending on the traffic density of the line. The state share ranges from 25 to 50 percent of project cost. Priorities are based on the net present value of the project, in addition to equity and geographical distribution factors. The state calculates a benefit-to-cost ratio for financial project evaluation. Maximum assistance for one project, combined grant and loan, is two million dollars. Loan duration will not exceed ten years, and the loan interest rate is set equal to the state's cost of capital.

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APPENDIX B

DETAILED DESCRIPTION OF RAIL AND INTERMODAL PROJECTS CASE STUDIES

A short version of the six case studies of local rail service projects is included in Chapter III. This appendix presents a more detailed case study description. Three are rail projects, three are intermodal projects, all are located in the Midwest region (Illinois, Iowa, Missouri). They were selected based on the diversity of their funding sources (state and local) and the nature of the financial assistance (loans and grants).

Interviews were conducted during 1990 at each of the six facilities, and in some cases, with associated shippers and economic development groups. The interviews were purposely unstructured so that biases on the part of the research team would not force the discussion. In each case study, an attempt was made to discover those elements which were seen by the respective operators, investors, shippers, and community members as essential to the success (broadly defined) of their project. These success attributes were explored, and are synthesized and presented in Chapter IV.

The case studies which follow include the Columbia Terminal Railroad in Columbia, Missouri; the Rochelle Industrial Spur in Rochelle, Illinois; the Appanoose County Community Railroad in Centerville, Iowa; the Quad Cities Container Terminal in Davenport, Iowa; the Burr Oak Intermodal Facility in Chicago, Illinois; and the Newton Intermodal Facility in Newton, Iowa.

Columbia Terminal Railroad

The City of Columbia, Missouri identified its interest in continued rail service, and became a catalyst for the creation of the Columbia Terminal Railroad. The City's interest was two-fold. First, the City receives coal on the line for its power plant, and second, the line serves its industrial development area, and preservation of the line may promote economic development in the area. More specifically, it was believed that shippers along the line contributed to a healthy tax base, and stimulated utility services demand.¹

The project started when the Norfolk and Western Railway Co. (Norfolk and Western) expressed interest in abandoning the 22 mile line. The Columbia Chamber of Commerce began looking for a shortline operator to buy or lease and operate the line. However, potential operators were not interested in the line, since traffic was only about 400 cars per year. The Chamber then approached the municipal utility (water and electric service) and asked whether the utility would operate the railroad. Interestingly, the utility was concerned about preserving the line since industries along the line were heavy water and electricity users.

The utility managers favored the purchase of the railroad and, based on the merits of the idea, including economic development, retention of industry, and attraction of bulk shippers in the future, convinced the City Council to support the creation of the Columbia Terminal Railroad. At the very beginning, the utility recognized that the line would have to be subsidized. Loss of the line, however, would present greater long-run losses in terms of utility revenue foregone.

Additionally, the fact that the city owned a railroad gave them significant leverage in coal purchase negotiations. They traditionally had received locally-mined coal by truck. When they let bids for coal after purchasing the railroad, the bid price on trucked coal declined. The coal continued to move by truck until 1990, but the threat of competition saved the utility more than the entire cost of establishing the railroad. There has been no private financial support, though community members (bankers, county supervisors, city leaders) are very vocal in their support of the railroad.

Railroad Finance and Pricing

The acquisition cost of the line was 325,000 dollars. They purchased a rebuilt locomotive for 100,000 dollars, and they have no investment in rolling stock. The annual subsidy of the railroad has been about 50,000 dollars. For 1990, the railroad was expected to break even since all the coal to the power plant is now hauled on the rail line. The power plant had just switched to low-sulfur Wyoming coal, and in 1990 the traffic volume was about 1,000 carloads of coal.

The tariff on the line is based on a fee paid by the Norfolk and Western. The Norfolk and Western pays the Columbia Terminal Railroad a flat fee for handling a car from the point of the junction and delivering the car to the shipper or receiver. During the first two years of operation, the flat fee was 200 dollars per car, and the Norfolk and Western continued to market the service and handle the accounting. The Columbia Terminal Railroad simply turns in a monthly list of the cars hauled.

The price per car still averages 200 dollars. Pricing of services varies based on the commodity and the number of cars shipped at a time, with multi-car rates in effect.

Operating Characteristics

When purchased, the line did not meet 25 mile-per-hour safety standards. At the initiation of service, the Columbia Terminal Railroad used a 500,000 dollars Local Rail Service Assistance Act (LRSA) grant to refurbish the line and bring it up to 25 mile-per-hour safety standards.

The Columbia Terminal Railroad hired three employees. They were all previous railroad employees, displaced from other lines. The utility uses its existing employees to provide the ancillary services for the line, such as engineering and design expertise, rail crossing maintenance, procurement, and payroll.

To advise the City Council on management of the rail line, an advisory board was set up. The board consisted of seven members, one of whom must be a shipper. The remainder of the board members must have railroad experience or knowledge, with half residing in the city and half residing outside the city. Members of the board have acted as advocates for the rail line.

Marketing Efforts and Traffic Composition

Traffic on the line is predominately inbound, although in the past, grain was shipped outbound. The loss of grain shipments from the local elevator was attributed to the Norfolk and Western's increasing its rail rates. The shipper believed that Norfolk and Western is discouraging the use of rail for grain shipments because of the short haul movement from

Columbia to Mississippi River ports and to processing facilities around St. Louis. The short haul ties up Norfolk and Western rolling stock for relatively small amounts of revenue. A grain elevator owner on the line is currently negotiating with the Norfolk and Western Railroad for more attractive grain rates. Also, a small amount of recycled cardboard originates on the line for shipment outbound.

Marketing was originally the responsibility of the Norfolk and Western. However, the Norfolk and Western neglected its responsibility so the utility marketing staff currently markets railroad service from Columbia. Originally, the city marketed the railroad with a 30,000 dollar oil overcharge grant, promoting the rail line as an energy efficient means of shipping. Promotional activities included a market study and a "shippers day." Inbound traffic on the line includes building bricks, steel for a fabricator that makes corrugated culvert pipe, recycled paper and newsprint, and plastic pellets for a PVC pipe manufacturer.

Traffic on the line in the three years prior to the City's purchase averaged 400 to 450 cars per year. During the year of purchase, only 350 cars were originated. In the first year of operation by the city, 600 to 650 cars were originated. Traffic stayed at that level until 1990 when the grain elevator discontinued rail shipments. In April, 1990, traffic shot up when the City began receiving coal by rail.

The city felt that there could be more traffic if they could locate an intermodal ramp in Columbia. Currently, the nearest ramps are in Kansas City or St. Louis.

Railroad Industry Concentration

The project was not justified based strictly on revenues received for transportation service. The utility felt that it was justified, based on maintaining and developing its economic base in Columbia. However, an obstacle to rail-dependent economic development may be increasing rail industry concentration.

Concern was expressed over the concentration of rail services. There is a belief that if traffic is not originated on the Norfolk and Western, it will not be shipped by rail to Columbia. For example, wine from California originates on the Atchison, Topeka and Santa Fe Railroad. The Santa Fe unloads its rail cars in Kansas City and ships wine to a distribution point in

Columbia by truck. Due to the time and costs of interlining and switching cars, Columbia officials say it is difficult for them to attract traffic originated on other railroads.

Comments from a Shipper on the Columbia Terminal Railroad

For the makers of PVC plastic pipe, one of the primary considerations in 1974 for locating in Columbia was rail service. The PVC resin is delivered in rail cars, and finished PVC is shipped by truck directly to construction contractors. Ownership of the plant changed hands in 1982, when the Norfolk and Western still served the line. When the PVC plant opened, it produced 30,000 pounds per day, and were receiving ample service, once a week, from the Norfolk and Western. In 1990, the plant produces 160,000 pounds per day, and expansion was planned. Because of the greater volume, they require more frequent rail service.²

When the Norfolk and Western owned the line, the once-per-week switching made it extremely difficult to plan the use of cars and production. Now, the city performs switching daily, and can make a switch the day after a request is received.

Had railroad service been discontinued, this plant certainly would have left Columbia. The pipe manufacturer is too small to purchase and operate the line, as are all the other shippers. The city was seen to be the only possible operator, and has met with a great deal of satisfaction from the shippers.

Rochelle Industrial Spur

Two Class I mainlines run through and cross in the city of Rochelle, Illinois. One is the Chicago and North Western Railroad's mainline from Omaha to Chicago and the other is the Burlington Northern Railroad line running from Chicago to Minneapolis and on to Seattle. Some 75 trains per day pass through Rochelle.

To take advantage of the two railroads, the city built a one and one-half mile railroad to connect with the mainlines. The industrial park in Rochelle is centered around the city's rail line. The cost of the city's tie-in spur in 1987 was 1.3 million dollars.³

Although the city backed the project, the economic development agency had responsibility for finding as much non-city funding as possible. The Chicago and North Western Railroad

provided the city with materials for the project to connect to their end of the city's spur. The city provided the labor to install the rail. The state paid for the labor through a 400,000 dollar grant to the city. This grant program has since been discontinued, and the only funds that are now available are low-interest loans. The Burlington Northern Railroad was unwilling to provide 187,000 dollars for switch work to connect the spur with its line, until it became apparent that the line was being built; they eventually provided funds for the switch. Shippers did not provide any of the capital for the project.

Traffic and Pricing on the Line

Shipment destined for Rochelle typically experience lower freight rates, when compared with transport into Chicago by the Chicago and North Western Railroad. Also, due to less rail congestion, private fleet refrigerated (CO₂) tank cars can turn in four to six days. This allows some 13 to 15 long hauls per year as opposed to nine hauls for railroad-owned cars.

Currently, the largest firm in the city's industrial park is a cold storage facility, Wiscold. It receives and ships 450 million pounds per year of food products from the Rochelle facility. Roughly 80 to 85 percent of the inbound products are delivered by rail and outbound is entirely by truck. There are currently 112 lessees in the cold storage warehouse. The facility includes cold and dry storage and transloading. The capacity of the facility was 7.7 million cubic feet of storage, and was expected to grow to 20 million cubic feet.⁴

Wiscold operates its two privately-owned switch engines to move cars into and out of the siding. Sometimes the railroad provides switching. The peak shipping demand for the plant was 80 cars per day.

The industrial park was also attempting to attract a lumber components manufacturer (wood trusses and other fabricated wood components). The city has applied for an economic development grant from the state to build public infrastructure, including sewer and streets, for them. Lumber will be shipped in by rail from the west coast and finished components will be trucked into Chicago.

The original switching charges prior to the Staggers Act (1980) were 97 dollars per car. In an attempt to maintain traffic on their own lines after deregulation, the railroads increased

switching charges. Because of the competition now between the two railroads, with city's own ability to switch cars, switching charges have been brought back in line.

The cold storage facility experiences an empty back haul problem due to the large traffic volumes coming from the west coast, resulting in a refrigerated rail car rate of 500 dollars, from Rochelle to the west coast. The low transportation prices provide the opportunity to ship commodities for export to the Pacific Rim. For example, one of the plants in the industrial facility packs meat. Argentine and Australian beef is received from the west coast, and it can be packaged and frozen at Wiscold and shipped back to the west coast. The beef is shipped in containers from the overseas origin, transloaded at the port and shipped in rail cars to Rochelle. Three containers can be transloaded into one refrigerated boxcar, and the containers are then released for international trade.

Cooperative Efforts and Economic Development Issues

Of the two Class I railroads, the Burlington Northern Railroad was less interested in the local project. For example, the BN Railroad already had a siding that may have been used as part of Rochelle's shortline. Unfortunately, the Burlington Northern demolished the line. Originally, the BN had a 35 percent market share; now they have a 20 percent market share.

The shippers own tracks that lead to their plants, and the city owns and maintains the lead tracks on the spur. The City Public Works Department maintains the track.

To encourage industry to locate in Rochelle, the local taxing bodies have provided tax abatement for new industry. Wiscold was able to win a two-year tax abatement from all local taxing authorities. This abatement is 90 percent the first year and 75 percent the second year.

Funding for the Economic Development Corporation comes from the city's utility department. The city owns its own power plant and competes with Commonwealth Edison. High utility rates charged by the city had been a problem. However, due to high electricity demand from new industries and development, utility rates for electricity from the city's plant are now lower than rates from Commonwealth Edison's nuclear plant. The utility currently sells 600,000 dollars per year in electricity to the industrial park users. The cold storage facility is

able to load its peak power demand in the off-peak, at night. This spreads out the use of the utility's physical plant and reduces average cost which ultimately reduces utility rates.

Appanoose County Community Railroad

The town of Centerville, Iowa was originally served by both the Burlington Northern Railroad and the Chicago, Rock Island and Pacific Railroad Company (Rock Island). In late 1970's, abandonment of the Burlington Northern branch line from Alexandria, Missouri to Centerville was approved and the line was scheduled to be dismantled in 1981. In 1980, when the Rock Island went bankrupt, service was discontinued and the Rock Island line running south of Centerville was also scheduled for dismantling in 1981.

Union Carbide Corporation, the major employer in Centerville, made the community aware of the importance of rail service to its operation. Union Carbide employed 450 to 550 people and used the railroad for inbound transportation of plastic pellets used in making plastic packaging for meats. In 1981, the community developed a plan for the restoration of rail service. During the interim, when no rail service was available, Union Carbide shipped plastic pellets to Ottumwa by rail and trucked the pellets to Centerville. The intermodal movement was expensive and it was reported that the process also created opportunities for the contamination of the pellets.

