RAILS
-WITH-
TRAILS

Design, Management and Operating Characteristics of 61 Trails Along Active Railroads

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EXECUTIVE SUMMARY

Every day thousands of Americans safely use and enjoy trails located along active rail lines. The number of "rails-with-trails" is steadily increasing as communities throughout the United States work with local railroads to take advantage of the opportunities that rail corridors provide for creating valuable trails.

GROWTH: The growth and popularity of rails-with-trails appears to parallel the growth of traditional rail-trails. This report analyzes 61 existing rails-with-trails. This is up from the 37 rails-with-trails that were identified in Rails-to-Trails Conservancy's first rails-with-trails report in March 1996. At least another 20 rails-with-trails are being planned.

DUAL BENEFIT: Constructing a trail along an active railroad doubles the value a community derives from the rail corridor and provides citizens with an extra transportation choice. In many places it is difficult to find land on which trails can be built so using an existing rail corridor can be a good option. In some cases, trails support railways by providing enhanced access for transit riders to stations.

SAFETY: Despite fears that rails-with-trails expose users to greater danger by their proximity to active rail lines, rails-with-trails appear to be just as safe as other trails. Our survey of trails found only one accident between a trail user and a train. This is the same single accident identified in the March 1996 report that occurred on a trail otherwise operating safely for 34 years. In fact, using a rail-with-trail may well be significantly safer than walking or cycling next to a busy main road and it may serve to keep people from walking on active rail tracks.

RANGE OF DESIGNS: Rails-with-trails are operating successfully under a wide variety of conditions. Some are very close to rail tracks and others further away. Some use extensive separating fences or barriers. Some are next to high-speed, high-frequency train services. Others are on industrial branch lines or tourist railroads with slower trains operating only a few times per week. Some have at-grade crossings while others use underpasses or overpasses.

RAILROADS: While railroad companies are understandably cautious of such projects, this report found that 20 out of 61 trail managers described the attitude of the railroad involved with their trail as supportive, positive or good (and in one case, "great!"). Only five trail managers reported the railroad company initially opposed their trail. Rail-with-trail benefits for the railroads can include corridor beautification, potential reduction of trespassing on train tracks, reduced vandalism and increased transit ridership.

LIABILITY: The survey revealed the vast majority of rails-with-trails are insured by existing state, county or city insurance coverage in a similar manner to other trails. An increasing number of railroad companies are requiring trail managers to indemnify them against liability. The report found only three claims made against trail managing agencies. Two of these cases were settled (one for a human injury and one for a farm animal). According to the survey results, no claims were made against railroad companies.

I. INTRODUCTION

Rail corridors can be attractive sites for trails because they often provide a direct connection between popular community locations, such as downtown districts and residential areas. At a time when demand for trails is increasing, finding land for them can be difficult. Placing trails alongside active rail corridors can be an excellent method of securing land for safe, popular and effective trail development.

WHAT ARE RAILS-WITH-TRAILS?

There are more than 1,000 multi-use trails in the United States operating on rail corridors no longer used by trains. This concept is well-understood and has strong community support.

The idea of rails-with-trails is less well-known. It is the name given to multi-use trails along rail lines that are still active.

This report provides a wide variety of information about the growing phenomenon of rails-with-trails. It is hoped that the report can help to ensure that decisions about future and proposed rails-with-trails are based as much as possible on objective facts.

This report follows two previous reports on rails-with-trails by Rails-to-Trails Conservancy. The first was published in March, 1996 and the second in September, 1997.

The information in this report covers many aspects of rails-with-trails, including the extent and growth of rails-with-trails nationwide, safety performance, liability, trail design and location issues, attitudes of railway companies, obtaining easements for trails and funding.

The report is based on an extensive survey of managers of 61 rails-with-trails along with interviews and literature research. The authors had little direct contact with members of the railroad industry.

WHO CAN USE THIS REPORT?

This report is designed to be of assistance primarily to trail planners, advocates and managers. By clearly laying out the national rails-with-trails experience, the report is designed to help answer questions such as:

- Are rails-with-trails safe?
- Will a rail-with-trail work in our community?
- How do we design our rail-with-trail to make it safe and effective?
- How can we work cooperatively with a railroad company?
- How do we handle liability issues?
- Who has experience with different aspects of rails-with-trails?

It is hoped that the report will also be useful to the railway industry, elected officials, federal, state and local transport officials, consultants, planning departments and anyone interested in the rails-with-trails concept.

A daycare group uses the York County Heritage Trail to get some exercise and explore their community. Photo: Gwen Loose

II. REPORT FINDINGS

GROWTH OF RAILS-WITH-TRAILS

The growth and popularity of rails-with-trails appears to parallel the growth of traditional rail-trails. This report analyses 61 existing rails-with-trails. This is up from the 37 rails-with-trails that were identified in the Rails-to-Trails Conservancy's first rails-with-trails report in March 1996.

Today rails-with-trails represent about 6% of the total number of rail-trails in the United States. This number is likely to increase as more people learn about the potential of rails-with-trails.

Rails-with-trails exist in 20 states with Pennsylvania having nine, the most of any state.

Rails-with-trails appear to be as popular as any other type of multi-use trail. The 35 rails-with-trails that supplied usage figures recorded a total annual patronage of 8.2 million visits.

At least 20 more rails-with-trails are known to be in various stages of development, with many more likely to be at the pre-development stages.

LENGTH OF RAIL-WITH-TRAILS

As the number of rails-with-trails has grown, so has the overall length of these trails. Today, rails-with-trails cover 523 miles, up from 299 miles in March, 1996, an increase of 75%.

Of course not all rails-with-trails run along active rail lines for their total length. Of the total inventory of 523 miles of rails-with-trails, 239 miles (46%) are adjacent to an active rail line.

DUAL BENEFIT

Once constructed, rails-with-trails offer similar benefits to trail users and the general community as other types of trails. They are safe places for walking, jogging, cycling and other forms of recreation or human-powered travel and they provide recreation, commuter and utility links between and within communities.

Rails-with-trails also make efficient use of rail corridors by providing more transportation choices and recreation opportunities for the community. In many places it is difficult to find land on which trails can be built so utilizing an existing rail corridor can be the best option. Also, the continued expansion of urban sprawl rarely leaves space for multi-use trails. Provided trails next to rails are developed in a safe and well-planned manner, they can be a highly efficient way to make the most of scarce space in a community.

For example, the five-mile Folsom Park Trail in Folsom, California is being developed with the specific goal of making the best use of the existing transport corridor. It will include not only the trail and the future commuter light rail, but a road as well. The trail is expected to boost rail ridership as train commuters use the trail to cycle or walk to the stations for their commute to Sacramento.

LOGICAL LINKS

Rail corridors were developed to serve or form links between many of the places that cyclists, walkers and other trail users want to go. These include links between downtowns and residential areas, often running along attractive waterfronts or serving historic tourist destinations.

Just like abandoned train lines, active lines have bridges and culverts designed to help trains avoid at-grade road crossings. Trails can sometimes take advantage of these, improving the safety of trail users by keeping them away from road crossings and making the trail route smoother and more direct and attractive to users. An example of this is a cantilevered bicycle and pedestrian bridge hung on the side of a railroad bridge in Harpers Ferry, West Virginia.

LAND OWNERSHIP

The report shows that for 29 of the 61 trails (48%), the trail land is owned by the agency that manages the trail. Of the trail managing agencies, 20 obtained an easement from a railroad company.

RAILS-WITH-TRAILS IN THE UNITED STATES

Date	Total trail length (miles)	Percent parallel to rail line (miles)
March 1996	299	51%
September 1997	390	45%
June 2000	523	46%

DESIGN HIGHLIGHTS

The following indicators demonstrate the range of conditions under which rails-with-trails have been successful.

- **Longest trail:** 57 miles (Railroad Trail, Michigan);
- **Shortest trail:** 0.4 miles (Libba Cotton Bikepath, North Carolina);
- **Longest length of rail next to trail:** 22 miles (Railroad Trail, Michigan);
- **Shortest length of rail next to trail:** 0.2mi (Watts Towers Crescent Greenway, California);
- **Fastest trains:** 150 mph (Southwest Corridor Park Trail, Massachusetts);
- **Slowest trains:** 5 mph (West Orange Trail, Florida);
- **Oldest trail:** 1966 (Illinois Prairie Path, Illinois);
- **Most recent trail:** 2000 (several trails);
- **Widest corridor:** 1,500 feet average width (Rose Canyon Bike Path, California);
- **Most narrow corridor:** 18 feet (Seattle Waterfront Trail and Duwamish Trail, both in Washington);
- **Closest to tracks:** 2 feet (Railroad Trail, Michigan);
- **Furthest from tracks:** 100 feet (several trails);
- **Most trains:** 9 per hour (Illinois Prairie Path, Illinois);
- **Fewest trains:** 1 per week (several trails);
- **Most trail/rail crossings:** 17 (Southwest Corridor Park, Massachusetts);
- **Least trail/rail crossings:** 0 (several trails);
- **Most at-grade crossings:** 13 (Heritage Rail Trail County Park, Pennsylvania);
- **Least at-grade crossings:** 0 (several trails);
- **Most expensive corridor acquisition:** $7 million (Fillmore Trail, California);
- **Least expensive corridor acquisition:** $0 (several trails).

VARIETY OF RAILS-WITH-TRAILS

Successful rails-with-trails operate under a variety of conditions. Some are very close to rail tracks and others further away. Some use extensive separating fences or barriers. Some are next to high-speed, high-frequency train services while others are on industrial branch lines or tourist railroads with slower trains operating only a few times per week. Some have at-grade crossings while others use underpasses.

The trails can be successful under a variety of conditions as long as the trail is designed to the satisfaction of the railroad, the trail manager and existing design standards. See the Case studies for specific examples.

