

NCHRP

SYNTHESIS 374

NATIONAL
COOPERATIVE
HIGHWAY
RESEARCH
PROGRAM

Preserving Freight and Passenger Rail Corridors and Service



A Synthesis of Highway Practice

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NCHRP SYNTHESIS 374

**Preserving Freight and Passenger
Rail Corridors and Service**

A Synthesis of Highway Practice

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SUBJECT AREAS

Rail

Research Sponsored by the American Association of State Highway and Transportation Officials
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WASHINGTON, D.C.
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Cover photograph: Abandoned Chicago Great Western alignment at Villa Park, Illinois, shortly before tracks were removed in 1976. Credit: Don Hitchcock (www.abandonedrailroads.com).

FOREWORD

*By Staff
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Research Board*

Highway administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to highway administrators and engineers. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire highway community, the American Association of State Highway and Transportation Officials—through the mechanism of the National Cooperative Highway Research Program—authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-5, “Synthesis of Information Related to Highway Problems,” searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, *Synthesis of Highway Practice*.

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

This synthesis will be of interest to state department of transportation (DOT) personnel, as well as to others who work with them in the area of rail corridor preservation. Today, the shrinkage of rail service seems to vary dramatically from state to state. However, the rising cost and complexity of establishing new transportation corridors and growing congestion on all surface modes of travel focuses new attention on the issues surrounding retention of rights-of-way or restoration of rail services. Survey results indicated that some of the best restoration efforts appeared to include direct engagement by the future rail service providers from the earliest stages of rail line assessment. Six respondents claimed success in restoration of previously dormant rail corridors, with activity centered in North Carolina, Ohio, and Pennsylvania. California’s Rail Inventory, undertaken by the California DOT in 2001, signaled the start of corridor evaluation for passenger rail or public transit use. More detailed investigations yielded six interesting rail corridor success stories where it was said that vision, perseverance, and the ability to reach out to multiple stakeholders brought about the preservation of properties.

State DOTs, selected metropolitan planning organizations, commuter rail agencies, short line holding companies, and Class I railroads were all surveyed for information for this synthesis. Response rates were moderate, supporting the previously held notion that preserving rail alignments does not seem to be a high-priority issue in many jurisdictions.

David P. Simpson, TranSystems Corporation, Minneapolis, Minnesota, collected and synthesized the information and wrote the report. The members of the topic panel are acknowledged on the preceding page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

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PRESERVING FREIGHT AND PASSENGER RAIL CORRIDORS AND SERVICE

SUMMARY Efforts to preserve rail corridors or restore rail service to dormant rail alignments across the United States are very uneven. A handful of states have aggressive, well-funded programs to support the preservation or reuse of rail alignments; more states have modest programs to support short line operations on a case-by-case basis, but attach no value to corridor retention per se. In 2005, California completed what is perhaps the nation's most comprehensive physical plant inventory of active and abandoned rail corridors; a review driven by interest in passenger rail and nonmotorized corridor interests. A foundation has been set to more fully lever these valuable alignments in this country's most populous state.

This synthesis was undertaken to document current practices with respect to rail corridor preservation. State departments of transportation (DOTs), selected metropolitan planning organizations, commuter rail agencies, short line holding companies, and Class I rail carriers were all surveyed for information. Response rates to the survey were moderate, averaging 24%, and overall supporting the notion that preservation of rail alignments is not a high-priority issue in many jurisdictions. A handful of state respondents, however, had a great deal of experience and valuable observations on rail preservation policies and could be said to have become experts on this subject through their dealings with several dozen rail corridors over the past two decades. North Carolina, Ohio, and Pennsylvania DOTs each have serious, well-established rail sections and a history of successful preservation efforts.

The success of active state programs appears to flow from a clear policy foundation that positions stakeholder agencies to act in advance of specific abandonment "crisis" situations. These programs include a mixture of loan and grant assistance programs and appear to have benefited from long-term partnership relationships with experienced short line operators. In states with well-funded programs, the success rates for retaining corridors are very high: 103 of 114 attempted preservation initiatives were deemed to be successful in those jurisdictions. The structure of public rail assistance for a given line often includes a combination of DOT and local (usually county-based) agencies in a joint-powers relationship designed to preserve or rejuvenate a specific rail property.

Preservation of lines for transit use more naturally falls into the purview of metropolitan planning organizations, with or without planning assistance from state-level agencies. Some cities have made excellent use of preserved alignments: St. Louis Metro service is perhaps the poster child for these opportunities in that grade-separated service to the downtown core for the region's first new light rail service was provided through 19th century rail tunnels.

Recreational interests may prove to be valuable allies in preserving rail corridors, but may also require accommodation if and when efforts are made to restore active rail service along a given line. New tools are provided by 1983 amendments to the Federal Trails Act for such groups to prevent dismemberment of a corridor with or without the support of local landholders or public agencies. Approximately 20% of the nation's rail trails have been created through application of the federal rules.

The “capacity crisis” that confronts all surface transportation users has yet to have a major effect on public agency perspectives toward dormant or lightly used intercity alignments. Class I freight providers are content to build ever-higher densities on consolidated, fully subscribed main track routes. Advocates of improved intercity passenger rail continue to favor development of higher speed services on those same high-density freight routes despite the challenges of integrating passenger and freight rail operations. Existing state-run rail assistance programs focus understandably on the short- to medium-term economic effects of public rail assistance, which generally translates into support for lines with significant on-line rail industries and employment.

Rail service restorations, although relatively uncommon, fall generally into one of three categories:

- Startup light rail, commuter rail, or bus rapid transit services. Actions to preserve the alignments in question were generally led by local planning agencies or transit authorities.
- Opening or reopening of a single major rail-dependent facility such as a coal or mineral extraction facility or a large-scale chemical plant.
- Reinstitution of general freight service through a collaborative state, county, carrier, or shipper initiative. State grant and loan funds with a requirement for local matches are typical of such restorations.

Strategies for extracting better long-term use of the nation’s rail resources may be helped through further targeted assessment of rail corridor issues.

RAIL CORRIDORS—NOT SIMPLY A WALK IN THE PARK

CRISIS OF CAPACITY

America's surface transportation network is laboring under the strain of population growth, longer commutes, skyrocketing demand for intercity freight, and international trade patterns that favor offshore manufacturing and assembly of consumer goods. The impact of this "crisis of capacity" is felt most acutely by the public at large on the nation's highway system—in rush hour traffic jams or on some major intercity alignments. An illustrative example of driver frustration is summarized in the 2000 Special Virginia Safety Task Force study on the I-81 Corridor:

Contributing most dramatically to the increasing concerns of motorists is the increasing presence of truck traffic. In certain areas of this interstate and at certain times truck use exceeds 40% (1).

A partial solution raised by many to freight and passenger motor vehicle congestion is to increase the use of the rail mode for commuting, intercity passenger travel, or freight movement. This strategy, however, faces major challenges of its own. The U.S. rail freight network as measured by miles of track in service is approximately one-half the size of that network in 1980, when the Staggers Act substantially deregulated freight railroad market entry and exit decisions. Despite that reduction, today's rail network carries approximately twice the ton-miles of freight moved in 1980 by rail carriers (2). (Approximately 919 billion revenue ton-miles of freight were moved by the Class I carriers in 1980 vs. 1.70 trillion ton-miles in 2005.)

After the 1980 statutory deregulation, all major rail freight carriers embarked on a continuing program of comprehensive network rationalization. This involved shedding underperforming rail infrastructure in a number of ways. Marginal low-density lines were either abandoned outright or sold to lower-overhead short line railroads. Increasingly, the large Class I railroads concentrated on trunk line corridors and left the gathering and distribution of low-density traffic to smaller railroads. [Approximately one in four carloads of freight now originates or terminates on a short line railroad (3).]

Even on trunk corridor routes, the major carriers also greatly reduced the throughput capacity of many lines from pre-1980 levels. Where a main line had two or more tracks, it was often reduced to one. This allowed the rail carrier to generate salvage or reuse opportunities from the removed rail and ties and to lower its maintenance costs by avoiding the

burden of upkeep on multiple tracks deemed to be excessive relative to projected traffic levels. Despite the resurgence of rail traffic, over the past 15 years a substantial portion of the Class I rail network remains as single track.

By the late 1990s, a combination of factors led to a substantial expansion of rail freight traffic levels. Overall growth in the U.S. economy and population probably would have produced a significant traffic increase anyway, but certain sectors of traffic grew even faster. Increased intermodal traffic in the form of trailers and containers resulted from increased foreign trade and from the advantage perceived by trucking companies in using more efficient rail-borne long hauls, with the truck-borne portions limited to initial consolidation and post-rail distribution. In response to the 1990s growth in traffic, a number of major railroads embarked on multi-billion dollar capital improvement programs on their key routes.

In certain network "choke points," notably the Alameda Corridor in southern California, federal and state funds were combined with private railroad capital to construct major intermodal projects aimed at increasing the throughput of key corridors.

Overall U.S. rail freight traffic is expected to grow sharply from current levels by 2020. The increase in traffic has already resulted in service and capacity constraints at some locations and on some rail corridors. Increasing network capacity to keep up with this demand is a challenge that presumably must be met by some combination of complementary efforts.

Private freight rail operators are reluctant to invest in new freight rail services that do not meet the profit or service priorities of their overall network services. Even where excess rail capacity exists, carriers are reluctant to accommodate passenger rail operations given the disproportionate consumption of line capacity (because of higher speeds), liability issues associated with moving people rather than freight, and the inevitable restrictions on adjustments to freight rail operations.

Surface freight capacity (highway or rail) is time-consuming and expensive to obtain. Highway expansion projects are particularly time-consuming and contentious given the environmental and property acquisition elements of such projects. Rail freight capacity, by contrast, can generally be achieved within existing rail corridors through construction of

additional track or through reactivation of dormant or lightly used rail alignments.

Given these challenges, the value of retaining dormant or lightly used rail alignments for future needs appears obvious. A surprising number of jurisdictions have *no* policies in place to encourage corridor preservation. Most states do have some type of short line railway assistance programs to preserve local freight service in support of economic development or job preservation strategies (see chapter three); however, the success or failure of these efforts is generally not tied to any long-term vision for other uses of the alignments. Resource scarcity leads to a focus on shorter-term needs, placing corridor preservationists at a severe disadvantage no matter how compelling the long-term case may be for retention of an alignment. A few states do have long-standing policies and solidly funded programs to preserve rail corridors and encourage the preservation and/or expansion of rail freight service (see Table 1).

SHORT LINES AND REGIONAL CARRIERS

Local rail freight initiatives for lines spun off from the major Class I carriers have led to an explosion of short line and regional rail operations in the United States. The Staggers Rail Act of 1980 encouraged the creation of short lines by requiring that preference be given to potential buyers of lines who would preserve rail freight service rather than simply liquidate the properties.

New owners and operators have, in many cases, found success by implementing flexible labor rules, providing enhanced customer service and pursuing smaller-volume traffic opportunities that simply “did not make the radar screen” of the large rail operators.

The number of short line and regional carriers has more than tripled in the past quarter century, from approximately 180 in 1980 to more than 550 today. Currently, approximately 32% of the rail-route miles in the United States is maintained and operated by non-Class I carriers. (The Federal Class I carrier definition is based on an inflation-adjusted revenue threshold that stood at \$319 million in 2005.)

Encouraging and/or providing financial support to local rail service providers is an important corridor preservation strategy, but is not one that should be casually embraced. Some considerations and pitfalls are described in chapter two, Preservation Strategies.