Community Response

When the community first confronted the loss of service, business leaders looked for a shortline operator to organize the line and operate the railroad. They identified four shortline companies that were interested in the line. However, many Centerville business leaders believed that all the operators were unacceptable, that each operator was not stable enough to risk the future of the city's industry. It was felt that an outside company would not have the commitment to stay with the community if revenues were to decline. Because major employers in the community are dependent on rail service, community leaders felt they could not afford to take the risk of having an outside company operate the rail line. Community ownership was

viewed as indicating to existing and prospective industries a long-term commitment to the railroad.⁵

The citizens of Centerville formed a non-profit corporation to initiate and manage a shortline railroad and restore service. The plan for rail service restoration included the purchase of 4.3 miles of the Burlington Northern Railroad line running southeast out of town to the point where it met the Rock Island line. Then came the purchase 5.7 miles of the Rock Island track running northwest to its intersection with the Norfolk and Western Railway Company (Norfolk and Western) line. The Norfolk and Western line runs between Moberly, Missouri and Des Moines. The proposal called for the rehabilitation of the line and the construction of the intersections between the Burlington Northern and the Rock Island Railroads, and between the Rock Island and Norfolk and Western Railroads.⁶

The Burlington Northern Railroad's line was a branch line and consisted of rail weighing between 60 and 75 pounds per section.⁷ The Rock Island segment was on its mainline between Kansas City and Chicago, but its operation was restricted to ten miles per hour. The Rock Island track was 112-pound rail. Based on the traffic projections, the Iowa Department of Transportation estimated in 1982 that when service was reinstated, 905 carloads (mostly grain) would be generated.⁸

An initial fund raiser generated 150,000 dollars through small donations of concerned members of the public. The original 150,000 dollars was used to match funds from the Iowa Rail Finance Authority. In 1983, the community amassed a funding package for the railroad which included 180,000 dollars in contributions collected from residents, a 550,000 dollar loan by the Farmers Home Administration, an 800,000 dollar Urban Development Action Grant, and a 300,000 dollar grant from the Iowa Department of Transportation, Rail Assistance Program.⁹

The non-profit corporation, Appanoose County Community Railroad Company (ACCR), purchased 8.6 miles of Rock Island Railroad track and five miles of Burlington Northern Railroad track, and spent nearly one million dollars on the construction of new intersections between the Burlington Northern and Rock Island, and with the Norfolk and Western Railroad line.¹⁰ After the purchase of a used locomotive, the first cars were originated on the line in 1984.

During the start-up of the line, Union Carbide, two grain elevators and a scrap metal dealer agreed to pay a 450 dollar surcharge on each car, and guaranteed a fixed demand for cars. During the start-up period, both elevators went out of business because of the lack of grain to ship. One of the elevators failed to pay its guaranteed surcharge, although the other did. Variations in traffic are largely dependent on grain shipments. Grain moves under contract, rather than on carload rates. Revenue generated per car from moving grain tends to be one-third of the revenue generated per car of plastic pellets.

Business Development

The community understood that many of its industries were too mobile to invest in the community to the extent of operating a railroad and purchasing right-of-way. The current industrial users are not bound by location as is the community. Furthermore, it seemed that the companies were not likely to make even short-term investments unless they were certain of stable rail service.

Centerville's industrial park abutts the rail line. In 1985, shortly after the ACCR was established, the Rubbermaid Company announced that it would open a plant in Centerville. Rubbermaid took over an existing building which they later expanded into a 200,000 square-foot facility. In addition to the benefits of rail service, Rubbermaid was attracted to Centerville by Iowa Southern Electric utility, an Urban Development Action Grant, the favorable labor market, and the existing plant. However, it appears evident that without the railroad, Rubbermaid would not have located in Centerville.

The Union Carbide plant has continued to manufacture plastic bags for meat and poultry at the facility, now operating under the name of VisKase. They employ between 450 and 540 people. The rail line allows them to avoid truck transfers of the plastic pellets, which were both expensive and risky, as the chances for contamination were critical for food-related packaging.

Operations

The ACCR has three full-time employees consisting of a manager and two employees that operate the train and perform maintenance. The railroad also uses part-time employees to assist

in track maintenance. Materials for track maintenance (primarily rails) have been donated to the ACCR by the Norfolk and Western Railroad Company.

Members of the non-profit corporation board of directors included two bank presidents, representatives of the Chamber of Commerce and of VisKase (the current owner of the former Union Carbide facility), and other interested citizens. The Board of Directors of the non-profit corporation has representation from the County Supervisors, City Council and the public at large.

Railroad Revenues

Revenue is based on a charge per-car. There are three commodities carried by the railroad: plastic pellets (inbound), scrap metal (outbound), and grain (outbound). The Norfolk and Southern Railroad Company (parent company of the Norfolk and Western) agreed to pay ACCR a 30 dollars per car subsidy in addition to the base rate of 250 dollars per carload on all plastic pellet carloads generated on the line, up to a total of 250,000 dollars. Grain is shipped to Molten and the railroad had a contract directly with each grain elevator before they closed.

The ACCR also generates revenue from the storage of cars. When the factories order more cars than they can use, the railroad charges them for storage of cars. Revenue is earned also from maintenance performed on tracks owned by shippers. The ACCR has paid off all its debts and is attempting to build a cash reserve.¹¹

Quad Cities Container Terminal

A low-interest loan from the State of Iowa was approved in late 1988, and in 1989, four investors in the Quad Cities Container Terminal (QCCT) built an intermodal facility at Davenport, Iowa. The State of Iowa used oil overcharge funds for this project. The 750,000 dollar loan has a ten-year term, with quarterly repayment based on traffic volumes at the facility. The QCCT charges 20 dollars per lift for loaded trailers on flat cars, and 30 dollars per lift for loaded containers. Of this, the Iowa Department of Transportation requires that at least 1.50 dollars per trailer and 11.50 dollars per container be returned to the State in loan repayment.¹²

The terminal is located on a 15 acre site, with an adjacent 12 acres available for expansion. The parcel is owned by two of the private-sector partners. The terminal is operated by non-union employees.

A number of area industries expressed interest in stack-train and intermodal service in the Quad Cities, including John Deere, Alcoa, Honda America, the Rock Island Arsenal, and J.I. Case. These were considered established rail users, who required consistent daily rail service for their international and domestic traffic. The container terminal is seen as a positive attempt to encourage international trade by developing facilities to handle intermodal transportation. Although there is a container terminal at Newton, Iowa, it was not seen to have the capacity and location to help many eastern Iowa shippers remain viable in the international market.

Local companies were partners in the economic development process. For example, John Deere was instrumental in the establishment of the foreign trade zone (FTZ) and in obtaining a U.S. Customs Officer and Port-of-Entry Status for the Quad Cities.

Traffic Patterns

The terminal operators see their niche market to be within 100 miles of the terminal. They believe that if container rates from the west coast could be obtained which are equivalent to the rates into Chicago, they could be successful in their niche. Their 100-mile intermodal niche would be protected from Chicago competition by the drayage cost.

Prior to the establishment of the QCCT, a good deal of eastbound freight traffic passed through the Quad Cities on its way to Chicago rail heads. It then had to be drayed back to the Quad Cities from the Chicago ramps, at a cost of 350 to 400 dollars per load.¹³

The initial two-year QCCT contract required the Soo Line Railroad to provide 14,000 lifts (about 7,000 containers or trailers) per year at the facility. It appears that for the first year of operation (1989) traffic fell short of the 14,000 lifts by about 5,000 lifts. The Soo Line Railroad has indicated informally that it will not renew the contract, and shippers predict that once the railroad contract has expired, the volume of lifts will decrease even further.

Even with the QCCT, it is estimated that Quad Cities shippers still send 2,600 twenty-foot equivalent units (TEU's) per year into Chicago by truck. Several shippers believe that a proposed buy-out of the Soo Line Railroad by Rio Grande Industries preoccupied railroad management and caused a lack of interest on the part of the railroad, precipitating a number of problems for the QCCT. The buy-out attempt ultimately failed.¹⁴

The American Honda plant receives between 800 and 1,000 containers per year. Many go through Chicago and are trucked back to Davenport. Currently, about 60 percent of its traffic passes through the QCCT, but it is not on the stack-trains. The containers are off-loaded from stack-trains at Kansas City (or other facilities) and moved to the QCCT on non-unit trains.

Honda identified three problems prohibiting their use of stack-trains at the QCCT. They include:

1. Honda pays for the complete transportation from Japan to Davenport so the local office does not have direct control over the service.
2. The steamship lines are reluctant to use the facility because they have their own investments in facilities elsewhere.
3. Steamship lines are cautious about dealing with the Soo Line Railroad.¹⁵

Honda would like to do more business through the QCCT and hoped that if the Southern Pacific Railroad were to take over the facility, the steamship lines would be willing to divert stack-train freight to the Davenport ramp. Honda prefers to have deliveries made in Davenport because it provides more control over arrivals at its plant. When a container is drayed from Chicago it is dropped off when the trucker reaches Davenport, and Honda must arrange for local storage. If the containers were delivered by stack-train to Davenport, after off-loading, they can be queued at the QCCT for scheduled delivery at the plant.

The John Deere Company is the largest employer in Iowa, and a major Quad Cities shipper, receiving over 600 containers per year inbound. Much of this traffic, as well as significant Deere outbound traffic, does not pass through the QCCT.

Some identity-preserved bulk commodities are being moved over the ramp in Davenport. This includes seed, grain and grain products. There are ten to twenty containers per month of identity-preserved bulk commodities originating in Davenport.

Difficulties which Emerged

Among problems cited by shippers was the infrequency of stack-train service. By its second year of operation, the QCCT was receiving two dedicated stack-trains per week, one Monday and one Thursday, each with five articulated cars. Also coming into the terminal are mixed freight trains with trailers and containers on flat cars. Even though shippers had asked for more frequent service, and would increase their traffic volume by rail if trains were scheduled more frequently, the railroad did not provide additional trains.

A regional line, the Iowa Interstate Railroad, could add to service frequency, but it is located about five miles from the QCCT. The Iowa Interstate was trying to establish a competitive switching rate to accept intermodal traffic from the Soo Line Railroad, which had originated at the terminal facility. However, establishment of a rate has been slow to come to fruition. Interdom, a third party which works with the Iowa Interstate, has asked for this rate as well. Evidently, other railroads do not provide significant competitive pressures. It seems that the competitive pressures for the Soo Line Railroad actually come from the drayage companies, who can haul Quad Cities freight in and out of the giant Chicago intermodal yards.

Another area of concern has been marketing. Under the initial contract, this was the responsibility of the railroad. As soon as the Soo Line Railroad discontinued its ramp operation and the QCCT took over, the number of originating cars started to decline. It appears that traffic during most months has been ten to twenty percent below the levels during the time of the railroad operation. However, as traffic fell, the QCCT staff and partners became heavily involved in marketing the terminal, even though their fee of 20 dollars per lift does not specifically include marketing efforts. But since they were unable to quote or generally predict rail rates, many marketing efforts failed.¹⁶

A third problem area has been the failure of the railroads (both the Soo Line and Southern Pacific) to provide a competitive overall rate structure compared with drayage options

into Chicago. Since the Quad Cities area has a six-to-one ratio of outbound to inbound container freight, empty containers must be drayed back from Chicago. Also, the Soo Line charges a repositioning fee of 120 dollars per container to move an empty container from Chicago to the Quad Cities. Together with the freight rates, switching rates, and interlining rates, direct rail movement into the Quad Cities is not in many cases competitive with motor carrier rates out of the Chicago rail heads.¹⁷

The unwillingness of the major railroads to enter into interline agreements is an important problem for shippers who wish to utilize a preferred ocean port. In this project, the Soo Line Railroad receives its eastbound traffic from the Southern Pacific Transportation Company, which carries freight from Southern and Central California ports. Both the John Deere and Honda companies prefer Pacific Northwest ports, which cannot be reached from the QCCT on the Soo Line Railroad.

In the North Atlantic trades, John Deere calculates a 126 dollars per TEU advantage in using the QCCT. This is for freight moving westbound into Chicago on the CSX Railroad or Conrail, then trucked across town, loaded onto the Soo Line Railroad, and sent into the QCCT. However, due to the schedule uncertainty and time delay (about two days) in the cross-town trucking segment, John Deere has decided to forfeit the 126 dollars and dray the containers right into the Quad Cities. This ensures that the freight will arrive in accordance with Deere's Just-In-Time (JIT) inventory and production scheduling system.

There is a strong belief among shippers and economic development officials that the trust generated when the QCCT was created has been broken. The Soo Line Railroad and the terminal operator became partners in developing the facility and the railroad guaranteed the traffic (14,000 lifts). Several participants expressed a belief that the rail carriers have not lived up to their end of the bargain. Also, two ocean shipping lines, Maersk and ESI (OOCL), have stopped marketing containers from the QCCT. Due to the repositioning fee, they will work strictly out of Chicago.

In mid-1990, traffic through the facility was not great enough to generate revenues sufficient to cover the facility's operating cost. However, it is clear that the traffic potential in the Quad Cities area is more than ample, given the proper pricing and service environment. In early 1991, after the failed SP-Soo Line Railroad buy-out, the Soo Line Railroad decided to

concentrate on marketing, and commenced an aggressive marketing effort. Traffic through the facility has improved significantly, and loan repayment continues to be on schedule.¹⁸

Effect of Project on Economic Development

Should the terminal fail, a number of negative economic impacts for the region might result. These include higher shipping costs, reduced energy efficiency, and loss of new businesses, especially those involved in international commerce. It would diminish efficient transportation connections of Iowa manufacturers involved in intermodal-dependent international markets. Furthermore, there may be a chilling effect that the failure would have on prospective intermodal facility operators elsewhere in the state.

Economic development officials suggest several ideas which may help the QCCT meet expectations. First, the QCCT may have to become closely allied with and sponsored by one large user. Second, access for a second railroad may increase competition and service at the facility. Third, move the QCCT to another rail line. It may be helpful to bring in a "third party" with international transport connections to carry out marketing responsibilities.¹⁹

When economic development groups promote the Quad Cities, they are selling location, and they target industries for whom location is a relevant factor to their distribution of goods. This is particularly important for those companies who saw their goods coming in from the Pacific Rim, travel through the Quad Cities, and unloaded in Chicago or Galesburg, Illinois. So the container facility enhanced the Quad Cities' location.