SAFETY AND DESIGN

Safety is perhaps the most important aspect of developing any rail-trail, whether along an operating railroad or not. The good news is that rails-with-trails appear to be just as safe as other trails. Every day thousands of people across the United States safely use existing rails-with-trails.

Fears that more trail users would be severely injured due to the proximity of moving trains have not been realized. A 1999 draft report by the Institute of Transportation Engineers (ITE) technical committee on rails-with-trails noted that existing rails-with-trails appeared to be operating without major problems. This finding corroborates that of the Rails-to-Trails Conservancy's first rails-with-trails report in March, 1996.

TRAIN-TRAIL USER CONFLICTS

A bicyclist on the Illinois Prairie Path ignored an at-grade road crossing warning bells and flashing lights and rode around a lowered crossing gate. The bicyclist was struck by an on-coming train and sustained injuries. (Technically, this incident did not occur on the trail corridor but at an adjacent, pre-existing road/rail crossing.) This is the only incident in this trail's 34-year history and is the same single accident recorded in Rails-to-Trails Conservancy's 1996 report.

One other accident that occurred adjacent to a trail, but not involving a trail user, occurred adjacent to the Tony Knowles Coastal Trail in Anchorage, Alaska when a young person was injured after crossing the trail from a residential area to "hop" a slow-moving Alaska Railroad train. See Case Studies for more details.

RELATIVE SAFETY OF ROAD AND RAIL

Opponents of rails-with-trails have said that introducing people to active railroad corridors will reduce the safety of the corridor. However, questions on the safety of active railroad corridors are only relevant in comparison with existing bicycle and pedestrian safety on roadways and with current accident levels on rail lines without adjacent trails.

According to Michael G. Jones, chairman of the ITE technical committee, "more than 10,000 bicyclists are injured on California's roads each year compared with 115 reported trespasser incidents on railroads in the same year."

In the right circumstances, rails-with-trails can be safer than trails next to roads. The ITE draft report notes that a trail set 25 feet from a track carrying 10 to 20 trains per day provides "substantially less exposure to potential accidents for people than riding or walking within a few feet of a road carrying between 10,000 and 40,000 vehicles per day."

There is no background data available on the total number of people legally and illegally crossing or walking on railroad tracks throughout the United States. This makes it impossible to accurately compare the relative safety for people on different types of active railroad rights-of-way versus heavily traveled roadways.

SAFE DESIGNS

Trail managers can do a great deal to ensure that their trail is designed, operated and maintained to be as safe as possible. Each of the 61 trail managers surveyed for this study faced a variety of safety challenges that they have solved.

Key safety design factors include:

- Providing adequate distance between track and trail;
- Providing safe fencing, barriers or grade separation between track and trail where necessary;
- Designing safe rail crossings;
- Installing adequate trail-user warning signs.

This report found 43 of the 61 rails-with-trails surveyed had installed some kind of barrier between the rails and the trail. Barriers used include vegetation, grade separation, fences, ditches and cement walls. Crossings are at-grade, tunnels or overpasses.

Other trail safety findings include:

- The average separation between track and trail is 33 feet;
- There are at least 69 at-grade railway crossings operating on rails-with-trails throughout the United States with only one recorded accident. (See above.)

The Schuylkill River Trail in Philadelphia, Pennsylvania has 250,000 visits per year. Photo: Richard Smithers.

INSURANCE AND LIABILITY

Trail insurance and liability are key issues to be resolved when developing a trail. Liability issues have become increasingly important to local agencies that develop and maintain rail trails. Of particular concern are the large dollar amounts sought from public agencies for medical costs and punitive damages should an accident occur.

Railroads, many of which are private companies, can be very concerned about any increased liability they may face due to the construction of a rail-with-trail.

CLAIMS AGAINST TRAIL MANAGERS

Three out of 61 trail managers had claims made against them:

- the Tony Knowles Coastal Trail in Alaska;
- the La Crosse River State Trail in Wisconsin;
- the Bugline Trail in Wisconsin.

The Alaska accident involved a settlement with the injured person. (See case study.)

In the case of the La Crosse River State Trail, a farm animal broke through a fence, strayed onto the track and was killed by a train. A settlement was made to cover the value of the animal.

The other claim involved the alcohol-related death of the occupant of a car that drove onto the disused train line that later became the Bugline Trail in Wisconsin. The car drove off a trestle bridge onto another train line below and was hit by a train. The claim was not successful.

INSURANCE POLICIES

Of the 61 rails-with-trails surveyed, only three are not covered by existing city, county, state or park district insurance policies:

- Michigan's Railroad Trail, which is self-insured through a policy held by Alpine Snowmobile Trails Inc., the non-profit organization that manages the trail.
- The Stavich Bicycle Trail in Ohio and Pennsylvania, which is insured privately by the trail manager.
- The Huffman Prairie Overlook Trail in Ohio where the volunteer manager is hoping to have the trail included in existing city and county self-insurance policies.

The Schuylkill River Trail uses a fence to separate trail users from the trains. Photo: Richard Smithers.

CLAIMS AGAINST RAILROADS

None of the 61 trail managers were aware of liability claims being filed against any railroads as a result of trails running along active rails.

INDEMNIFICATION

The survey data shows that rail operators increasingly are requiring trail managers to indemnify them against liability for accidents.

Of the 61 trails studied, 16 (26%) were required to release the corridor's owner from liability for accidents on the trail. This is up from 17% of trails in 1996.

This result may be because the trails studied in the Rails-to-Trails Conservancy's 1996 report were those that were easiest for the trail managers to develop or because rail operators are becoming more concerned about their liability.

Offering to incorporate the trail into the city, county or state umbrella policy can be an effective way to alleviate railways' liability concerns.

LIABILITY ISSUES

While liability is a vitally important issue, building a trail along an active railroad does not, in itself, expose the trail manager to unacceptable risk of liability. In other words, the concept of rails-with-trails is not an inherently negligent design.

As is the case with trails *not* adjacent active railways, public trail managers and private landowners have some liability protection in many states due to recreational use statutes. These statutes reduce the liability of landowners and managers who provide free public access on their land for recreational uses such as trails.

Railroads have, for many years, had some protection against liability for injuries on their tracks due to the impracticality of fencing many thousands of miles of railway, some of which have been in place for more than a century.

However, railroads are naturally interested in keeping their liability to a minimum. In some cases the mere threat of possible legal action, and the amount of the railroad's time and effort that may be needed to resolve even frivolous suits, will be enough to deter some rail companies—particularly small companies—from involvement in rails-with-trails.

Regardless of the merit of a suit, payments are often made in liability cases because settling is more cost effective than fighting a case.

DESIGN AND MANAGEMENT "DOS"

The following list will help trail managers take some steps toward protecting themselves from liability.

- Use accepted design guidelines: Use widely accepted (national and state) standards and guidelines for designing and building trails.
- Use standard signs: Use traffic signals and warning devices indicated by state or national guidelines.
- Use professionals: Facilities that have been approved or reviewed by unregistered or unlicensed professionals may increase liability exposure.
- Adhere to maintenance standards: Maintenance should be consistent along the trail. The responsible agency should have written maintenance procedures to follow.
- Insure the trail: Ensure the trail manager has proper insurance coverage or has budgeting for self-insurance.
- Monitor conditions: The responsible agency should have a mechanism for monitoring conditions on the trail and responding to them. Accidents should be reviewed to see whether trail conditions were a contributing factor.
- Keep written record of all maintenance activities and procedures.
- Correct hazards in a timely fashion.
- Warn of known hazards: Trail users should be warned that the trail is adjacent to an active rail corridor and warned to use caution when crossing tracks.
- Don't describe the trail as safe: Don't make verbal or written comments that indicate that the trail is safe or safer than other particular routes.

RISK MANAGEMENT

The key to minimizing exposure to liability for rails-with-trails is the same as for other types of trails. The trail should be designed by professionals to accepted state and national standards and it must be systematically maintained and managed with clear, well-documented records.

The manager of any trail, especially a rail-with-trail, should obtain legal advice on their exposure to liability.

The three main types of scenarios likely to expose trail managers to potential liability are:

- Injuries caused by trail defects;
- Injuries caused by conditions on adjacent property including the active railroad;
- Injuries resulting from conflicts among users or where a trail crosses a road or railroad track.

Special care should be taken to ensure that crossings are properly designed with the correct signage and that any barriers designed to improve safety are well-maintained. (See the AASHTO *Guide for the Design of Bicycle Facilities* listed in the Design Resources section on page 34.)

WORKING WITH RAILROADS

This study shows that while railroad operators are concerned about any proposal that might bring more people into contact with their rail lines, many also are supportive of the concept of rails-with-trails and the benefits trails can bring to the community and the railroad company.

SUPPORTIVE RAILROADS

This study found that in 20 cases (38% of the rails-with-trails analyzed), the railroad company's attitude was described as "supportive," "positive," "good" or (in one case) "great." There are a variety of reasons for railroads to support trails ranging from tangible benefits to the railroad to a desire to be a good corporate citizen and improve community relations.

The following table indicates the benefits that railroads can derive from rails-with-trails. In some examples, railroad managers believe that a trail could be beneficial but no trail has yet been constructed along their lines.