RAIL BANKING

Rails to Trails to Rails

A major step forward for rail corridor preservation was the passage by Congress in 1983 of Rail Banking amendments to the National Trails Act. For the first time a federally sanctioned

mechanism to preserve rail corridors was made available to those seeking to keep alignments intact through interim conversion to trail use. Many rail corridors contain easements that revert back to adjacent landowners when an abandonment is consummated. Under rail banking, however, the corridor remains available for future restoration of rail service and is not, therefore, technically abandoned. More than 4,400 miles of former rail rights-of-way has been preserved nationwide under rail banking provisions, with approximately one-half available to the public for biking, hiking, and other recreational use (Figure 1).

It should be noted that the use of the National Trails Act for rail banking activities has been largely driven by trail interests rather than those seeking to restore rail service at some point in the future. Preserving rail rights-of-way does carry an obligation for financial resources that are most often met by trail-use organizations, public park and recreation authorities, or through access to federal Transportation Enhancement fund provisions. Planning coordination of recreation and active rail use possibilities for a given alignment is the exception rather than the rule.

Rail banked rights-of-way present a potentially valuable resource for communities engaged in the development of new or expanded transit links or other dedicated transportation interests. It is clear, however, that biking and other trail use interests have grown in political stature and clout. Such organizations are often sympathetic to rail (and particularly transit) development. Addressing their needs as part of a



FIGURE 1 Chisago County, Minnesota Trail Posting. (Source: Michael Rogers, Washington County Transportation Planning.)

corridor service restoration plan is an important political element of transportation planning even though trail interests may lack legal standing to block new rail service under the federal rails-to-trails provisions.

As a practical matter, some jurisdictions acknowledge the permanence of recreational or commuter trail use and its need to be accommodated in some manner even when active rail service is resumed.

An example comes from a 2003 Twin Cities area corridor review:

In 1995, the HCRRRA (Hennepin County Railroad Authority) adopted a land use management plan that allows for the interim use of their corridors for parks and trails until such time as the property is to be utilized for transit. The HCRRRA adopted this interim use policy because it allowed for the provision of wonderful community amenity, trails.... Overall, 43 miles of trails have been constructed on land acquired by the HCRRRA to preserve it for a future transit use.

The current study is NOT about eliminating the Southwest LRT Trail, it is evaluating the possibility of providing an additional community amenity, rail transit, for the Southwest Metro Area (4).

Preservation of trail and recreational facilities may serve to solidify support from environmental or “green advocacy” groups whose natural affinities to the rail mode might be compromised if forced to choose between transit and trails. “Rails with Trails” solutions carry some important design and liability considerations as described in chapter three.

When the Trains Come Back (or not)

Having once preserved valuable rail corridors, the difficulty of restoring active train service may vary considerably depending on the intensity of use of adjacent land holdings, the duration of service abandonment, and the nature of the new rail service being proposed. Installing even the most basic rail track, ties, and ballast on a pregraded route can cost on the order of \$1 million/mile before any signaling, safety, or security features are involved. Still, the advantage of a “preserved” corridor when compared with a brand new alignment is huge—individual property negotiations are avoided, environmental processes are streamlined, and major structures (for corridors preserved under Rails to Trails) will have been kept intact.

Most successful restoration efforts have included a significant public agency role, well-defined job impacts, and/or a depressed local economy that was sorely in need of new eco-

nomics activity. Rural freight rail restorations carry the dual advantages of less intensive land use along the rights-of-way and positive job impacts for clients to be served. Urban freight rail proposals typically face more problems.

Transit agencies are in the position of developing products that benefit the general traveling public—an advantage not available to rail freight carriers. The use of existing rights-of-way for transit is an essential element of forging cost-effective public transportation networks.

The cost and availability of suitable real estate in built-up urban environments means that growth of rail passenger service will be highly dependent on access to existing rights-of-way. It will often make sense to use existing railroad right-of-way for new commuter rail projects (5).

Some public agencies develop specific programs that preserve a higher profile of future needs and possible used for “dormant” alignments, giving notice to adjacent landowners and the public generally that an interim period of low-impact or recreational use does not proscribe future development of active passenger or freight rail activity. Provisions may include large, conspicuous signage along the trail alignments and/or disclosure requirements for adjoining property sale transactions that make clear the potential future use of the corridors in question.

TOURIST TRAINS AND OTHER SOLUTIONS

A number of threatened freight rail lines have been preserved by local business and community interests through conversion to irregular excursion or regularly scheduled tourist passenger operations. Literally dozens of such specialized train services are scattered across the country. Most operate from 10 to 50 miles of track, rely heavily on volunteer labor, and appeal to train enthusiasts in addition to general tourism interests.

The casual reader of this report may already sense that there is no “one size fits all” solution to the challenges of rail corridor preservation and restoration. Federal “Rails to Trails” provisions do provide some important tools for preservationists to at least buy time; forestalling the dismemberment of rail corridors as longer-term strategies and funding to restore rail service are brought to bear. In other circumstances, the recreational use of such alignments may be the “highest and best use” for the corridors, particularly if combined with existing tourism amenities.

We will now examine in turn the issues surrounding corridor preservation, service restoration, and some best-case examples of dealing with these issues from around the country.

PRESERVATION STRATEGIES

SYSTEM IN CRISIS

By the late 1970s, the legacy of many decades of government regulation of the nation's freight railways had brought the rail service network to a crisis stage. The merger and bankruptcy of the Penn Central Railroad had threatened to shut down rail and commuter operations in the U.S. Northeast. A full 20% of the U.S. rail network was in bankruptcy, and carriers that were nominally solvent were deferring investment on a massive scale, effectively consuming their physical plant assets to maintain cash flow for the short term. Main line operations in certain corridors were reduced to 10 mph to minimize the effect of an increasing number of derailments.

Faced with a nationwide rail service crisis, Congress elected to substantially deregulate most railway decision making, enabling rail managers to price, market, and demarket traffic much like any other business. Line abandonment and sale decisions were put on an expedited timetable for review, with the burden of proof (and responsibility for subsidies) shifting to those opposing such actions. Collective rate making was abolished, and confidential contracting conveyed new bargaining leverage to the largest-volume rail shippers.

These changes had major implications for the country's physical rail network. Economic pressures were fully brought into play as determinants of size and shape of the track network, and rail line abandonment accelerated. Given these new powers, the major rail carriers began to shed from 4,000 to 8,000 miles of their networks annually (6). Local and state officials, alarmed at the loss of local services, began to lobby for rail assistance programs at the state and federal levels.

STATES MOVE INTO RAIL BUSINESS

A federal rail service assistance program was established by the 3R Act (following the Penn Central bankruptcy), and was amended by the Local Rail Service Assistance (LRSA) Act of 1978 and the Omnibus Budget Reconciliation Act of 1981. The LRSA program provided funding on a federal/local matching share basis for four types of projects: rehabilitation, new construction, substitute service, and acquisition. States, at their election, could provide funds on a grant or loan basis. It was during this period that states began to treat seriously the need for public rail planning. The National Conference of State Railroad Officials was established in 1976 to provide policy input to federal agencies and to share best practices

regarding rail assistance programs. This group later became the Standing Committee on Rail of AASHTO.

In 1990, LRSA was changed to a Local Rail Freight Assistance (LRFA) program. The criteria for eligibility for rail lines to receive assistance were revised and clarified. Funds for the program were dramatically reduced in the 1990s, and congressional appropriations ceased in 1995. More than \$544 million in federal funds were expended between 1976 and 1985. Some states continue to recycle monies originally made available through LRFA by means of revolving loan funds that may, at times, be fortified by modest infusions of new state funding. A summary of state rail assistance programs is shown in Table 1, taken from the as-yet-unpublished NCHRP report, Rail Freight Solutions to Roadway Congestion (Project 08-42).

As may be seen here, states vary considerably in their approaches to freight rail assistance programs; however, most such programs set as a priority the preservation of service on light-density lines. A line in active service is far easier to defend than an idle corridor, whose utility is seen to be only sometime in the future. Nonetheless, some states have active corridor preservation programs to preserve alignments even where short-to-medium term prospects for viable business volumes do not exist. The Federal Railbanking Program described later is an important tool for those seeking to preserve alignments that have little prospect for short-term commercial use.

PUBLIC SUPPORT AND SHORT LINE OPERATIONS

Champions of local branch line freight service must, at some point, face a key irony that shadows short line operations—that the business success of many short line railroads is substantially tied to the service performance of the very entities that spun them off in the first place. Many short line rail carriers are physically captive to the larger “parent” railways and thus cannot provide competitive service without excellent cooperation and reliable interchanges to the larger trunk systems.

Another important consideration for those seeking a “short line” strategy to preserve rail corridors is the physical condition of transferred rail infrastructure assets. The physical condition of the nation's short line carriers ranges from robust to barely operational. Track conditions often reflect the history

TABLE 1
SAMPLING OF STATE FREIGHT RAIL PROGRAMS

State	Program	Program Type	Administrative Agency	Funding Source	2002 Funding	Current Status	Class I Eligibility
IL	Rail Freight Program	Revolving loan	Illinois DOT—Bureau of Railroads	General funds	No new funds	\$3 million total from state, \$1 million total from federal	State—Yes Federal—No
IN	Industrial Rail Service Fund	Grant (75% state) and loan	Indiana DOT—Rail Section	4/100s of 1% of state sales tax receipts	About \$1.3 million from tax	Generally \$1.3 million annually, with additional from loan repayments	No
IN	Passive Grade Crossing Improvement Fund	Grant	Indiana DOT—Rail Section	General fund	\$500,000	Cut to \$465,000 in 2003	No
IA	Rail Assistance Program	Grant or loan	Iowa DOT—Office of Rail Transportation	Appropriation	No new funds. Funds almost depleted	Previously received annual funding	Yes
IA	Rail Economic Development Program	Grant	Iowa DOT—Office of Rail Transportation	Appropriation	No new funds. Funds almost depleted	No new funding for past 2 or 3 years	Yes
IA	Intermodal Pilot Project	Loan	Iowa DOT—Office of Rail Transportation	Exxon Settlement via DNR	\$700,000 total	Started 5 years ago. No projects selected yet	Yes
IA	Rail Revolving Loan Fund	Loan	Iowa DOT—Office of Rail Transportation	Appropriation	Current balance \$130,000	Active since 1998	Yes
ME	Industrial Rail Access Program	Grant (50% state)	MEDOT Office of Freight Transportation	Legislative bond package	\$2 million over 5 years	Asking for \$2–3 million	No Class I Railroads in ME
ME	Bonds for Matching Federal Programs	Grant (used in conjunction with CMAQ)	MEDOT Office of Freight Transportation	State bonds	As needed	Active—but used mostly for Amtraks Downeaster	No Class I railroads in ME
NH	Rail Line Revolving Loan Fund	Revolving loan	NHDOT	General fund appropriation	\$150,000 (\$4 million total in program)	Established in 1993 and increased in 1997	No
NJ	NJ Rail Assistance Program	Grant (70% state)	NJDOT Bureau of Freight Services	State Transportation Trust Fund, CMAQ	\$8 million—Trust, \$2 million—CMAQ	Annual since 1983	No
OH	Spur and Rail Rehabilitation Program	Grant	Ohio Rail Development Commission & Ohio Department of Development	General fund appropriations	\$3–4 million for 2001–2002 shared across three programs	New budget begins July 1, 2003	Yes
OH	Acquisition Program	Grant and loan	Ohio Rail Development Commission	General fund appropriations	\$3–4 million for 2001–2002 shared across three programs	New budget begins July 1, 2003	N/A
OH	Railroad Rehabilitation Program	Loan	Ohio Rail Development Commission	General fund appropriations	\$3–4 million for 2001–2002 shared across three programs	New budget begins July 1, 2003	Yes
OH	Rail Grade Separation Program	Grant	Ohio DOT & Ohio Rail Development Commission	Federal Section 130	Approx. \$20 million	10 year, \$200 million effort	Yes
OR	Short Line Railroad Rail Infrastructure Improvement Program	Grant (with railroad match)	Oregon DOT	Short Line Credit Premium Account—Lottery bonds	\$2 million for 2001–2002	Have requested \$2 million for 2003–2004	No
OR	Grade Crossing Protection Account	Grant	Oregon DOT	State Highway Fund—Portion of registration and driver license fees	\$300,000 annually	\$200,000 for federal matching, \$100,000 for maintenance	Yes