A failed attempt to recruit a Japan-based manufacturer was cited. They needed a midwestern distribution point. They found it to be less expensive to ship from the west coast to Chicago by stack-train, than to the Quad Cities, even though the freight travels through the Quad Cities, and this diminished the attractiveness of the Quad Cities in the eyes of that manufacturer.

Burr Oak Intermodal Facility

The Burr Oak Intermodal Facility, in operation since October 1989, is located in the Blue Island section of Chicago, Illinois. It lies on the Iowa Interstate Railroad line. The original Iowa Interstate Railroad yard and intermodal facility in the Chicago area is known as the Evans yard, where intermodal traffic was handled from 1984 to 1989. The Iowa Interstate Railroad interchanges with the Chessie System Railroad (CSX) and the Harbor Railroad.

In 1987, the Iowa Interstate Railroad started stack-train service with Interdom, a third party common carrier. Its primary service corridor was Chicago to Newton to Los Angeles. This service grew very rapidly, but the Evans facility was limited to a single track and a six or seven car spot. This created excessive switching requirements to load or unload a stack-train. In addition, there were trucks coming in and out of the reload facility, and heavy CSX and Harbor Railroad carload traffic made it very inefficient to marshal a stack-train.²⁰

Physical Facilities

The decision was made to move to the present location, Burr Oak. The Burr Oak facility has about 20 acres and land for expansion is available, if necessary. The facility provides ample room to maneuver, more so than at the Newton facility. Due to three insufficient bridge clearances east of Rock Island, stacked containers often must be reshuffled. The large yard allows the chance to set the boxes down in the yard, which eases loading and stacking. By contrast, the Newton facility does not have enough space to place boxes on the ground.

The packer has room to stack boxes on the ground, rather than requiring a constant flow of chassis. In addition, there are two sets of tracks to allow for easier marshalling of trains. Capacity of the facility is about 200 lifts in a four and one-half hour period.

The operators are considering upgrading the facility. The dirt yard creates problems for the stability of the packer. A chuckhole and an overweight box could create a spill. The yard must be graded about once a week. They are also considering computerizing the gate house. The improvements will occur when and if a major contract, for example, with a steamship line, is obtained. Otherwise, yard improvements will come incrementally, while other railroad-wide needs are being addressed.

Management and Staff

The lift labor is provided by non-union contract employees. The contractor at Burr Oak is S&H Leasing Company. Railroad employees consist of the terminal manager, the gate people that do the inspections, and the railroad agent. S&H is a partnership of the two firms that do the local drayage and chassis maintenance. S&H handles all cartage, maintenance, and ramping. The lift equipment is leased by the Iowa Interstate Railroad and S&H does the maintenance. No Interdom employees work in yard.

The efficiencies observed are largely due to the flexibility of the labor force. They work most efficiently with a four man crew: two spotters, a ground man (to handle the twist locks on the box), and a packer operator.

The proposed new ownership of the Iowa Interstate Railroad by the Chicago West Pullman Corporation has not substantially changed the business plans of the railroad. Growth in traffic at the Burr Oak Facility was due in part to backing from Maytag Corporation. Maytag has supported the service, thereby showing that the regional railroad can be competitive with the with larger railroad.²¹

Traffic Patterns

The current volume of lifts is some 2,000 to 2,100 per month, or 24,000 to 26,000 lifts per year. The stack-trains and the piggy-back trailers are run as part of a general manifest train, so there are no strictly intermodal trains.

Traffic flows quickly through the facility, with very little gate waiting. Most trains are unloaded in 1-1/2 to 2 hours. The crew can unload and stack 13 forty-foot boxes in 45 minutes.

Interdom's only traffic generation points are Chicago, Newton, Los Angeles and Seattle. The Iowa Interstate Railroad originates or terminates only at its four intermodal terminals in Iowa and Illinois, and did not handle any overhead intermodal traffic.

Traffic from Iowa origins has been fairly stable, but traffic from origins outside of Iowa has grown. Traffic from the U.S. Post Office has increased, and the railroad is currently considering leasing a second packer for the Burr Oak facility.

Very little of their intermodal traffic is "steel-wheel" interchange from other railroads. Because of the rail congestion in the Chicago area, they dray all interchange traffic to another yard, where it is ramped onto another carrier's train.

Newton Intermodal Facility

The intermodal facility at Newton, Iowa is a cooperative venture between Interdom Stack-Train Services, Maytag, Inc. (an appliance manufacturer), and other investors. Interdom is a third party seller of stack-train services on the Iowa Interstate Railroad (IAIS). The Newton facility is operated by Container Services, a contractor. The facility has a capacity of about 60 containers or trailers per shift. About 10,000 intermodal loads are hauled in and out of the Newton facility annually.²²

The Newton facility is designed to be a low cost, minimum investment operation. The acreage for maneuvering truck trailers and a piggy packer was readily available in an existing rail yard area. Some tracks were removed or covered over with crushed rock. The more expensive option of paving was not used. Additional land for parking trailers was acquired at a tax sale for 38,000 dollars. The city resurfaced the street to reach it, which is the only taxpayer support devoted to the intermodal facility.

In addition to obtaining these facilities for low costs, investment was kept low by leasing rather than buying equipment. The packer is leased by Container Services for around 3,800 dollars per month. If freight volume declined to a level deemed insufficient to support the facility, liquidation costs would be low.

Origins with Maytag

The origins of intermodal handling in Newton can be traced back to the late 1950s. Maytag then moved about 65 percent of their products by boxcar and the rest by truck. Truck was predominantly used for short haul movements, such as Newton to Minneapolis. Longer hauls originated on the Rock Island using damage-free box cars.

A change in Maytag's distribution pattern spelled the end of boxcar shipments. In place of shipping through wholesalers, Maytag began direct shipments to their customers, the

appliance dealers, most of whom required "rubber tire delivery," because they had neither the facilities or demand for boxcar-size shipments.

Intermodal Options

Piggyback services were substituted for box cars, with the Rock Island installing ramps made from old flat cars by 1960. Shipments and facilities grew, albeit reluctantly by the Rock Island in ensuing years, until the site had six ramps. Maytag was still shipping by boxcar and by piggyback when the Rock Island stopped service, reducing Maytag's rail freight to a low level until the line was returned to service. In 1990, about 35 percent of all outbound freight is rail, exclusively intermodal. The last box car moved was in 1985.

Some major advances in railroad equipment provided alternatives for Maytag to consider. The RoadRailer (a string of coupled truck-trailers mounted with flanged railroad wheels) could provide door-to-door service but was felt to have too high a damage rate for their products. A better option was containerized shipments on a double-stack car. With better suspensions and fewer couplers per train, stack cars arrived with less damage to their loads than previous piggyback shipments.

Maytag views double-stack rail shipments as an area into which they would like to expand. They view the expansion of the use of stack-train service to be a function of the number of mechanized ramps dispersed throughout the country.

Maytag hopes to provide the Iowa Interstate Railroad with overhead traffic, making it more than a regional grain-hauling railroad. The overhead traffic is good for Maytag since high quality double-stack services require high volumes. High volumes are derived when the Interstate attracts more through traffic, with the train simply stopping in Newton to be topped out with Maytag freight.

Interdom and Traffic Patterns

Interdom's Iowa operations are run by Container Services, providing an almost entirely variable cost structure, on a time basis. That is, costs are incurred either monthly, such as the lease charge for the packer, or in other short time periods, such as staffing wages. Moving boxes costs 18 to 20 dollars per lift. The contractor utilizes labor which operates under flexible conditions, both duration of shift and time of day.

Maytag traffic comprises 15 percent of Interdom's total volume, and 20 percent of their total revenue. Maytag views their traffic as seed traffic. In addition, Maytag would like to use their traffic to provide the seed for Interdom to expand into other corridors. Roughly 75 percent of the traffic from the Newton facility is from Maytag. When the container packer was first put in place in 1986, all intermodal traffic was outbound Maytag traffic. More recently, bulk mail to and from Des Moines and other traffic is shipped through Newton.

As Interdom expands its lanes of traffic, the majority of the traffic carried continues to be for Maytag. As an example, when Interdom expanded to Seattle, 80 percent of the initial traffic was from Maytag. With time, Maytag's proportion has dropped.

Because of the size of Maytag, it has served as a consistent anchor for Interdom. Maytag's traffic could be used by Interdom to leverage its way into new lanes. It seems that a large anchor shipper is an important factor contributing to the success of any new facility. Low-volume shippers may benefit from their proximity to an anchor shipper.

Problems and Concerns

Double-stacks are not without problems. First, many eastern locations are inaccessible due to low clearance at bridges. Stacked 9'6" boxes provide a great deal of difficulty for some of the rail carriers, and not all routes with bridges or tunnels have sufficient clearance for the increased height. After a sufficient incubation period to demonstrate the viability of the concept, railroads are quickly improving structures to permit double-stack trains.

Second, to make double-stack services a viable choice, there needs to be a critical mass of double-stack loading facilities, trains and shippers. Each facility requires a sufficient pool

of available chassis, as well as availability of "piggy-packers" to transport containers between loading and staging areas and to lift them on and off rail cars.

Competitive structures may also become a concern. At Newton, the Iowa Interstate Railroad and Interdom cooperate, with Interdom acting as the Interstate's third party agent. At other locations, however, they compete with one another. For example, both parties have sales forces for intermodal freight moving out of Chicago.

Maytag views Interdom to be a third party parallel to American President Lines Intermodal Division (API). Interdom and API provide similar services, though Interdom is on a smaller scale.

The Class I rail carriers contend that there are enough mechanized intermodal facilities to accommodate the intermodal freight. Shippers believe that Class I carriers have a high-density, high-volume mentality, and could not handle low traffic density locations because of their labor cost structure. It is doubtful that the Class I carriers, as inherently high volume, bulk goods movers, could compete in areas requiring low volume and high quality service.

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APPENDIX C

LITERATURE REVIEW

A body of literature on regional and shortline railroads exists. Some of this literature will be reviewed in this appendix. Much of the previous research ties into this current subject, including rail project finance, public policy toward rail transport infrastructure, issues of economic development, and the development of intermodal transportation. Policy makers should be aware of this body of knowledge, and of the work which has been completed, to assist in planning and decision-making.

Regional and Shortline Railroads: Alternatives and Risks

While their historical origins could describe all railroads as being, at one time, regional or shortlines, specific literature recognizes them as alternatives to inadequate rail service or abandonment of existing feeder lines.¹

Significant among early studies was the 1976 report of Baumel, Miller, and Drinka, which describes the economic benefits and costs of upgrading 71 rail lines in Iowa, and estimates the impact of abandonment of these rail lines upon communities and individual businesses in Iowa.² Changes in abandonment proceedings included in the 1980 Staggers Act³ produced opportunities for branch line and short haul rail roads,^{4,5} with guidelines for their operation.^{6,7,8,9,10,11} Among trunk lines, the Norfolk Southern Corporation viewed the changed procedures as an opportunity for orderly rationalizing of low density lines, while retaining the carloads of traffic they would generate for the mainline haul.¹²

Economic analysis work by Due,^{13,14} Sidhu, Charney, and Due,¹⁵ Harris,¹⁶ Black,¹⁷ Grim,¹⁸ Wolfe,^{19,20} and by Walter and McNair²¹ looked at the traffic densities, cost functions and other measures that may spell success or failure for these former branch lines. The importance of estimating all operating costs, including a return on investment, has been demonstrated by Langley and Patton.²² Articles identifying short line costs also included work by Wilson, Tyrchniewicz, and Mason,^{23,24} and by Wood.²⁵

Railroad and Shipper-specific Reports

Evidence of shortline interest in the Federal Region VII area (Iowa, Kansas, Missouri, and Nebraska) is shown by a number of articles.²⁶ Notable developments include the Chicago, Central and Pacific Railroad (CC&P), with articles discussing its size (over 500 miles)²⁷ and its financial problems.^{28,29,30,31} The Iowa Interstate Railroad^{32,33} operates over former Rock Island track, has received much attention for its service innovations.^{34,35} Other regional railroads included in published articles included the Cedar Valley Railway Co.,³⁶ the Iowa Northern Railway,³⁷ and the Dakota, Minnesota and Eastern Railroad Co.³⁸

National and International Interest

The court challenge over labor's role in the decision to sell the Pittsburgh and Lake Erie Railroad Company (P&LE) created national interest because of its potential effects on future shortline sales.^{39,40,41} A discussion of "railroad spinoffs (and) labor standoffs" in the P&LE case was published by Thoms, Dooley, and Tolliver.⁴²

Another regional line sale that elicited widespread interest was the Delaware and Hudson Railway Company (D&H) and related trackage rights issues and competitive market structures with Guilford Transportation Industries.^{43,44, 45,46, 47,48}

In addition to the coverage cited above, regional and local railroads were described in trade journal articles in Distribution,⁴⁹ Handling & Shipping Management,⁵⁰ Railway Age,^{51,52,53,54,55,56,57,58,59,60} Traffic Management,⁶¹ Traffic World,⁶² Transportation & Distribution Management,⁶³ as well as in textbooks.^{64,65}

Interest in regional railroads is not confined solely to the United States. The Economist, a British publication, has discussed this industry segment.⁶⁶ Further away, a short line was reported in the former Soviet Union.⁶⁷

Shipper Concerns

Just as the railroads are dependent upon their traffic base for survival, shippers along the shortlines are concerned about maintaining rail service.⁶⁸ Dooley and Rodriguez researched the

effect that short-line operations may have upon the level of rail services received by grain shippers on light density rail lines.⁶⁹ Oman and Walker inquired about reactivating segments of a bankrupt line to serve agricultural communities in Colorado, Kansas and Nebraska.⁷⁰ In another Kansas study, Eusebio and Rindom assessed the impact of rail branch line abandonments on rural highways.⁷¹ A study of the effects of rail line abandonment on Pennsylvania shippers was published by Gittings and Thomchick.⁷² Kuehn's study asked if abandoned grain shippers were "captive shippers."⁷³

It is not unusual for shippers to take a leadership role in encouraging the formation of local rail lines.^{74,75} Some familiar names such as Cargill, Maytag, Mobil Oil, Georgia Pacific,⁷⁶ National Steel,⁷⁷ Archer-Daniels-Midland,⁷⁸ Kodak, Delco, Rochester Gas and Electric,⁷⁹ Speed Queen and Green Giant⁸⁰ have been involved in the establishment of local or shortline rail service.