The Chief Operating Officer of the Wheeling and Lake Erie Railroad, Steven Wait, sees several benefits of having trails along operating rail lines, although the company does not yet have a trail along any of its rail lines. "We… see many benefits

Benefits to Railroads		
RAILROAD BENEFIT	RAILROAD	TRAIL EXAMPLE
Rail corridor beautification	Burlington Northern Wheeling and Lake Erie Railroad New England Central Railroad	Cedar Lake Trail (MN) No trail yet Norwottuck Rail-Trail (MA)
Potential for reducing trespassing on tracks	Lake State Railroad Burlington Northern Southern California Regional New England Central Railroad Regional Transit District Norfolk Southern	Railroad Trail (MI) Cedar Lake Trail (MN) Mission City Trail (CA) Norwottuck Rail-Trail (MA) Platte River Multi-Use Trail (CO) Schuylkill River Trail (PA)
Improved community relations	Wheeling and Lake Erie Railroad	No trail yet
Reduced vandalism	Wheeling and Lake Erie Railroad	No trail yet
Reducing motor vehicle access to tracks	New England Central Railroad	Norwottuck Rail-Trail (MA)
Improved railroad maintenance	Burlington Northern and Santa Fe	Cedar Lake Trail (MN)
Legalize existing uses and improve safety	Lake State Railroad	Railway Trail (MI) (snowmobiling)
Sell surplus land	CSX	Zanesville Riverfront Bikepath (OH)
Increased transit ridership	Regional Transit Authority	Folsom Parkway Rail-Trail (CA)

of rails-with-trails within some of the communities we serve, both in economic development and enhancing the beauty of the area. With properly patrolled trails, these areas could see a dramatic decrease in trespassing, vandalism and sabotage."

Lake State Railroad's president, Rich Vanbuskirk, says the Railroad Trail in Michigan "is better than what we had." Previously people were using the rail corridor illegally and without controls. "(The trail) gives snowmobilers a chance to operate safely. The arrangement is working well."

RAILROAD OPPOSITION

Of the 61 rails-with-trails surveyed, only five (8.2%) were initially opposed by railroad companies, the same percentage as in 1996. These were:

- Clarion-Little Toby Creek Trail in Pennsylvania
- Duwamish Trail in Washington
- Schuylkill River Trail in Pennsylvania
- Tony Knowles Coastal Bicycle Trail in Alaska
- Traverse Area Recreation Trail in Michigan

In all cases where the railroad opposed the trail, it was due to concern about safety and/or liability. The table on the following page indicates how the railroad's opposition to the trail was eventually resolved.

In another example, the Rose Canyon Bike Path in California was not opposed, but the Santa Fe Railway prevented the construction of at-grade crossings. The Alaska Railroad has similarly not agreed to at-grade crossings and requires under or overpasses on the Tony Knowles Coastal Bicycle Trail.

While many rails-with-trail projects are operating successfully and many more are planned, this does not mean that the railroad industry has formally endorsed the concept of rails-with-trails.

Many in the railroad industry are not in favor of trails along active railroads. For example, the American Shortline and Regional Rail Association remains opposed to rails-with-trails. Others in the industry are concerned by the current lack of federal or state-endorsed guidelines for selecting and designing rails-with-trails. The principle concern of the railroads is liability.

LIABILITY AND SAFETY

It is not surprising that railroads are so concerned about safety and liability. The rail industry is strongly committed to improving the safety of its operations and to keeping people off railroad tracks. It spends millions of dollars each year on this effort through Operation Lifesaver and other efforts to achieve this goal.

Apart from the obvious desire to preserve life and limb, the rail industry is concerned with the trauma that train accidents can cause to train drivers and other staff, the possibility of vandalism of railroad property which may be expensive to repair or create a threat to safety, and the threat of litigation.

Trails are sometimes seen as attracting additional people and problems to the corridor, directly conflicting with railroad maintenance, operations and safety.

As previously noted, for some railroads, the threat of possible legal action may be enough to deter them from involvement in rails-with-trails. This is especially so in the case of shortline rail companies which are smaller and have fewer financial and legal resources than large Class 1 railroads such as Union Pacific, CSX and Norfolk Southern.

Offering to incorporate the trail into a city, county or state umbrella insurance policy and to indemnify the railroad will go a long way towards alleviating the railroad's liability concerns.

RAILROAD OPERATIONS

Most railroads are private companies with a job to provide a return to shareholders. For many, working with community groups to facilitate trails is a new experience outside their traditional activities.

Working with a railroad involves learning as much as possible about the railroad's operations by trying to see the world from the railroad's point of view. The more that trail advocates understand railroad companies, the easier it will be to develop mutually satisfactory solutions that enhance the railroad's operation and provide an excellent trail.

A construction crew works on the York County Heritage Rail-Trail. Photo: Gwen Loose

FEDERAL RAILS-WITH-TRAILS BEST PRACTICES REPORT

The federal government has launched a "best practices" study of rails-with-trails. The study, expected to be complete in October 2001, is under the control of the Federal Railroad Administration. It also involves the Federal Highway Administration, the Federal Transit Administration and the National Highway Traffic Safety Administration.

The Federal Railroad Administration believes that the best approach for federal involvement with rails-with-trails is to help develop "best practices" guidance, rather than introduce rigid regulations.

The report will cover development, implementation and operational issues for rails-with-trails, examine existing state guidelines for rails-with-trails and discuss the concerns of the railroad industry about rails-with-trails. It is expected to provide guidance for both trail planners and railway operators.

RESOLUTION TO RAILROAD OPPOSITION

TRAIL	HOW RAILWAY OPPOSITION RESOLVED
Clarion-Little Toby Creek Trail (PA)	Not resolved. Considering relocation of trail or rails.
Duwamish Trail (WA)	Project authorized by City of Seattle which owned right-of-way and provided liability insurance.
Schuylkill River Trail (PA)	Railroad accepted designs for extra safety provisions for fencing and crossings.
Tony Knowles Coastal Bicycle Trail (AK)	Railroad accepted designs for extra safety provisions including underpasses.
Traverse Area Recreation Trail (MI)	Michigan DOT had authority over trail right-of-way and liability covered by state road commission.

III. CASE STUDIES

TRAINS WAIT FOR TRAIL USERS ON PENNSYLVANIA'S HERITAGE RAIL-TRAIL COUNTY PARK

On the popular 21-mile Heritage Rail-Trail County Park in south central Pennsylvania, the county of York was in a good position to plan the safe operation of both rail and trail because it owned the corridor.

In 1990 the county took control of the line from the Pennsylvania Department of Transportation (DOT) to develop the historic trail. In 1996, a rail operator approached the county to run a tourist train with meals and entertainment.

According to Gwen Loose of the county's rail-trail authority, the lease granted by the county to the rail company requires trains to stop before they enter the narrow Howard Tunnel where the gap between track and rail drops as low as six feet. The train must wait until the 250-foot tunnel is clear before proceeding.

Other safety features include PennDOT standard highway reflectors on the tunnel's dark walls every three feet (there is no extra lighting) and a pressure-treated, three-inch high wooden strip at the trail's edge to prevent large ballast stones straying onto the gravel trail and upending cyclists or twisting ankles. The Howard Tunnel, dating from 1835, is the oldest continuously operating railroad tunnel in United States.

The lease also requires the train operator to remove worn ties on the far side of the track to keep ballast stones off the trail. The company runs up to two trains per day.

Photo by Karen-Lee Ryan

The Heritage Rail-Trail County Park's rail crossings are designed to help cyclists cross perpendicular to the tracks, Ms. Loose said. The crossings have an asphalt surface for extra grip and the signage is the same as for a highway. To further reduce the county's liability, there are signs directing cyclists to dismount at each crossing.

The trail uses eight-foot high fences on its historic bridges to prevent even equestrians falling onto the tracks. In other places there is no barrier between track and trail and a gap of about 10 feet.

Ms. Loose said that the county and its insurer spent a lot of time reviewing the trail's safety performance. "The County of York has a safety inspector who ensures that we follow the advice of our insurance carrier," she said. "The carrier was not difficult to deal with but they wanted to check each track crossing and anywhere the clearance (between rail and trail) was close."

The county recently completed a full inventory of all the trail's physical characteristics including signage. To date there have been no reported problems between trail users and the train.

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EXPANDING CEDAR LAKE TRAIL'S SUCCESS IN MINNEAPOLIS

The success of Minneapolis's Cedar Lake Trail, which connects the western suburbs to downtown, has laid the foundation for a significant expansion of the Minneapolis bicycle system.

The 3.6-mile Cedar Lake Trail runs along a mainline track of the Burlington Northern and Santa Fe Railroad (BNSF) carrying 10 to 12 trains per day at speeds of up to 60 mph. The trail, which offers classic Minnesota lake scenery and reclaimed industrial land, has become the trunk from which branches and extensions are snaking out providing trail connections to more and more twin city residents.

According to City Transportation Engineer Jon Wertjes, at least one-third of the 750 cyclists on the trail each weekday are commuters with significant peaks in the mornings and evenings. Other users are drawn by the chance to experience the Cedar Lake Park's birdlife and nature within sight of the city skyline.

The latest extension will assist University of Minnesota students traveling to an alternate campus in St. Paul and to the city center.

The city is currently negotiating with the railroad over the design of the extension. In places, the existing trail sits as close as 15 feet to the BNSF tracks but the railroad now requires a minimum setback of 25 feet along with fencing on new trails, according to Mr. Wertjes. The railroad is also charging more to lease trail land.

Mr. Wertjes describes the railroad's attitude as open-minded. "They are willing to sit down and talk with us." From the railway's perspective, the trail has helped beautify a once "very industrial" corridor. Debris has been cleared away and wildflowers and native grasses planted.

The city is hoping to reduce the 25-foot setbacks where the trail would sit behind a retaining wall. Inside the 25-foot limit, the city is required to accept additional liability for trail users. Once the trail reaches about 50-foot separation from the railroad, fences are no longer required.

The Cedar Lake Trail has one at-grade railway crossing which was inactive when the trail was built. It has since become active, requiring minor modifications to improve sight lines. There have been no problems reported at this crossing, which is of rubberized concrete with a 90-degree angle.

One of the overlying aims of the Minneapolis bicycle system is obtaining a dual benefit from transport corridors. Mr. Wertjes says that many local rail corridors have been bought by the regional rail authority with a view to trains or light rail being reintroduced possibly with more trails adjacent.

One of the most difficult challenges in creating the trail has been coordinating the different groups that all have a stake in the trail and the land on which it lies. These groups include the City, the Parks Board, a local citizens group called the Cedar Lake Park Association and BNSF's engineering and property management divisions.