(continued on next page)

TABLE 1 (Continued)

State	Program	Program Type	Administrative Agency	Funding Source	2002 Funding	Current Status	Class I Eligibility
PA	Rail Freight Assistance Program	Grant	PennDOT—Bureau of Rail Freight, Ports & Waterways	General fund appropriations	\$7 million	Active, though previously at \$8 million/year	No, due to PennDOT policy
WA	Freight Rail Program	Grant and loan	Washington State DOT	Multimodal account—rental car tax, new and used vehicles sales tax	\$4 million for 2001–2003 biennium	\$61.29 million for 2003–2013. \$48.89 million is for 13 specific projects	Yes, but has not been done
WA	Grain Train Program	Purchase	Washington State DOT	Originally received \$750,000 in Stripper Well overcharge funds. Program now self-sustaining through car-hire payments.	N/A	Active	N/A

Source: NCHRP Project 08-42: Rail Freight Solutions to Roadway Congestion.

DNR = Department of Natural Resources; CMAQ = Congestion Mitigation and Air Quality; N/A = not available.

of a short line's establishment as much as the underlying commercial value of the clients served by the line.

The Class I carrier business model encourages “harvesting” of free cash flow, with minimal investment, on lines that are destined for spin-off or abandonment. Short lines that assume control of such properties after a lengthy period of neglect may develop new revenues sufficient to support “normalized” capital and maintenance, but not large enough to address a significant capital backlog. Public assistance may thus be required to overcome this capital gap to both maintain operations and attract new rail clients who would insist on access to the new, heavier-loading rail equipment.

The upgrade of standard carload weight limits by Class I carriers from 263,000 to 286,000 lb has put stress on many short line operators whose infrastructure, even when properly maintained, was not designed to handle rail cars of that weight size. Many short line roads are plagued with large numbers of timber-frame bridges that are functionally obsolete and should be replaced to handle the heavier cars. The 286,000 lb issue is particularly acute for those roads that handle primarily bulk commodities such as grain or coal, given the price competitiveness and sourcing competition for such movements.

The impact of poor track conditions on short line operators takes many forms.

- Increased incidence of derailments, with attendant increases in insurance premiums.
- Inability to handle certain classes of hazmat (hazardous material) rail commodities.

- Slower operating speeds, leading to less efficient use of crews. For example, Meridian Southern Railroad, in eastern Mississippi requires two days for a full round trip over its 54-mile operations. Customers who would otherwise receive daily service are served only tri-weekly.
- Loss of traffic to trucks or main line rail locations for commodities that benefit from the higher-standard (286,000 lb) maximum carloading.
- An inability to attract new, on-line client investment if future rail service is viewed as uncertain.
- Low carload weight limits may impair the relative economics of rail shipping and/or drive new investment to main line industrial sites capable of 286,000 lb loading standards.

Still, the challenges of reassembling rail corridors are such that extra pains to preserve freight rail operations of some sort may be seen as desirable if there is *any* potential for more intensive future use. The line will survive legal challenges to its integrity and may not be broken up by adjacent landholders so long as active service is taking place. Two additional preservation strategies may also be considered—passenger excursion services and rails-to-trails interim-use designations.

PASSENGER EXCURSIONS

A number of rail spin-off properties around the country are kept in service by operation of specialized excursion operations that lever the modern-day novelty (at least in North America) of traveling by rail or take advantage of its proximity to major tourist attractions. A handful of such operations appear to have reached a “critical mass” of patronage and service frequency, appealing to the general public as well as

those with a specific interest in trains. Some long-running examples include:

- The Napa Valley Wine Train—This 36-mile operation between the towns of Napa and St. Helena is now a world-famous part of the California wine country touring regimen. Special packages include tours of specific wineries and gourmet five-course meals.
- The Great Smoky Mountain Railroad—Entering its 19th year of service, this North Carolina operator ran 932 trains in 2005, taking visitors over an historic and rugged alignment that first opened western North Carolina to settlement in the late 1880s.

The long-term success of such operations depends on a number of factors, including:

- Proximity to a major urban market with trains staged at a “long commute” driving distance from those urban centers.
- Additional, complementary tourism draws such as national parks, scenic lookouts, and cultural attractions.
- Professional operations and marketing leadership. Technical regulations and staff training requirements that go well beyond what is typically required for other tourist attractions of a similar scale.

LEGACY OF RAILS TO TRAILS

Substantial deregulation of America’s railroads through the Staggers Rail Act in 1980 accelerated the network downsizing trend that had been in progress since the close of World War II. In 1983, the U.S. Congress reacted to the flood of abandoned lines (then averaging 4,000–8,000 track-miles per year) by amending the National Trails Systems Act to create a federal rail banking program. The Rails to Trails Act allowed the federal government to regulate the disposition of lines threatened with abandonment, preserving the rights-of-way to permit future reactivation for rail services. Interim use of such corridors for bike and trail ways is permitted; however, permanent structures along the routes must be kept intact consistent with the potential restoration of rail-based transportation.

Nearly 2,100 miles of rail alignments throughout the country have been formally converted to multiple-use trails since the 1983 act. Preserving such rights-of-way has created a variety of attractive new recreation and transportation resources in communities nationwide. Preservation of rail corridors for trail use may also occur as a result of voluntary negotiations (outside of the federal rail banking framework); however, approximately one in six rail-trail miles exist today as a result of the Rails to Trails Act.

Other corridors are the product of voluntary negotiations between the original (rail carrier) owners and public or private groups that have recognized the value of intact readily con-

vertible linear property parcels. From a legal perspective, the important distinction between the Rails to Trails corridors and other rail banked alignments is the federal preemption under the Rails to Trails interim-use grant that effectively trumps the actions of groups seeking to block restoration of rail service by a prospective new operator.

Rails to Trails corridors include a number of provisions that are important to those considering future active rail services for the corridors in question.

- The public agency or qualified organization that is seeking to control the rights-of-way must be willing to assume financial and legal responsibility for the corridor.
- The abandoning railroad can decide to donate, lease, or sell their property to the prospective trail manager.
- The trail manager, once in control of the property, may remove railroad track and ties, but may not disturb other long-term structures required for future rail service restoration.
- The trail agency may build no permanent structures on the trail alignment.
- The corridor remains under *federal* jurisdiction, and any state laws that might extinguish the trail manager’s right to use the corridor are preempted.
- A rail banked line is subject to possible future restoration of rail service by any qualified service provider. Trail users must surrender their interim rights of use if they are unable to reach alternative accommodations with the prospective (new) rail service provider.

The legal authority of the Rails to Trails legislation to override local and state authorities, as well as private property interests, has been repeatedly tested in the courts and has survived each and every challenge. A landmark (and unanimous) 1990 Supreme Court decision affirmed that:

The Amendments are a valid exercise of Congress’ Commerce Clause power. The stated congressional purposes—(1) to encourage the development of additional recreational trails on an interim basis and (2) to preserve established railroad rights-of-way for future reactivation of rail service—are valid objectives to which the Amendments are reasonably adapted [Preseault v. ICC, 494 U.S. 1 (1990)].

That same court decision acknowledged that the petitioners *may* be entitled to compensation for their alleged loss of property values through the rail banking process; however, actual payouts since the Supreme Court decision have been scattered and modest in size.

SURVEY RESULTS

A survey was undertaken to assess current practices with respect to rail corridor preservation. State departments of transportation (DOTs), selected metropolitan planning organizations, commuter rail agencies, short line holding

TABLE 2
SURVEY PARTICIPATION

Target Group	Distribution	Response	Rate (%)
State Departments of Transportation	50	19	38
Selected Metropolitan Planning Organizations	41	7	17
Commuter Rail Agencies	21	1	5
Short Line Rail Holding Companies	7	0	0
Class I Rail Carriers	7	3	43
Total	126	30	24

TABLE 3
RAIL PRESERVATION EFFORTS: IMPORTANT ELEMENTS

Rank	Factor	Average Score
1	Financial contributions from state agencies	6.4
2	Financial contributions from federal sources	6.2
3	Formal state corridor preservation policy	5.2
4	Financial contributions from local public agencies	5.0
5	Support from trail or recreational interest groups	5.0
6	Federal rails to trails legislation	5.0
7	Rail shipper/receiver carload commitments	4.0
8	Financial commitments from prospective rail operators	3.9
9	Financial contributions from local rail users	3.0
10	Other (mostly inclusion in a formal plan or policy)	1.0

companies, and Class I rail carriers were all surveyed for information. Response rates to the survey were moderate, averaging 24% overall, supporting the notion that preservation of rail alignments is not a high-priority issue in many jurisdictions (see Table 2). A few state respondents, however, had a great deal of experience and valuable observations on rail preservation policies and could be said to have become expert on this subject through their dealings with several dozen rail corridors over the past two decades. North Carolina, Ohio, and Pennsylvania DOTs each have serious, well-established rail sections and a history of successful preservation efforts.

Respondents engaged in corridor preservation efforts were successful most of the time, with 103 of 114 targeted alignments (90%) kept intact. Tellingly, the successful preservation initiatives were nearly without exception the product of a formal state corridor policy or involved alignments that had previously been identified as essential in formal state or regional transportation plans. Of the 103 preserved properties, 57 have active freight service today, 23 are

used primarily for recreation, 21 are dormant, and 2 are used for passenger rail excursion trips.

Respondents who had succeeded in preserving rail alignments were asked to score, on a scale from 0 to 10, the importance of various elements to the success of their efforts. The 17 “successful” entities ranked these elements as described here. Access to funding topped the list followed closely by the existence of formal preservation policies and plans (see Table 3).

It may appear surprising to see financial contributions from the federal government ranked so highly, as no such funding for line preservation exists today. From an historic perspective, however, it was the federal local freight rail assistance programs that provided seed funding in the 1980s and early 1990s to both protect rail alignments and establish regular state-administered loan and grant programs to preserve light-density lines. Some of those original federal disbursements continue to be “recycled” by certain states for new projects through revolving funds as loans are repaid by short line operators.

WHEN THE TRAINS COME BACK

CHALLENGES AND RESTORATIONS

Although examples of rail corridor restorations around the country are plentiful, restoration of rail service to abandoned or “dormant” rail alignments is far more unusual. Adjacent landowners may become accustomed to the peace and quiet afforded by extended 100-ft corridors whose industrial origins grow ever more obscure as they are overtaken by wild vegetation. However, pressures to reactivate an alignment may occur through the prescribed phasing of a long-term public transportation plan (as for some urban transit systems) or because the economic circumstances surrounding the original closure of a line have changed.