Financing, Public Policy and Economic Development Issues

Transportation finance literature has often concentrated on highway construction and maintenance, probably because of the significant use of public funds for this mode.^{81,82,83} Highway financing through private funds and user fees has been discussed by Johnson,⁸⁴ and by Varma and Sinha.⁸⁵

Most railroads are owned by their shareholders, with capital being supplied through equity funds and long-term borrowing. A review of financial methods for stand-alone railroads was written by Tye, who included a discussion of asset valuation.⁸⁶ Another corporate form of organization is a holding company,⁸⁷ rather than individuals, owning shares of several railroads. Holding company characteristics were identified by Sattler.⁸⁸ A critique of the misuse of this form of regional rail carrier ownership was presented by Sheehan.⁸⁹ Trade articles have discussed other sources and financing opportunities,^{90,91,92,93} and have noted that railroad financing problems are international.^{94,95}

The financial risks perceived for local railroad projects may make conventional financing, through the sale of bonds or shares of stock, unavailable or impractical. One form of collateral is a guarantee of revenue-paying carloads of freight by shippers or connecting mainlines.⁹⁶

Financing problems are not unique to shortlines, some of which may benefit from the experience of other commercial sectors in obtaining support. Financing rural projects was analyzed by Drabenstott and Morris.^{97,98} The parallels between the development of local railroads and other rural facilities are important. Public expenditure priorities for urban services, as well as the rural infrastructure in developing countries were discussed by Jimenez.⁹⁹

Public sector financial participation is an important source of funds for local rail service projects. At the state level, Disman addressed the capital needs of the small and medium size businesses, the roles a state may play, and some suggestions for how financial approaches may be developed and implemented.¹⁰⁰

Financing and public policy are inseparable in the contemporary transportation infrastructure. Boyd compared the roles of the public and private sectors in transportation investment, suggesting how the benefits of each mode could be maximized.¹⁰¹ Several states have invested directly in short line railroads,^{102,103,104} and others are considering public ownership or support of intrastate lines, often primarily for carrying passengers.¹⁰⁵ In a case described by Maze, Cook and Carter, the state of Oklahoma revitalized portions of the former Rock Island line. The track was restored by a cooperative financial agreement between the state, a local shippers association, and a private railroad carrier established to operate the line.¹⁰⁶

Due discussed the justifications for governmental participation in railroad financing in two respects: the provision of capital and the meeting of deficits.¹⁰⁷ Alternative institutional structures for state and local government ownership of railroads were identified by Fisher.¹⁰⁸ Rock reviewed local option taxes and other intergovernmental sources of local funds for rail carriers.¹⁰⁹ The rate of return on funded projects in one city was studied by Wetmore.¹¹⁰

Federal support of local rail service was furnished by the Regional Rail Reorganization Act of 1973. Initial trends from this assistance program were analyzed by Black.¹¹¹ The Local Rail Service Assistance Program (LRSA)¹¹² provided a federal fund earmarked for states' programs. LRSA goals and project methodologies were discussed in Appendix A of this report.

Boaten reviewed the role of states in providing adequate rail services,¹¹³ especially after LRSA funds were expended,¹¹⁴ while Kooten and Spriggs argued against having the government aid branch lines by suggesting alternative uses for the funds.¹¹⁵

Allen and Vellenga reviewed the progress and problems of selected states' railroad financing programs.¹¹⁶ A standard requirement of these programs is to produce a benefit-to-cost ratio for various scenarios, including termination of service, as shown in a case study by Hooper, Kenworthy and Pitfield.¹¹⁷

An analysis of the public policy and legal implications in feeder line sales was provided by Mielke.¹¹⁸ Of primary interest, especially after the P&LE court case, has been organized labor's interest in the sale of shortlines. Articles in Traffic World have followed labor's challenges to prospective sales of line which serve Region VII,^{119,120} and related legislation as proposed.¹²¹

State and local initiatives for economic development span both financing and public policy venues. Trends in public infrastructure policy and economic development were tracked by Fox and Smith.¹²² Finance and economic growth environments have been described by Jung,¹²³ by Egan and Bendick,¹²⁴ and by Kohli and Sood.¹²⁵ Ryans et al. compared the economic development programs of several different countries.¹²⁶ Economic development in rural areas has been the subject of studies by Daniels,¹²⁷ and by Drazen and Eckstein.¹²⁸

Huddleston and Pangotra produced a simple model of a state and local economy in which transportation investments can be tracked through to their logical impacts.¹²⁹ Transportation factors in economic development have been cataloged by states.¹³⁰ Zorn discussed infrastructure financing for promoting economic development in the East North Central region.¹³¹ An historical perspective on the effects railroads have had on land values was presented by Pincus.¹³²

Economic Development and Intermodal Transportation

Trailer-on-flatcar (TOFC) was introduced in 1954 (although Whitehill points out that railroads had hauled circus wagons in the same manner for years¹³³), benefitting shippers with lower rates than motor carriers alone, and service less affected by weather interruptions. Although the early advantages of reduced long-distance transit time were largely eclipsed by the interstate highway system and team drivers, regional and local rail facilities have been developed to compete with long-haul trucking. Innovations in facilities and intermodal

equipment have been reported for regional lines in Massachusetts and Iowa,^{134,135} and they are consistent with the potential technology effects described by Williams and Roberts.¹³⁶ There are a number of examples of regional lines expanding their intermodal service. Indeed, the provision of intermodal service has been of great importance to these lines, and to the communities which they serve.^{137,138,139}

Conclusions from the Literature

As seen in this brief review of related articles, regional and short line railroads have been the topics of numerous writers. Most helpful in providing background for the current study were reports that were either railroad or shipper-specific; some pertained to the states in Region VII; others had significant national effects.

There were relatively fewer articles and books found that integrated the topics of financing, public policy, and economic development pertaining to regional and local railroads (and, especially, intermodal activities). The literature clearly identifies the need for objective, benefit-to-cost ratio criteria to be used in decisions on public sector participation in local rail service projects. The role of, and need for, more subjective local rail project evaluation criteria has become clear. While the related articles did provide perspective, their relative absence points to the need for the current study.

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New Jersey⁴³

New Jersey's State Rail Assistance Program received a three million dollar appropriation in 1989. The state has identified distinct goals for the assistant program. They are:

- Economic goal. Preserve and improve the freight transportation system which supports and promotes economic activity in New Jersey.
 - Minimize the negative employment impacts of rail freight service abandonments.
 - Increase employment potential with new/improved rail freight services or facilities.
 - Minimize increases in transportation costs for industries located on lines scheduled for abandonment.
 - Protect the Core System.

- Efficient freight distribution goal. Ensure freight movement within the state is accomplished in an efficient and expeditious manner.
 - Promote rail services that exhibit potential for long-term economic viability.
 - Support competitive freight transportation services where economically viable.

- Land use goal. Promote an appropriate balance between land development and each component of the freight system to maintain consistency with available state, regional, and local development goals as articulated in the State's Transportation Plan.
 - Promote rail freight projects which complement the guidelines for regional and local development.
 - Promote the adaptive re-use of existing urban rail freight facilities.
 - encourage the clustering of economic activity in the development of new rural and suburban rail freight facilities.

- Energy goal. Maximize the conservation of energy by promoting the use of freight systems which will provide the necessary service at the lowest energy cost.
 - Promote energy efficient aspects of rail freight transportation.
 - Promote rail freight services that minimize detrimental environmental impacts.

- Environmental goal. Advise and counsel on an overall freight transportation system which complements the State's desire for a clean, healthful, and pleasant living environment.
 - Promote rail freight services that minimize detrimental environmental impacts.

- Responsive freight transportation system goal. Provide transportation facilities that satisfy the requirements of freight shippers and the industries they serve.

- Promote joint private and public funding and rail freight improvement projects.

The highest priority in New Jersey's assistance plan went to projects which had been previously implemented and phased in over a number of years. Next were acquisitions of core rail lines, followed by newly-identified rehabilitation or construction projects.

As is the case with a number of other states, New Jersey requires that the economic analysis of projects results in a benefit to cost ratio greater than one, and be part of the core rail system. The commitment from both users and the railroad is required. For core system projects, the state's share could be 70 percent and the sponsor's share would be 30 percent. Non-core projects have a 50-50 split between the state and the sponsor.

New Jersey was entitled to 3.6 million dollars annually in federal funding, and received a total of eight million dollars. FRA funding decreased considerably in 1982. Table 4 presents the schedule of federal and state funds earmarked for rail assistance in New Jersey from 1982 through 1989.

Table A-4 New Jersey Funding

<u>Year</u>	<u>Federal Funds</u>	<u>State Funds</u>
1982	\$350,000	NA
1983	\$200,000	NA
1984	\$125,000	\$1.0 Million
1985	NA	\$2.0 Million
1986	NA	\$2.0 Million
1987	\$400,000	\$3.0 Million
1988	\$960,000	\$3.0 Million
1989	NA	\$3.0 Million

The state of New Jersey uses an economic analysis to screen projects. Benefits include the direct impacts of the project on employment, personal income, changes in transportation costs to local commerce, and changes in railroad costs and revenues. Costs are the total costs of implementing the project over a life of five years. New Jersey uses a discount rate of four percent, established in consultation with Rutgers University (the State University of New Jersey).

An example of a notable rail assistance project in New Jersey is the Cloverleaf Industrial Track in Middlesex County, owned and operated by Conrail. Completed in 1989, five businesses were identified with potential traffic of 500 carloads annually. This project cost 135,000 dollars, and the state's share was 94,000 dollars. With transportation cost savings of 1,574,100 dollars annually, the benefit to cost ratio was 12.8-to-one.

Pennsylvania⁴⁴

The state of Pennsylvania is one of the more active states in rail assistance programs, not only in the number of such programs, but, more importantly, in the amount of funds available for rail assistance. This is largely due to the rapid and extensive abandonments which threatened the state's rail network in mid-1970's. After the 4-R Act of 1976, the state enacted legislation to allow its Department of Transportation (Pa DOT) to effectively participate in the federal rail subsidy program.

Between 1976 and 1983, Pennsylvania purchased 180 miles of track. Funding was primarily from federal sources, through the Rail Line Acquisition Program. The state's intent was to return ownership of these lines to the private sector after the lines became financially viable. By 1990, the state still owned 136 miles of the original 180 miles.

The Rail Line Acquisition Program expired in 1983; subsequent to this program the state did not purchase any rail lines. By 1984, the state responded to rail assistance needs by passing Act 119, the Rail Freight Preservation and Improvement Act. It created a 13-member Rail Freight Policy Committee and authorized a comprehensive rail freight study. The study, which began in 1985, evaluated state policies and programs, and the role of each rail line within the rail network. The study recommended programs to best serve the state's goals in maintaining an essential rail network and attracting new industries.

Pennsylvania uses funds from state, local, and private sources to support rail freight projects, as long as there is strong support and commitment at the local level. Generally, grants awarded through the General Fund Rail Assistance Program are 80 percent state-funded, with 20 percent local or private funds. All projects are required to have a minimum operating life of five years. Rail programs of two basic types are described in the following.

General Fund Programs. This program provides assistance for three types of non-capital investments. The investment types include:

- **Accelerated Maintenance.** Aimed at preserving essential rail freight service on non-state-owned lines. Work is targeted at branch lines and shortlines that had deferred maintenance by previous Class I operators. Accelerated maintenance will bring lines up to FRA Class I standards. Shippers and manufacturers using these lines are then able to stay competitive, creating economic stability and greater potential to attract new rail-dependent businesses to the state, thereby fostering economic development.
- **Program Maintenance.** Currently the state reserves one million dollars per year to maintain its 136 miles of state-owned rail. Private sources (75 users) provide 20 percent of the program's cost.
- **Rail Operating Assistance.** State-owned lines may receive up to 50 percent of their operating deficits, with the remainder from rail shippers who need the continued service. This program has a 300,000 dollar annual budget.

General Fund Program assistance amounted to some 4.5 million dollars during 1989-1990, whereas 4.55 million dollars was budgeted for the 1990-1991 projects.

Capital Budget Programs. Rail freight assistance under this program was intended for rail projects with large capital requirements. The goal was to ensure an efficient rail freight network to meet the transportation and economic development needs of Pennsylvania. Completed projects of this type include track relocation and rehabilitation, construction of intermodal facilities, freight yards, and bridge clearance projects. By providing capital assistance, the state aims to create better transportation options, thus decreasing shipping costs, attract new industries, and decrease highway maintenance costs by reducing truck traffic.

Funds for this program are made available through the sale of general obligation bonds. The twelve-year (1988-2000) program of funds may provide a total of 84 million dollars for capital projects. The amounts of funds by category are shown in Table A-5.

Table A-5 Pennsylvania Program of Funds, 1988 to 2000

<u>Activity</u>	<u>Millions of Dollars Allocated</u>
New Facility Construction	10.232
Clearance Improvements	39.293
Track Rehabilitation	29.509

Project Prioritization. All projects proposed for state assistance must be evaluated utilizing economic analysis to provide a benefit-to-cost ratio for the project. Projects which are found to have a benefit to cost ratio greater than one are placed in a pool of eligible projects. They are then ranked according to their positive impact on employment. Higher priority is given to projects with more jobs saved or created relative to project cost; i.e., cost per employee or job.