In 1995, the trail won an Environmental Excellence award from the Federal Highway Administration. The citation noted that the Cedar Lake Park Association raised one-third (about $500,000) of the money needed to buy the trail corridor.

Photo courtesy of Chris Gregerson

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612.673.2614

FOLSOM PARK TRAIL WILL BRING RIDERS TO TRANSIT STATION

Efficient use of space is "definitely one of the main goals" of the Folsom Parkway Rail-Trail, according to Jim Konopka, trail development coordinator for the City of Folsom, California. "We have the road, the train and the trail all working together in the same corridor."

The five-mile Folsom Park Rail-Trail, which is currently under construction, will run along the Sacramento commuter light rail line and feed transit riders to the stations. "From day one (the transit authority) was open to the idea," he said.

The right-of-way is owned by the Joint Powers Authority, which is made up of several agencies including the cities of Folsom and Sacramento and the regional transit authority.

Although as many as six trains per hour will be running up to 50 mph during peak hours, the transit authority has not required the use of fences, even though in places the trail goes within 10 feet of the track. In most places the separation is much greater and augmented by a screen of mature oak trees.

A one-mile section already constructed is popular with lunchtime joggers from businesses bordering the trail. Business owners also see the benefit of staff being able to commute to work by bike, said Mr. Konopka. Funding has come from the federal Transportation Enhancements program.

Addressing the issue of liability has been made easier because the land is owned and operated by government agencies. Folsom plans another rail-with-trail along a scenic branch line 30 miles to the City of Placerville. The train would be a weekend-only tourist operation.

The biggest problem encountered in developing the trail was providing a safe, convenient alignment through and around the light rail stations, according to Mr. Konopka. The final design involved moving a parking lot back and running the uninterrupted trail adjacent to the light rail station. "The trail alignment worked out great because it was kept separate from the parking lot but still provided direct access to the bike parking at the light rail station," he said.

Another design issue was in a section of the right-of-way that was only 3 to 5 feet, much narrower than the required minimum trail to train distance. The trail had to be raised 2 to 3 feet above the track with a retaining wall and provide a metal fence along the retaining wall.

For more information, contact:

Jim Konopka
Trail Development Coordinator
City of Folsom
50 Natoma Street
Folsom, CA 95630
916.351.3516

BOSTON'S SOUTHWEST CORRIDOR PARK PUTS TRAIL HIGH ABOVE RAIL

Not many rail-trails have a construction budget of $750 million, which puts the design of Boston's Southwest Corridor Park trail somewhat out of reach for many planners.

The 4.7-mile trail attracts about 1.5 million users annually. It traverses this inner city park 30 to 50 feet above the massive concrete corridor where Amtrak's Acela trains zip past at 150 miles per hour on their way to New York.

In the 1960s, local residents opposed the planned construction of a major highway in place of the train line, which was then at ground level, according to Allan Morris, Superintendent of Southwest Corridor. Instead, the state of

Photo by Gabriel Ben-Yosef

Massachusetts developed an inner city green-space called the Southwest Corridor Park with three train systems running below.

The high cost was the result of digging, lining and partially roofing the rail trench as well as constructing several new train stations in the park. The park and trail development cost $27 million. The corridor also carries Massachusetts Bay Transit Authority trains and a commuter train heading to the beltway surrounding Boston.

Cement and chain link fences ensure that there is "no way anyone could access the tracks," said Mr. Morris. In some places the parkland decking provides excellent vantage points to view trains." Virtually every day you'll see young children waiting for and watching the trains," Mr. Morris said. The park was recently pictured on the front cover of *Recreating the American City*, by Neal Peirce.

Volunteers are a key part of maintaining this park. More than 2,000 people volunteered on the corridor park just last year, Mr. Morris said. Volunteer tasks include everything from landscape maintenance and court surface painting to trail maintenance. A local cycling group has helped sweep and pave the trail.

For more information, contact:

Allan Morris
Superintendent of Southwest Corridor
38 New Health Street
Jamaica Plain, MA 02130
617.727.0057

Anchorage Coastal Trail Shares Insurance with Railroad

When a youth was injured in 1998 after crossing the Tony Knowles Coastal Bicycle Trail to "hop" a slow-moving Alaska Railroad train, the municipality of Anchorage found itself first in line in the event of a liability settlement.

Even though the injured man was not using the trail, except to cross from a residential area to the train line, the arrangement negotiated by the Municipality of Anchorage meant that it had accepted much of the burden of liability

Photo by Jack Mosby

that might otherwise have fallen to the railroad.

As a result of the accident, the municipality has changed its procedures for monitoring and maintaining trail fences.

According to the municipality's Rachel Sunnell, the Tony Knowles Coastal Bicycle Trail is named for the former mayor of Anchorage and current Governor of Alaska who is an enthusiastic trail advocate. It runs 13 miles south along the Cook Inlet from downtown Anchorage offering superb views of Denali and the chance to see a breaching beluga whale.

"It's a year-round trail. In summer we have everyone from joggers to grandmothers watching birds to children learning to ride bikes," Ms. Sunnell said. "And it can get hectic. In some places we have more than 1,000 people on the trail every day."

The trail has three tunnels under the rail tracks with another to be added when a new four-mile connector trail is built inland along Ship Creek. The new tunnel was preferred by the railroad to an at-grade crossing.

Although it took two years to work through the safety concerns for the new trail, Ms. Sunnell said the visionary approach of senior railroad officers and their positive attitude toward the trail was crucial in getting the final permits signed.

For more information, contact:

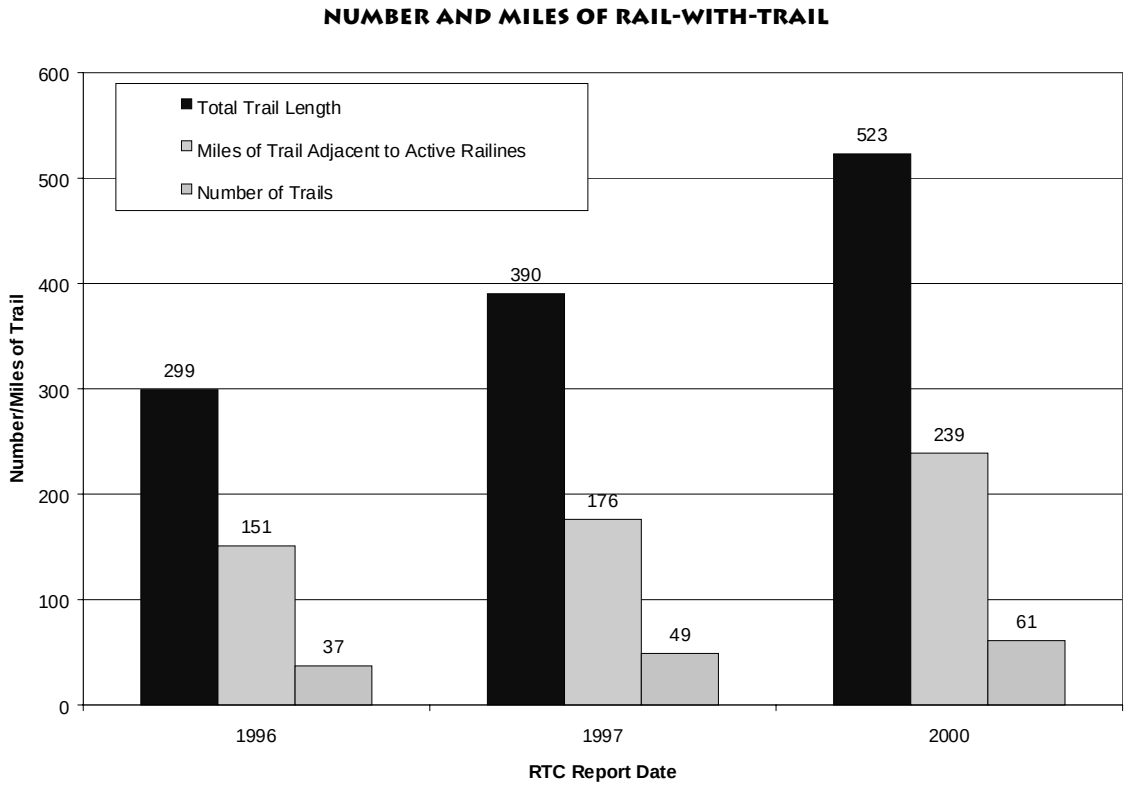
Dave Gardner
Municipality of Anchorage
Department of Culture and Recreation
/ Parks and Beautification Division
P.O. Box 196650
Anchorage, AK 99519-6650
907.343.4474

IV. SURVEY RESULTS IN DETAIL

This section contains the full results of the survey sent to 61 trail managers in November 1999. The results are compared with results of the Rails-to-Trails Conservancy's March 1996 survey. (Note: The 1996 report was updated in September 1997 with some additional information on 12 new trails.)

This report follows a similar methodology to that used in the original 1996 Rails-with-Trails report. In the fall of 1999, trail managers of 61 existing rails-with-trails were telephoned by a member of the Rails-to-Trails Conservancy staff. The manager was asked a series of questions about the operation of their trail. Individual responses are listed in the appendix.