Only six survey respondents claimed success in the restoration of previously dormant rail corridors, with activity centered in three states: North Carolina, Ohio, and Pennsylvania. Each of these states works from a solid, long-term funding commitment to support rail services (see the program summaries in chapter one) and are able to react to specific needs and opportunities as they arise. In other words, the value of retaining rail services and corridors is generally accepted as the starting premise for specific alignment initiatives in these states.

From the survey responses the principal challenges to restoring rail service, in order of importance, include:

- Securing funding for the restoration project,
- Dealing with right-of-way encroachments,
- Opposition from adjacent landowners,
- Discord among public agencies over the intended corridor use, and
- Pressure from potential or actual recreational users.

Despite the challenges of restoration, a number of long-dormant alignments do enjoy regular train service today. Table 4 presents some of those rail corridors.

RESTORING SERVICE TO RAIL BANKED LINES

One challenge faced by those seeking to restore rail service on preserved but out-of-service corridors are the interests of recreational users who may be using the alignment and are reluctant to cede their access to a more active transportation mode. Corridors preserved under terms of the National Trails Act amendments of 1983 may more easily be restored

for active rail service in that these corridors have never been formally abandoned from a legal perspective; federal pre-emption is still in effect. Approximately 17% of all rail-trail mileage in the United States fits into this category (7). Specific trail segments that are federally protected for rail service restoration are shown in Table 5.

The right of a prospective rail service provider to restore active rail service in a rail banked corridor was most recently reaffirmed by the Surface Transportation Board (STB) in August 2005, as the STB responded to a petition from the Browns, Grayville & Poseyville Railway Company. That railway was seeking to restore service to a 22.5-mile rail line between Browns, Illinois, and Poseyville, Indiana, to serve a prospective ethanol plant. The Indiana Trails Fund had been using the corridor as a recreational trail through application of federal rail banking provisions when rail service ceased in 1998. The Fund was resisting the notice to vacate their interim use provisions.

In a decision dated September 20, 2005, the STB reaffirmed the right of original or new rail service providers to access and restore service over rail banked corridors:

Under the Trails Act, interim trail use is subject to the future restoration of rail service over the right-of-way. Upon agreement following the issuance of a NITU [Notice of Interim Trail Use], the abandoning carrier generally transfers the right-of-way to the trail user, but retains the right to reinstitute rail service. Thus, an interim trail use arrangement is subject to being cut off at any time [Surface Transportation Board Decision, SYB Docket No. AB-477 (Sub-No. 3X)].

Despite this broad and federally protected authority, rail line service restorations do not take place in a vacuum. Environmental and recreation groups are often among the more vocal supporters of the rail mode, given its environmental and fuel consumption advantages. Strategies to accommodate or even make allies of such organizations can be in the interest of all concerned. One such strategy is to consider “rails with trails” as part of the long-term corridor configuration.

RAILS-WITH-TRAILS

A possible solution for recreational interests and railways alike might be to share corridors where permitted by safety, liability, and engineering factors. In August 2002, the U.S.DOT commissioned a thorough study of Rails-with-Trails (RWT) to

TABLE 4
DORMANT RAIL CORRIDORS RESTORED TO SERVICE

State	Endpoints	Miles	Out of Service	Service Restored	Operator	Current Use
AL	Leeds–Childersburg	26	1999	2004	Norfolk Southern	Atlanta Terminals Bypass Service to ethanol plant
IL/IN	Browns–Poseyville	22.5	1998	2006	Browns, Grayville & Poseyville Railway	Local grain elevators
IN	Hobart–Tolleston	9	1983	1993	Chicago Ft. Wayne & Eastern	Local grain and ethanol clients
MN	Norwood Young America–Hanley Falls	94	2000	2002	Minnesota Prairie Line	Passenger excursions
NC	Dillsboro–Murphy	67	1988	1989	Great Smoky Mountains Railway	Tourist trains
NY	Remsen–Lake Placid	119	1980	1992	Adirondack Scenic Railroad	Through coal trains
NY	Olean–Hornell	70	1993	2003	Western New York & Pennsylvania Railroad	Mixed local freight
NY	Jamestown, NY–Corry, PA	30	1993	2002	Western New York & Pennsylvania Railroad	Tourist trains
NY	Corinth–North Creek	40	1988	2001	Upper Hudson River Railroad	Mixed local freight
OH	Zanesville–New Lexington	21	1990	2000	Ohio Central	Mixed local freight
OH/PA	Youngstown, OH–Darlington, PA	36	1996	2001	Ohio & Pennsylvania	Mixed local freight
OH	Cadiz–Cadiz Junction	6	1980s	2004	Columbia & Ohio River Railroad	Mixed local freight
PA	Homer City–Cloe	17	1993	2005	Buffalo and Pittsburgh Railroad	Mixed local freight
TN	Copperhill–Etowah	40	2001	2005	Hiwassee River Railroad	Mine tailings and passenger excursions
TN/GA	Nashville–Willacoochee	14	1979	1999	Georgia and Florida Railroad	Mixed local freight
WV	Coal Mountain	7	1985	2005	Norfolk Southern	Coal
WV	Big Omer	2	1995	2005	Norfolk Southern	Coal

perform a literature review, assess current practices, and draw key conclusions from experience with the RWT initiatives across the nation.

Not surprisingly, most rail carriers and trails groups approach the entire subject of RWT from very different perspectives. RWT advocates covet the scenic terrain and favorable gradients available on rail corridor rights-of-way as well as the at least intermittent serenity of isolation from motor vehicle traffic. Rail carriers, on the other hand, are generally hostile to RWT initiatives because they seldom generate revenue, may carry significant liability risks, and may serve to limit or at least complicate future efforts to add rail capacity through new, parallel second main tracks, or passing sidings. Access to shippers on one side of the corridor may also be limited or made more complex by the presence of the trail (see Table 6).

Short line carriers are often more willing to consider rails with trails because of the short lines' more limited train speeds and service frequencies, as well as a need to build strong, local community support in the areas they serve. Some short line groups have adopted formal trail policies, such as these from the Wheeling Corporation:

- The line in question must be a low-frequency, low-speed operation.
- The property must be available and suitable for this type of project.
- The tracks must be isolated from the trail with proper barriers.
- The statutory scheme must be compatible with joint use between trails and railroads.
- The trail operator must obtain proper property liability insurance.
- There will be compensation to the railroad for the use their property, either through sale or lease.
- The trail operator, not the railroad, will cover the improvements to the property, along with the insurance costs.
- The trail operator and/or local community groups must provide the security personnel to properly patrol and control the property (8).

The issue of RWT is of particular relevance to rail service restoration in that the number of recreational users generally exceeds that of business stakeholders requiring rail freight service. Strategies that will accommodate both groups may help to achieve “critical mass” politically in

TABLE 5
OPEN RAIL-TRAILS ON RAIL BANKED CORRIDORS

Trail Name	State	Length on	
		Right-of-Way	Total Length
Delta Heritage Trail (Barton–Lexa)	AR	4.3	4.3
Fresno–Clovis Rail-Trail	CA	13	13
Ventura River Trail (Ojai Valley Trail Extension)	CA	5	5
Mineral Belt Trail	CO	6	12.5
Capital Crescent Trail (Georgetown Branch Trail)	DC	11	11
Suwannee River Greenway	FL	4.5	8
Cedar Prairie Trail	IA	1	1
Kewash Nature Trail	IA	13	13
Laurens	IA	1.5	1.5
Perry to Rippey Trail (Three County Trail)	IA	9	9
Raccoon River Valley Trail	IA	21	21
Raccoon River Valley Trail Extension	IA	13	13
Sauk Rail Trail	IA	13.4	33.2
Shell Rock River Trail (Butler County Trail)	IA	5.5	5.5
Summerset Trail	IA	10.83	12
Three Rivers Trail	IA	36	36
Vinton to Dysart (Old Creamery Trail)	IA	15.3	15.3
Wabash Trace Nature Trail	IA	63	63
Winkel Memorial Trail	IA	6	10
Nampa to Stoddard Trail	ID	1.5	1.5
Trail of the Coeur d Alenes	ID	72	72
Weiser River Trail	ID	46	46
Bill Chipman Palouse Trail	ID, WA	7.45	7.45
Long Prairie Trail	IL	14.6	14.6
Madison County Transit Schoolhouse Trail	IL	11.5	11.5
McHenry County Prairie Trail	IL	21	25
Flint Hills Nature Trail (Herington)	KS	4	4
Flint Hills Nature Trail (Ottawa)	KS	1	1
Haskell Rail-Trail (formerly Lawrence Rail-Trail)	KS	1.1	1.1
Landon Nature Trail (South Topeka)	KS	1	1
Prairie Spirit Rail-Trail	KS	33	33
Shortgrass Prairie Trail (Protection to Clark County Line)	KS	2	2
Muhlenberg County Rail-Trail	KY	6	6
Tammany Trace	LA	28	28
Minuteman Bikeway	MA	10.5	10.5
Saint John Valley Heritage Trail	ME	0.4	18
Avon to Sauk Center (Lake Wobegon Extension)	MN	28	28
Frisco Greenway	MO	4	4
Frisco Highline Trail	MO	18	18
Grant’s Trail	MO	8	8
Katy Trail State Park (Main)	MO	224.5	224.5
Crosstie Walk (Cleveland)	MS	0.6	0.6
Longleaf Trace	MS	41	41
Dunn–Erwin Rail-Trail	NC	5.3	5.3
Cowboy Recreation and Nature Trail	NE	47	47
Field Club Trail	NE	2	2
Oak Creek Trail	NE	12	12
Steamboat Trace Trail	NE	21.4	21.4
White River Trail	NE	10	10
Vestal Rail Trail	NY	2.1	2.1
Richland B&O Trail	OH	18.4	18.4
Old Frisco Trail	OK	8.2	8.2
Astoria Riverwalk	OR	5.1	5.1
OC&E Woods Line State Trail	OR	100	100
Springwater Corridor	OR	14	14
Springwater on the Willamette	OR	3	3
Houtzdale Line Rail-Trail (East)	PA	4.5	4.5
Houtzdale Line Rail-Trail (West)	PA	6.7	6.7
Panhandle Trail (Allegheny County)	PA	6.85	6.85
Pine Creek Trail	PA	41	41
Pittsburgh Riverwalk at Station Square	PA	1.5	1.5
Warren to North Warren	PA	2	2
Youghiogeny River Trail–North	PA	41	43
George S. Mickelson Trail	SD	114	114
Caprock Canyons State Park Trailway	TX	64.2	64.2
Chaparral Trail	TX	29	29
Denton Branch Rail-Trail (Trinity Trails System)	TX	8	8

(continued on next page)

TABLE 5 (Continued)

Trail Name	State	Length on Right-of-Way	Total Length
Katy Trail (Dallas)	TX	3.74	3.74
Lake Mineral Wells State Trailway	TX	20	20
Historic Union Pacific Rail Trail State Park	UT	28	28
Little Mountain Rail Trail	UT	10	10
Hanging Rock Battlefield Trail	VA	1.58	1.7
Beebe Spur	VT	4.05	4.05
Burlington Waterfront Bikeway	VT	7.6	7.6
Missisquoi Valley Rail-Trail	VT	26.5	26.5
Cascade Trail (Sedro–Woolley to Concrete)	WA	22.3	22.3
Cedar River Trail	WA	17.5	17.5
Chehalis to Raymond (Raymond to Southbend Riverfront Trail)	WA	3.5	3.5
Klickitat Trail	WA	31	31
Milwaukee Road Corridor (John Wayne Pioneer Trail)	WA	145	145
Snoqualmie Valley Trail Extension (1 mile gap)	WA	10	10
Algoma to Casco Junction	WI	12.4	12.4
Bayfield County Snowmobile Trail	WI	55	65
Cattail Trail	WI	17.8	17.8
Fox River Trail (Green Bay to Greenleaf)	WI	13.5	13.5
Mountain–Bay State Trail	WI	80.5	83.4
Pine Line Trail	WI	25.9	25.9
Rice Lake to Superior Trail (Chippewa Falls to Superior)	WI	90	90
Tomorrow River State Trail	WI	15	15
Greenbrier River Trail	WV	76	76
Panhandle Trail (Colliers to WV/PA Line)	WV	4.4	4.4

overcoming local opposition to renewed line service. Although federally rail banked corridors (as described in the previous section) carry a presumption of renewed rail service whenever and wherever needed, it should be recalled that more than 80% of existing rail trails have no such federal protection.