Vermont⁴⁵

Vermont's goal is to promote a balanced and integrated transportation system by maintaining adequate rail service to meet the needs of its people and industries and by improving rail service whenever possible. The first objective of the plan is to maintain existing rail service to attract new industries, thus creating new jobs and improving the economic health of the state. Other objectives include maintaining rail service on the level necessary to serve existing rail users' needs, developing policies to guide future decisions regarding public involvement in rail service, and ensuring equitable and effective use of public funds invested in rail projects. Rail corridors which may be needed to support future development are railbanked.

Under the railroad capital improvement program, state funds are appropriated as needed for the acquisition of rail facilities, rehabilitation of rail lines, and for subsidizing state-owned rail lines. The LRSA has been another source of funds.

An economic analysis of projects is conducted to determine those with a benefit to cost ratio greater than one, whether a significant number of shippers will benefit, and prospects for improving the railroad's operating efficiency. Highest priority in the selection of projects is given to rail service preservation, defined as rehabilitation projects on abandoned lines.

Progressively lower priorities are assigned to rehabilitation or new construction on state owned lines, and for rehabilitation projects where the railroad or shippers are interested in providing the non-federal share of project costs. Projects are also ranked by decreasing benefit to cost ratios.

Virginia⁴⁶

The Commonwealth has adopted policies which will provide assistance for maintaining vital and financially viable rail service. The policies provide for:

- Localities to promote the use of light-density rail lines.
- Financial assistance for acquisition and rehabilitation of rail lines threatened by abandonment.
- Financial assistance for improvement of the physical plant of marginally profitable branch lines.
- Preservation of abandoned rights-of-way which may have potential for future uses.

Rail assistance projects in Virginia may be funded through a variety of revenue mechanisms, including gasoline taxes, railroad corporate taxes, lottery proceeds, railroad fuel taxes, and a special transportation trust fund.

A maximum two percent of the retail value of gasoline may be collected by the state. These taxes are collected by the Department of Taxation and then returned to proper jurisdictions for transportation purposes. The revenues are administered by a Transportation District Commission. A portion of railroad corporate tax may be used for financial assistance purposes. In 1990, the corporate tax was six percent on net income, totaling about ten million dollars that year.

A portion of lottery proceeds may be allocated by the general assembly for rail financial assistance programs. A retail tax may be placed on fuel purchased by railroads operating in Virginia. Finally, a Special Transportation Trust Fund has been established, a portion of which may be appropriated for railroad programs; one percent of this fund is 4.7 million dollars.

Washington⁴⁷

The 1983 Legislature enacted the Rail Freight Service statute which included the Essential Rail Assistance Account (ERAA) to help county rail and port districts to acquire, maintain, and improve essential rail service, and to operate railroad equipment to maintain essential rail service.

The Rail Bank System was added in 1985. This system was prompted by the need to mitigate line abandonments. The bankruptcy of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company (Milwaukee Road) in the late 1970's resulted in the abandonment of 446 miles in the State of Washington. Many of the abandonments had little or no impact on the local economy since there were redundant rail lines or existing economic transportation alternatives. However, in some locations, rail abandonments had adverse impacts on the local economy, and the communities requested state and federal assistance to continue service.

Wisconsin⁴⁸

The purpose of the Transportation Economic Assistance Program is to increase the number of jobs in the state of Wisconsin by assisting economic development projects in their transportation needs, when transport is essential to the project. The program assists local governments in preserving freight rail service as part of a balanced transportation network for the benefit of the local economy through capital assistance to rail line rehabilitation projects.

The state has three transportation assistance programs. The first is the Transportation Economic Assistance (TEA) program, intended to help new businesses in Wisconsin by funding transportation improvements, which include rail and non-rail transportation access. Under the program, the state will pay up to 50 percent of a project's cost. Projects must meet seven criteria for eligibility. The seven criteria are the following:

- The business development will create new jobs.
- The business development is contingent upon a certain transportation improvement.
- The business development does not involve transferring jobs from one part of the state to another.

- There is commitment from parties involved that the development is certain.
- There is no other means for financing the needed transportation improvement.
- The cost (to the state) per job created does not exceed 5,000 dollars.
- The applicant must submit a job guarantee, that the expected number of directly created jobs will be realized within three years of the starting date.

Under the TEA program, the state pays up to 50 percent of project costs, provided the cost per job created does not exceed 5,000 dollars. The total state share should not exceed one million dollars. The private business or local government applicant provides the rest of the project costs using private funds, federal funds, and in-kind services. Priorities are assigned (in descending order of importance) on the basis of the cost to the state per job created or retained, transportation efficiency benefits associated with the project, the unemployment rate in the county where the project is located, and whether or not a TEA project has been funded in the region during the preceding two years.

The second program is called Advance Capital Administrative Guidelines. Its purpose is to assist local government in preserving rail service through line rehabilitation projects. To be eligible, the project must be within the state of Wisconsin and the benefits (transportation efficiency and economic development) must exceed costs. The rehabilitation work must be performed on line elements located in the track zone, which includes road bed and main track.

The state will provide a loan or grant for a portion of the project cost depending on the traffic density of the line. The state share ranges from 25 to 50 percent of project cost. Priorities are based on the net present value of the project, in addition to equity and geographical distribution factors. The state calculates a benefit-to-cost ratio for financial project evaluation. Maximum assistance for one project, combined grant and loan, is two million dollars. Loan duration will not exceed ten years, and the loan interest rate is set equal to the state's cost of capital.

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APPENDIX B

DETAILED DESCRIPTION OF RAIL AND INTERMODAL PROJECTS CASE STUDIES

A short version of the six case studies of local rail service projects is included in Chapter III. This appendix presents a more detailed case study description. Three are rail projects, three are intermodal projects, all are located in the Midwest region (Illinois, Iowa, Missouri). They were selected based on the diversity of their funding sources (state and local) and the nature of the financial assistance (loans and grants).

Interviews were conducted during 1990 at each of the six facilities, and in some cases, with associated shippers and economic development groups. The interviews were purposely unstructured so that biases on the part of the research team would not force the discussion. In each case study, an attempt was made to discover those elements which were seen by the respective operators, investors, shippers, and community members as essential to the success (broadly defined) of their project. These success attributes were explored, and are synthesized and presented in Chapter IV.

The case studies which follow include the Columbia Terminal Railroad in Columbia, Missouri; the Rochelle Industrial Spur in Rochelle, Illinois; the Appanoose County Community Railroad in Centerville, Iowa; the Quad Cities Container Terminal in Davenport, Iowa; the Burr Oak Intermodal Facility in Chicago, Illinois; and the Newton Intermodal Facility in Newton, Iowa.

Columbia Terminal Railroad

The City of Columbia, Missouri identified its interest in continued rail service, and became a catalyst for the creation of the Columbia Terminal Railroad. The City's interest was two-fold. First, the City receives coal on the line for its power plant, and second, the line serves its industrial development area, and preservation of the line may promote economic development in the area. More specifically, it was believed that shippers along the line contributed to a healthy tax base, and stimulated utility services demand.¹

The project started when the Norfolk and Western Railway Co. (Norfolk and Western) expressed interest in abandoning the 22 mile line. The Columbia Chamber of Commerce began looking for a shortline operator to buy or lease and operate the line. However, potential operators were not interested in the line, since traffic was only about 400 cars per year. The Chamber then approached the municipal utility (water and electric service) and asked whether the utility would operate the railroad. Interestingly, the utility was concerned about preserving the line since industries along the line were heavy water and electricity users.

The utility managers favored the purchase of the railroad and, based on the merits of the idea, including economic development, retention of industry, and attraction of bulk shippers in the future, convinced the City Council to support the creation of the Columbia Terminal Railroad. At the very beginning, the utility recognized that the line would have to be subsidized. Loss of the line, however, would present greater long-run losses in terms of utility revenue foregone.

Additionally, the fact that the city owned a railroad gave them significant leverage in coal purchase negotiations. They traditionally had received locally-mined coal by truck. When they let bids for coal after purchasing the railroad, the bid price on trucked coal declined. The coal continued to move by truck until 1990, but the threat of competition saved the utility more than the entire cost of establishing the railroad. There has been no private financial support, though community members (bankers, county supervisors, city leaders) are very vocal in their support of the railroad.

Railroad Finance and Pricing

The acquisition cost of the line was 325,000 dollars. They purchased a rebuilt locomotive for 100,000 dollars, and they have no investment in rolling stock. The annual subsidy of the railroad has been about 50,000 dollars. For 1990, the railroad was expected to break even since all the coal to the power plant is now hauled on the rail line. The power plant had just switched to low-sulfur Wyoming coal, and in 1990 the traffic volume was about 1,000 carloads of coal.

The tariff on the line is based on a fee paid by the Norfolk and Western. The Norfolk and Western pays the Columbia Terminal Railroad a flat fee for handling a car from the point of the junction and delivering the car to the shipper or receiver. During the first two years of operation, the flat fee was 200 dollars per car, and the Norfolk and Western continued to market the service and handle the accounting. The Columbia Terminal Railroad simply turns in a monthly list of the cars hauled.

The price per car still averages 200 dollars. Pricing of services varies based on the commodity and the number of cars shipped at a time, with multi-car rates in effect.

Operating Characteristics

When purchased, the line did not meet 25 mile-per-hour safety standards. At the initiation of service, the Columbia Terminal Railroad used a 500,000 dollars Local Rail Service Assistance Act (LRSA) grant to refurbish the line and bring it up to 25 mile-per-hour safety standards.

The Columbia Terminal Railroad hired three employees. They were all previous railroad employees, displaced from other lines. The utility uses its existing employees to provide the ancillary services for the line, such as engineering and design expertise, rail crossing maintenance, procurement, and payroll.

To advise the City Council on management of the rail line, an advisory board was set up. The board consisted of seven members, one of whom must be a shipper. The remainder of the board members must have railroad experience or knowledge, with half residing in the city and half residing outside the city. Members of the board have acted as advocates for the rail line.

Marketing Efforts and Traffic Composition

Traffic on the line is predominately inbound, although in the past, grain was shipped outbound. The loss of grain shipments from the local elevator was attributed to the Norfolk and Western's increasing its rail rates. The shipper believed that Norfolk and Western is discouraging the use of rail for grain shipments because of the short haul movement from

Columbia to Mississippi River ports and to processing facilities around St. Louis. The short haul ties up Norfolk and Western rolling stock for relatively small amounts of revenue. A grain elevator owner on the line is currently negotiating with the Norfolk and Western Railroad for more attractive grain rates. Also, a small amount of recycled cardboard originates on the line for shipment outbound.

Marketing was originally the responsibility of the Norfolk and Western. However, the Norfolk and Western neglected its responsibility so the utility marketing staff currently markets railroad service from Columbia. Originally, the city marketed the railroad with a 30,000 dollar oil overcharge grant, promoting the rail line as an energy efficient means of shipping. Promotional activities included a market study and a "shippers day." Inbound traffic on the line includes building bricks, steel for a fabricator that makes corrugated culvert pipe, recycled paper and newsprint, and plastic pellets for a PVC pipe manufacturer.

Traffic on the line in the three years prior to the City's purchase averaged 400 to 450 cars per year. During the year of purchase, only 350 cars were originated. In the first year of operation by the city, 600 to 650 cars were originated. Traffic stayed at that level until 1990 when the grain elevator discontinued rail shipments. In April, 1990, traffic shot up when the City began receiving coal by rail.

The city felt that there could be more traffic if they could locate an intermodal ramp in Columbia. Currently, the nearest ramps are in Kansas City or St. Louis.

Railroad Industry Concentration

The project was not justified based strictly on revenues received for transportation service. The utility felt that it was justified, based on maintaining and developing its economic base in Columbia. However, an obstacle to rail-dependent economic development may be increasing rail industry concentration.

Concern was expressed over the concentration of rail services. There is a belief that if traffic is not originated on the Norfolk and Western, it will not be shipped by rail to Columbia. For example, wine from California originates on the Atchison, Topeka and Santa Fe Railroad. The Santa Fe unloads its rail cars in Kansas City and ships wine to a distribution point in

Columbia by truck. Due to the time and costs of interlining and switching cars, Columbia officials say it is difficult for them to attract traffic originated on other railroads.

Comments from a Shipper on the Columbia Terminal Railroad

For the makers of PVC plastic pipe, one of the primary considerations in 1974 for locating in Columbia was rail service. The PVC resin is delivered in rail cars, and finished PVC is shipped by truck directly to construction contractors. Ownership of the plant changed hands in 1982, when the Norfolk and Western still served the line. When the PVC plant opened, it produced 30,000 pounds per day, and were receiving ample service, once a week, from the Norfolk and Western. In 1990, the plant produces 160,000 pounds per day, and expansion was planned. Because of the greater volume, they require more frequent rail service.²

When the Norfolk and Western owned the line, the once-per-week switching made it extremely difficult to plan the use of cars and production. Now, the city performs switching daily, and can make a switch the day after a request is received.

Had railroad service been discontinued, this plant certainly would have left Columbia. The pipe manufacturer is too small to purchase and operate the line, as are all the other shippers. The city was seen to be the only possible operator, and has met with a great deal of satisfaction from the shippers.

Rochelle Industrial Spur

Two Class I mainlines run through and cross in the city of Rochelle, Illinois. One is the Chicago and North Western Railroad's mainline from Omaha to Chicago and the other is the Burlington Northern Railroad line running from Chicago to Minneapolis and on to Seattle. Some 75 trains per day pass through Rochelle.

To take advantage of the two railroads, the city built a one and one-half mile railroad to connect with the mainlines. The industrial park in Rochelle is centered around the city's rail line. The cost of the city's tie-in spur in 1987 was 1.3 million dollars.³

Although the city backed the project, the economic development agency had responsibility for finding as much non-city funding as possible. The Chicago and North Western Railroad

provided the city with materials for the project to connect to their end of the city's spur. The city provided the labor to install the rail. The state paid for the labor through a 400,000 dollar grant to the city. This grant program has since been discontinued, and the only funds that are now available are low-interest loans. The Burlington Northern Railroad was unwilling to provide 187,000 dollars for switch work to connect the spur with its line, until it became apparent that the line was being built; they eventually provided funds for the switch. Shippers did not provide any of the capital for the project.