OVERALL STATISTICS



Number of states with rails-with-trails in 1996—16; in 2000—20

TRAIL SITES

QUESTION 1

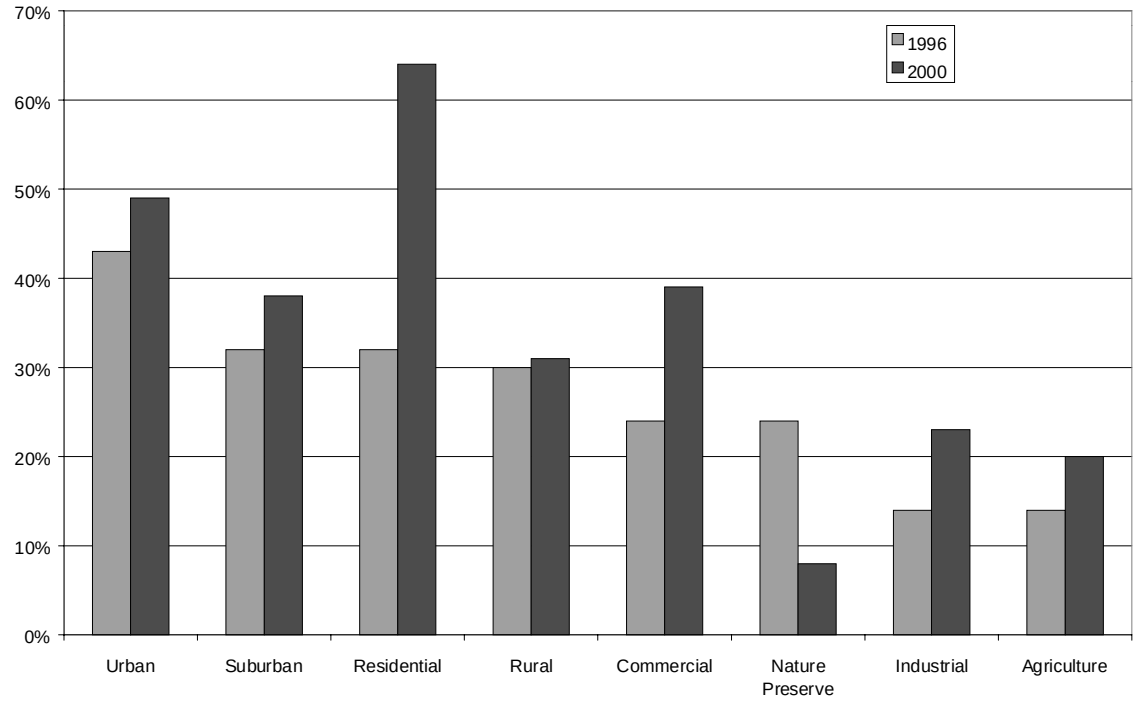
What is the length of the trails?

Longest: 57 miles (Railroad Trail, MI)
Shortest: 0.2 miles (Watts Towers Crescent Greenway, CA)
Average: 8.6 miles (1996 average: 8.1 miles)

QUESTION 2

What type of terrain does the trail pass through?

PERCENT OF RAILS-WITH-TRAILS BY TERRAIN TYPE



QUESTION 3

For how many miles does the trail run along an active rail corridor?

	2000	1996
Average	3.8 miles	4.1 miles
Range	0.2–27 miles	0.2–22 miles

	No. in 2000	% in 2000	% in 1996
Adjacent 50% or more of their length	39	64%	70%
Adjacent less than 50% of their length	22	36%	30%

QUESTION 4

How wide is the full rail-with-trail corridor?

Distance (ft.)	No. of Trails
0 – 30	6
31 – 60	12
61 – 100	15
101 – 150	4
151 – 200	8
Greater than 200	3
Unknown	13
Total	61

QUESTION 5

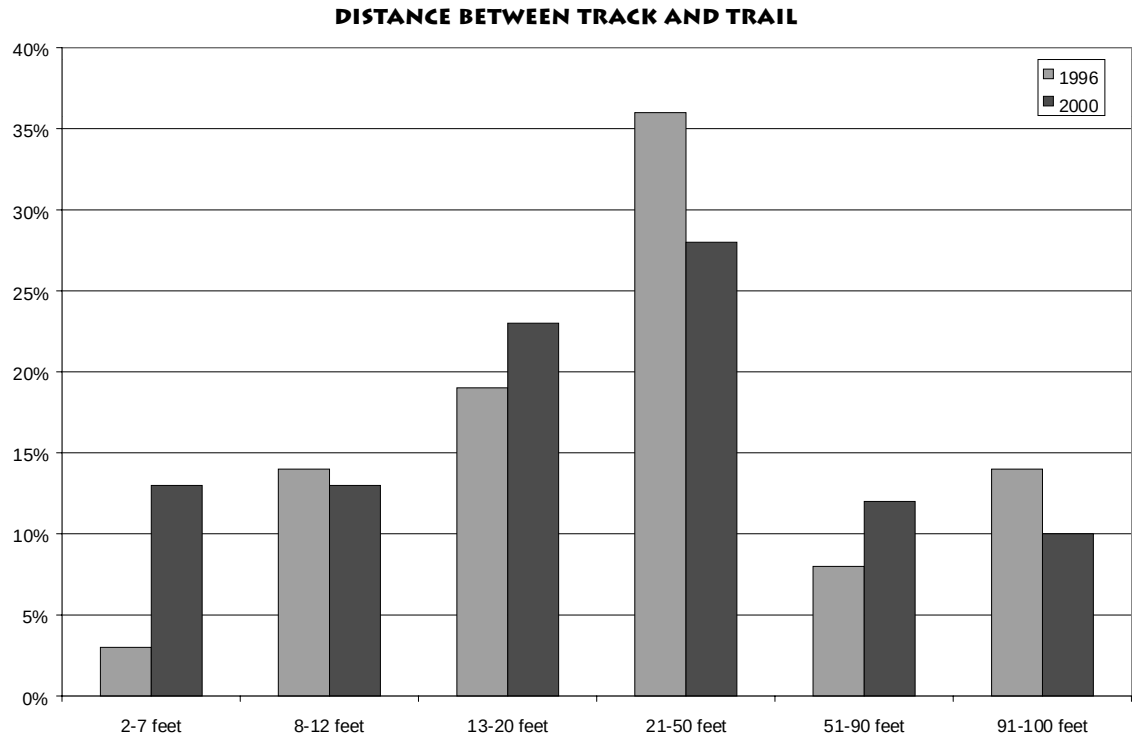
How wide is the trail?

	2000	1996
Average	10 ft	11 ft
Range	4–20 ft	4–20 ft

QUESTION 6

What is the distance between the active track and trail? (Measurement from the centerline to the nearest edge of the trail.)

	2000	1996
Average	33 ft	55 ft



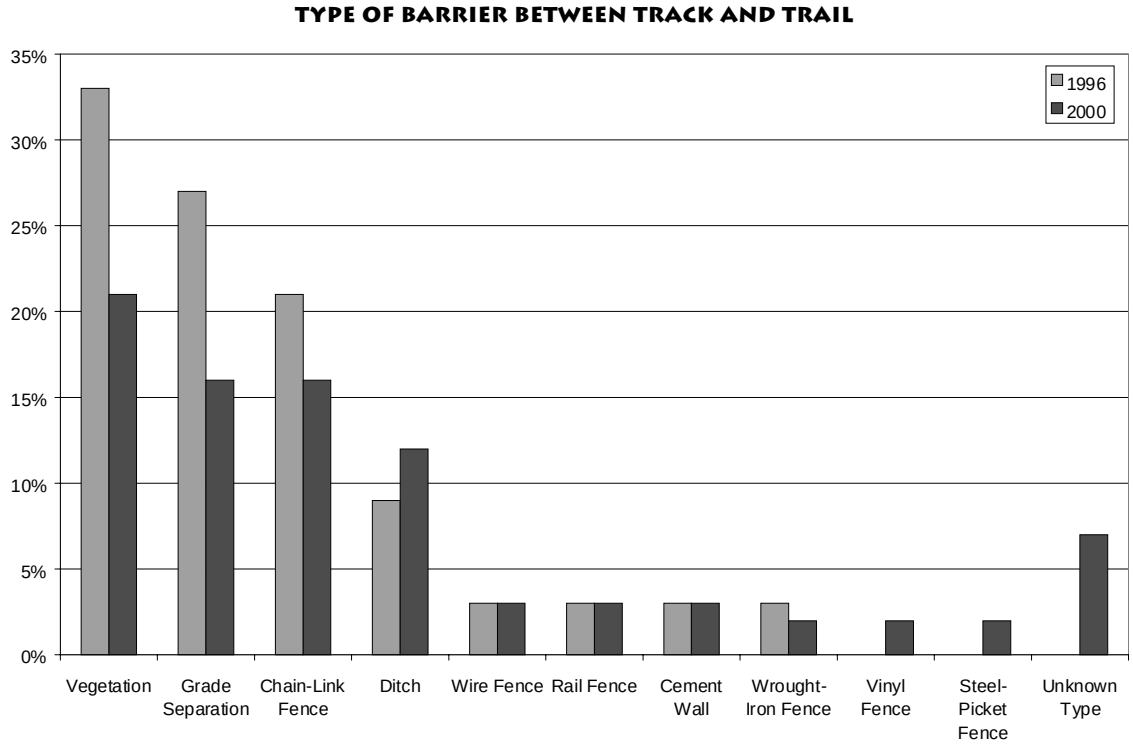
QUESTION 7

Is there a barrier separating the tracks and trail?

	No. in 2000	% in 2000	% in 1996
Yes	43	71%	70%
No	17	28%	30%
Unknown	—	1%	2%

Note: "Yes" does not necessarily mean a full barrier. It includes some partial barriers and one instance where a barrier is planned to be removed.

Of the 43 trails with barriers separating the tracks and trail, the following types of barriers were used:



Note: Many trail managers identified more than one type of barrier.

QUESTION 8

Does the trail cross the tracks?

	No. in 2000	% in 2000	% in 1996
Yes	33	54%	49%
No	25	41%	51%
N/A	3	5%	—

Average number of crossings: 2.9 (1996: 2.1)
Range of number of crossings: 0–17 (1996: 0–5)

All crossings were at-grade except for:

- The Bugline Trail in Wisconsin and the Southwest Corridor Park Trail in Massachusetts have overpasses.