URBAN TRANSIT DEVELOPMENT

Some cities and metropolitan planning authorities have preserved urban rail corridors whose use as local freight gathering lines became economically unfeasible during the long exodus of heavy industry from the core of America's urban areas. The specific future use of such alignments need not be specified at the time of preservation; however, highly visible reminders can serve to inform the public that a more active use of a given corridor is a definite future possibility.

Various county rail authorities in the St. Paul–Minneapolis region of Minnesota have together preserved approximately 80 miles of former freight rail rights-of-way for future transit development purposes. Corridors used on an interim basis as recreation trails are conspicuously posted (see Figure 2). Landowners with properties abutting the corridors are also required to disclose future potential transit of the alignments as part of the real estate disclosure process whenever properties are sold. Specific planning studies are slated for 2007 to determine best uses of two such alignments, the Red Rock and Rush line corridors from downtown St. Paul.

The St. Louis Metrolink System made excellent use of preserved rail properties in their launch of the region's first

modern light rail system in 2003. Fourteen miles of the initial 17-mile system were placed on preserved rights-of-way, including the 19th century Eads Bridge to East St. Louis, rail freight tunnels under the downtown core (see Figure 3) and a former Wabash Railroad alignment northwestward toward the St. Louis International Airport. A number of extensions and new alignments are planned; those including current trails are posted as future Metro service routes.

TAKING STOCK: CALIFORNIA DEPARTMENT OF TRANSPORTATION RAIL INVENTORY

In 2001, California's governor directed the California DOT (Caltrans) to "identify the status of all the rail corridors in the state and evaluate their relative importance and potential for future rail passenger service" (9). The department was also asked to "identify abandoned rail corridors that have potential for use by non-motorized transportation and as links to improve access to public transit." California has a formal policy to preserve rail rights-of-way and to "acquire abandoned railroad lines when the right-of-way for such lines has a potential public transportation use, including but not limited to, a use for highways, bus ways, bicycles, pedestrians, or guide ways" (California Streets and Highway Code, Section 2540). The purpose of the 2001 assessment was to provide information to local transportation planning agencies for consideration in local planning efforts. Various joint-powers agencies in different regions of the state have used the inventory as a fundamental planning tool when considering future options for rail corridor use.

TABLE 6
EXAMPLES OF ACTIVE RWTS BY CORRIDOR TYPE AND OWNERSHIP

Trail Name	Corridor Owner	Railroad Operation	Location
Class I Railroads			
Arboretum Trail	Norfolk Southern	Unknown	PA
Cedar Lake Trail	Burlington Northern Santa Fe	Burlington Northern	MN
Celina/Coldwater Bike Trail	Norfolk Southern	RJ Corman	OH
Columbus Riverwalk	Norfolk Southern	Railtex/GATX/Georgia Southwestern Railroad Co.	GA
Eastbank Esplanade/Steel Bridge Riverwalk	Union Pacific	Union Pacific, Amtrak	OR
Elk River Trail	Norfolk Southern	Norfolk Southern	WV
Gallup Park Trail	Norfolk Southern	Norfolk Southern	MI
Huffman Prairie Overlook Trail	CSX	CSX and Grand Trunk Western	OH
Schuylkill River Trail	Norfolk Southern (3.2 km/2 mi)	Norfolk Southern	PA
Stavich Bicycle Trail	CSX	CSX	OH & PA
Union Pacific Trail	Union Pacific	Union Pacific	CO
Zanesville Riverfront Bikepath	Norfolk Southern	CSX and Norfolk Southern	OH
Privately Owned, Class II or Other Freight			
Blackstone River Bikeway	Providence and Worcester Railroad	Providence and Worcester Railroad	RI
Central Ashland Bike Path	Rail America	Rail America	OR
Clarion–Little Toby Creek Trail	Buffalo to Pittsburgh Railroad	Buffalo to Pittsburgh Railroad	PA
Heritage Trail	Canada National Reading & Northern Railroad Co.	Canada National Reading & Northern Railroad Co.	IA PA
Lehigh Gorge River Trail	Reading & Northern Railroad Co.	Reading & Northern Railroad Co.	PA
Lower Yakima Valley Pathway	Washington Central	Washington Central	WA
MRK Trail	Union Pacific	Union Pacific	IL
Railroad Trail	Lake State Railroad	Lake State Railroad	MI
Rock River Recreation Path	Union Pacific	Union Pacific	IL
Silver Creek Bike Trail	Dakota, Minnesota & Eastern	Dakota, Minnesota & Eastern	MN
Tony Knowles Coastal Bicycle Trail	Alaska Railroad Corp.	Alaska Railroad Corp.	AK
Whistle Stop Park	Cimarron Valley Railroad	Cimarron Valley Railroad	KS
Excursion/Short Line, Publicly or Privately Owned Land			
Animas River Greenway Trail	Durango & Silverton Narrow Gauge Railroad	Durango & Silverton Narrow Gauge Railroad	CO
Cotton Belt Trail	Dallas Area Rapid Transit	Ft. Worth & Western Railroad	TX
Eastern Promenade Trail	Maine Dept. of Transportation	Maine Narrow Gauge	ME
Heritage Rail Trail County Park	York County	Northern Central Railway Inc.	PA
Lowell Canal Trail	National Park Service	National Park Service	MA
Santa Fe Rail Trail	Santa Fe Southern	Santa Fe Southern	NM
Publicly Owned Railroad Corridors, Passenger or Freight			
Atchison, Topeka and Santa Fe Trail	Orange County Transportation Authority	Amtrak, Southern California Regional Rail	CA
Bugline Trail	Waukesha County	Union Pacific	WI
Burlington Waterfront Bikeway	Vermont Agency of Transportation	Vermont Railway Co.	VT
Cascade Trail (SR-20)	City of Burlington/Skagit County	Burlington Northern Santa Fe Railway	WA
Duwamish Trail	City and Port of Seattle	Burlington Northern Santa Fe Railway	WA
Eastern Promenade Trail	Maine Department of Transportation	Maine Narrow Gauge	ME
Eliza Furnace Trail	City of Pittsburgh	CSX	PA
Folsom Parkway Rail-Trail	Regional Transit Authority	Regional Transit Authority	CA
Great Lakes Spine Trail	Iowa Department of Natural Resources, Dickinson County, cities	Chicago Northwestern Transportation Co.	IA

(continued on next page)

TABLE 6 (Continued)

Trail Name	Corridor Owner	Railroad Operation	Location
Heritage Rail Trail County Park	York County	Northern Central Railway, Inc.	PA
La Crosse River State Trail	State of Wisconsin	Canadian Pacific Railway, Inc., Amtrak	WI
Levee Walking Trail	City of Helena	Arkansas Midland	MT
Myrtle Edwards Park Trail	City and Port of Seattle	Burlington Northern Santa Fe Railway	WA
Platte River Trail	Regional Transit District	Denver Rail Heritage Society	CO
Porter Rockwell Trail	Utah Transit Authority	TRAX	UT
Rock Island Trail	City of Colorado Springs	Denver & Rio Grande Western	CO
Rose Canyon Bike Path	Metropolitan Transit District Board	Amtrak and Santa Fe	CA
Seattle Waterfront Pathway	City of Seattle	METRO Transit	WA
Southwest Corridor Park	Massachusetts Bay Transit Authority	MBTA Commuter Rail and Amtrak	MA
Three Rivers Heritage Trail	City of Pittsburgh	CSX	PA
Traction Line Recreation Trail	New Jersey Transit Authority	NJ Transit and Norfolk Southern	NJ
Traverse Area Recreation Trail (TART)	Michigan Department of Transportation	Tuscola & Saginaw Bay Railroad	MI
Watts Towers Crescent Greenway	Metropolitan Transportation Authority	Metropolitan Transportation Authority	CA
West Orange Trail	Orange County Parks	CSX	CA

California’s first, comprehensive geographic information systems-encoded database of all rail corridors and bicycle and pedestrian facilities was developed by the study team. Each rail corridor was evaluated as to its potential for joint use or reuse for rail passenger service, nonmotorized transport, or transit access linkages. Classifications for reuse were based both on objective technical specifications and input received through a comprehensive public involvement process. A 150-member Stakeholder Advisory Committee was created, including railway, local public agency, recreation, and regional planning agency representatives. The committee participated in each phase of the study process and was encouraged to regularly access a special website that tracked and updated geo-

graphic information systems information as it was developed for the rail and nonmotorized facilities audit.

Evaluation of the rail corridors for passenger rail or transit use was grounded on the natural pairing of demand and feasibility—does the public want the potential service and is it feasible to provide such service by means of the facility in question?

Demand ratings were developed based on criteria such as:

- Travel demand from Intermodal Transportation Management System and regional planning models.



FIGURE 2 Washington County, Minnesota, trail posting. (Source: Washington County Department of Public Works.)



FIGURE 3 St. Louis Metrolink train emerging from one of the historic freight rail tunnels in the core of the city. (Source: World Tram and Trolleybus Systems: [http://ymtram.mashke.org/.](http://ymtram.mashke.org/))

- Connections to similar transit facilities within a specified distance.
- Population density within five miles of potential station stops.
- Accessibility to major traffic generators.
- Local support as reflected in local and regional planning documents.

Feasibility elements for passenger or transit operations included:

- Engineering geometrics,
- Intensity and speed of freight service,
- Level of interest from regional agencies, and
- Safety concerns as derived from grade crossings per mile and U.S.DOT accident prediction models.

The combination of demand and feasibility for each line was then used to give an overall line categorization.

- High-demand, high-feasibility. Corridors are considered to have “high” potential for development.

- High-demand, low-feasibility. Corridors may be developed to meet a strong public demand, but the development will be very challenging.
- Low-demand, high-feasibility. Corridors are considered “low” potential at present, but should perhaps be preserved for future use.
- Low-demand, low-feasibility. Very low potential alignments; no action required.

Results from the study have been shared with Caltrans district and metropolitan planning organization/regional planning agencies. An “Abandoned Railroad Account” has long been designated in the State Transportation Fund as a vehicle to support local preservation efforts; however, it has received little if any actual funding.

In California, the removal of rail track infrastructure from a rail banked corridor triggers requirements for a full environmental review, if and when an interested party seeks to replace the removed rails. No such restoration has ever occurred in California.