Traffic and Pricing on the Line

Shipment destined for Rochelle typically experience lower freight rates, when compared with transport into Chicago by the Chicago and North Western Railroad. Also, due to less rail congestion, private fleet refrigerated (CO₂) tank cars can turn in four to six days. This allows some 13 to 15 long hauls per year as opposed to nine hauls for railroad-owned cars.

Currently, the largest firm in the city's industrial park is a cold storage facility, Wiscold. It receives and ships 450 million pounds per year of food products from the Rochelle facility. Roughly 80 to 85 percent of the inbound products are delivered by rail and outbound is entirely by truck. There are currently 112 lessees in the cold storage warehouse. The facility includes cold and dry storage and transloading. The capacity of the facility was 7.7 million cubic feet of storage, and was expected to grow to 20 million cubic feet.⁴

Wiscold operates its two privately-owned switch engines to move cars into and out of the siding. Sometimes the railroad provides switching. The peak shipping demand for the plant was 80 cars per day.

The industrial park was also attempting to attract a lumber components manufacturer (wood trusses and other fabricated wood components). The city has applied for an economic development grant from the state to build public infrastructure, including sewer and streets, for them. Lumber will be shipped in by rail from the west coast and finished components will be trucked into Chicago.

The original switching charges prior to the Staggers Act (1980) were 97 dollars per car. In an attempt to maintain traffic on their own lines after deregulation, the railroads increased

switching charges. Because of the competition now between the two railroads, with city's own ability to switch cars, switching charges have been brought back in line.

The cold storage facility experiences an empty back haul problem due to the large traffic volumes coming from the west coast, resulting in a refrigerated rail car rate of 500 dollars, from Rochelle to the west coast. The low transportation prices provide the opportunity to ship commodities for export to the Pacific Rim. For example, one of the plants in the industrial facility packs meat. Argentine and Australian beef is received from the west coast, and it can be packaged and frozen at Wiscold and shipped back to the west coast. The beef is shipped in containers from the overseas origin, transloaded at the port and shipped in rail cars to Rochelle. Three containers can be transloaded into one refrigerated boxcar, and the containers are then released for international trade.

Cooperative Efforts and Economic Development Issues

Of the two Class I railroads, the Burlington Northern Railroad was less interested in the local project. For example, the BN Railroad already had a siding that may have been used as part of Rochelle's shortline. Unfortunately, the Burlington Northern demolished the line. Originally, the BN had a 35 percent market share; now they have a 20 percent market share.

The shippers own tracks that lead to their plants, and the city owns and maintains the lead tracks on the spur. The City Public Works Department maintains the track.

To encourage industry to locate in Rochelle, the local taxing bodies have provided tax abatement for new industry. Wiscold was able to win a two-year tax abatement from all local taxing authorities. This abatement is 90 percent the first year and 75 percent the second year.

Funding for the Economic Development Corporation comes from the city's utility department. The city owns its own power plant and competes with Commonwealth Edison. High utility rates charged by the city had been a problem. However, due to high electricity demand from new industries and development, utility rates for electricity from the city's plant are now lower than rates from Commonwealth Edison's nuclear plant. The utility currently sells 600,000 dollars per year in electricity to the industrial park users. The cold storage facility is

able to load its peak power demand in the off-peak, at night. This spreads out the use of the utility's physical plant and reduces average cost which ultimately reduces utility rates.

Appanoose County Community Railroad

The town of Centerville, Iowa was originally served by both the Burlington Northern Railroad and the Chicago, Rock Island and Pacific Railroad Company (Rock Island). In late 1970's, abandonment of the Burlington Northern branch line from Alexandria, Missouri to Centerville was approved and the line was scheduled to be dismantled in 1981. In 1980, when the Rock Island went bankrupt, service was discontinued and the Rock Island line running south of Centerville was also scheduled for dismantling in 1981.

Union Carbide Corporation, the major employer in Centerville, made the community aware of the importance of rail service to its operation. Union Carbide employed 450 to 550 people and used the railroad for inbound transportation of plastic pellets used in making plastic packaging for meats. In 1981, the community developed a plan for the restoration of rail service. During the interim, when no rail service was available, Union Carbide shipped plastic pellets to Ottumwa by rail and trucked the pellets to Centerville. The intermodal movement was expensive and it was reported that the process also created opportunities for the contamination of the pellets.

Community Response

When the community first confronted the loss of service, business leaders looked for a shortline operator to organize the line and operate the railroad. They identified four shortline companies that were interested in the line. However, many Centerville business leaders believed that all the operators were unacceptable, that each operator was not stable enough to risk the future of the city's industry. It was felt that an outside company would not have the commitment to stay with the community if revenues were to decline. Because major employers in the community are dependent on rail service, community leaders felt they could not afford to take the risk of having an outside company operate the rail line. Community ownership was

viewed as indicating to existing and prospective industries a long-term commitment to the railroad.⁵

The citizens of Centerville formed a non-profit corporation to initiate and manage a shortline railroad and restore service. The plan for rail service restoration included the purchase of 4.3 miles of the Burlington Northern Railroad line running southeast out of town to the point where it met the Rock Island line. Then came the purchase 5.7 miles of the Rock Island track running northwest to its intersection with the Norfolk and Western Railway Company (Norfolk and Western) line. The Norfolk and Western line runs between Moberly, Missouri and Des Moines. The proposal called for the rehabilitation of the line and the construction of the intersections between the Burlington Northern and the Rock Island Railroads, and between the Rock Island and Norfolk and Western Railroads.⁶

The Burlington Northern Railroad's line was a branch line and consisted of rail weighing between 60 and 75 pounds per section.⁷ The Rock Island segment was on its mainline between Kansas City and Chicago, but its operation was restricted to ten miles per hour. The Rock Island track was 112-pound rail. Based on the traffic projections, the Iowa Department of Transportation estimated in 1982 that when service was reinstated, 905 carloads (mostly grain) would be generated.⁸

An initial fund raiser generated 150,000 dollars through small donations of concerned members of the public. The original 150,000 dollars was used to match funds from the Iowa Rail Finance Authority. In 1983, the community amassed a funding package for the railroad which included 180,000 dollars in contributions collected from residents, a 550,000 dollar loan by the Farmers Home Administration, an 800,000 dollar Urban Development Action Grant, and a 300,000 dollar grant from the Iowa Department of Transportation, Rail Assistance Program.⁹

The non-profit corporation, Appanoose County Community Railroad Company (ACCR), purchased 8.6 miles of Rock Island Railroad track and five miles of Burlington Northern Railroad track, and spent nearly one million dollars on the construction of new intersections between the Burlington Northern and Rock Island, and with the Norfolk and Western Railroad line.¹⁰ After the purchase of a used locomotive, the first cars were originated on the line in 1984.

During the start-up of the line, Union Carbide, two grain elevators and a scrap metal dealer agreed to pay a 450 dollar surcharge on each car, and guaranteed a fixed demand for cars. During the start-up period, both elevators went out of business because of the lack of grain to ship. One of the elevators failed to pay its guaranteed surcharge, although the other did. Variations in traffic are largely dependent on grain shipments. Grain moves under contract, rather than on carload rates. Revenue generated per car from moving grain tends to be one-third of the revenue generated per car of plastic pellets.

Business Development

The community understood that many of its industries were too mobile to invest in the community to the extent of operating a railroad and purchasing right-of-way. The current industrial users are not bound by location as is the community. Furthermore, it seemed that the companies were not likely to make even short-term investments unless they were certain of stable rail service.

Centerville's industrial park abutts the rail line. In 1985, shortly after the ACCR was established, the Rubbermaid Company announced that it would open a plant in Centerville. Rubbermaid took over an existing building which they later expanded into a 200,000 square-foot facility. In addition to the benefits of rail service, Rubbermaid was attracted to Centerville by Iowa Southern Electric utility, an Urban Development Action Grant, the favorable labor market, and the existing plant. However, it appears evident that without the railroad, Rubbermaid would not have located in Centerville.

The Union Carbide plant has continued to manufacture plastic bags for meat and poultry at the facility, now operating under the name of VisKase. They employ between 450 and 540 people. The rail line allows them to avoid truck transfers of the plastic pellets, which were both expensive and risky, as the chances for contamination were critical for food-related packaging.

Operations

The ACCR has three full-time employees consisting of a manager and two employees that operate the train and perform maintenance. The railroad also uses part-time employees to assist

in track maintenance. Materials for track maintenance (primarily rails) have been donated to the ACCR by the Norfolk and Western Railroad Company.

Members of the non-profit corporation board of directors included two bank presidents, representatives of the Chamber of Commerce and of VisKase (the current owner of the former Union Carbide facility), and other interested citizens. The Board of Directors of the non-profit corporation has representation from the County Supervisors, City Council and the public at large.

Railroad Revenues

Revenue is based on a charge per-car. There are three commodities carried by the railroad: plastic pellets (inbound), scrap metal (outbound), and grain (outbound). The Norfolk and Southern Railroad Company (parent company of the Norfolk and Western) agreed to pay ACCR a 30 dollars per car subsidy in addition to the base rate of 250 dollars per carload on all plastic pellet carloads generated on the line, up to a total of 250,000 dollars. Grain is shipped to Molten and the railroad had a contract directly with each grain elevator before they closed.

The ACCR also generates revenue from the storage of cars. When the factories order more cars than they can use, the railroad charges them for storage of cars. Revenue is earned also from maintenance performed on tracks owned by shippers. The ACCR has paid off all its debts and is attempting to build a cash reserve.¹¹

Quad Cities Container Terminal

A low-interest loan from the State of Iowa was approved in late 1988, and in 1989, four investors in the Quad Cities Container Terminal (QCCT) built an intermodal facility at Davenport, Iowa. The State of Iowa used oil overcharge funds for this project. The 750,000 dollar loan has a ten-year term, with quarterly repayment based on traffic volumes at the facility. The QCCT charges 20 dollars per lift for loaded trailers on flat cars, and 30 dollars per lift for loaded containers. Of this, the Iowa Department of Transportation requires that at least 1.50 dollars per trailer and 11.50 dollars per container be returned to the State in loan repayment.¹²

The terminal is located on a 15 acre site, with an adjacent 12 acres available for expansion. The parcel is owned by two of the private-sector partners. The terminal is operated by non-union employees.

A number of area industries expressed interest in stack-train and intermodal service in the Quad Cities, including John Deere, Alcoa, Honda America, the Rock Island Arsenal, and J.I. Case. These were considered established rail users, who required consistent daily rail service for their international and domestic traffic. The container terminal is seen as a positive attempt to encourage international trade by developing facilities to handle intermodal transportation. Although there is a container terminal at Newton, Iowa, it was not seen to have the capacity and location to help many eastern Iowa shippers remain viable in the international market.

Local companies were partners in the economic development process. For example, John Deere was instrumental in the establishment of the foreign trade zone (FTZ) and in obtaining a U.S. Customs Officer and Port-of-Entry Status for the Quad Cities.

Traffic Patterns

The terminal operators see their niche market to be within 100 miles of the terminal. They believe that if container rates from the west coast could be obtained which are equivalent to the rates into Chicago, they could be successful in their niche. Their 100-mile intermodal niche would be protected from Chicago competition by the drayage cost.

Prior to the establishment of the QCCT, a good deal of eastbound freight traffic passed through the Quad Cities on its way to Chicago rail heads. It then had to be drayed back to the Quad Cities from the Chicago ramps, at a cost of 350 to 400 dollars per load.¹³

The initial two-year QCCT contract required the Soo Line Railroad to provide 14,000 lifts (about 7,000 containers or trailers) per year at the facility. It appears that for the first year of operation (1989) traffic fell short of the 14,000 lifts by about 5,000 lifts. The Soo Line Railroad has indicated informally that it will not renew the contract, and shippers predict that once the railroad contract has expired, the volume of lifts will decrease even further.

Even with the QCCT, it is estimated that Quad Cities shippers still send 2,600 twenty-foot equivalent units (TEU's) per year into Chicago by truck. Several shippers believe that a proposed buy-out of the Soo Line Railroad by Rio Grande Industries preoccupied railroad management and caused a lack of interest on the part of the railroad, precipitating a number of problems for the QCCT. The buy-out attempt ultimately failed.¹⁴

The American Honda plant receives between 800 and 1,000 containers per year. Many go through Chicago and are trucked back to Davenport. Currently, about 60 percent of its traffic passes through the QCCT, but it is not on the stack-trains. The containers are off-loaded from stack-trains at Kansas City (or other facilities) and moved to the QCCT on non-unit trains.

Honda identified three problems prohibiting their use of stack-trains at the QCCT. They include:

1. Honda pays for the complete transportation from Japan to Davenport so the local office does not have direct control over the service.
2. The steamship lines are reluctant to use the facility because they have their own investments in facilities elsewhere.
3. Steamship lines are cautious about dealing with the Soo Line Railroad.¹⁵

Honda would like to do more business through the QCCT and hoped that if the Southern Pacific Railroad were to take over the facility, the steamship lines would be willing to divert stack-train freight to the Davenport ramp. Honda prefers to have deliveries made in Davenport because it provides more control over arrivals at its plant. When a container is drayed from Chicago it is dropped off when the trucker reaches Davenport, and Honda must arrange for local storage. If the containers were delivered by stack-train to Davenport, after off-loading, they can be queued at the QCCT for scheduled delivery at the plant.

The John Deere Company is the largest employer in Iowa, and a major Quad Cities shipper, receiving over 600 containers per year inbound. Much of this traffic, as well as significant Deere outbound traffic, does not pass through the QCCT.

Some identity-preserved bulk commodities are being moved over the ramp in Davenport. This includes seed, grain and grain products. There are ten to twenty containers per month of identity-preserved bulk commodities originating in Davenport.