- The Illinois Prairie Path has some above grade (bridges) over the main rail line with at-grade crossings at the spur lines.
- Rock River Recreation Path, Illinois, has one bridge.
- Tony Knowles Coastal Bicycle Trail, Alaska, has tunnels under rail tracks.

Note: The average number of crossings in 2000 is higher than that in 1996 largely because the Southwest Corridor Park Trail, Massachusetts, has 17 overpass crossings. These crossings are separated from the track by a fence and a 30-50 ft. rail trench.

Warning signs: 66% (1996: 62%) of trails with at-grade crossings have warning signs for trail users.

RAIL OPERATION

QUESTION 9

What railroad or agency owns the adjacent active rail corridor?

	No. in 2000	% in 2000
Private	29	48%
Public	30	49%
Unknown	2	3%

(Public includes: Public transit agency/authority, DOT, parks commission)

QUESTION 10

What was the railroad's attitude to the trail?

	No. in 2000	% in 2000
Opposed	5	8%
Supportive	20	33%
Neither opposed nor supportive	36	59%

In 20 trail cases (33%), the railroad's attitude was described as supportive, positive, good or (in one case) great. There are a variety of reasons for railroads to support trails ranging from benefits to the railroad to a desire to be a good corporate citizen and improve community relations.

Five trails (8%) were initially opposed by railroad companies. The reasons cited for their opposition were:

- Concern about liability at a narrow section of trail—Clarion-Little Toby Creek Trail in Pennsylvania.
- Concern about liability—Duwamish Trail in Washington.
- General concern—Schuylkill River Trail in Pennsylvania.
- Concern about liability at crossings—Tony Knowles Coastal Bicycle Trail in Alaska.
- Concern about liability—Traverse Area Recreation Trail in Michigan.

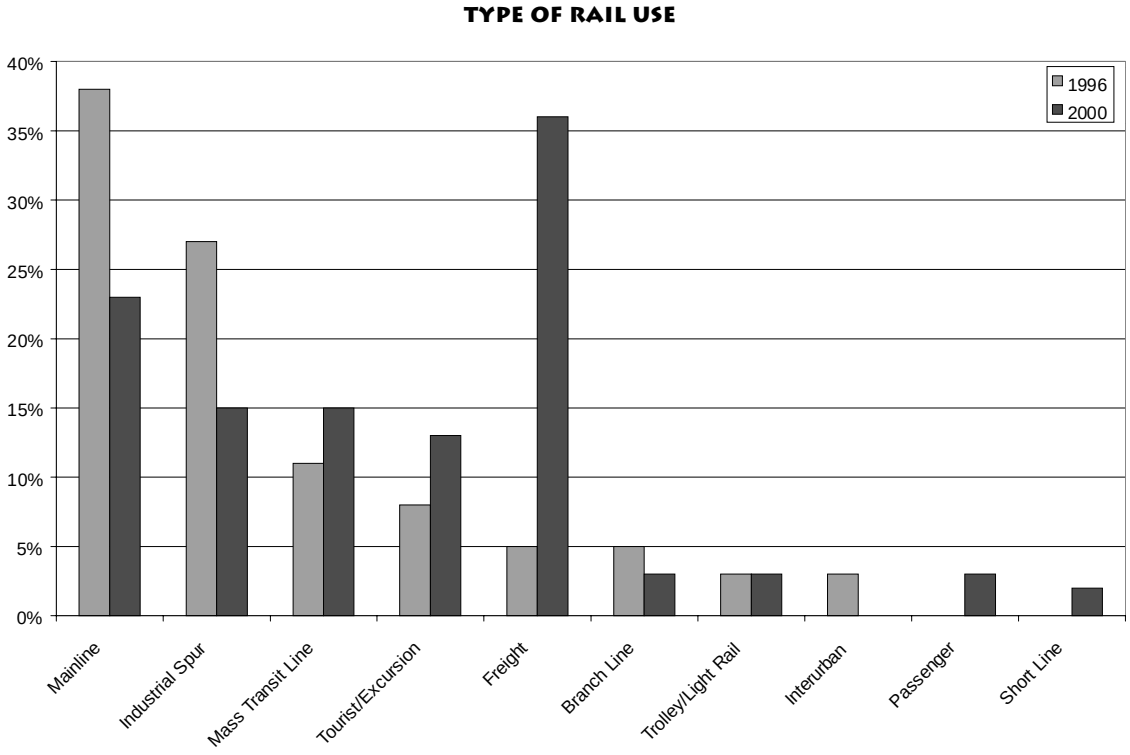
Two situations were resolved when either the state DOT (Michigan in the case of the Traverse Area Recreation Trail) or the city government approved the trail design. In one case (Clarion-Little Toby Creek Trail), the trail or rail may be moved. The Schuylkill River Trail was approved after Norfolk Southern approved safety designs for crossings and fencing. The Tony Knowles Coastal Bicycle Trail was approved after the local department of parks and recreation added extra safety precautions to trail design.

QUESTION 11

What type of rail line does the trail run alongside?

	No. in 2000	% in 2000
Class 1	31	51%
Short line	16	26%
Public	7	12%

Trail managers identified the rail lines by a variety of names. These are shown below. Several trail managers identified more than one type of rail line.



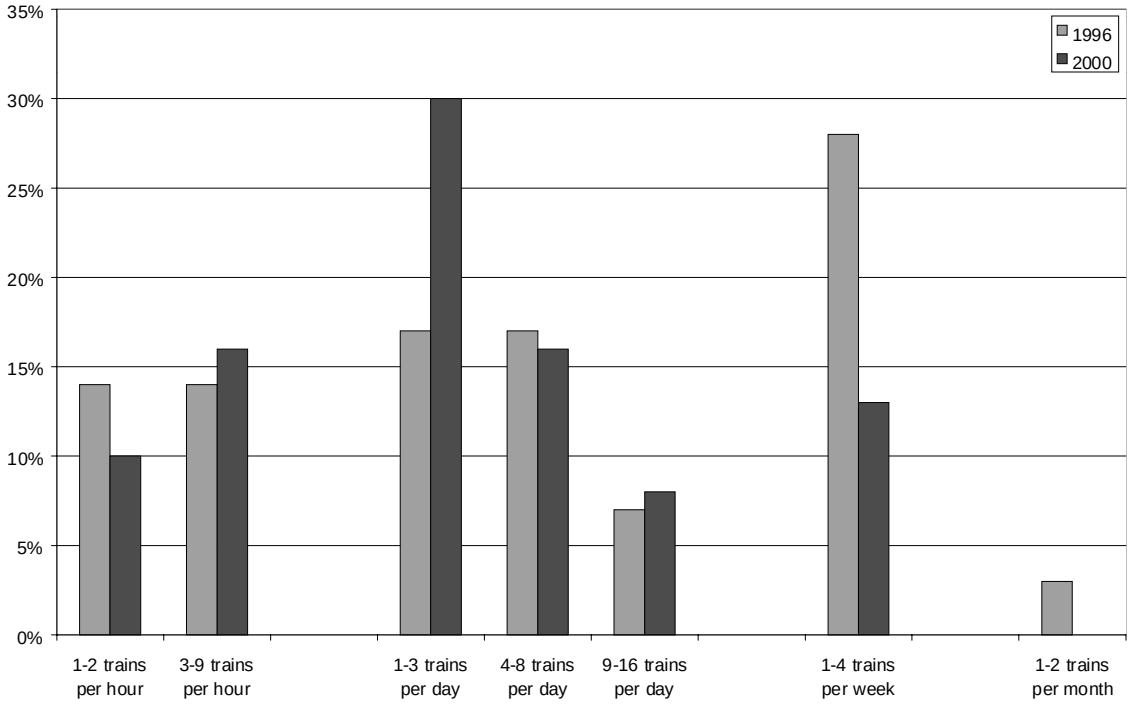
QUESTION 12

Approximately how frequently do trains run on the adjacent tracks?

	No. in 2000	% in 2000	% in 1996
3–9 trains per hour	10	16%	14%
1–2 trains per hour	6	10%	14%
9–16 trains per day	5	8%	6%
4–8 trains per day	10	16%	17%
1–3 trains per day	18	30%	17%
1–4 trains per week	8	13%	28%
1–2 trains per month	0	0%	3%
Out of service	0	0%	3%
Unknown	4	7%	3%

(Where a range of frequencies were given, the most frequent service has been taken.)

TRAIN FREQUENCY



QUESTION 13

Do peak hours of rail use correspond with peak hours of trail use?

	No. in 2000	% in 2000	% in 1996
Yes	18	29%	23%
No	25	43%	55%
Occasionally	12	20%	23%
N/A	5	8%	16%

QUESTION 14

What is the approximate maximum train speed?

	2000	1996
Average maximum train speed	32 mph	32 mph
Range of train speeds	5–150 mph	5–90 mph

TRAIL USE

QUESTION 15

What is the approximate number of trail users annually?

	2000	1996
Average	240,409	250,679
Range	16,000–1,500,000	18,000–1,500,000
Total number of user days	8,173,903	9,200,000

Of the 61 trails, 35 were able to answer questions about use. It is not unusual for new trails to record lower use statistics than established trails because it takes time for the community to become aware of new trails.

LIABILITY

QUESTION 16

Is the trail insured against liability?

	No. in 2000	% in 2000
Yes	60	98%
No	1	2%

Who insures the trail?

	% in 2000	% in 1996
Government agency	58%	95%
Private insurance	2%	3%
No insurance	1%	2%

QUESTION 17

Is the trail manager required to indemnify the rail carrier against liability?

	No. in 2000	% in 2000	% in 1996
Yes	16	26%	16%
No	33	54%	84%
N/A	12	20%	—

QUESTION 18

Was insurance difficult to acquire?

	No. in 2000	% in 2000	% in 1996
No	42	69%	100%
N/A	19	31%	0%

ACCIDENTS

QUESTION 19

Have any train-related accidents occurred on the trail? (This question includes only those accidents caused by the path being adjacent to an active rail line, such as direct trail user-train collisions or accidents caused by debris left on the path by the railroad.)

	No. in 2000	No. in 1996
Yes	1	1
No	60	37

(Note: this is the same accident.)

The single accident recorded in these figures is the same one on both occasions. This occurred at an at-grade road crossing on the Illinois Prairie Path when a bicyclist ignored warning bells and flashing lights and rode around a lowered crossing gate and was injured in a collision with the train. (Technically, this incident did not occur on the trail corridor but at an adjacent, pre-existing road/rail crossing.)

The study also revealed one other accident that occurred on or adjacent to trails but did not involve "trail users." This was adjacent to the Tony Knowles Coastal Trail in Anchorage Alaska when a young person was injured after crossing the trail from a residential area to "hop" a slow-moving Alaska Railroad train.

QUESTION 20

Have any train-related accident claims been filed against your agency since the trail opened for use?

	No. in 2000	% in 2000	No. in 1996	% in 1996
Yes	3	5%	1	3%
No	58	95%	36	97%

The three trails which had claims made against them (5% of all surveyed trails) were:

- the Tony Knowles Coastal Trail in Alaska,
- the La Crosse River State Trail in Wisconsin, and
- the Bugline Trail in Wisconsin.

In the case of the La Crosse River State Trail, Wisconsin, a farmer's animal broke through a fence, straying onto the track and was killed by a train. A settlement was made to cover the cost of the animal. This was the claim listed in the RTC 1996 report.

In the case of the Tony Knowles Coastal Trail, the trail manager settled the case. This included a settlement to the injured man. Even though the injured man was not using the trail, except to cross from a residential area to the train line, the insurance arrangement negotiated by the Municipality of Anchorage meant that it had accepted much of the burden of liability that might otherwise have fallen to the railroad. The accident triggered some insurance changes. Under the new structure, liability will depend on who is at fault, the municipality or the railroad. The railroad has increased its insurance coverage and the municipality is helping to pay the increased premiums. Also, the municipality has changed its procedures for monitoring and maintaining trail fences.

The case of the Bugline Trail in Wisconsin involved the alcohol-related death of the occupant of a car driven onto what later became the Bugline Trail in Wisconsin. The car drove off the side of a trestle bridge onto another train line below and was hit by a train. No settlement was made by the trail manager.

QUESTION 21

Are you aware of any claims being filed against the railroad?

	No. in 2000	No. in 1996
Yes	0	0
No	61	37

TRAIL MAINTENANCE

QUESTION 22

Who is primarily responsible for trail maintenance?

	No. in 2000	% in 2000	% in 1996
City or town	38	62%	65%
County	11	18%	22%
State	4	7%	8%
Federal government	1	2%	—
Friends of the trail group	4	7%	16%
University	—	—	3%
Private	3	5%	—
No response	2	3%	—

Some trail managers identified more than one group responsible for maintenance.

QUESTION 23

How much is spent on maintenance annually?

	2000	1996
Average	$16,913	$33,557
Range	$100–100,000	$100–200,000
Cost per mile	$2,641	$4,142

Note: These figures are based on 22 responses out of 61 trails. It is difficult to compare maintenance costs between trails. Some maintenance amounts may include items of general park maintenance or other items not directly related to the trail and its operation.

QUESTION 24

Does the railroad help maintain the corridor?

	No. in 2000	% in 2000	% in 1996
Yes	4	7%	8%
No	55	90%	92%
Unknown	2	3%	—

QUESTION 25

Does railroad maintenance infringe upon the trail corridor?

	No. in 2000	% in 2000	% in 1996
Yes	8	13%	22%
No	51	84%	78%
Unknown	2	3%	—

CORRIDOR ACQUISITION

QUESTION 26

Does your agency own the rail corridor?

	No. in 2000	% in 2000	% in 1996
Yes	29	48%	47%
Partial	4	7%	11%
No	27	44%	42%
N/A	1	2%	—

Note: Partial ownership means the trail manager owns part of the trail and received an easement or unofficial permission for the remainder.

QUESTION 27

If your agency does own the corridor, how much did you pay for it?

	No. in 2000	% in 2000	% in 1996
$0	6	18%	16%
$1,000–$7million (average: $801,684)	12	36%	19%
Unknown	15	45%	65%

Between 1996 and 2000, there was an increase in the number of trails paying for part of their trail corridors. There was also a drop in the number of trail managers who reported not knowing how much was paid for their trail land. This may represent a growing understanding by railroad companies that the land is valuable.

QUESTION 28

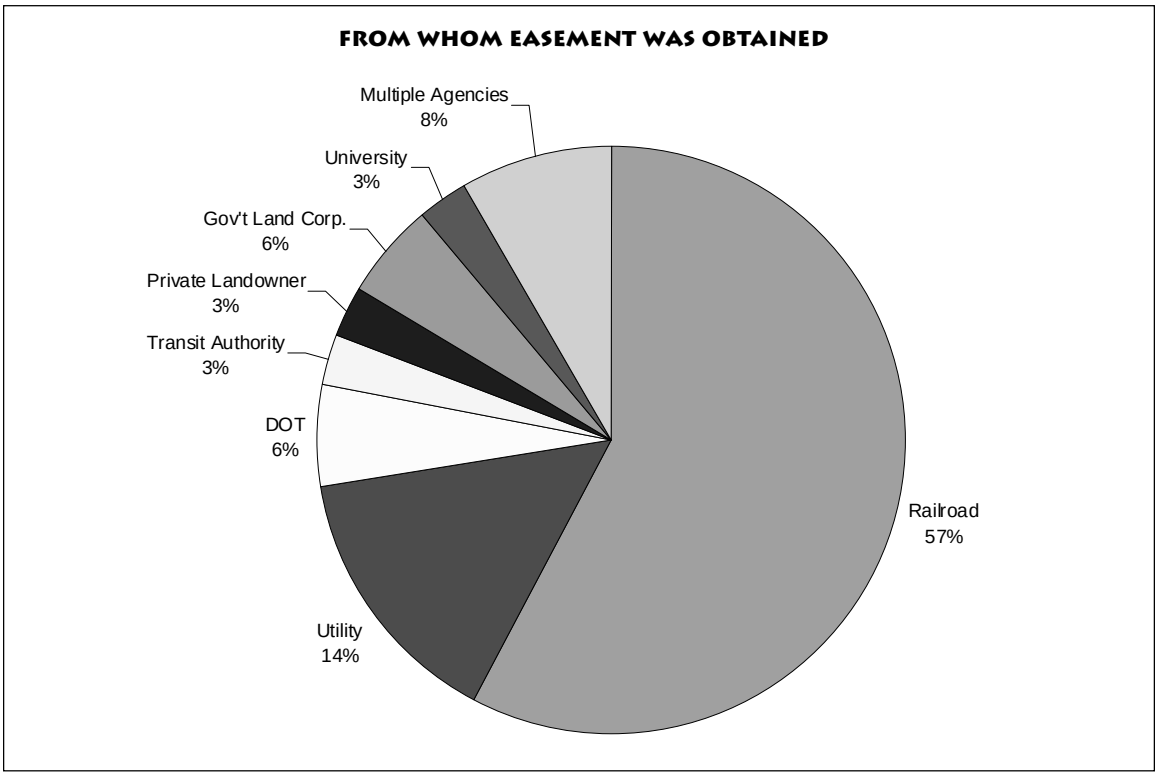
Did you obtain an easement?

Of those not claiming full ownership of their trails:

	No. in 2000	% in 2000
Yes	25	81%
N/A	2	7%
No	3	10%
License	1	3%
Total	31	—

QUESTION 29

From whom was your easement obtained?



Note: Some trail managers indicated they obtained easements from several agencies but did not identify them. This question was not asked in 1996.

QUESTION 30

How was your trail funded?

	No. in 2000	% in 2000	% in 1996
State funds	26	43%	51%
Private funds	22	36%	35%
Federal funds	25	41%	22%
City funds	26	43%	19%
County funds	12	20%	19%

Note: Most trail managers indicated more than one source of funds. For specific funding sources, see the survey responses at the end of the study.

The main shift appears to be that both federal and city funding have risen since the 1996 survey, while state funding has fallen. This may be because trail developers have become more adept at attracting federal funding, such as TEA-21 funds. Trail developers also appear to be good at attracting funds from several sources to complete their trails.

NUMBERS OF RAILS-WITH-TRAILS IN EACH STATE

RAILS-WITH-TRAILS OVERSEAS

For example:

- In Melbourne, Australia, the popular Port Melbourne Light Rail trail connects the city's downtown to the inner suburb of Port Melbourne about 3 miles away. The trail crosses trolley tracks (known locally as trams) on several occasions and includes at-grade and above-grade road crossings.
- The Bellarine Rail-Trail runs from the outskirts of Geelong, the second largest city in the state of Victoria and about 50 miles from Melbourne, to the seaside town of Queenscliff. For much of its 20 miles, it runs along the Bellarine Tourist Railway.

V. KEYS TO A SUCCESSFUL PROJECT

WORKING WITH RAILROAD COMPANIES

This section covers advice for trail advocates on how to work positively and cooperatively with railroads to develop mutually satisfactory rail-with-trail projects.

RESEARCH THE CORRIDOR

The specifics of the trail corridor should be recorded before you start your rail-with-trail project. Details to research include:

- Corridor width,
- Ownership,
- Type of terrain,
- Potential environmental hazards,
- An inventory of all bridges, roads and tunnels,
- Connections to other community resources, historic structures, and
- Compatibility with the local bicycle and pedestrian plan.

RESEARCH THE ADJACENT RAIL LINE

Before you approach the railroad, know who they are and what types of service they provide. You should know what agency or company owns the corridor and which railroad(s) runs trains on the tracks. Find out whether the line runs freight service or mainline passenger service or serves as a mass transit line or an industrial spur. It is useful to know how often trains run on the adjacent tracks, and their average speed.