RAIL CORRIDOR SUCCESS STORIES

Much remains to be done to fully exploit the value of abandoned or lightly used rail corridors around the United States. Fortunately, there are good examples from those who had vision, perseverance, and an ability to reach out to multiple stakeholders in preserving and restoring active use to this sometimes fragile network of properties that tie communities and regions together. In some cases the vision has not been achieved, but the properties have been preserved. Here are some of the more interesting rail corridor success stories that we have found in this investigation.

NASHVILLE AND EASTERN RAILROAD

In 1986, CSX Transportation sought to spin off a light-density line and associated branch lines in north-central Tennessee, extending from Vine Hill (in the Nashville area) eastward to Monterey; a distance of 110 miles. The only significant remaining rail freight shipper in the area was EL Dupont, served by the Hickory branch spur. Originally, CSX had sought to retain direct operating rights for the 10 miles of service to the Dupont plant, further imperiling the business viability of any operator seeking to preserve the balance of the line.

The Tennessee DOT responded to the proposed abandonment by creating a joint-powers rail authority in partnership with three of the four affected counties. The Nashville and Eastern Railroad Authority (NERA) began to work with a rail management group to develop a business plan to restore rail service and freight business volumes across the property. The lines in question were, as is typical in such cases, in very marginal operating condition. Each year approximately 2,000 carloads of traffic were moving, most of it from the Dupont facility that CSX had sought to hold out from the sale. In the fall of 1986, NERA purchased the lines from CSX, including the Hickory branch to the Dupont plant (see Figure 4).

With the rail lines in public hands, a long-term operating agreement was struck with the startup private rail management group Nashville and Eastern. According to Bill Drunic, Nashville and Eastern Railroad (NERR) President, the involvement of the future rail managers in the business planning for the property brought a measure of discipline to the entire assessment; shipper and carrier interests projecting new business for the line would live with the consequences if such predictions proved to be inflated.

Since 1986, NERR has worked collaboratively with the Tennessee DOT and the NERA to invest \$43.5 million in essential rail infrastructure improvements across the property. One-hundred-ten miles of active track has been reconstructed and 77 bridges upgraded. Business volumes have grown from 2,000 carloads in the initial year of operations to approximately 9,000 annual carloads today. A mix of general merchandise commodities, including plastics, paper, beer, lumber, steel, propane, and fertilizer helps to even out the inevitable volume cycles for individual clients.

A new use for the Nashville and Eastern right-of-way promises to further anchor the line's place as part of central Tennessee's long-term infrastructure. In September 2006, commuter rail operations commenced on the 32-mile, Nashville-to-Lebanon portion of the route, creating the first of five "spokes" on what is envisioned as a 142-mile network of commuter rail lines (see Figure 5). Unlike Class I operators, most short lines welcome the infrastructure investment that goes with commuter rail operations and are in a position to adapt freight service to accommodate rush hour passenger operations. Other envisioned corridors in the Nashville region support high-density Class I freight services and will be far more costly to convert to mixed use.

NERR President Drunic attributes the success of the Nashville and Eastern to a number of factors.

- The railway enjoys sufficient freight volume to support the basic railway infrastructure. CSX's original intent to sell only the moribund part of the property while keeping for itself the one remaining viable shipper would have led to full abandonment for most of the line. Another positive aspect of the traffic base is the wide diversity of commodities that tend to smooth the volume cycles that occur on an industry-specific basis.
- Public financing was available to overcome much of the capital infrastructure deficit NERR faced at startup. Tennessee DOT funds were granted on an 80/20 matching basis, with the balance of monies from shipper and local agency interests. It is doubtful that operating revenue would have been sufficient to support debt financing of the needed capital improvements even if offered at discounted rates.
- NERR recognizes the need for a robust maintenance regime on all of the operated lines, averaging around \$10,000 per mile per year. A disciplined maintenance



FIGURE 4 Nashville and Eastern Motive Power. (Source: Nashville and Eastern: <http://www.nerr.com>.)

regime is essential to keeping jointed and lighter-weight rail in service, even for relatively modest local service operations.

- Thorough and regular engagement with all local stakeholders began before startup and has continued to the present day. NERR also works on a regular and systematic basis with clients, local municipalities, and economic development groups to attract new customers while preserving the existing base of commerce in the corridor.

BURBANK BRANCH BUS RAPID TRANSIT

In 1990, the cash-strapped Southern Pacific Railroad negotiated the sale of a number of freight rail rights-of-way in the LA Basin, including the 14-mile Burbank Branch line from North Hollywood to Burbank (see Figure 6). Rail service to the last remaining freight customers ended in the fall of 1992. The corridor was preserved and in 2004 became the alignment for one of the nation's most successful bus rapid transit (BRT) projects.

The Metro Orange Line is operated by the Los Angeles County Metropolitan Transportation Authority, traveling 14



FIGURE 5 Music City Star demonstration run. (Source: www.musiccitystar.org.)



FIGURE 6 Burbank Line local freight train in the early 1990s. (Source: Chris Bauman's Burbank train page: <http://home.att.net/~chrisbauman/burbank.htm>.)

miles between the Warner Center and the North Hollywood Metro Red Line subway station in the San Fernando Valley.

The Orange Line is designed with similar characteristics of an urban light-rail system such as a dedicated right-of-way, more broadly dispersed stations approximately one mile apart, platform ticket machines for faster boarding, public art, park-n-ride lots, and other amenities.

Because of its many differences from a standard bus service, the authority has branded the transitway as part of the region's network of light and heavy rail lines. It appears on the Metro Rail System map. Orange Line vehicles, Metroliners, are painted in the silver and gray color scheme of Metro Rail vehicles. Likewise, it is the authority's only bus line that has been marketed with a color designation rather than its line number (901) (see Figure 7).

As of May 2006, the BRT route was carrying approximately 22,000 daily riders, a level originally not foreseen to



FIGURE 7 Orange Line "Metroliner" BRT vehicle, San Fernando Valley. (Source: www.answers.com/topic/lacmta-orange-line.)

occur until 2020. Preservation of the Southern Pacific right-of-way allowed the Metropolitan Transportation Authority to put in place the dedicated-alignment service without significant “not in my back yard” concerns. The original freight rail engineering specifications for the route also permit relatively straightforward conversion to higher-capacity light-rail service should ridership continue to climb. A 40,000 daily passenger volume is considered the practical limit of the BRT mode for this alignment.

HIAWASSEE RIVER RAILROAD

Copperhill, Tennessee, is located on a rail route that contains one of the most spectacular examples of 19th century railway engineering in North America. This route between Marietta, Georgia, and Etowah, Tennessee, was often called the “Hook and Eye Line,” because of a pair of unusual engineering features along the route. The “Hook” was a tight double reverse curve at Tate Mountain, Georgia, between Whitestone and Talking Rock. The “Eye” is an 8,000-ft loop that climbs Bald Mountain near Farner, Tennessee, encircling it almost twice before crossing back over itself and turning south toward Georgia. It was built in 1898 by the Atlanta, Knoxville and Northern Railway to replace a set of switchbacks on the original line (10) (see Figure 8).

Between 1890 and 1908, the line was the only direct rail route between Atlanta and Knoxville. Louisville and Nashville purchased the Atlanta, Knoxville and Northern in 1902 and, in 1908, built a bypass over far less challenging terrain for service between the two cities. Much of the Hook and Eye Line remained in service, however, to serve local clients and the mine at Copperhill. The Ducktown ore body near Copperhill produced high-grade copper ore from the early 1830s to the late 1980s, almost 150 years. In 1987, the copper mine closed down, but service between Etowah and Copperhill remained owing to the continued operation of a sulfuric acid plant at the

smelter facility. In 2001, the smelter also closed down and CSX abandoned the property. Track remained in place, however, owing to the historic and scenic nature of the alignment.

A number of local governments and civic groups from southeast Tennessee came together and formed the Old Line Railroad Coalition for the purpose of preserving the line and the corridor. The coalition, in turn, established a legal authority called the Southeast Local Development Corporation to negotiate purchase of the line from CSX.

The Tennessee Valley Railroad, a rail excursion operator based in Chattanooga, was able to operate some special tourist trains in 2004 over portions of the route that had been put into service temporarily to support repairs to a Tennessee Valley Authority powerhouse on the Hiwassee River.

A new lease on life for the property came from an unexpected source: Chinese demand for iron ore. The original copper mining operation at Copperhill produced enormous piles of calcine waste containing rich amounts of iron. Representatives of the Chinese government examined the 10-million-ton waste deposit in 2004 and determined that a cost-effective recovery system could be put in place to move the waste by means of 75-car trains. Traffic would move over the Hiwassee line for interchange to CSX and Atlantic seaport delivery. The waste would then be moved to Chinese smelters where the iron would be extracted. The trains began running in 2005. As of this writing, the ore movements have been suspended as a result of source competition and an uptick in marine shipping costs. Continuing growth in demand and pricing of basic industrial resource products would appear to bode well for the resumption of the movement of the calcine waste sometime in the next few years.

The calcine movement was made possible by a number of factors:

- The rail alignment and trackage were still intact owing to the historic and scenic nature of the alignment.
- CSX and the Southeast Local Development Corporation (SLDC) were able to affect a transfer of the line under the federal “rails to trails” exemption processes. The order from the STB of July 22, 2002, reads in part “SLDC will acquire CSX’s 43.47-mile line of railroad between Etowah and Copperhill, in Polk and McMinn Counties, Tennessee, for recreational trail use and ‘rail banking.’ Under the rail-to-trails process established in Federal law, rail lines approved for abandonment may be converted into trails, subject to possible reactivation for future rail use (rail banking).”
- Essential raw material prices have risen to a threshold that made further mineral extraction from waste materials economically viable. (Some carriers, such as Norfolk Southern generally leave mining rail rights-of-way in place until and unless there is no further prospect for renewed extractive operations.)

Mls.	STATIONS.
0	Etowah.....
33	Farner.....
43	Ducktown.....
48	Copperhill.....
61	Blue Ridge.....
77	Ellijay.....
87	Whitstone.....
97	Jasper.....
102	Tate.....
105	Nelson.....
109	Ball Ground.....
120	Canton.....
126	Holly Springs.....
133	Woodstock.....
144	Marietta.....

FIGURE 8 Atlanta, Knoxville and Northern Railway timetable page. (Source: Georgia’s Railroad History and Heritage: [http://railga.com/.](http://railga.com/))

- Community support was easy to obtain for renewal of service given that the calcine moves would remove a waste material from the area, provide employment, and preserve an historic transportation alignment that could have future use as a tourism draw.

GREENBUSH LINE RESTORATION

Boston's Greenbush Corridor enjoyed regular commuter rail service from the mid-19th century through the first half of the 20th century through private operators, including the New Haven Railroad, until the demise of service altogether in 1959 (see Figure 9). State and local agencies stepped in to preserve this and two other "Old Colony" lines for long-term use as revitalized transit corridors.

The Boston-area Greenbush Project will restore commuter rail service on the 18-mile-long Greenbush line through the towns of Braintree, Weymouth, Hingham, Cohasset, and Scituate, Massachusetts. Restoration of passenger service begins at the connection with the existing Massachusetts Bay Transportation Authority Old Colony Main Line at the Braintree Wye in East Braintree, and extends easterly along the former New Haven Railroad alignment to the terminus in the Greenbush section of Scituate.