Difficulties which Emerged

Among problems cited by shippers was the infrequency of stack-train service. By its second year of operation, the QCCT was receiving two dedicated stack-trains per week, one Monday and one Thursday, each with five articulated cars. Also coming into the terminal are mixed freight trains with trailers and containers on flat cars. Even though shippers had asked for more frequent service, and would increase their traffic volume by rail if trains were scheduled more frequently, the railroad did not provide additional trains.

A regional line, the Iowa Interstate Railroad, could add to service frequency, but it is located about five miles from the QCCT. The Iowa Interstate was trying to establish a competitive switching rate to accept intermodal traffic from the Soo Line Railroad, which had originated at the terminal facility. However, establishment of a rate has been slow to come to fruition. Interdom, a third party which works with the Iowa Interstate, has asked for this rate as well. Evidently, other railroads do not provide significant competitive pressures. It seems that the competitive pressures for the Soo Line Railroad actually come from the drayage companies, who can haul Quad Cities freight in and out of the giant Chicago intermodal yards.

Another area of concern has been marketing. Under the initial contract, this was the responsibility of the railroad. As soon as the Soo Line Railroad discontinued its ramp operation and the QCCT took over, the number of originating cars started to decline. It appears that traffic during most months has been ten to twenty percent below the levels during the time of the railroad operation. However, as traffic fell, the QCCT staff and partners became heavily involved in marketing the terminal, even though their fee of 20 dollars per lift does not specifically include marketing efforts. But since they were unable to quote or generally predict rail rates, many marketing efforts failed.¹⁶

A third problem area has been the failure of the railroads (both the Soo Line and Southern Pacific) to provide a competitive overall rate structure compared with drayage options

into Chicago. Since the Quad Cities area has a six-to-one ratio of outbound to inbound container freight, empty containers must be drayed back from Chicago. Also, the Soo Line charges a repositioning fee of 120 dollars per container to move an empty container from Chicago to the Quad Cities. Together with the freight rates, switching rates, and interlining rates, direct rail movement into the Quad Cities is not in many cases competitive with motor carrier rates out of the Chicago rail heads.¹⁷

The unwillingness of the major railroads to enter into interline agreements is an important problem for shippers who wish to utilize a preferred ocean port. In this project, the Soo Line Railroad receives its eastbound traffic from the Southern Pacific Transportation Company, which carries freight from Southern and Central California ports. Both the John Deere and Honda companies prefer Pacific Northwest ports, which cannot be reached from the QCCT on the Soo Line Railroad.

In the North Atlantic trades, John Deere calculates a 126 dollars per TEU advantage in using the QCCT. This is for freight moving westbound into Chicago on the CSX Railroad or Conrail, then trucked across town, loaded onto the Soo Line Railroad, and sent into the QCCT. However, due to the schedule uncertainty and time delay (about two days) in the cross-town trucking segment, John Deere has decided to forfeit the 126 dollars and dray the containers right into the Quad Cities. This ensures that the freight will arrive in accordance with Deere's Just-In-Time (JIT) inventory and production scheduling system.

There is a strong belief among shippers and economic development officials that the trust generated when the QCCT was created has been broken. The Soo Line Railroad and the terminal operator became partners in developing the facility and the railroad guaranteed the traffic (14,000 lifts). Several participants expressed a belief that the rail carriers have not lived up to their end of the bargain. Also, two ocean shipping lines, Maersk and ESI (OOCL), have stopped marketing containers from the QCCT. Due to the repositioning fee, they will work strictly out of Chicago.

In mid-1990, traffic through the facility was not great enough to generate revenues sufficient to cover the facility's operating cost. However, it is clear that the traffic potential in the Quad Cities area is more than ample, given the proper pricing and service environment. In early 1991, after the failed SP-Soo Line Railroad buy-out, the Soo Line Railroad decided to

concentrate on marketing, and commenced an aggressive marketing effort. Traffic through the facility has improved significantly, and loan repayment continues to be on schedule.¹⁸

Effect of Project on Economic Development

Should the terminal fail, a number of negative economic impacts for the region might result. These include higher shipping costs, reduced energy efficiency, and loss of new businesses, especially those involved in international commerce. It would diminish efficient transportation connections of Iowa manufacturers involved in intermodal-dependent international markets. Furthermore, there may be a chilling effect that the failure would have on prospective intermodal facility operators elsewhere in the state.

Economic development officials suggest several ideas which may help the QCCT meet expectations. First, the QCCT may have to become closely allied with and sponsored by one large user. Second, access for a second railroad may increase competition and service at the facility. Third, move the QCCT to another rail line. It may be helpful to bring in a "third party" with international transport connections to carry out marketing responsibilities.¹⁹

When economic development groups promote the Quad Cities, they are selling location, and they target industries for whom location is a relevant factor to their distribution of goods. This is particularly important for those companies who saw their goods coming in from the Pacific Rim, travel through the Quad Cities, and unloaded in Chicago or Galesburg, Illinois. So the container facility enhanced the Quad Cities' location.

A failed attempt to recruit a Japan-based manufacturer was cited. They needed a midwestern distribution point. They found it to be less expensive to ship from the west coast to Chicago by stack-train, than to the Quad Cities, even though the freight travels through the Quad Cities, and this diminished the attractiveness of the Quad Cities in the eyes of that manufacturer.

Burr Oak Intermodal Facility

The Burr Oak Intermodal Facility, in operation since October 1989, is located in the Blue Island section of Chicago, Illinois. It lies on the Iowa Interstate Railroad line. The original Iowa Interstate Railroad yard and intermodal facility in the Chicago area is known as the Evans yard, where intermodal traffic was handled from 1984 to 1989. The Iowa Interstate Railroad interchanges with the Chessie System Railroad (CSX) and the Harbor Railroad.

In 1987, the Iowa Interstate Railroad started stack-train service with Interdom, a third party common carrier. Its primary service corridor was Chicago to Newton to Los Angeles. This service grew very rapidly, but the Evans facility was limited to a single track and a six or seven car spot. This created excessive switching requirements to load or unload a stack-train. In addition, there were trucks coming in and out of the reload facility, and heavy CSX and Harbor Railroad carload traffic made it very inefficient to marshal a stack-train.²⁰

Physical Facilities

The decision was made to move to the present location, Burr Oak. The Burr Oak facility has about 20 acres and land for expansion is available, if necessary. The facility provides ample room to maneuver, more so than at the Newton facility. Due to three insufficient bridge clearances east of Rock Island, stacked containers often must be reshuffled. The large yard allows the chance to set the boxes down in the yard, which eases loading and stacking. By contrast, the Newton facility does not have enough space to place boxes on the ground.

The packer has room to stack boxes on the ground, rather than requiring a constant flow of chassis. In addition, there are two sets of tracks to allow for easier marshalling of trains. Capacity of the facility is about 200 lifts in a four and one-half hour period.

The operators are considering upgrading the facility. The dirt yard creates problems for the stability of the packer. A chuckhole and an overweight box could create a spill. The yard must be graded about once a week. They are also considering computerizing the gate house. The improvements will occur when and if a major contract, for example, with a steamship line, is obtained. Otherwise, yard improvements will come incrementally, while other railroad-wide needs are being addressed.

Management and Staff

The lift labor is provided by non-union contract employees. The contractor at Burr Oak is S&H Leasing Company. Railroad employees consist of the terminal manager, the gate people that do the inspections, and the railroad agent. S&H is a partnership of the two firms that do the local drayage and chassis maintenance. S&H handles all cartage, maintenance, and ramping. The lift equipment is leased by the Iowa Interstate Railroad and S&H does the maintenance. No Interdom employees work in yard.

The efficiencies observed are largely due to the flexibility of the labor force. They work most efficiently with a four man crew: two spotters, a ground man (to handle the twist locks on the box), and a packer operator.

The proposed new ownership of the Iowa Interstate Railroad by the Chicago West Pullman Corporation has not substantially changed the business plans of the railroad. Growth in traffic at the Burr Oak Facility was due in part to backing from Maytag Corporation. Maytag has supported the service, thereby showing that the regional railroad can be competitive with the with larger railroad.²¹

Traffic Patterns

The current volume of lifts is some 2,000 to 2,100 per month, or 24,000 to 26,000 lifts per year. The stack-trains and the piggy-back trailers are run as part of a general manifest train, so there are no strictly intermodal trains.

Traffic flows quickly through the facility, with very little gate waiting. Most trains are unloaded in 1-1/2 to 2 hours. The crew can unload and stack 13 forty-foot boxes in 45 minutes.

Interdom's only traffic generation points are Chicago, Newton, Los Angeles and Seattle. The Iowa Interstate Railroad originates or terminates only at its four intermodal terminals in Iowa and Illinois, and did not handle any overhead intermodal traffic.

Traffic from Iowa origins has been fairly stable, but traffic from origins outside of Iowa has grown. Traffic from the U.S. Post Office has increased, and the railroad is currently considering leasing a second packer for the Burr Oak facility.

Very little of their intermodal traffic is "steel-wheel" interchange from other railroads. Because of the rail congestion in the Chicago area, they dray all interchange traffic to another yard, where it is ramped onto another carrier's train.

Newton Intermodal Facility

The intermodal facility at Newton, Iowa is a cooperative venture between Interdom Stack-Train Services, Maytag, Inc. (an appliance manufacturer), and other investors. Interdom is a third party seller of stack-train services on the Iowa Interstate Railroad (IAIS). The Newton facility is operated by Container Services, a contractor. The facility has a capacity of about 60 containers or trailers per shift. About 10,000 intermodal loads are hauled in and out of the Newton facility annually.²²

The Newton facility is designed to be a low cost, minimum investment operation. The acreage for maneuvering truck trailers and a piggy packer was readily available in an existing rail yard area. Some tracks were removed or covered over with crushed rock. The more expensive option of paving was not used. Additional land for parking trailers was acquired at a tax sale for 38,000 dollars. The city resurfaced the street to reach it, which is the only taxpayer support devoted to the intermodal facility.

In addition to obtaining these facilities for low costs, investment was kept low by leasing rather than buying equipment. The packer is leased by Container Services for around 3,800 dollars per month. If freight volume declined to a level deemed insufficient to support the facility, liquidation costs would be low.

Origins with Maytag

The origins of intermodal handling in Newton can be traced back to the late 1950s. Maytag then moved about 65 percent of their products by boxcar and the rest by truck. Truck was predominantly used for short haul movements, such as Newton to Minneapolis. Longer hauls originated on the Rock Island using damage-free box cars.

A change in Maytag's distribution pattern spelled the end of boxcar shipments. In place of shipping through wholesalers, Maytag began direct shipments to their customers, the

appliance dealers, most of whom required "rubber tire delivery," because they had neither the facilities or demand for boxcar-size shipments.

Intermodal Options

Piggyback services were substituted for box cars, with the Rock Island installing ramps made from old flat cars by 1960. Shipments and facilities grew, albeit reluctantly by the Rock Island in ensuing years, until the site had six ramps. Maytag was still shipping by boxcar and by piggyback when the Rock Island stopped service, reducing Maytag's rail freight to a low level until the line was returned to service. In 1990, about 35 percent of all outbound freight is rail, exclusively intermodal. The last box car moved was in 1985.

Some major advances in railroad equipment provided alternatives for Maytag to consider. The RoadRailer (a string of coupled truck-trailers mounted with flanged railroad wheels) could provide door-to-door service but was felt to have too high a damage rate for their products. A better option was containerized shipments on a double-stack car. With better suspensions and fewer couplers per train, stack cars arrived with less damage to their loads than previous piggyback shipments.

Maytag views double-stack rail shipments as an area into which they would like to expand. They view the expansion of the use of stack-train service to be a function of the number of mechanized ramps dispersed throughout the country.

Maytag hopes to provide the Iowa Interstate Railroad with overhead traffic, making it more than a regional grain-hauling railroad. The overhead traffic is good for Maytag since high quality double-stack services require high volumes. High volumes are derived when the Interstate attracts more through traffic, with the train simply stopping in Newton to be topped out with Maytag freight.

Interdom and Traffic Patterns

Interdom's Iowa operations are run by Container Services, providing an almost entirely variable cost structure, on a time basis. That is, costs are incurred either monthly, such as the lease charge for the packer, or in other short time periods, such as staffing wages. Moving boxes costs 18 to 20 dollars per lift. The contractor utilizes labor which operates under flexible conditions, both duration of shift and time of day.

Maytag traffic comprises 15 percent of Interdom's total volume, and 20 percent of their total revenue. Maytag views their traffic as seed traffic. In addition, Maytag would like to use their traffic to provide the seed for Interdom to expand into other corridors. Roughly 75 percent of the traffic from the Newton facility is from Maytag. When the container packer was first put in place in 1986, all intermodal traffic was outbound Maytag traffic. More recently, bulk mail to and from Des Moines and other traffic is shipped through Newton.

As Interdom expands its lanes of traffic, the majority of the traffic carried continues to be for Maytag. As an example, when Interdom expanded to Seattle, 80 percent of the initial traffic was from Maytag. With time, Maytag's proportion has dropped.

Because of the size of Maytag, it has served as a consistent anchor for Interdom. Maytag's traffic could be used by Interdom to leverage its way into new lanes. It seems that a large anchor shipper is an important factor contributing to the success of any new facility. Low-volume shippers may benefit from their proximity to an anchor shipper.

Problems and Concerns

Double-stacks are not without problems. First, many eastern locations are inaccessible due to low clearance at bridges. Stacked 9'6" boxes provide a great deal of difficulty for some of the rail carriers, and not all routes with bridges or tunnels have sufficient clearance for the increased height. After a sufficient incubation period to demonstrate the viability of the concept, railroads are quickly improving structures to permit double-stack trains.

Second, to make double-stack services a viable choice, there needs to be a critical mass of double-stack loading facilities, trains and shippers. Each facility requires a sufficient pool

of available chassis, as well as availability of "piggy-packers" to transport containers between loading and staging areas and to lift them on and off rail cars.

Competitive structures may also become a concern. At Newton, the Iowa Interstate Railroad and Interdom cooperate, with Interdom acting as the Interstate's third party agent. At other locations, however, they compete with one another. For example, both parties have sales forces for intermodal freight moving out of Chicago.

Maytag views Interdom to be a third party parallel to American President Lines Intermodal Division (API). Interdom and API provide similar services, though Interdom is on a smaller scale.

The Class I rail carriers contend that there are enough mechanized intermodal facilities to accommodate the intermodal freight. Shippers believe that Class I carriers have a high-density, high-volume mentality, and could not handle low traffic density locations because of their labor cost structure. It is doubtful that the Class I carriers, as inherently high volume, bulk goods movers, could compete in areas requiring low volume and high quality service.

ENDNOTES

1. Interview with Mr. R. Powell, Chief Engineer, City of Columbia Water and Light Department (July 25, 1990).
2. Interview with Extrusion Technology managers, Columbia, Missouri (July 25, 1990).
3. Interview with Mr. K. Wise, Director, Chamber of Commerce, Rochelle, Illinois (August 29, 1990).
4. Interview with Mr. K. Bence, Plant Manager, Rochelle Cold Storage, a division of Wiscold, Inc. (August 29, 1990).
5. Interview with Mr. D. Taylor, President, Iowa Trust and Savings Bank, Centerville; and Mr. C. McCarty, Coordinator, Chariton Valley Resource Conservation and Development (July 3, 1990).
6. "1982 Iowa Railroad Analysis Update," Transportation Regulatory Authority of the Iowa Department of Transportation, Ames, Iowa (1982), p. 128.
7. "1982 Iowa Railroad Analysis Update," p. 128.
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9. "1985 Iowa Railroad Analysis Update," Iowa Department of Transportation, Planning and Research Division and Rail and Water Division, Ames, Iowa (1986) p. 146.
10. "1985 Iowa Railroad Analysis Update," p. 146.
11. Interview with Mr. D. Morrow, Manager, Appanoose County Community Railroad (July 3, 1990).
12. Interview with Mr. C. Severance, Rail and Water Division, Iowa Department of Transportation (July, 1990).
13. Interview with Mr. M. Bender, Manager of International Transportation, John Deere & Co., Moline, Illinois (July 12, 1990).
14. "SP Switches to BN Track Rather than Fight C&NW," Journal of Commerce (August 2, 1990), p. 1.
15. Interview with Mr. C. Stewart, Honda America (July, 1990).
16. Interview with Mr. J. McKenzie, President of QCCT and President of Alter Barge Lines, Davenport, Iowa (July 12, 1990).

17. Interview with Mr. S. Cipich, Executive Vice-President, Quad Cities Container Terminal, Davenport, Iowa (July 12, 1990).
18. Interview with Mr. C. Severance, Rail and Water Division, Iowa Department of Transportation (February 12, 1991).
19. Interview with Mr. D. Gibeault, Vice-President of Quad City Development Group, Rock Island, Illinois (July 12, 1990).
20. Interview with Mr R. Muilenburg, Director of Terminal Service, Iowa Interstate Railroad, Chicago (August 29, 1990).
21. Interview with Mr. T. McInerney, General Manager, Interdom, Inc., Chicago, Illinois (1990).
22. Interview with Mr. A. Roberts, Traffic Planner, Maytag Company, Newton, Iowa (June 14, 1990).

APPENDIX C

LITERATURE REVIEW

A body of literature on regional and shortline railroads exists. Some of this literature will be reviewed in this appendix. Much of the previous research ties into this current subject, including rail project finance, public policy toward rail transport infrastructure, issues of economic development, and the development of intermodal transportation. Policy makers should be aware of this body of knowledge, and of the work which has been completed, to assist in planning and decision-making.

Regional and Shortline Railroads: Alternatives and Risks

While their historical origins could describe all railroads as being, at one time, regional or shortlines, specific literature recognizes them as alternatives to inadequate rail service or abandonment of existing feeder lines.¹

Significant among early studies was the 1976 report of Baumel, Miller, and Drinka, which describes the economic benefits and costs of upgrading 71 rail lines in Iowa, and estimates the impact of abandonment of these rail lines upon communities and individual businesses in Iowa.² Changes in abandonment proceedings included in the 1980 Staggers Act³ produced opportunities for branch line and short haul rail roads,^{4,5} with guidelines for their operation.^{6,7,8,9,10,11} Among trunk lines, the Norfolk Southern Corporation viewed the changed procedures as an opportunity for orderly rationalizing of low density lines, while retaining the carloads of traffic they would generate for the mainline haul.¹²

Economic analysis work by Due;^{13,14} Sidhu, Charney, and Due;¹⁵ Harris;¹⁶ Black;¹⁷ Grim;¹⁸ Wolfe;^{19,20} and by Walter and McNair²¹ looked at the traffic densities, cost functions and other measures that may spell success or failure for these former branch lines. The importance of estimating all operating costs, including a return on investment, has been demonstrated by Langley and Patton.²² Articles identifying short line costs also included work by Wilson, Tyrchniewicz, and Mason,^{23,24} and by Wood.²⁵

Railroad and Shipper-specific Reports

Evidence of shortline interest in the Federal Region VII area (Iowa, Kansas, Missouri, and Nebraska) is shown by a number of articles.²⁶ Notable developments include the Chicago, Central and Pacific Railroad (CC&P), with articles discussing its size (over 500 miles)²⁷ and its financial problems.^{28,29,30,31} The Iowa Interstate Railroad^{32,33} operates over former Rock Island track, has received much attention for its service innovations.^{34,35} Other regional railroads included in published articles included the Cedar Valley Railway Co.,³⁶ the Iowa Northern Railway,³⁷ and the Dakota, Minnesota and Eastern Railroad Co.³⁸

National and International Interest

The court challenge over labor's role in the decision to sell the Pittsburgh and Lake Erie Railroad Company (P&LE) created national interest because of its potential effects on future shortline sales.^{39,40,41} A discussion of "railroad spinoffs (and) labor standoffs" in the P&LE case was published by Thoms, Dooley, and Tolliver.⁴²

Another regional line sale that elicited widespread interest was the Delaware and Hudson Railway Company (D&H) and related trackage rights issues and competitive market structures with Guilford Transportation Industries.^{43,44,45,46,47,48}

In addition to the coverage cited above, regional and local railroads were described in trade journal articles in Distribution,⁴⁹ Handling & Shipping Management,⁵⁰ Railway Age,^{51,52,53,54,55,56,57,58,59,60} Traffic Management,⁶¹ Traffic World,⁶² Transportation & Distribution Management,⁶³ as well as in textbooks.^{64,65}

Interest in regional railroads is not confined solely to the United States. The Economist, a British publication, has discussed this industry segment.⁶⁶ Further away, a short line was reported in the former Soviet Union.⁶⁷

Shipper Concerns

Just as the railroads are dependent upon their traffic base for survival, shippers along the shortlines are concerned about maintaining rail service.⁶⁸ Dooley and Rodriguez researched the

effect that short-line operations may have upon the level of rail services received by grain shippers on light density rail lines.⁶⁹ Oman and Walker inquired about reactivating segments of a bankrupt line to serve agricultural communities in Colorado, Kansas and Nebraska.⁷⁰ In another Kansas study, Eusebio and Rindom assessed the impact of rail branch line abandonments on rural highways.⁷¹ A study of the effects of rail line abandonment on Pennsylvania shippers was published by Gittings and Thomchick.⁷² Kuehn's study asked if abandoned grain shippers were "captive shippers."⁷³

It is not unusual for shippers to take a leadership role in encouraging the formation of local rail lines.^{74,75} Some familiar names such as Cargill, Maytag, Mobil Oil, Georgia Pacific,⁷⁶ National Steel,⁷⁷ Archer-Daniels-Midland,⁷⁸ Kodak, Delco, Rochester Gas and Electric,⁷⁹ Speed Queen and Green Giant⁸⁰ have been involved in the establishment of local or shortline rail service.

Financing, Public Policy and Economic Development Issues

Transportation finance literature has often concentrated on highway construction and maintenance, probably because of the significant use of public funds for this mode.^{81,82,83} Highway financing through private funds and user fees has been discussed by Johnson,⁸⁴ and by Varma and Sinha.⁸⁵

Most railroads are owned by their shareholders, with capital being supplied through equity funds and long-term borrowing. A review of financial methods for stand-alone railroads was written by Tye, who included a discussion of asset valuation.⁸⁶ Another corporate form of organization is a holding company,⁸⁷ rather than individuals, owning shares of several railroads. Holding company characteristics were identified by Sattler.⁸⁸ A critique of the misuse of this form of regional rail carrier ownership was presented by Sheehan.⁸⁹ Trade articles have discussed other sources and financing opportunities,^{90,91,92,93} and have noted that railroad financing problems are international.^{94,95}

The financial risks perceived for local railroad projects may make conventional financing, through the sale of bonds or shares of stock, unavailable or impractical. One form of collateral is a guarantee of revenue-paying carloads of freight by shippers or connecting mainlines.⁹⁶

Financing problems are not unique to shortlines, some of which may benefit from the experience of other commercial sectors in obtaining support. Financing rural projects was analyzed by Drabenstott and Morris.^{97,98} The parallels between the development of local railroads and other rural facilities are important. Public expenditure priorities for urban services, as well as the rural infrastructure in developing countries were discussed by Jimenez.⁹⁹

Public sector financial participation is an important source of funds for local rail service projects. At the state level, Disman addressed the capital needs of the small and medium size businesses, the roles a state may play, and some suggestions for how financial approaches may be developed and implemented.¹⁰⁰

Financing and public policy are inseparable in the contemporary transportation infrastructure. Boyd compared the roles of the public and private sectors in transportation investment, suggesting how the benefits of each mode could be maximized.¹⁰¹ Several states have invested directly in short line railroads,^{102,103,104} and others are considering public ownership or support of intrastate lines, often primarily for carrying passengers.¹⁰⁵ In a case described by Maze, Cook and Carter, the state of Oklahoma revitalized portions of the former Rock Island line. The track was restored by a cooperative financial agreement between the state, a local shippers association, and a private railroad carrier established to operate the line.¹⁰⁶

Due discussed the justifications for governmental participation in railroad financing in two respects: the provision of capital and the meeting of deficits.¹⁰⁷ Alternative institutional structures for state and local government ownership of railroads were identified by Fisher.¹⁰⁸ Rock reviewed local option taxes and other intergovernmental sources of local funds for rail carriers.¹⁰⁹ The rate of return on funded projects in one city was studied by Wetmore.¹¹⁰

Federal support of local rail service was furnished by the Regional Rail Reorganization Act of 1973. Initial trends from this assistance program were analyzed by Black.¹¹¹ The Local Rail Service Assistance Program (LRSA)¹¹² provided a federal fund earmarked for states' programs. LRSA goals and project methodologies were discussed in Appendix A of this report.

Boaten reviewed the role of states in providing adequate rail services,¹¹³ especially after LRSA funds were expended,¹¹⁴ while Kooten and Spriggs argued against having the government aid branch lines by suggesting alternative uses for the funds.¹¹⁵

Allen and Vellenga reviewed the progress and problems of selected states' railroad financing programs.¹¹⁶ A standard requirement of these programs is to produce a benefit-to-cost ratio for various scenarios, including termination of service, as shown in a case study by Hooper, Kenworthy and Pitfield.¹¹⁷

An analysis of the public policy and legal implications in feeder line sales was provided by Mielke.¹¹⁸ Of primary interest, especially after the P&LE court case, has been organized labor's interest in the sale of shortlines. Articles in Traffic World have followed labor's challenges to prospective sales of line which serve Region VII,^{119,120} and related legislation as proposed.¹²¹

State and local initiatives for economic development span both financing and public policy venues. Trends in public infrastructure policy and economic development were tracked by Fox and Smith.¹²² Finance and economic growth environments have been described by Jung,¹²³ by Egan and Bendick,¹²⁴ and by Kohli and Sood.¹²⁵ Ryans et al. compared the economic development programs of several different countries.¹²⁶ Economic development in rural areas has been the subject of studies by Daniels,¹²⁷ and by Drazen and Eckstein.¹²⁸

Huddleston and Pangotra produced a simple model of a state and local economy in which transportation investments can be tracked through to their logical impacts.¹²⁹ Transportation factors in economic development have been cataloged by states.¹³⁰ Zorn discussed infrastructure financing for promoting economic development in the East North Central region.¹³¹ An historical perspective on the effects railroads have had on land values was presented by Pincus.¹³²

Economic Development and Intermodal Transportation

Trailer-on-flatcar (TOFC) was introduced in 1954 (although Whitehill points out that railroads had hauled circus wagons in the same manner for years¹³³), benefitting shippers with lower rates than motor carriers alone, and service less affected by weather interruptions. Although the early advantages of reduced long-distance transit time were largely eclipsed by the interstate highway system and team drivers, regional and local rail facilities have been developed to compete with long-haul trucking. Innovations in facilities and intermodal

equipment have been reported for regional lines in Massachusetts and Iowa,^{134,135} and they are consistent with the potential technology effects described by Williams and Roberts.¹³⁶

There are a number of examples of regional lines expanding their intermodal service. Indeed, the provision of intermodal service has been of great importance to these lines, and to the communities which they serve.^{137,138,139}

Conclusions from the Literature

As seen in this brief review of related articles, regional and short line railroads have been the topics of numerous writers. Most helpful in providing background for the current study were reports that were either railroad or shipper-specific; some pertained to the states in Region VII; others had significant national effects.

There were relatively fewer articles and books found that integrated the topics of financing, public policy, and economic development pertaining to regional and local railroads (and, especially, intermodal activities). The literature clearly identifies the need for objective, benefit-to-cost ratio criteria to be used in decisions on public sector participation in local rail service projects. The role of, and need for, more subjective local rail project evaluation criteria has become clear. While the related articles did provide perspective, their relative absence points to the need for the current study.

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