RESEARCH THE RAILROAD COMPANY

The more you know about the railroad, the easier your negotiations will be. Railroad officials are much more likely to respond positively to someone who has made an effort to understand their business and the terminology they use. Find out about the railroad's relationships with your community and with other communities. Who owns the railroad? Who are its key staff? What is its recent financial performance? Have there been any recent announcements, news or future plans related to it? Is it a local, regional or Class 1 railroad? Also find out about the history of the company and the history of the particular corridor in which you are interested.

UNDERSTAND THE RAILROAD'S PERSPECTIVE

A railroad is a business and its bottom line is to make money. While you may not be able to help them financially, railroads do respond to good public relations opportunities, especially if the surrounding community has rallied around the trail. It is important to have the support of the corridors' adjacent and nearby landowners because the railroad does not want to alienate the community it serves.

LIABILITY AND SAFETY ISSUES ARE A MAJOR CONCERN FOR RAILROADS

Each year railroads invest millions of dollars into their "operation lifesaver" programs. These programs are designed to educate the public about railroad safety issues. Railroads take safety and liability issues seriously and you should too. Make sure the design of your trail incorporates safety precautions as a top priority. Offer to alleviate their liability concerns by incorporating the trail into the city, county or state umbrella insurance policy. Proper treatment of liability issues will reduce financial risks to the railroad.

SHARE YOUR IDEAS WITH OTHER RAIL-WITH-TRAIL ADVOCATES

Check the appendix and find a rail-with-trail that shares similar characteristics to your project. Contact the appropriate trail manager listed. He or she might have insights and ideas about working with an adjacent railroad as well as tips on trail design.

DO NOT TRESPASS!

Make sure you have permission from the railroad before you enter the property to assess the corridor. A guaranteed method to alienate the railroad and to invite opposition to your project is to trespass.

YOUR APPROACH TO THE RAILROAD SHOULD BE COORDINATED

Make sure you have one person appointed as the primary point of contact for the railroad's representative. Separate approaches by a number of different individuals can give your trail group a disjointed appearance.

RAILROADS ARE DIVERSE ORGANIZATIONS

Within any one railroad company will be a variety of viewpoints, often depending on each person's role in the company and their experiences. For example, engineering or operations staff — who are responsible for keeping tracks safe and trains running on time — may have a different view from community relations or strategic planning staff. Regional or local staff may have a different view from the head office. Don't give up if your approach is knocked back the first time.

WHAT CAN YOU OFFER THE RAILROAD?

Find out if the railroad has any specific problems or issues that it would like to resolve. Examples include reducing vandalism or trespassing, beautifying industrial areas or improving its community image.

Incentives for railroads to consider rail-with-trail projects include:

- Designing the trail to allow for future expansion of the railroad's activities.
- Guaranteeing the railroad that the number of trespassers will not increase as a result of the trail and specifying a schedule of actions to ensure this happens.
- Guaranteeing the railroad total and unimpeded access to maintain their tracks, including undertakings to close the trail if necessary for specific maintenance activities.
- Considering land swaps or zoning changes that assist the railroad.
- Improving existing at-grade crossings, possibly through co-sponsoring applications for funding grade separation of crossings.

TRAIL DESIGN / SAFETY

Designing and operating a safe trail is probably the most important aim of a trail manager. A trail that is as safe as possible will also reduce the trail manager's exposure to liability and that of the railroad and nearby landowners.

The federal government's "best practices" study of rails-with-trails, planned for completion in September 2001, will assist trail managers in designing safe rails-with-trails. In the meantime, a variety of information is available to help design safe rails-with-trails. Much of the following advice comes from the results of the RTC study and a 1999 draft report by the ITE (Institute of Transportation Engineers) Technical Committee on Rails-with-Trails.

USE OF FENCES

The RTC report found that 71% of rails-with-trails used a barrier to separate the tracks and the trail. The types of barriers used include vegetation, grade separation, cement walls, ditches and fences made of chain link, wire, rail, wrought iron, vinyl or steel pickets.

The main arguments against providing fencing on a trail are:

- high installation and maintenance cost,
- visual impact,
- the lack of effectiveness of any but the most expensive types of fences, and
- environmental impact.

The main arguments in favor of fencing are that fences are the best available tool for keeping trail users away from the tracks or adjacent properties. While there is no empirical data that proves the effectiveness of fencing, it is logical to assume that a well-constructed and well-maintained fence will have a channeling effect.

The ITE draft report states that "there is no logical reason to require an expensive 6-foot fence along the entire length of a proposed rail-with-trail, especially where there has been no history of trespassing in the area." With or without the new trail, people will still have unimpeded access to the railroad tracks from legal crossings and from adjacent properties. The report suggests that it would be more effective to post "no trespassing" signs along the corridor along with heavy fines such as $500 for the first offense. People who are determined to walk on the tracks will not be dissuaded by a fence.

The ITE draft report suggests a rule of thumb is to use a fence when it is needed to channel trail users toward legal crossings. This would include at least 200 feet from each legal crossing (to prevent trail users from taking short cuts across the tracks). To make the channeling effective, there must be a legal crossing within a reasonable distance — about 500 feet — or the fence will likely be vandalized.

Fences or other barriers have also been used where a trail runs particularly close to a rail line. The minimum distance would depend on the speed and frequency of the trains.

The effectiveness of different fences at discouraging climbers or vandalism varies widely. In areas with historically high numbers of trespassers, more durable, higher, and more expensive fencing might be used. Where there has been no history of trespassing, a lower fence can be used. No matter what type of fence is used, make sure it is set back from the trail an adequate distance. This is particularly true for vegetative fences which may be dense enough to provide hiding places.

CROSSINGS

There are two types of crossings that trail designers must address: road and rail crossings.

ROAD CROSSINGS — A methodology for designing road crossings has been developed for California's Coastal Rail-Trail (starting in San Diego). It creates four distinct crossing types based primarily on average daily traffic volumes and traffic speed. The methodology is available from Alta Consulting. (See Rails-with-Trails Resources on page 34).

RAIL CROSSINGS — Rail crossings are potentially more problematic. Railways are very keen to avoid building new at-grade crossings. For example, the California Public Utilities Commission has a policy of no new at-grade crossings. Exceptions are granted on a case-by-case basis and usually only for branch, but not main, lines. One suggestion is to close a seldom-used existing crossing in exchange for a new trail crossing. Another suggestion is to inventory the illegal movement of people across rail lines and design specific crossing improvements and fencing to address it. Also, the trail will attract users from the surrounding areas. Access routes to the trail should be planned to eliminate additional illegal crossing in the future and be channelled to existing crossings.

Where a trail crosses a road or a rail line, the option of going over or under the road or trail is a possibility, albeit an expensive one. If an underpass is erected for the trail, be sure to include plenty of lighting.

The AASHTO *Guide for the Development of Bicycle Facilities* includes specific advice on designing rail-trail crossings.

SETBACKS

There is no empirical data that correlates setbacks (distance of trails from the centerline of adjacent tracks) and safety. This study found an average setback of 33 feet for all rails-with-trails. The ITE draft report concluded that the average setback from mainline tracks was about 25 feet and from branch line tracks it was about 20 feet.

Reasonable setback distances will allow maintenance crews to work on the railroad without disrupting the trail. In areas where reduced setbacks are unavoidable, a solid barrier can be provided to protect trail users from flying debris.

Railroad officials are usually concerned about locating trails close to tracks because:

- There is a higher likelihood of the public being hit or affected by objects falling from trains, dust or dirt being blown out from trains, debris flung from moving wheels, or being injured in a derailment.
- It provides access for malicious individuals to throw things onto the tracks or at the driver or passengers.
- It may be seen as creating a precedent which encourages the public to go close to trains in other places that have not been specifically designed for public access.

PROJECT FEASIBILITY REPORT

A project feasibility report is an ideal tool for trail advocates to ensure they have checked out all the angles and to communicate the project to the railway. The ITE draft report includes the following suggested list of issues to be examined in a project feasibility report:

- setting,
- property ownership,
- adjacent land use description,

- description of current and planned rail operations,
- need and purpose,
- existing safety conditions,
- projections on use,
- trail design alternatives,
- fencing and landscaping alternatives,
- access and lateral crossings,
- provision for future sidings, tracks, and maintenance access,
- grade crossing analysis,
- typical and minimum setbacks from the centerline of the track,
- preliminary engineering,
- proposed trail operations,
- implementation strategy (phasing, cost, funding),
- liability strategy, and
- environmental aspects.

A project feasibility report should present a preferred option to the railroad. It should clearly identify how different concerns have been addressed.

RESOURCES

RAILROAD RESOURCES

There are a variety of resources that will help you learn about railroad companies. One of the best places to start is the Internet.

- The Federal Railroad Administration (www.fra.dot.gov) is the federal government's railroad agency. It's Web site covers safety, research and development, legislation affecting railways (including TEA-21) and federal staff. The FRA is managing the Department of Transportation's "best practices" study of rails-with-trails.
- Association of American Railroads represents the nation's Class 1 railroads, the largest companies in the industry such as Burlington Northern Santa Fe, Union Pacific and Amtrak. Its Web site has a wealth of information about issues important to the industry: www.aar.org or contact AAR at 202.639.2302.
- Operation Lifesaver (www.oli.org) is the railway industry's program to reduce death and injury due to road-rail accidents. This site has lots of safety statistics and information on community programs.
- Individual railroad Web sites such as www.unionpacific.com or www.conrail.com.
- The American Shortline and Regional Rail Association (www.geocities.com/Heartland/Plains/7114) represents the smaller rail companies. It can be contacted at 202.628.4500. The Web site has contact details and links to many of these companies.
- The National Transportation Safety Board (www.ntsb.gov/Railroad/railroad.htm) is an independent federal agency that investigates accidents and conducts safety studies on railroads and other modes of transportation.