The line will provide needed additional transportation capacity and an attractive new commuting option between Boston and the South Shore. The project will help to alleviate the severe highway and rapid transit congestion in this area, as well as address the currently inequitable distribution of commuter rail service.

The project involves the reconstruction of existing, largely out-of-service railroad right-of-way as a single-track railroad with four controlled passing sidings, each approximately 1 mile in length. Once completed, the facility will be equipped with a new signal and communications system and end-of-the-line train layover facility. In addition, certain freight facilities in Braintree will be relocated off-line.

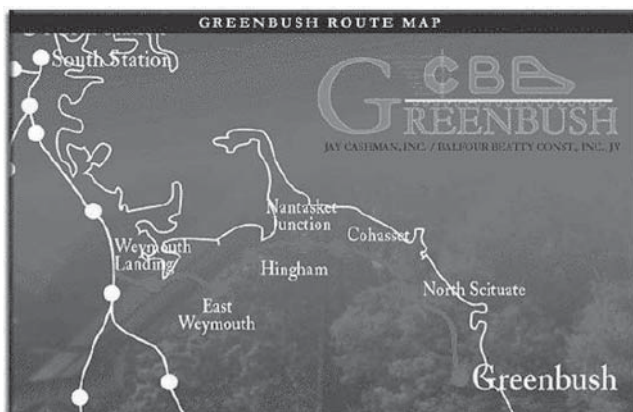


FIGURE 9 Greenbush route map. (Source: <http://www.cbbgreenbush.com/routemap.html>.)

The right-of-way is currently active for local freight service on the first 1.5 miles in East Braintree. The remainder of the right-of-way is either out of service or abandoned. The proposed commuter rail service will provide 12 round trips between Boston–South Station and Greenbush each weekday and 8 round trips on weekends.

BUILDING A REGIONAL RAIL NETWORK IN OHIO

Lengthy intercity or regional rail corridors are sometimes threatened with dismemberment as owning carriers seek to discard, at the margin, all track that is strictly not required to serve local clients and have alternative alignments for long-distance traffic movement. Such was the 1991 threat to Conrail's 160-mile "Panhandle" line in central Ohio, because the carrier applied to an abandoned 24-mile section near the center of the corridor (see Figure 10).

The Ohio DOT and local leaders fought the bifurcation, leading finally to a \$7.3 million purchase of the entire 160-mile corridor by the state in 1992. Under public ownership, the Columbus and Ohio River Railroad was created with rail operations provided under lease by the adjoining Ohio Central Rail System. Together, these lines have evolved into a thriving regional operation. Payments to the state by the service lessee will have fully amortized Ohio's original investment in the Columbus and Ohio River Railroad line by 2012. Discussions are underway to sell the relevant trackage to Ohio Central, completing the investment and marketing integration of all branch line rail operations in this part of the state.

WILLAMETTE SHORE TROLLEY

A nearly abandoned 5.6-mile Southern Pacific branch line linking the downtown core with suburban Lake Oswego is likely to become a vital transportation link in the Portland, Oregon, metro area. The right-of-way was first established in 1885–1887 as the Portland and Willamette Valley Railroad, which began operation in July 1887. It was purchased by the Southern Pacific Railroad in the 1890s for further development as a freight and passenger service corridor.

The railroad had a major impact on the development of southwest Portland and "Oswego" (as it was then known) and became the main transportation link for developing residential communities along the route. The line was electrified in 1914 and passenger traffic hit its peak in 1920 with Southern Pacific running 64 "Red Electrics" to and from Portland and Oswego daily (see Figure 11). Passenger service ended on October 5, 1929, although freight service continued until 1983.

In August 1984, the Interstate Commerce Commission granted Southern Pacific permission to abandon the line. In November of that year, the Portland Friends of the Willamette

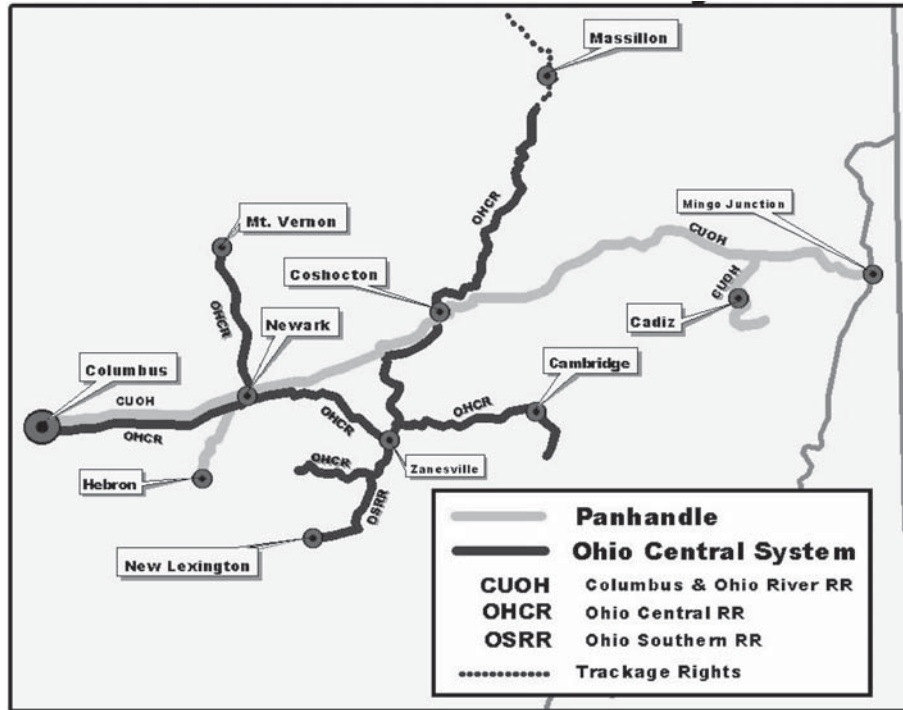


FIGURE 10 Regional rail lines in central Ohio; the Panhandle and Ohio Central Railroad System. (Source: Ohio Rail Development Commission.)

River Greenway, a nonprofit corporation, was asked to assist seven governmental entities in their effort to acquire the line, to guarantee the preservation of the right-of-way for future mass transit (11).

From September through December 1987, the Oregon Electric Railway Historical Society operated a trolley on the line to determine the feasibility of such a service there. Negotiations between Southern Pacific and the governmental entities continued until the six-mile line was purchased in the fall of 1988. Weekend excursion trolley service began on

a long-term basis in July 1990 and has continued to the present day.

Tri-County Metropolitan District of Oregon (TriMet), operator of Portland’s light-rail system, is now looking to use of the line for more intense, regular transit service. A study done by the agency indicates that a new streetcar line built along the current alignment would be more practical than a “heavier” light-rail system. Under TriMet’s plan, the new streetcar line would run 5.6 miles from a connection with the Portland Streetcar in the North Macadam Urban Renewal Area to a park-n-ride facility in Lake Oswego. Streetcars would operate on a 12-min headway during rush periods, with a run time of 15 min between Southwest Bancroft Street (Portland) and Lake Oswego, or 25 min all the way from downtown Portland. Costs to build the line are expected to be relatively low, because so much can be reused, including a 1,300-ft tunnel and two trestles. The line is expected to cost approximately \$81 million, serve 10 stations, and carry approximately 600 people per hour during peak periods.



FIGURE 11 Willamette Shore Trolley emerges from tunnel. (Source: Railway Preservation: <http://www.railwaypreservation.com/vintagetrolley/lakeoswego.htm>.)

In 2005, the Metro Council of Portland approved \$688,000 in funding to complete the Alternatives Analysis and begin environmental impact studies in the corridor. Although these activities will continue into calendar year 2008, a preferred modal alternative may be selected by the end of 2007 (12).

Although the Willamette Shore corridor project cannot yet be described as a complete success, it appears likely that the

alignment will, in time, be used as a significant transit corridor for the following reasons:

- Traffic and congestion in the Portland region are increasing;
- Long-range transportation improvement plans for Metro rule out “broad scale expansion in highway capacity” in the subject alignment; and
- Portland’s first streetcar line in the northwest section of the downtown area has been far more successful than expected, and public understanding of the relatively “low impact” nature of streetcar operations has somewhat eased the concerns of homeowners adjacent to the Willamette Shore route.

Success of the restoration, should it occur, may be credited to:

- Early involvement by a wide range of local public stakeholders to negotiate retention of the alignment and purchase from the Southern Pacific Railroad.
- Ongoing efforts to maintain the visibility and integrity of the alignment through special excursion operations and community involvement. These have been underway for 16 years.
- A planning context where there is general public understanding that current highway corridor capacity is fixed and unlikely to change as population grows.

CONCLUSIONS

The rationalization of railway trackage in the United States has a long history; peak network mileage was achieved in the 1920s, and has fallen steadily since the end of World War II. How states and communities react to the shrinkage of rail service varies dramatically from state to state and community to community. The rising cost and complexity of establishing new transportation corridors for passenger or freight service and the growing congestion for all surface freight modes has focused new attention on the issues surrounding retention of rights-of-way or restoration of rail services.

- State and Local Engagement

A number of states treat these issues very seriously, and the study's "best practices" conclusions are drawn from those states. States including North Carolina, Ohio, and Pennsylvania act on specific rail lines from policy foundations that recognize the value of corridor preservation and enjoy substantial (if still modest compared with other modes) annual funding. These states also do an excellent job of tracking the benefits of public rail line investment and communicating those impacts to political decision makers. Generally speaking, those benefits have much more to do with job creation and retention and rail-client investment than in relieving the stress on the corollary highway networks.

The structure of public rail assistance for a given line often includes a combination of state department of transportation (DOT) and local (usually county-based) agencies in a joint-powers relationship designed to preserve or rejuvenate a specific rail property. The prospective rail service provider is often identified very early in the process and directly participates in the capital condition and business volume forecasts that justify or disqualify the injection of public funds.

A recurring challenge for those seeking to preserve light-density lines is the marginal divestiture strategy most Class I carriers pursue in pulling back their services. If operationally feasible, a Class I carrier will seek to preserve direct access to the one or two viable clients remaining on a line while jettisoning the balance of the rail alignment. Agencies or short line carriers seeking to create a viable substitute operation must then try to negotiate a larger scope of asset transfer that includes the "critical volume" necessary for a new operator to get started.

Support from multiple shippers and local economic development agencies is essential for preserving local rail

service, particularly on lines devoted to the movement of general freight and industrial traffic. Preservation of services on lines devoted to a single large shipper or commodity (e.g., grain or coal) may be simpler to execute, but the longevity of the property may be at more risk given the lack of diversity in the traffic base. For example, many Midwestern states are struggling with the rail policy implications of disruption to traditional flows of grain caused by the expansion of shuttle train service, conversion of corn to ethanol, and new interest in smaller-lot "identity preserved" agricultural products. For many of these lines there is little or no other rail-susceptible traffic to replace traditional bulk grain commodity flows.

- Federal Role

No new policy initiatives to preserve rail lines or restore rail services have been promulgated by the federal government since the 1980s. The federal influence on the current situation facing states and municipalities however is very clear. It was the federal rail assistance programs of the 1980s and early 1990s that triggered formal recognition of the rail mode in many state DOTs. Those programs were specifically designed to identify and preserve those lines that were believed to be the most viable for the long term. Formal assessment and "triage" mechanisms were put in place for the lines and specific DOT personnel were assigned to coordinate state rail policies.

Revolving loan funds for local rail authorities or short line operators were established with a portion of those federal funds, and the repayment of such loans in some states still provides the bulk of rail assistance funding available in any given year. Some states supplement the loan repayment cash flows with specific new appropriations from the state's general fund or with a dedicated funding source such as rail diesel fuel tax receipts. The last federal funding to be provided for local rail freight assistance was appropriated in 1996.

Another federal influence has been felt through the "Rails to Trails" provisions of the National Trails Act of 1983. Private or public bodies may take advantage of the Rails to Trails provisions and effectively preserve federal preemption of any local or state efforts to dismember a line. Because a line is never technically "abandoned" under Rails to Trails, the possibility for renewed rail service is always there. The law has survived numerous court challenges and enjoys bipartisan support in the U.S. Congress. It should also be

noted that the Surface Transportation Board is clear about the priorities of the Act—“*interim* trail use” means exactly that. The original rail service provider or a new operator may quickly reassume control of any Rails to Trails corridor to reinstate train service.

The reader should also recall that only approximately 20% of all rail-trails nationally have achieved that status through application of the federal rules. Locally, authorized rail-trails may be forever devoted to recreation or other uses, and advocates of new rail service will enjoy no special legal advantages in overcoming typical “not in my back yard” concerns that accompany such proposals.

- Shipper and Carrier Roles

As noted previously, some of the best restoration efforts have included direct engagement by the future rail service providers from the earliest stages of the rail line assessment. Rail clients and carriers understand very well that restoring rail service to a line is not a “build it and they will come” proposition. Shipping by means of rail is a far more complex endeavor than securing truckers to move goods over the public highway network. The situation is made even more complex for most short line customers in that most shipments must move by means of at least two rail carriers to reach their final destinations. The long-distance “line haul” carrier is often the very company that sought to divest itself of the branch line in question.

Once a physical track network is restored, competitive rail service depends on good faith cooperation and commitment from three parties—the rail shippers and receivers, the short line or regional rail service provider, and the Class I large railroad connector. Some Class I roads provide excellent and disciplined connecting service to and from their short line partners. A key point for restoration advocates is the need to discuss, in detail, how such service will be configured before a decision to restore a line moves forward.

A few larger short lines or regional carriers have sufficient geographic reach or specialized movements wherein they handle traffic from origin to destination under their sole control, but such situations are the exception rather than the rule.

Finally, it may be noted that many short line and regional carriers have rebuilt much of their rail franchise volumes on former Class I lines by simply showing up and paying attention to the needs of their local clients. Several short line operators reported that their customers had no face-to-face contact with a railway employee for “several years” before the transfer of operations. An excellent local rail presence can begin to overcome that history, but as noted earlier the full origin–destination transit performance may still depend heavily on the Class I connecting service.

- Recreational Interests

Recreation and trail interests often contribute momentum to rail corridor preservation initiatives, but are understandably less enthused over prospects to restore active train service to such alignments. “Rails with Trails” may provide a win–win solution in certain circumstances, particularly where the rail use is sponsored by a public authority and/or relatively low-speed train operations are involved. Class I carriers are by far the most reluctant partners to entertain rails with trails proposals owing to concerns over liability and trespassing.

- Transit and Passenger Rail

Transit agencies have an interest in preserving rail alignments to reduce startup costs for new services and to minimize community disruption as service networks are expanded. A number of urban planning agencies have developed comprehensive corridor preservation programs to protect future transit needs. St. Louis Metro officials made excellent use of old railway tunnels in service to the downtown core with the first leg of their new light rail system. Salt Lake City, Minneapolis, St. Paul, and other urban centers have similarly laid the groundwork for future, more robust transit services. The transfer of such alignments to public hands is only the first step, however. An active program to remind the public at large, interim recreational users and adjacent property owners of plans for transit development can help to mitigate downstream not in my back yard concerns and may help to spur transit-complementary development adjacent to the corridors in question.

- Areas for Future Study

Rail corridor preservation and reuse is and will likely remain a trial-and-error exercise for many corridor advocates, given the wide range of political, land-use, and environmental conditions under which such efforts take place. Much may be learned from the experiences of others, and many of these “best practices” have been documented in this report. There appear, as well, to be some general areas of further enquiry related to rail corridors that would be worthy of further, formal investigation.

- Corridor preservation does not, at present, appear to be a leading concern for intercity passenger rail advocates. Current FRA-designated high-speed rail corridors assume upgrades to current main line freight routes rather than development of new, passenger-dedicated alignments. A reevaluation of this approach might reveal cost and service advantages to segregation of freight and passenger operations that would in turn bring new attention to redundant or lightly used corridors. What corridors should receive priority for preservation under a “service segregation” scenario?
- What lightly used or dormant long-distance rail alignments are worthy of preservation for future use? What mechanisms would be appropriate to effect such preservations? Building political support for “corridor preservation” where on-line business is scarce is a particular

challenge for those seeking to preserve long-term options for use of such alignments.

- What roles may short line carriers play in moving shorter-distance freight that does not interface with the Class I rail network? Are there public or private business models that would position such operators to divert medium-distance intercity freight from the highway system through shared capital investment in terminals, specialized rolling stock, or new technologies?
- Are there complementary roles for freight and passenger movement on urban rail transit networks? How can transit systems be designed to play a dual role to both move passengers and provide freight mobility in the inner city? In late 2006, TRB expected an interim report

for TCRP Project A-27, “Shared Use of Railroad Infrastructure with Non-FRA-Compliant Public Transit Rail Vehicles.” This report will deal in particular with the safety challenges of shared passenger and freight rail operations. More work may be warranted on the market and service implications of specialized rail freight services on urban transit networks.

- What role should metropolitan planning organizations play in preserving freight rail infrastructure? Most such efforts have historically centered on alternative uses such as urban transit or recreational corridors. Given rising fuel costs and growing highway congestion, should railway yard facilities be given special consideration as centers for freight movement or consolidation?

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APPENDIX A

Survey Questionnaire

NCHRP 37-10

QUESTIONNAIRE

RAIL CORRIDOR PRESERVATION

Respondent name:

Respondent telephone:

Respondent e-mail:

- (1) Have you engaged in efforts to preserve threatened rail rights-of-way?
- Yes—Continue to Question 2
- No—Thank you. Please proceed to the “Rail Corridor Restoration” section of this survey.
- (2) How many threatened rail corridors have you tried to preserve?
- (3) How many threatened rail corridors have you succeeded in preserving?
- (4) For preserved corridors
- _____ Number of lines where local freight service was continued
- _____ Number of corridors that were “railbanked” with no interim use
- _____ Number of corridors that were converted to recreational use
- _____ Other (describe): _____
- (5) Why have you attempted to preserve rail rights-of-way?
- Local rail freight service preservation
- Recreational value for trail/bike use
- Need for future use as a transportation corridor (specify):
- Highway
- Local freight rail service
- Through (long distance) freight service capacity
- Passenger rail/transit
- (6) Was a need for the subject rail alignments identified formally in state or metropolitan transportation plans?
- Yes (please describe): _____
- No
- (7) Rate the following elements and their importance to success of *your* preservation efforts.
- 10 = Critical 0 = No importance at all
- _____ Formal state corridor preservation policy
- _____ Federal rails to trails legislation
- _____ Financial contributions from local rail users
- _____ Financial contributions from local public agencies
- _____ Financial contributions from state agencies
- _____ Financial contributions from federal sources
- _____ Financial commitments from prospective rail operators
- _____ Rail shipper/receiver carload commitments
- _____ Support from trail or recreational interest groups
- _____ Other (specify): _____

(8) If you wish, please describe one or two corridor preservation efforts that you consider to be unique or notable and key learnings from those efforts. _____

Thank you.

Kindly proceed to the “Rail Corridor Restoration” questionnaire.

APPENDIX B

List of Agencies Responding to Preservation and/or Restoration Surveys

State Agencies

Alaska Department of Transportation
Bob Laurie

California Department of Transportation
William D. Bronte

Colorado Department of Transportation
Tamela Goorman

Indiana Department of Transportation
Tom Beck

Iowa Department of Transportation
Craig Markley

Kentucky Department of Transportation
Jill Asher

Maine Department of Transportation
Kevin Rousseau

Maryland Department of Transportation
David Ganovski

Michigan Department of Transportation
Melvin G. Williams

Minnesota Department of Transportation
Bob Rickert

Missouri Department of Transportation
Rodney Massman

New York Department of Transportation
Steve Slavick

North Carolina Department of Transportation
Pam Davis

North Dakota Department of Transportation
Bob Johnston

South Dakota Department of Transportation
Bruce Lindholm

Utah Department of Transportation
Dan Kuhn

Wyoming Department of Transportation
Dan Kline

Metropolitan Planning Organizations

Capitol Region Council of Governments (Connecticut)
Sandy Fry

Delaware Valley Regional Planning Commission
Ted Dahlburg

Hillsborough County Florida
Joe Zambito, Charner Reese

Metropolitan Council—Minnesota
Jim Barton

Nashville Metropolitan Planning
Fred Schwartz

Northeast Ohio Areawide Coordinating Agency
Jonathan Giblin

Oakland
Therese McMillan

Puget Sound Regional Council
King Cushman

Southeast Michigan Council of Governments
Alex Bourgeau

Transit Agencies

Trinity Railway Express
Kathryn Waters

Utah Transit Authority
Paul O'Brien

Class I Carriers

Canadian Pacific Railway
Judy Mitchell

CN Rail
James Kvedaras

APPENDIX C

Survey Response Summary

NCHRP 37-10

RAIL CORRIDOR PRESERVATION

- (1) Have you engaged in efforts to preserve threatened rail rights-of-way?
 - 18 Yes—Continue to Question 2
 - 12 No—Thank you. Please proceed to the “Rail Corridor Restoration” section of this survey.

- (2) How many threatened rail corridors have you tried to preserve?
 - Average 6.3 from all responders saying “yes” on Question 1.

- (3) How many threatened rail corridors have you succeeded in preserving?
 - Average 5.7 from all responders saying “yes” on Question 1.

- (4) For preserved corridors
 - Average 3.1 Number of lines where local freight service was continued
 - Average 1.2 Number of corridors that were “railbanked” with no interim use
 - Average 1.3 Number of corridors that were converted to recreational use
 - Average 0.1 Other (describe).

- (5) Why have you attempted to preserve rail rights-of-way?
 - (Total affirmative votes from all responders saying “yes” on Question 1.)
 - 8 Local rail freight service preservation
 - 9 Recreational value for trail/bike use
 - Need for future use as a transportation corridor (specify):
 - 1 Highway
 - 7 Local freight rail service
 - 2 Through (long distance) freight service capacity
 - 7 Passenger rail/transit

- (6) Was a need for the subject rail alignments identified formally in state or metropolitan transportation plans?
 - 8 Yes
 - 7 No
 - 3 No response

- (7) Rate the following elements and their importance to success of *your* preservation efforts.
 - 10 = Critical 0 = No importance at all (average rating)
 - 5.2 Formal state corridor preservation policy
 - 5.0 Federal rails to trails legislation
 - 3.0 Financial contributions from local rail users
 - 5.0 Financial contributions from local public agencies
 - 6.4 Financial contributions from state agencies
 - 6.2 Financial contributions from federal sources
 - 3.9 Financial commitments from prospective rail operators
 - 4.0 Rail shipper/receiver carload commitments
 - 5.0 Support from trail or recreational interest groups
 - 1.0 Other (specify)

Abbreviations used without definitions in TRB publications:

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI-NA	Airports Council International-North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	Air Transport Association
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation