Phase I Report
Problem Definition

Alternative Solutions to Railroad Impacts on Communities

Minnesota Department
of Transportation
North Dakota State
Highway Department

October 1979

ALTERNATIVE SOLUTIONS TO RAILROAD IMPACTS ON COMMUNITIES

PHASE I REPORT: PROBLEM DEFINITION

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FOR

MINNESOTA DEPARTMENT OF TRANSPORTATION
NORTH DAKOTA STATE HIGHWAY DEPARTMENT

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I. INTRODUCTION

BACKGROUND

This report presents the results of the first phase of a study to identify community problems arising from conflicts between railroad operations and community activities, and to identify and evaluate possible solutions to these conflicts. The study was initiated as a result of (1) the formation and activities of the Rail Traffic Task Force, a voluntary group of Minnesota and North Dakota communities organized to identify and resolve railroad/community activity conflicts, and (2) the increasing significance of the coal train impact issue nationally.

The study area is shown in Exhibit 1. It is the Burlington Northern Railroad mainline corridor from Beach, North Dakota to Fargo/ Moorhead and from there to Staples, Minnesota, and then branching to the vicinity of Minneapolis and Duluth/Superior.

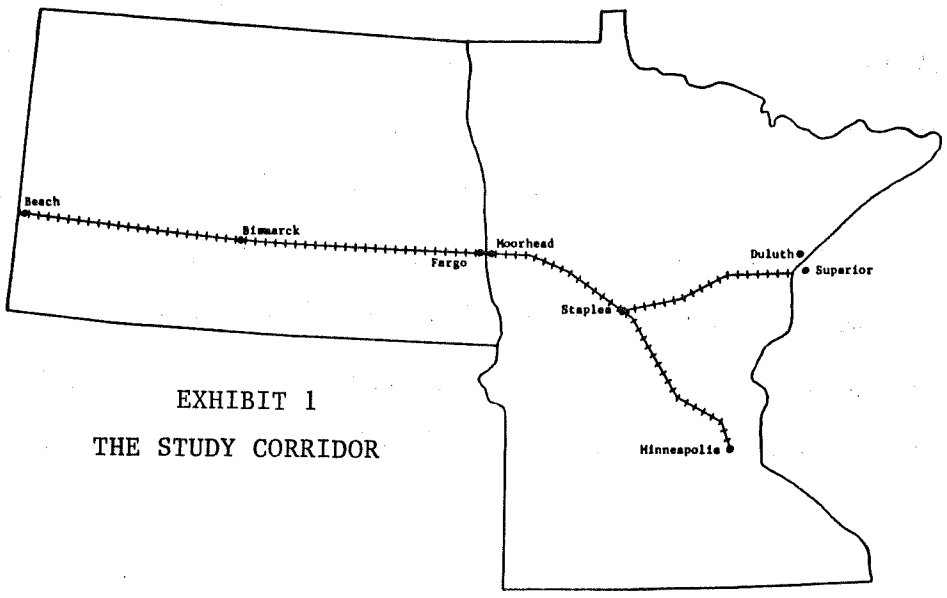

EXHIBIT 1
THE STUDY CORRIDOR

STUDY DEVELOPMENT

In 1976, the Rail Traffic Task Force was formed. Its members recognize that the Burlington Northern Railroad has had a substantial positive affect on the approximately 80 communities located in the corridor, for many years serving as a major employer and providing essential freight transportation links to the rest of the country. It continues to play this vital role in the development and well-being of these communities.

On the other hand, the location of the railroad mainline within these communities and the local rail service provided to them has created conflicts with community activities. The Task Force has contended that the increase in coal traffic in the corridor has significantly increased the severity of these conflicts. Task Force members as well as other communities are also concerned that if projected increases in rail traffic occur, the conflicts will become even more serious. The concerns of the Task Force and the actions it has taken to express these concerns are largely responsible for the conduct of this study.

The efforts of the Task Force and the commitment of the States of Minnesota and North Dakota and the Burlington Northern Railroad to address the community problems attracted the attention of the U.S. Departments of Energy and Transportation. The Departments were attracted by the opportunity to conduct a prototype study of community impacts of railroad operations, particularly unit coal train operations. As coal has come to play a more significant role in meeting the nation's energy requirements, the community impacts of unit coal trains have become an increasing concern of the federal government. Consequently, the U.S. Departments of

Energy and Transportation have joined the Minnesota Department of Transportation, North Dakota State Highway Department, the Burlington Northern Railroad and the Rail Traffic Task Force in jointly sponsoring this study. A study Management Board, on which each of the above study participants is represented, is responsible for policy guidance and approval of study results and products.*

STUDY OVERVIEW

There are many uncertainties surrounding railroad operation/community activity conflicts occurring in the corridor. These uncertainties include:

- The nature of the problems being experienced
- The location and severity of the problems
- The factors contributing to the problems
- The repercussions of the problems on community well-being and railroad operations
- The feasibility and effectiveness of alternative strategies, particularly low-cost strategies, to resolve the problems.

The purpose of this study is to address these issues. More specifically, the objective is to:

> Find low-cost solutions to the community impacts of railroad operation/community activity conflicts occurring in the corridor.

To accomplish this objective, a three phase work program is being conducted.

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*The U.S. Departments of Energy and Transportation are ex-officio members of the Board.

Phase I did the following:

- Identified the railroad operation/community problems (existing and perceived) in the corridor
- Determined in which communities problems occur
- Determined which communities have the most severe problems
- Chose six communities for more indepth case study.

Phase II will do the following:

- Define and describe impact problems in each selected community
- Identify alternative low cost solutions to resolve community impact problems in these communities
- Evaluate the alternatives and propose implementation of a minimum of ten as demonstration projects
- Identify funding sources for the demonstration projects.

Phase III will do the following:

- Implement the demonstration projects
- Determine the effectiveness of each project in resolving community problems
- Examine the applicability of the projects in other communities.

PHASE I APPROACH

This report documents the findings of Phase I of the study. As noted above, the purpose of Phase I is to identify the problems occurring in the corridor--their range, location and relative severity. It is also to select six communities for case study.

To accomplish this, an extensive data collection and analysis program was conducted. The data collection component focused on obtaining

corridor residents' perceptions and state and local government and Burlington Northern Railroad officials' perceptions of the problems that exist throughout the corridor.

To obtain these perceptions, information on 47 of the 77 corridor communities was obtained from the following activities:

- Review of relevant documents. A review of documents discussing railroad operation/community activity conflicts and attendant problems was conducted. This information was useful in designing the details of the data collection effort such as the content of the mail survey instrument described below. A bibliography of these documents are presented in Appendix A.

- A mail survey of corridor residents. A survey instrument was developed and mailed to 12,000 randomly selected corridor residents representing 30 corridor communities. The instrument and the procedures used to select the recipients are presented in Appendix B of this report. The survey asked recipients to identify the problems occurring in their community as a result of railroad operation/community activity conflicts. Also, recipients were asked to indicate the severity of each problem and potential ways to solve it.

  The survey was conducted during the period of December, 1978 through February, 1979. Responses were received from approximately 25% of all survey recipients and have been processed by computer. A summary of responses from residents of each community surveyed is presented in Appendix D.

- Interviews and public meetings with corridor community officials and residents. An itinerary of ten regional public meetings was prepared to provide the opportunity for residents to express their concerns and opinions regarding railroad operation/community activity conflicts. Every community that identified a person to act as its

representative during the study, was informed of the locations and dates of each of the public meetings. Promotion for these meetings was conducted jointly by the states and local community representatives. About twenty communities were represented at the public meetings. Each community representative also was invited to discuss with the consultant the railroad operation/community activity conflicts occurring in his or her community. Over thirty communities elected to be interviewed. They were represented by a variety of people including elected officials, city employees (administrators, planners, police and fire chiefs, emergency service and public service providers), and interest groups (citizens advisory committees, Chambers of Commerce). Whereas, the mail survey provided a large statistical base from which to calculate the perceptions of corridor residents concerning problems in their communities, the interviews and public meetings provided detailed insight into the factors contributing to the problems, the repercussions of the problems on community well-being and specific proposals which could resolve problems. Details on the locations and dates of the public meetings and interviews and the communities represented at these events are contained in Appendix C. A summary of problems described by participants for each community is presented in Appendix D.

- Interviews with state and Burlington Northern Railroad officials. To understand the respective state's and the railroad's perceptions of the problems, representatives of the Minnesota Department of Transportation, the North Dakota State Highway Department and the Railroad were invited to meet with the consultant. Representatives of each Burlington Northern regional and district office associated with the study corridor were interviewed on location. A list of persons interviewed in this effort is contained in Appendix C. Their comments are included in the community summaries contained in Appendix D.

- Field observations. During the tour of public meetings and interviews, on-site observations were conducted by the consultant to gain a

first-hand understanding and appreciation for the problems being experienced. The results of these observations are integrated into the community summaries contained in Appendix D.

The results of these analyses are presented in this report. Chapter II defines the nature and extent of community problems associated with railroad operations that are occurring in the corridor. Chapter III presents a list of low cost actions that may resolve the community problems. Chapters IV and V describe how the case studies will be conducted. In addition, there are several appendices contained in this report as described above.

II. THE NATURE AND EXTENT OF COMMUNITY PROBLEMS ASSOCIATED WITH RAILROAD OPERATIONS

INTRODUCTION

In this chapter, the basic problems resulting from railroad operation/community activity conflicts are defined. Variations in problem incidence, severity and manifestation among communities is explored to provide further insight into the problems occurring in the corridor. The causes of the problems are discussed with emphasis on the role of unit coal trains. Finally, expectations about future problem incidence and severity are presented. Additional information is contained in Appendix D in which a brief profile of problems confronting each corridor community is presented.

BASIC PROBLEMS OCCURRING IN THE CORRIDOR

It has been learned as a result of Phase I that seven basic types of problems exist or are perceived to exist in corridor communities as a result of rail/community conflicts. These basic problem types are:

- Pedestrian safety
- Vehicle safety
- Emergency vehicle delay
- Delays in traveling to and from work and school

- Noise, air pollution and other environmental disturbances
- Community development problems such as inhibition of economic or residential growth, distribution of economic activity away from preferred locations, and reduced community attractiveness.

Among the seven basic problems, emergency vehicle delay was cited most frequently by corridor residents as a community problem. Almost 60 percent of the respondents to the mail survey stated that emergency vehicle delays are created by railroad operations/community activity conflicts in their communities. The response rates corridor-wide for the remaining problems are presented in Exhibit 2.

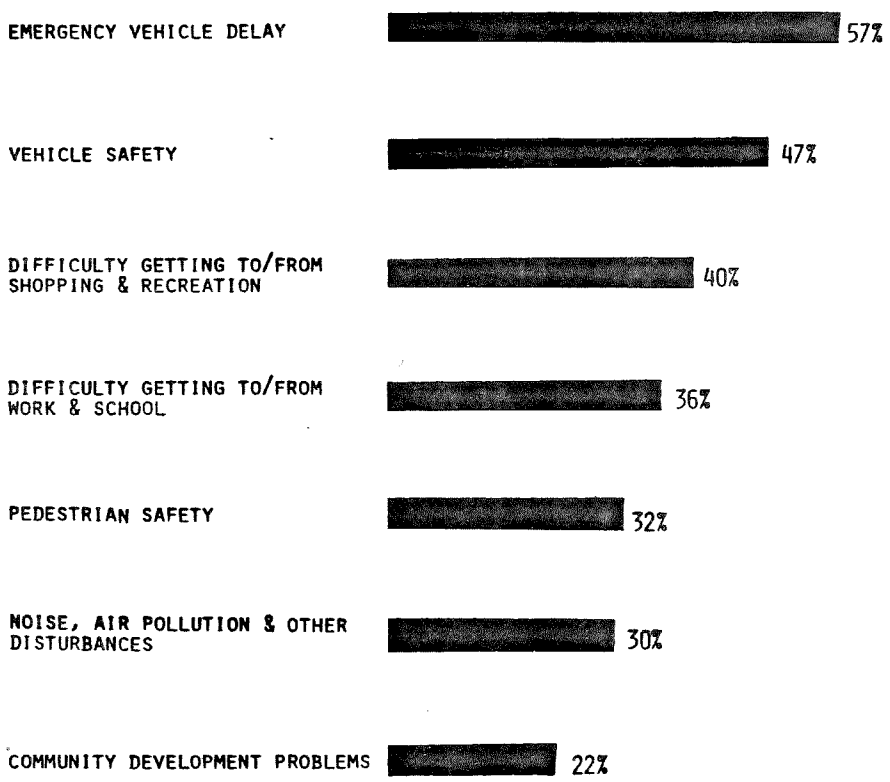
Delays to emergency vehicles also is cited by survey respondents as the most serious problem resulting from railroad/community conflicts. Recipients of the survey were asked to indicate the degree of severity (not severe, slightly severe, severe, very severe) of each problem in their community. In the opinion of 34 percent of the respondents, emergency vehicle delay is a severe or very severe problem. Response rates for the other problems are reported in Exhibit 3.

PROBLEM INCIDENCE AMONG COMMUNITIES

All corridor communities for which information was obtained experience at least one of the seven basic problems identified above. However, the relative extent and severity of each problem varies considerably among communities. What is deemed a serious problem in one community is of no apparent concern in another. This conclusion is revealed by the wide range in responses among communities to mail survey questions (see Exhibit 4). For example, 74 percent of one community's

EXHIBIT 2

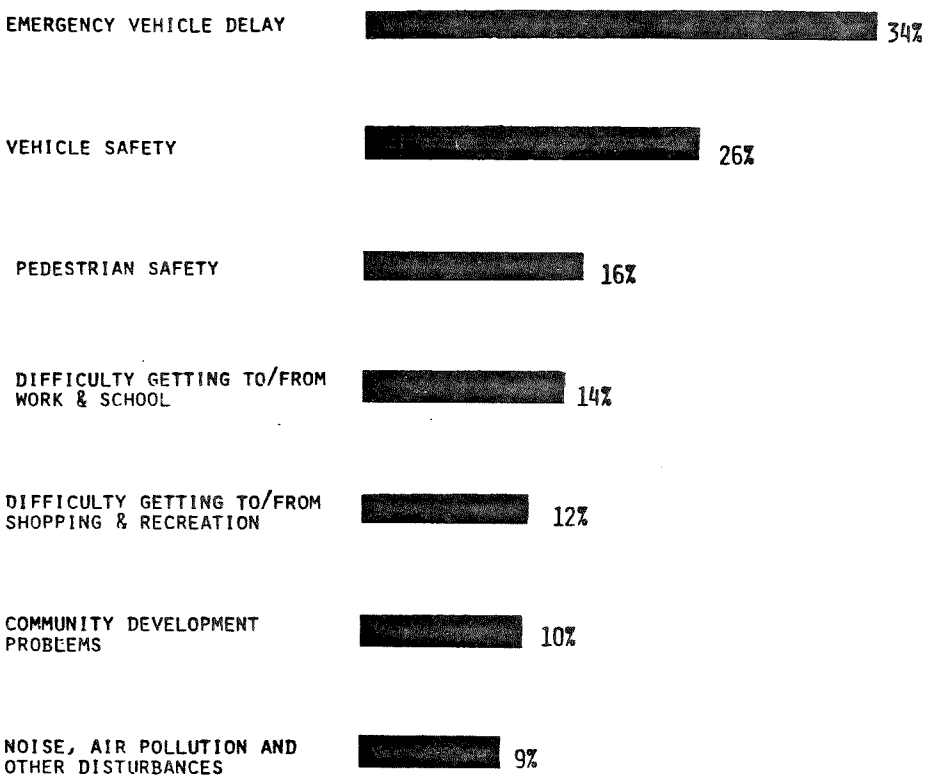
PROBLEMS CITED BY CORRIDOR COMMUNITIES
(PERCENT OF RESPONDENTS WHO PERCEIVE A PROBLEM TO EXIST)



SOURCE: ERNST & ERNST SURVEY OF STUDY CORRIDOR RESIDENTS; DECEMBER, 1978 - FEBRUARY, 1979

EXHIBIT 3

PROBLEMS CITED BY CORRIDOR COMMUNITIES
(PERCENT OF RESPONDENTS WHO PERCEIVE A PROBLEM TO BE SEVERE OR VERY SEVERE)



SOURCE: ERNST & ERNST SURVEY OF STUDY CORRIDOR RESIDENTS; DECEMBER, 1978 - FEBRUARY, 1979.

EXHIBIT 4

RELATIVE SEVERITY OF PROBLEMS CITED BY CORRIDOR COMMUNITY

COMMUNITIES	PERCENT OF COMMUNITY RESIDENTS WHO PERCEIVE THE SPECIFIED PROBLEMS AS A SEVERE OR VERY SEVERE PROBLEM IN THEIR COMMUNITY						
	Pedestrian Safety	Vehicle Safety	Environmental Problems	Emergency Vehicle Delay	Delays Traveling To/From Work and School	Delays Traveling To/From Shopping and Recreation	Community Development
MINNESOTA							
Anoka	8	15	3	15	3	0	5
Brainerd	6	26	3	58	12	11	4
Coon Rapids	7	11	11	9	11	11	4
Cromwell	3	6	6	3	2	0	8
Detroit Lakes	7	11	4	23	8	3	5
Dilworth	4	11	15	23	20	13	11
Elk River	29	35	13	33	11	13	20
Fridley	11	16	9	8	8	6	8
Hawley	10	5	4	5	5	4	9
Little Falls	11	30	8	74	33	38	21
Moorhead	13	15	7	40	32	11	20
Motley	12	34	9	11	5	5	0
New York Mills	5	18	3	11	2	0	0
Perham	29	66	13	40	21	18	7
Sartell	10	18	14	33	9	8	15
Sauk Rapids	24	41	23	47	23	19	16
Staples	13	12	7	66	19	16	25
St. Cloud	3	16	13	17	13	10	6
Wadena	22	22	7	49	18	9	7
NORTH DAKOTA							
Beach	58	77	15	73	42	38	14
Belfield	18	8	15	9	9	9	5
Bismarck	3	19	7	6	4	1	1
Casselton	32	45	13	52	18	12	9
Dickinson	16	14	13	18	2	12	11
Fargo	25	21	12	18	19	8	8
Jamestown	19	29	13	53	19	14	9
Mandan	11	9	17	6	8	2	17
Sanborn	18	18	0	20	8	10	0
Steele	11	13	8	21	5	5	3
Tappen	16	40	16	12	8	8	4

Source: Ernst & Ernst Survey of Study Corridor Residents, December 1978 - February 1979.

respondents stated that delays to emergency vehicles is a serious problem in their community. At the other extreme, only 3 percent of another community's respondents indicated that this is a serious problem. Similar ranges are associated with the other problem types.

The survey results also reveal that the communities with the most serious problem (i.e., with the largest percentage of respondents who believe a serious problem exists) vary by problem type. Only two of the communities (Beach, North Dakota and Sauk Rapids, Minnesota) rank among the top ten most severely affected communities in all seven problem areas. Seventy percent of the communities are in the top ten in at least one problem area. The summary of this characteristic of relative problem severity is presented in Exhibit 5.

While it has been shown that the list of communities with serious problems vary by problem type, some communities can be identified as having the most serious overall problem associated with rail/community conflicts. These communities are:

Beach, ND	Hebron, ND	Perham, MN
Brainerd, MN	Jamestown, ND	Sauk Rapids, MN
Carlton, NM	Little Falls, MN	Staples, MN
Casselton, ND	Moorhead, MN	Wadena, MN
Elk River, MN	New Salem, ND	

The list was developed on the basis of several items of information. For communities represented in the mail survey, those with the most serious overall problem were determined on the basis of the following data:

- The community rank among communities based on the sum of the percentage of respondents who perceive each problem to be severe or very severe in their community. (The justification for using this information is that communities with a larger percentage of their population experiencing a series of serious problems are

EXHIBIT 5

THE FREQUENCY WITH WHICH COMMUNITIES RANK WITHIN
THE TOP TEN MOST SEVERELY AFFECTED
COMMUNITIES BY PROBLEM TYPE*

NUMBER OF PROBLEM AREAS IN WHICH A COMMUNITY RANKS WITHIN THE TOP TEN	PERCENT OF COMMUNITIES	CUMULATIVE PERCENT OF COMMUNITIES
0	33	33
1	17	50
2	10	60
3	7	67
4	10	77
5	10	87
6	7	94
7	6	100

*Only communities represented in the survey of corridor residents are included in this calculation.

SOURCE: Ernst & Ernst Survey of Study Corridor Residents, December 1978-February 1979.

more severely affected by railroad operation/ community activity conflicts than communities with less extensive problem incidence.)

- The community rank among communities based on the percentage of respondents who perceive at least one problem to be severe or very severe in their community. (This is an indicator of the percentage of the population which experiences at least one serious problem. The justification for using this information is that a community with a larger percentage of population experiencing a serious problem is more severely affected by railroad operations/ community activity conflicts than a community with a smaller percentage of its population experiencing a serious problem.)

- The frequency with which a community is one of the top ten most severely affected communities by problem type. (The purpose of this information is to compensate those communities that are among the most severely affected communities in several problem areas but do not rank well in terms of the other information.

Based on this information, the ten communities with the most serious overall problem were judgmentally selected. Communities not represented in the survey were selected based on an understanding of their problems gained through interviews with community officials and residents, interviews with state government and railroad representatives, and field observations. These communities were ranked in a manner consistent with the rankings of the communities represented in the survey through comparative examination of problem descriptions.

Obviously, this list is to be viewed with caution because of the data limitations on which it is based. The determination of most severely affected communities is based largely on subjective data. Further, the rankings are relative; they do not indicate the very real problems that the less severely affected communities may confront. The important conclusion

from the Phase I analysis is that many communities confront problems resulting from rail/community conflicts that deserve attention. The communities vary in terms of the combinations of problems they confront and in terms of the relative severity of those problems. The approach to the resolution of the problems must vary accordingly.

EXAMPLES OF COMMUNITY PROBLEMS

It has been shown that the relative incidence and severity of problems differs among corridor communities. There also are differences in the ways problems are manifested in communities. These differences are best understood through examples. Described below are various problems cited by communities in the survey, interviews and public meetings conducted during Phase I. The examples are organized by the seven basic problem types previously defined in this chapter.

- Pedestrian Safety

  -In several communities, a large portion of the elderly population resides on the side of the mainline opposite to the central business and commercial area. Often these people do not have access to automobiles or by preference travel by foot. As train traffic has increased in the corridor, there has been growing concern for the safety of elderly pedestrians who cross the mainline for personal business or social activities. In addition, some communities are concerned that the elderly population is becoming increasingly isolated from the rest of the community due to pedestrian safety fears and delays.

  -In one community, a new swimming pool is nearing completion. The pool is located on the south side of the mainline adjacent to the community golf course. Because two-thirds of the population resides on the

north side of the mainline, the community is concerned about the potential safety hazard for children crossing the mainline to go swimming.

-A problem occurring with increasing frequency is children crawling underneath standing trains to avoid being late for school or to avoid waiting for the train to move so that they might proceed to their destination.

- Vehicle Safety

-In some communities, local switching operations often activate the gates at a crossing even though the train will not use the crossing. In other communities, the gates are activated by trains standing while the crew takes a break or a crew change occurs. These false warnings at crossings may last up to 20 minutes. Used to this experience, motorists have begun to ignore the warning signals with increasing frequency by weaving their vehicles through the gates. Several fatal accidents have resulted from this practice because the motorist failed to see a train coming from a direction opposite to the switch operation or standing train. In one community, trucks carrying combustible cargo frequently ignore the warning devices. A collision with a train and one of these trucks could produce a major disaster in the community.

-In many communities, the vehicle safety problem results in part from visual obstructions created by sharp curves in the track, and grain elevators, lumber yards, and other rail user facilities located adjacent to the mainline crossings.

-Steep approaches to grade crossings have caused accidents in some communities. The steep approach obstructs the motorist's view of trains. Also, to make it up and over the crossings, particularly in icy conditions, drivers will get up speed and are unable to stop if a train is coming.

- Environmental Problems

-Some communities, where residential areas are located near the railroad, are annoyed by train whistles that are blown late at night.

-As a result of lengthy vehicle delays at railroad crossings on major roadways, some communities report pollution problems. When the delays occur during peak time periods of the day, lengthy queues of idling vehicles are created.

-In one community the natural buffer of trees between a residential development and the mainline and railroad yard was removed to provide space for yard expansion required to satisfy growing demand. With the removal of this barrier, the community is no longer shielded from the yard operations. Property values are said to have declined as a result of the visual intrusion.

- Delays to Emergency Vehicles

-For many communities, a central cause of this problem is the existence of only one fire station, or one hospital, or one ambulance service which must serve population on both sides of the mainline. When the grade crossings are blocked, a more circuitous route to respond to emergencies is required. In emergency situations, a delay in reaching the emergency location could be critical. For example, a slaughter house, the major employer in one community, burned to the ground because the fire engine company was delayed in arriving at the scene by 20 minutes at a railroad grade crossing.

-Other communities' emergency vehicle access problems are complicated by community development patterns and geography. For example, in one community, the residential area is shaped like a triangle with the mainline bordering two sides and a river bordering the third side. Emergency services are provided from another part of the community making delays to emergency vehicles a potential problem. Geographic barriers, particularly lakes and rivers, occur frequently in corridor communities and complicate the vehicle delay problem.

-The anger caused by delay of emergency vehicles at rail crossings is as much a part

of the problem as the actual losses resulting from these delays. Residents related emotional descriptions of the intense anxiety created when a relative accompanies a person in the ambulance and the ambulance is delayed at a crossing on the way to the hospital.

- Delays to Work and School

-In one community, children are bused across the mainline for a special lunch program. Often they are delayed at crossings going to and from their lunch location. The delays mean a particularly short time for lunch or shortened classroom time.

-Many community members express frustration in commuting to work because of blockage by trains. Sometimes they leave with time to spare but are blocked by a train for 20 minutes and reach work late. Other times they leave early and arrive at work extremely early. The unpredictability of delays is as frustrating as the length of delays.

- Delays to Shopping & Recreation

-Many of the communities are located near prime recreation areas. The population in these communities often doubles or triples during the summer. When trains block access to the recreation areas large congestion problems are created in the communities which disrupt community activities as well as delay vacationers.

-Most corridor communities are too small to support more than one shopping and business area. Further, the shopping and business area has developed along one side of the mainline while the residential areas are dispersed on both sides. Often the population split by the mainline is in a 35%/65% ratio. Consequently, significant portion of most communities' residents are subject to delays traveling to/from shopping areas.

- Economic Development

-In several cases the community's growth is constricted by geographical limitations such

as rivers and lakes. These communities have developed across the railroad track from the main part of the community where the only available land exists. In other communities existing infrastructure makes development on the "wrong side of the tracks" an economic necessity. These developments further split the communities and increase the incidence of conflicts.

-In some communities development decisions have been made with no regard for the community/railroad conflicts which will be created. An example is a community currently located predominantly on one side of the mainline which has planned a major residential development on the other side of the mainline.

-In some communities, the closeness of the mainline to the CBD, or residential areas has created the fear of derailment as train traffic has increased. While the problem in this case is more one of expectation than a history of accidents, there have been isolated cases where derailments have done substantial damage to adjacent properties.

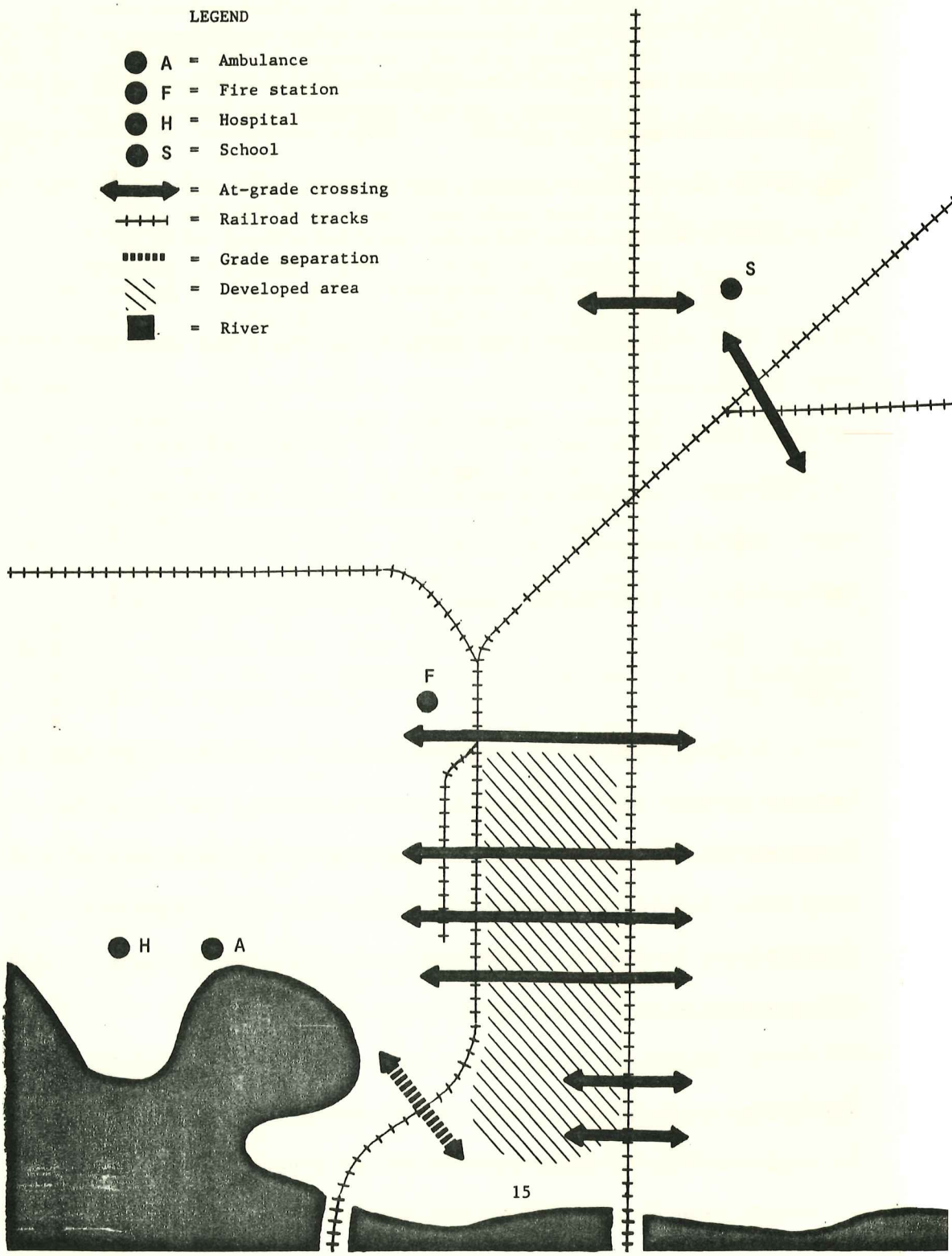
PROBLEMS FACING TWO CORRIDOR COMMUNITIES

While the above examples provide a more indepth view of the variety of problems experienced in the corridor, the following illustrations indicate the interrelationship and diversity of problems as they occur in single communities. These two cases illustrate the multiplicity of problems some communities have as a result of railroad operation/community activity conflicts.

The first illustration (see Exhibit 6) is a community in which the CBD is bordered on three sides by two mainlines and on the fourth side by a river. Over 50 train operations occur here on an average day. All crossings providing access to the CBD are at-grade with the exception of

EXHIBIT 6

EXAMPLE OF PROBLEMS CONFRONTING
CORRIDOR COMMUNITIES - MOORHEAD, MN.



one. The grade separated crossing does not provide good access to the CBD--it requires a circuitous route; it is narrow and often allows only one lane of traffic and; it is closed by flooding during parts of the year. The CBD is the site of a large urban renewal project, a $30 million investment designed to reverse the area's declining business activity. It was initiated at a time when city officials perceived train operations to be on the decline.

On the contrary, train operations have increased and are expected to continue to increase. The increased traffic has increased the frequency with which delays in gaining access to the CBD are experienced. The length of the delays are longer than in other communities due to the location of a rail yard just east of the city. Trains leaving the yard are slow to gain normal operating speed. At times, trains must wait in queue to enter the yard, blocking grade crossings in the city for long periods of time.

City officials and residents believe that the increased rail operations have contributed to a less than successful renewal project. They contend that the rail operations isolate the CBD from the community. Business activity continues to leave the CBD to relocate in outlying shopping centers in part because people want to avoid the frequent delays experiencd at grade crossings which provide the only access to the CBD. New commercial and office development is locating away from the CBD for similar reasons. The unpredictability of the delays is as significant as the actual delays in discouraging people from shopping or doing business downtown.

Other problems are experienced in this community as a result of increased railroad operations and the location of community activities and

services. A high school was recently built on the east side of the city. The problems of access to the school are apparent given the location of the railroad tracks.

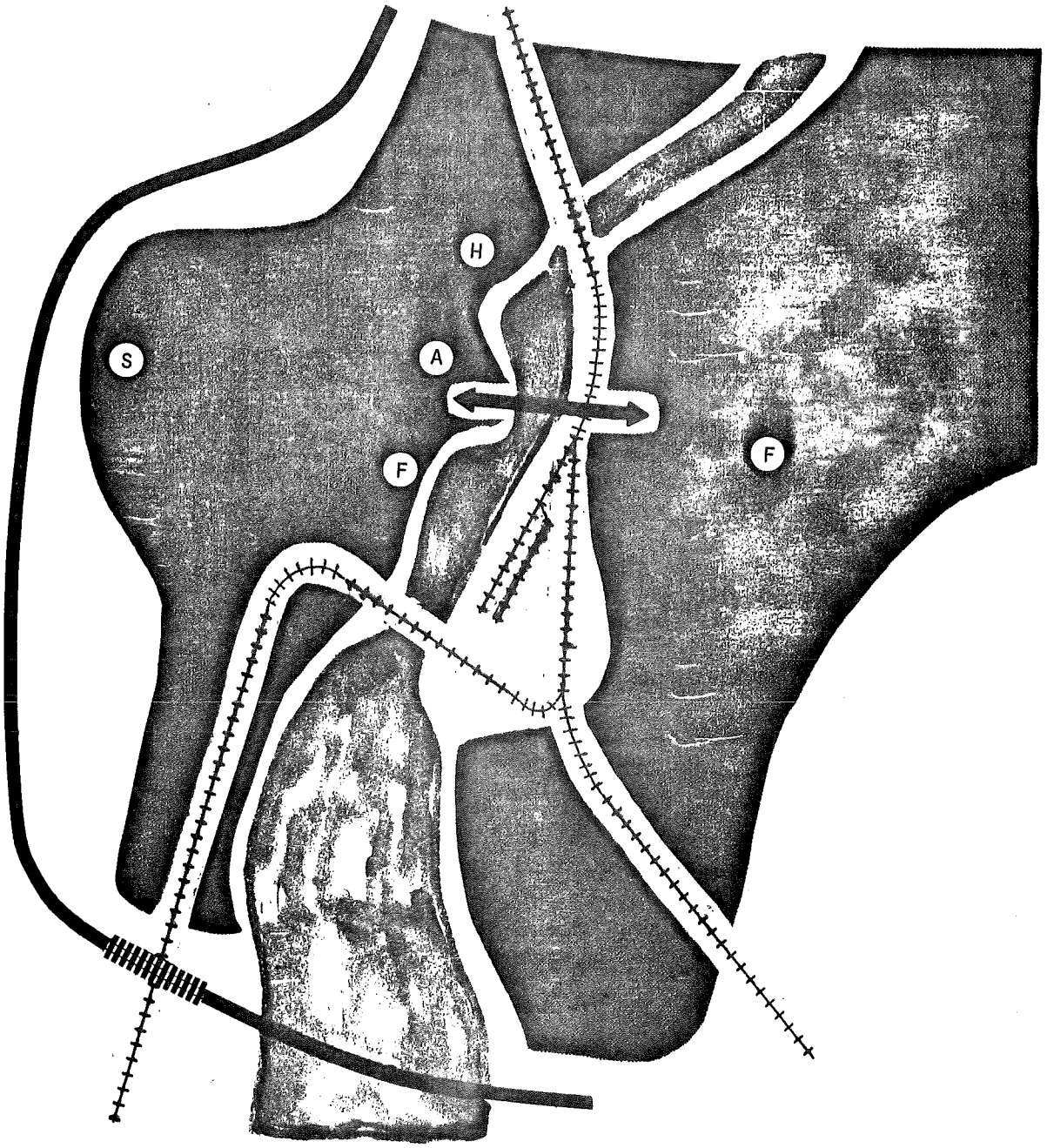
The city relocated its fire department from the CBD to another location to circumvent the need to cross the tracks. A second station was built more recently on the other side of the tracks to avoid rail crossings in serving the population and industry on the south side of the tracks. The hospital and ambulance service is located on the south side of the tracks. Unfortunately two-thirds of the population resides north of the tracks. Delays in responding to medical emergencies and delivery of patients to the hospital have resulted.

The city owns and operates a bus system. Buses cross the railroad tracks about 250 times a day. The relatively new system has problems maintaining a reliable schedule due to unpredictable bus delays at the crossings. The extent to which this has affected ridership and vehicle productivity has not been estimated.

The second illustration (see Exhibit 7) is a community that is divided into two equal parts by the Mississippi River. Also separating the two parts of the city is the Burlington Northern mainline. The bridge is the only connection between the city parts within the city limits. It crosses the mainline at grade. A bypass was recently completed around the city, but it requires an additional 10 minutes to use this as a crossing from one side of town to the other.

Twenty to twenty-five through trains use the mainline on an average day. The two S-curves and the two tresels which cross the river prevent these trains from operating at speeds greater than 20 mph. Thus,

EXHIBIT 7
EXAMPLE OF PROBLEMS CONFRONTING
CORRIDOR COMMUNITIES - LITTLE FALLS, MN.



See Exhibit 6 for legend.

the trains take longer to pass through a crossing than in the normal situation. (The Burlington Northern is in the process of straightening one of the S-curves to allow speeds of 30 mph. Also, traffic using the north line may be diverted to another route in the near future).

Yard operations occur just west of the crossing. Access to the yard is from the east. Consequently, local switching operations often block access between the city's two parts and contribute to the access problem. The city has calculated that the bridge crossing has been blocked by train operations up to 5 hours in a 24-hour period by railroad operations.

The city's main fire station, the ambulance service, hospital and school complex are located on the north side of the city. A lesser fire station was built on the south side of the city to control fires until the main fire station service can reach the site.

The consequences of the community development pattern, the transportation system, the river and the railroad operations just described are:

- Potentially serious delays in responding to medical, fire and police emergencies
- Significant and unpredictable delays in travel to/from work, school, business and social activities.

FACTORS CONTRIBUTING TO COMMUNITY PROBLEMS

The examples cited above reveal that the current problems are indeed the result of rail/community conflicts. To clarify this point, Exhibit 8 lists the factors found to contribute to the incidence and

EXHIBIT 8

FACTORS CONTRIBUTING TO COMMUNITY PROBLEMS

Community Transportation System

No grade separated crossings*

At grade crossings close/blocked simultaneously*

Grade separation inadequate

Outdated, inadequate warning devices*

Visual obstruction near rail right-of-way*

Icy roads

Steep approaches to grade crossings

Poorly maintained grade crossings

Volume of vehicle traffic*

State Highways in Communities*

State highway traffic diverted through communities by blocked crossings

Number of crossings and their spacing*

Angle of Roadway approach to crossing

Location of warning signals

Lack of pedestrian crossings*

Community/Railroad Communication

Do not know who to contact concerning problems*

Receive incomplete or inconsistent data

Lack of railroad/emergency vehicle communication*

Railroad not responsive to requests or complaints

Behavior Patterns

Possible misperception of problem severity

Violation of crossing warning signals*

Large volume of pedestrian traffic*

Community Service Patterns, Equipment, and Facilities

One emergency station serving areas on both sides of the mainline*

School bus routes require crossing mainline*

Transit bus routes require crossing mainline

Location of community recreation facilities vis-a-vis mainline*

Community Activities and Development Patterns

Percentage of commuinty split by the mainline*

Geographic barriers to development and access*

Significant seasonal variations in population/traffic*

Location of storage tank with combustible chemicals adjacent to mainline*

Location of new or planned development*

Location of available land for development

Infrastructure in place

Separation of commercial and business area from residential area by main line*

Separation of residential areas from school, shopping, work and recreation areas by the mainline*

Development on soft soil foundation

Railroad Operating Practices

Crew change location*

Local switching operations*

Train speed*

Train length*

Train volume*

Standing trains which block crossings*

Time of day switching operations occur*

Unpredictability of train movements*

Idling trains

Activation of warning signals when unnecessary*

Railroad Facilities

Inadequate spur on siding lingth*

Mechanical versus automatic switches

Locations of train verifiers

Number of mainlines

Location of switching operations*

Not well maintained right-of-way*

Location of yards*

Condition/age of tracks and structures

Track configuration

Location of maintenance facilities

Refueling location

severity of the seven basic problem types defined earlier. The factors are grouped to show that community characteristics and activity patterns as well as railroad operations and facilities give rise to these problems.

Exhibit 9 further clarifies the process by which the community problems are created. It presents the dynamic relationship between community activities and railroad operations that create the problems. Basically, the exhibit shows that the blocking of grade crossings within communities by railroad operations conflicts with community activities and development, thus creating the seven basic problems previously defined.*

An attempt was made to correlate specific community and railroad characteristics with problem incidence and severity to determine whether certain factors are more significant that others in creating problems. A X^2 test was used. The analysis provided no conclusive results primarily because the considerable variation in the combination of factors occurring in the communities made the sample size inadequate to provide statistically significant results. Nonetheless, field observations have revealed that certain factors are more significant than others. These factors are identified with asterisks in Exhibit 8, above.

THE ROLE OF UNIT COAL TRAINS

The role that unit coal trains play in the incidence and severity of community problems is of particular concern in this corridor. A large

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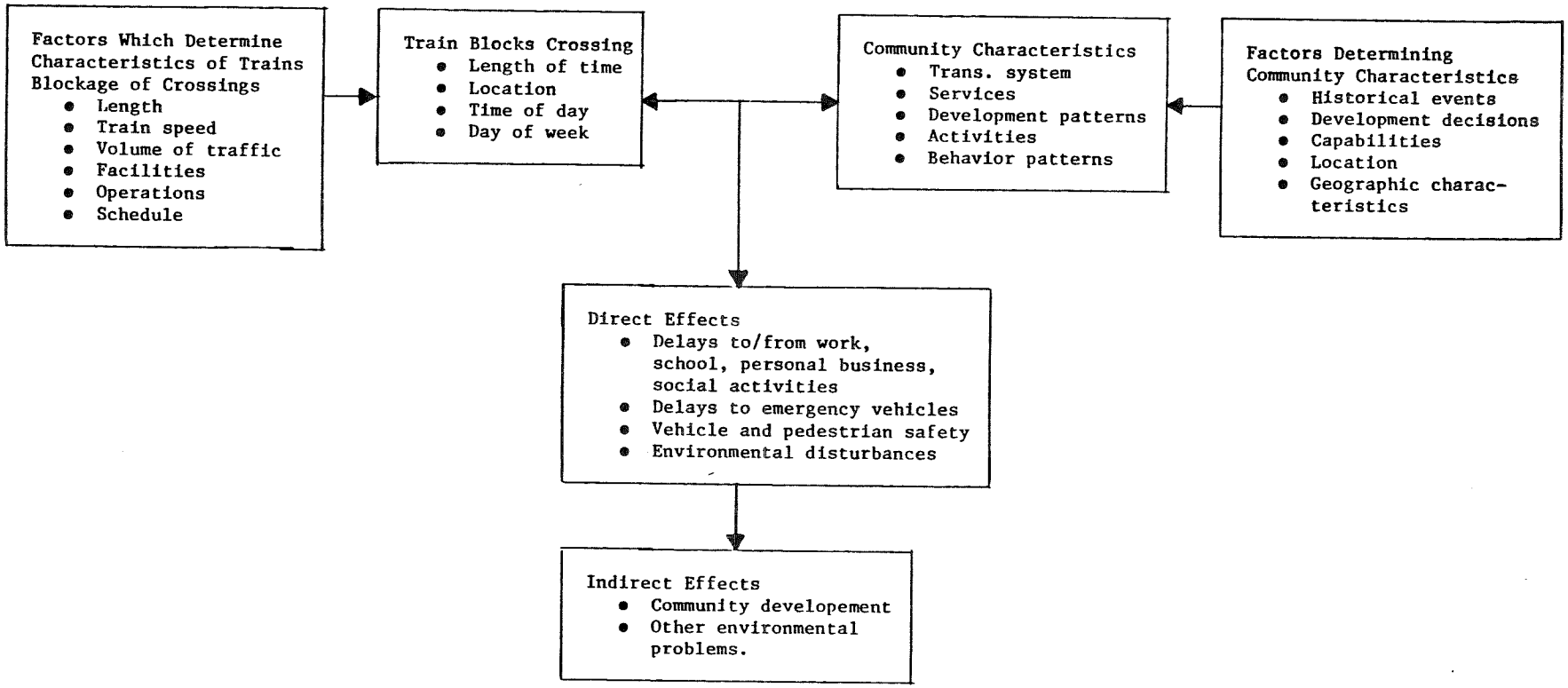
* Although some problems reported were not the result of grade crossing blockage (e.g., disturbances to land uses adjacent to the mainline), most of the significant problems (i.e., those reported most frequently and those thought to be most serious by community officials and residents) are related to the blocking of grade crossings. Thus, the discussion focuses on these problem types.

EXHIBIT 9

INTERRELATIONSHIP OF FACTORS CONTRIBUTING

TO COMMUNITY PROBLEMS



percentage of the increase in railroad operations in the corridor since 1971 is associated with increases in unit coal trains. Further projections suggest that future train increases will be predominantly unit coal trains. Because of this condition and the perception expressed by many at the outset of the study that unit coal trains are largely responsible for community problems in the corridor, the role of these trains was examined.

Contrary to popular opinion, it was found that unit coal trains are not the sole cause of the community problems. Although unit coal trains may be a significant factor in the development of community problems, based on the information collected in Phase I, they have not created any unique problems, nor are they the sole cause of any of the problems currently existing in the corridor. Rather, it is the cumulative effect of a mix of railroad operations in interaction with community characteristics that create the problems existing in corridor communities. The relative contribution of unit coal trains to these problems does differ among communities. The contribution is a function of traffic volume, train operations conducted, the characteristics of rail facilities, and the characteristics of the community.

Exhibit 10 compares characteristics of unit coal trains, merchandise trains and local freight trains. The final column of the exhibit presents the implications of the differences among the train types. Based on this information, several observations concerning the relative role of unit coal trains in the development of community problems can be made.

- In most communities, the types of operations conducted by unit coal trains differ only marginally from those conducted by merchandise trains. Consequently, the types of problems to which these trains contribute are the same.

This conclusion is substantiated by the fact that the types of problems existing in communities with predominantly coal train traffic differ only marginally from those in communities with predominantly non-coal train traffic. The magnitude of the coal trains' contribution to problems in a given community, however, may differ significantly from merchandise trains for reasons stated below.

- For through train movements under free traffic flow conditions, coal trains will block more crossings simultaneously for a slightly longer period of time than other trains. The difference between the coal and merchandise trains in this regard, however, is insignificant.

- Where both coal trains and merchandise trains conduct yard operations, or other operations requiring deceleration, stopping and acceleration, unit coal trains will block more crossings simultaneously for a slightly longer period of time than the merchandise trains.

- In some communities, merchandise trains conduct set-out and pick-up operations in the yards. In these communities, the merchandise trains may block crossings for a longer period of time than coal trains if the latter do not conduct and are not affected by trains entering and exiting the yards.

- The relative volume of unit coal trains versus other trains varies among communities. West of Casselton, North Dakota, coal trains predominate. East of Cassleton, merchandise trains predominate. This suggests that unit coal trains are a more significant contributing factor west of Casselton. The observation is consistent with comments made during the interviews and public meetings.

- There are definite operating differences between unit coal trains and local freight trains. Thus, the problems that each of these trains create may differ. Alternately, they may contribute to the same problem in a community in different ways.

- Because most of the operating characteristics of unit coal trains and merchandise trains are

similar, many, but not all, potential solutions used to address problems created by these trains are similar. Due to the large differences between unit coal trains and local freight trains, potential solutions for problems involving these train types differ more frequently.

During Phase II, a review of historical records and on-site observation of train operations in each case study community will provide the quantitative data required to draw more precise conclusions concerning the contribution of unit coal trains to community problems.

PROJECTIONS OF FUTURE COMMUNITY PROBLEMS

Data on the historic trends of problem concurrence and severity in the corridor are unavailable. However, it appears that the extent and magnitude of problems in the corridor have and will continue to increase. This is indicated by projections of train operations and community development patterns occurring in the corridor. Exhibit 11 presents the current and projected levels of through traffic on the various segments of the corridor main line. The volumes are divided into two categories, coal unit trains and other trains. The projections show increases in traffic volume up to 40 percent along some corridor segments by 1983. Much of the increase is expected to be unit coal trains. Insofar as the volume of mainline traffic contributes to the occurrence and severity of community problems, the projected increases in traffic volume will mean increases in community problems as well.

Also indicating that problems will increase in occurrence and severity is the magnitude and pattern of community development occurring in the corridor. Some corridor communities are experiencing annual average

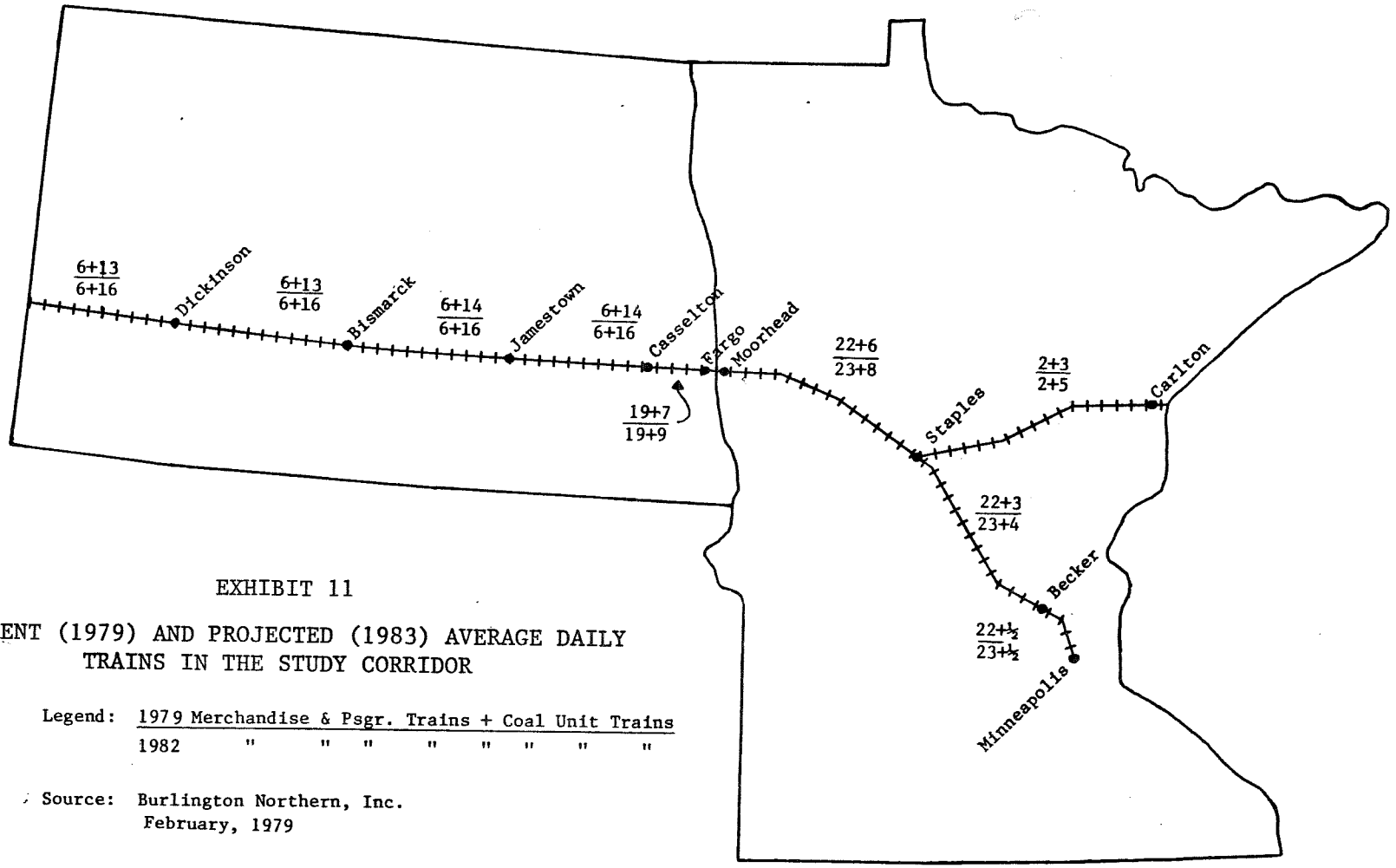


EXHIBIT 11

CURRENT (1979) AND PROJECTED (1983) AVERAGE DAILY TRAINS IN THE STUDY CORRIDOR

Legend: 1979 Merchandise & Psgr. Trains + Coal Unit Trains
1982 " " " " " " " "

Source: Burlington Northern, Inc.
February, 1979

2812
2812

growth rates of 10 percent. Growth translates into increased potential for conflicts between railroad operations and community activities. The development patterns which are occurring also may worsen existing problems or create new ones. Several corridor communities are experiencing development or have planned development which will further split the community on both sides of the mainline. Other communities are locating new schools, recreation facilities, and other public facilities on the side of the mainline apart from the primary residential areas of the community. To some extent these development patterns are unavoidable. Choices are limited by available land, geographic features such as lakes and rivers, and past investments in infrastructure. Regardless of the cause, the magnitude and patterns of community growth may increase the occurrence and severity of railroad operation/community activity conflicts and attendent problems.

III. LOW-COST SOLUTIONS TO THE COMMUNITY PROBLEMS

INTRODUCTION

As noted in Chapter I, a basic objective of this study is to identify and evaluate low-cost actions that may resolve problems occurring in corridor communities. The focus on low-cost solutions is responsive to the limitations on financial resources available to implement remedial actions. Also, low-cost actions may prove to be more cost-effective than higher cost alternatives such as rail relocation or grade separation.

LOW-COST ACTIONS

The elaboration and evaluation of low-cost actions is to be performed in Phases II and III of the study through the selection, implementation and monitoring of low-cost demonstration projects in six case study communities. However, the Phase I effort has already revealed several promising low-cost alternatives. This list is presented in Exhibit 12. The list shows the variety of alternatives that may prove effective in resolving the community problems. Significantly, it includes community oriented as well as railroad oriented actions; it also includes capital as well as operating actions and non-transportation as well as transportation related actions.

Another important finding of Phase I is that even if it were practical to divert railroad operations away from corridor communities, this would not be a favored strategy to resolve community problems. The

EXHIBIT 12

PRELIMINARY LIST OF POTENTIAL LOW COST SOLUTIONS TO RAILROAD/COMMUNITY CONFLICTS

Railroad Operating Practices

Ensure standing and local switching trains do not activate warning devices unnecessarily*

Ensure trains do not stand in crossings unless necessary*

Do not idle engines while trains are standing for long periods of time

Control train speeds through communities

Consolidate traffic on a single line

Divert traffic to alternative routes

Change switching operations schedules

Establish procedures to break trains in emergency situations*

Railroad Facilities

Change location of train verifiers

Change location of crew change points

Improve maintenance and appearance of track right-of-way

Extend sidings; construct additional sidings*

Straighten track alignment

Upgrade warning device activators*

Upgrade switches*

Change location of switching operations

Decrease derailment possibilities

Change train refueling location

Change train maintenance location

Community Transportation Facilities

Widen street at grade crossing

Locate additional warning devices farther from crossing

Improve crossing maintenance

Improve crossing and crossing approach maintenance in winter

Improve or upgrade warning devices*

Divert traffic to alternative routes

Designate emergency vehicle only routes

Extend gate arms*

Modify approach gradients

Synchronize warning signals and traffic lights*

Develop/improve pedestrian crossings

Construct new at grade crossings

Close at grade crossings

Railroad/Community Communication

Establish communications between emergency service providers and local train controller*

Establish communication channels between railroad and community officials*

Community Development Patterns

Remove visual obstructions adjacent to the main line*

Conduct preventive planning and related actions such as zoning and infrastructure development

Relocate storage facilities containing combustible products away from the main line

Community Services

Outfit firefighters with personal emergency equipment*

Acquire new fire equipment and construct new fire sheds*

Reroute school buses*

Reroute transit vehicles

Establish special emergency vehicle routes

Establish alternative emergency medical procedures

Establish coordination between jurisdiction fire services*

Behavior Modification

Market to promote area development

Campaign to change people's perceptions of problems

Conduct safety education programs*

Enforce laws against violating warning signals*

communities recognize that the railroad has played, and will continue to play, a vital role in their development and well-being. Eighty percent of all respondents to the survey stated that their community benefits from railroad operations. Even in communities with the most serious problems, the percentage of respondents who stated that their community benefits from railroad operations is high (not less than 65%). While corridor residents want to resolve the problems created by railroad operations/community activity conflicts, they do not want to lose the benefits accruing to them as a result of rail service in their communities.

During the remainder of the study the list of low-cost actions will be elaborated and the actions evaluated to determine how effective they may be in resolving community problems and if they are indeed low in cost.

WHO SHOULD PARTICIPATE IN PROBLEM RESOLUTION

The factors contributing to the community problems and the opportunities available to resolve these problems reveal that the problems must be confronted by a consortium involving the communities, the railroad, and the state and federal governments. These are the parties principally responsible for regulating the factors contributing to problem occurrence and severity or for implementing identified solution alternatives.

A related issue to be addressed in the remainder of the study is who should pay for the resolution of the problems. According to the survey respondents, a variety of parties should contribute to financing the solutions, including themselves. Responses to questions on financing

solutions are presented in Exhibit 13. The question of financing is more complex than determining corridor residents' opinions. The finance question will be addressed more thoroughly during the case studies.

EXHIBIT 13

CORRIDOR RESIDENTS' OPINIONS CONCERNING
WHO SHOULD PAY FOR THE RESOLUTION OF
COMMUNITY PROBLEMS

WHO SHOULD PAY	PERCENT OF RESPONDENTS STATING THIS ORGANIZATION OR GROUP SHOULD CONTRIBUTE TO THE COSTS OF SOLUTIONS
Local Government	19%
Allocate Part of Existing Budget	28%
Increase Taxes	17%
State Government	27%
Federal Government	33%
Railroad	73%
Local Businesses	9%

IV. COMMUNITIES SELECTED FOR CASE STUDY

INTRODUCTION

The final task of Phase I was the selection of case study communities. The purpose of the case studies, to be conducted in Phases II and III, are:

- To understand in more detail why communities are experiencing railroad/community problems and the magnitude of these problems, and
- To implement and evaluate alternative low-cost solutions to the problems through demonstration projects in each case study community. The evaluation will determine the effectiveness of the solutions and their applicability in other corridor communities.

To achieve these objectives, the case study communities have to be representative of other corridor communities in terms of railroad operating and community activity characteristics as well as problems experienced as a result of railroad/community conflicts. Also, the case study communities must afford the opportunity to implement and evaluate low-cost actions that have a reasonable probability of success in resolving problems, that address significant problems and that are potentially exportable to other corridor communities. Finally, the communities must afford the opportunity to implement these low-cost actions in a time frame consistent with the study schedule. To insure that these conditions are met, the following criteria were established to select the case study communities:

1. Communities experiencing the most severe overall impact will be selected. The case study communities will be selected from the list of communities rated as experiencing relatively high overall problem severity.

2. The range of problems experienced by corridor communities will be represented. At a minimum, each of the following problems will be represented by a minimum of one case study community:

    a) Vehicle and pedestrian safety

    b) Vehicular delay at grade-crossings including blocked emergency vehicle access and blocked access to schools and other services

    c) Environmental disturbances

    d) Community development disturbances

3. A minimum of two North Dakota and two Minnesota communities will be selected.

4. The communities selected will be representative of the various community types in the corridor. Insofar as possible, two communites from each of three community population size groups will be selected. These groups are:

    50 - 2,800
    4,600 - 15,000
    29,000 and above

    Population is the number of persons residing within the municipal boundaries of the community. These distinct community groupings are revealed through analysis of the distribution of the corridor communities by population size.

5. The communities selected must have indicated a definite commitment to resolving railroad/community impacts. Only communities which have designated a contact as the community's liaison for participation in the study will be selected. Also, only communities whose chief elected official has informed the consultant or the Management Board of his or her community's willingness to participate as a case study and assist in the case study to the extent possible will be selected.

6. A variety of railroad operations within communities will be represented.

7. Communities which present an opportunity to implement and test relevant low-cost actions. The communities which afford the opportunity to implement and evaluate a large number of low-cost options that may significantly reduce problem incidence or severity and that are exportable to other corridor communities confronting similar problems will be selected.

Exhibit 14 presents the data used to apply these criteria; Exhibit 15 shows the process by which the criteria were applied. Based on the criteria, the following six communities were selected for case study:

Beach, ND
Casselton, ND
Elk River, ND
Hebron, ND
Moorhead, MN
Sauk Rapids, MN

These communities are representative of other communities in the corridor in terms of community characteristics, problems experienced, causes of those problems, and potential solutions to those problems. Thus, by selecting these communities, information and procedures to identify the most cost-effective ways to resolve problems in the other corridor communities can be developed. A minimum of ten projects demonstrating solutions for problems will be selected for implementation in these communities.

EXHIBIT 14

DATA USED TO SELECT CASE STUDY COMMUNITIES

COMMUNITIES IDENTIFIED AS HAVING THE MOST SERIOUS OVERALL PROBLEMS	PROBLEMS CONFRONTING THE COMMUNITY[1]							STATE		POPULATION GROUP			COMMITMENT TO RESOLVE PROBLEMS		RAILROAD OPERATIONS[2]			NO. OF EXPORTABLE LOW-COST ACTIONS THAT COULD BE IMPLEMENTED[3]
	VS	PS	EVD	AWS	ASR	CD	ENV	Mn	ND	50-2,800	4,600-15,000	29,000+	Yes	No	Through Trains	Switching Operations	Delayed Trains	
Moorhead			X	X		X		X				X	X		X	X	X	10
Brainerd	X		X					X			X		X		X	X	X	7
Elk River	X	X			X	X		X			X		X		X	X	X	13
Jamestown	X	X	X	X	X		X	X			X		X		X	X	X	4
Little Falls	X		X	X	X	X		X			X		X		X	X	X	4
Sauk Rapids	X	X	X	X	X	X	X	X			X		X		X			9
Wadena		X	X	X				X			X		X		X			2
Beach	X	X	X	X	X	X	X		X	X			X		X	X	X	12
Carlton								X		X			X		X	X		8
Casselton	X	X	X	X	X				X	X			X		X	X	X	13
Hebron									X	X			X		X	X	X	9
New Salem									X	X			X		X		X	8
Perham	X	X	X	X	X			X		X			X		X	X		5
Staples			X	X	X	X		X		X			X		X		X	6

1/Only those problems identified as being of relatively high severity are noted.

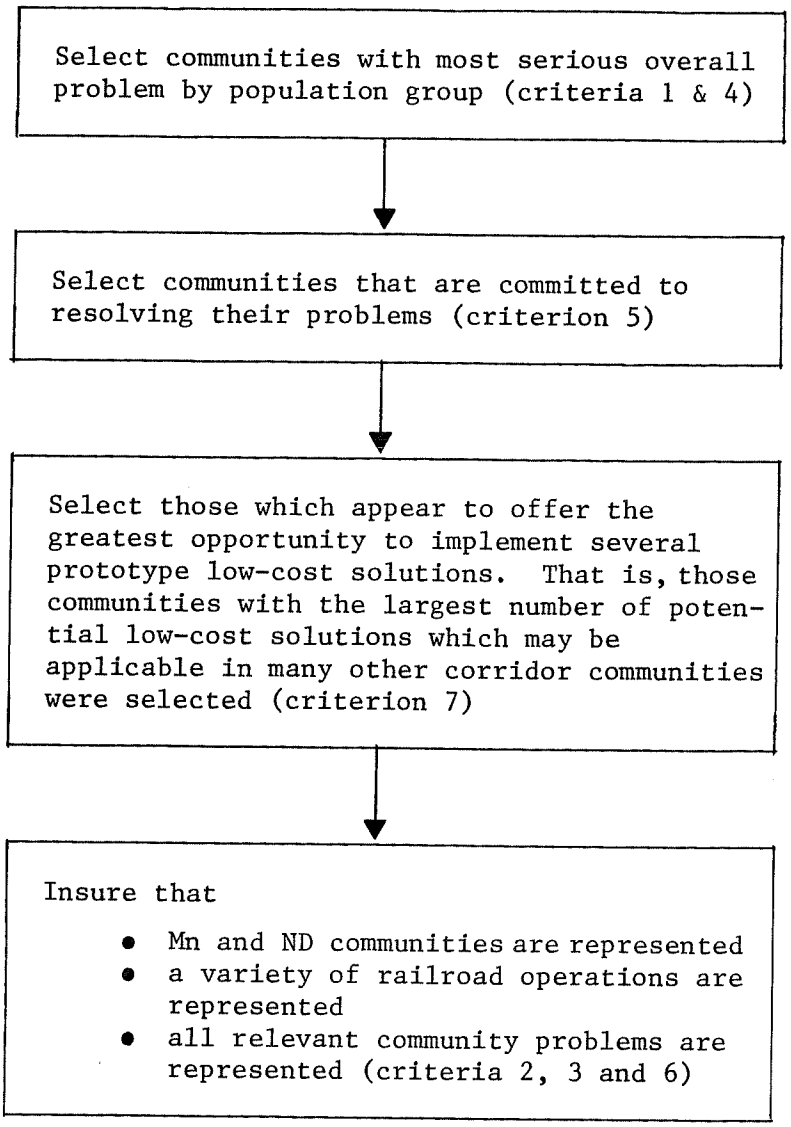
2/Trains may be delayed in a community to change crews, refuel, queue to enter a yard, wait to allow another train to pass, etc.

3/Low-cost actions considered exportable when the case studies were selected are the following:

- Ensure standing trains and local switching operations do not unnecessarily activate warning signals.
- Ensure that standing trains do not unnecessarily block grade crossings.
- Establish procedures to break trains in emergency situations.
- Extend sidings or construct new sidings.
- Upgrade warning signal activators (motion censors).
- Upgrade switches.
- Outfit firefighters with Personal Emergency Equipment.
- Establish coordination between jurisdictions fire services.
- Acquire new firefighting equipment/construct new fire station sheds.
- Reroute transit vehicles.
- Conduct Safety Education programs.
- Remove visual obstructions adjacent to the main line.
- Establish communication between emergency service providers and the local train controller.
- Improve communication between the community and railroad.
- Improve/upgrade warning signals.
- Extend warning gate arms.
- Synchronize warning signals and traffic lights.
- Develop/improve pedestrian crossings.
- Consolidate traffic on a single line.
- Conduct preventive planning and related actions.
- Enforce laws against violating warning signals.
- Divert vehicle traffic to alternative routes.
- Change location of rail operations (crew change points, switching, train verification, etc.).

EXHIBIT 15

PROCESS FOR APPLYING SELECTION CRITERIA



V. NEXT STEPS: CONDUCT OF THE CASE STUDIES

INTRODUCTION

Phase I culminated in the selection of six communities for case study. The final two phases of the study involve the implementation and evaluation of low-cost solutions in these six communities. An overview of the tasks to be performed in these phases is presented in Exhibit 16. Following is additional detail on each task in Phase II.

Task Descriptions

Task 1: Develop Procedures to Evaluate Alternative Ways to Resolve Community Problems. A cost-effectiveness framework will be developed to comparatively evaluate alternative ways to resolve each case study community's problems. To the extent possible, potential costs and benefits of each alternative will be quantified. However, due to data limitations and the short time frame for conducting the case studies, much of the evaluation will be based on the expert judgement of the consultant and study participants, i.e., the communities, the states and the railroad.

Task 2: Define Problems Experienced by Each Case Study Community. This task is directed at understanding and documenting in detail the nature and extent of problems resulting from railroad operation/community activity conflicts occurring in each case study

EXHIBIT 16

CASE STUDY APPROACH OVERVIEW

PHASE II: CONDUCT COMMUNITY CASE STUDIES AND PROPOSE DEMONSTRATION PROJECTS

Task 1: Develop Procedures to Evaluate Alternative Ways to Resolve Community Problems

Task 2: Define Problems Experienced by Each Case Study Community

Task 3: Identify Feasible Alternatives to Resolve Community Impacts

Task 4: Comparatively Evaluate Alternative Low-Cost Options and Propose Demonstration Projects

Task 5: Investigate and Recommend Sources of Funding for Each Proposed Demonstration Project

Task 6: Present Proposed Demonstration Projects to the Management Board for Approval

Task 7: Prepare and Submit Phase II Report

PHASE III: MONITOR AND EVALUATE THE IMPLEMENTATION OF THE DEMONSTRATION PROJECTS

Task 1: Monitor and Report Progress in Implementing the Demonstration Projects

Task 2: Evaluate the Effectiveness of the Demonstration Projects

Task 3: Prepare and Submit Study Final Report

community. The location of problems selected for study in each community will be identified; the current and potential future levels of each impact at each location will be estimated; and the characteristics of the current and future community activity systems and railroad operations (e.g., patterns, levels, facilities, locations) will be detailed.

These data will provide a clear definition of the magnitude of the current problems confronting each community. Also, they will establish the before conditions used to compare with the after conditions in order to evaluate demonstration project effectiveness. The data on community activity systems and railroad operations will provide insight into factors contributing to the problems and thus help generate potential solutions to them. Estimation of future conditions will add an important dimension to both the understanding of the problems and the assessment of alternatives to resolve them.

The output of this task will be a profile of each community's current and potential future problems and activity systems. A second output will be a profile of current and future railroad operating practices and facilities in each community.

Task 3: Identify Feasible Alternatives to Resolve Community Problems. The purpose of this task is to identify a list of alternative problem solutions available to each community. The focus will be on identifying low-cost, short-term, system management measures. However, more expensive alternatives and/or longer implementation time frame alternatives which appear particularly promising will be identifed as well. Additionally, both transportation system management and community activity system management alternatives will be identified. Possibilities for

combining two or more alternatives to formulate a more effective strategy will be considered. The objective is to identify a comprehensive list of relevant alternatives for each community.

TASK 4: Comparatively Evaluate Alternative Low-Cost Options and Propose Demonstration Projects. The procedures to perform this task will be developed in Task 1. As a result of this comparative evaluation, a minimum total of ten demonstration projects will be proposed for implementation and arrangements for this implementation defined. These projects will be documented for presentation to the Management Board. Each problems it will address, the extent to which these problems will be resolved by the project, possible additional effects, cost, arrangements for implementation, and implementation schedule.

TASK 5: Investigate and Recommend Sources of Funding for Each Proposed Demonstration Project. The purpose of this task is to identify recommended arrangements for financing each demonstration project. These arrangements will include recommended sources of funding, the amount of funding to be obtained from each source, and the procedures for obtaining this funding. To develop these recommendations, we will:

(1) Develop criteria to identify and comparatively evaluate funding sources.

(2) Develop a list of possible funding sources.

(3) Comparatively evaluate the candidate funding sources and select recommended sources and approximate levels of funding to be obtained from each one to finance each project.

TASK 6: Present Proposed Demonstration Projects to the Management Board for Approval. The purpose of this task is twofold. The first concern is to obtain Management Board approval of the projects

proposed for demonstration. The second is to provide the Management Board with the information they will require to establish the commitment of the communities, railroad and states to implement the projects.

The Board will be provided with detailed documentation of the proposed projects as specified in Tasks 4 and 5. A Board meeting will be conducted to select the demonstration projects to be implemented. Parties who will be involved in demonstration project implementation will participate in the meeting to facilitate discussion and clarification of issues concerning implementation arrangements which may arise. The output of this task will be a set of projects to be demonstrated in each community including any understandings concerning implementation arrangements which may be agreed to and next steps in the implementation process.

TASK 7: Prepare and Submit Phase II Report. This report will document the results of the Phase II effort and explain how these results were obtained.

VI. CONCLUSIONS

Phase I has provided important insight into the problems arising from railroad operation/community activity conflicts in the corridor. Communities throughout the corridor are experiencing seven basic types of problems:

- Pedestrian safety
- Vehicle safety
- Emergency vehicle delays
- Delays traveling to and from work and school
- Delays traveling to and from business and social activities
- Environmental disturbances, and
- Community development problems.

All communities for which data were obtained (i.e., 47 of the 77 communities located in the corridor) experience at least one of these problems. Many of the communities experience several problems.

Corridor-wide, emergency vehicle delay and vehicle safety are deemed to be the most serious problems. However, communities vary considerably in terms of problems encountered and the relative severity of those problems. Further, the relatively severe problems are not concentrated in a small group of communities. Rather, the list of most severely affected communities varies by problem type.

A variety of factors contribute to problem extent and severity. The problems are not caused solely by increased unit coal train traffic. Rather, they are the result of the interaction of a variety of community physical characteristics and activity patterns and railroad operations and facility characteristics. Projected growth in both railroad operations and community size and development patterns suggests the problems will increase in severity in the future.

There appear to be low-cost solutions to some of the problems experienced by the communities. Consistent with the problems' causes, these solutions range from changing community activity patterns to changing railroad operating practices. Which of these potential solutions are the most cost-effective remains a question to be explored in Phases II and III of the study.

Finally, it is apparent that, even if it were practical to divert railroad operations away from corridor communities, this would not be a favored strategy. The communities recognize that the railroad has played, and will continue to play, a vital role in their development and well-being. While corridor residents want to resolve the problems created by railroad operations/community activity conflicts, they do not want to lose the benefits accruing to them as a result of rail service in their communities.

APPENDIX A

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APPENDIX B

MAIL SURVEY INSTRUMENT AND SAMPLE SELECTION PROCEDURES

THIS APPENDIX CONTAINS THE FOLLOWING:

- The instrument used to survey corridor residents
- A memo to the Management Board identifying the communities to be surveyed and explaining their selection
- The procedure used to randomly select residents to whom the survey was sent
- The formula used to determine sample size requirements and data regarding response rates that can be used to perform statistical analyses of responses.

Ernst & Ernst

1225 Connecticut Avenue, N.W. • Washington, D.C. 20036 • Phone 202/862-6000

December 29, 1978

Dear Community Resident,

North Dakota and Minnesota have engaged Ernst & Ernst to do a study to learn about railroad-community problems and their possible solutions. The Burlington Northern railroad mainline passing through your community is of particular interest to us.

Enclosed with this letter is a questionnaire for you to fill out. It will give you an opportunity to express your opinions on possible railroad problems in your community so that something can be done to solve them. We think you will find it interesting and easy to complete. It will only take a few minutes.

Please return the completed questionnaire to Ernst & Ernst in the enclosed envelope as soon as possible. Postage has already been paid, so you need not add a postage stamp.

By the way, if you receive more than one questionnaire, please pass the extra one to someone else.

We sincerely appreciate your cooperation and assistance in this important study.

Sincerely,

Chip Taggart

Chip Taggart
Project Director

CT:bgj

Enclosure

P.S. We have enclosed an extra copy of a map of your community. Please accept it with our thanks for your help.

b. If YES, how severe a problem is this ... ?

(If NO, go to question 13 below.)

c. On the attached map draw circles with a "5" in them where you have this problem.

d. What to you think should be done to eliminate this problem?

4 VERY SEVERE

_____

_____

13a. Do have problems getting to shopping or recreational places because the road crossing is blocked by a train? (circle one)

1 NO
2 YES

b. If YES, how severe a problem is this for you?

(If NO, go to question 14 below.)

1 NOT SEVERE
2 SLIGHTLY SEVERE
3 SEVERE
4 VERY SEVERE

c. On the attached map draw circles with a "6" in them where you have this problem.

d. What do you think should be done to eliminate this problem?

_____

_____

14a. Does the location of the railroad in your community discourage economic growth or improvement of property near the railroad tracks? (circle one)

1 NO
2 YES

b. If YES, how severe a problem do you think this is? (circle one)

1 NOT SEVERE

CIRCLE ANSWERS HERE

INFORMATION ABOUT YOU AND YOUR FAMILY

1. What is your age: _____

2. What are the ages of the other people living in your home? (Circle those who are in school)

_____

3. Do you live in the area shown on the attached map? (circle one)

1 NO
2 YES

a. On the map, please put an "H" where you live. (If you live outside the area shown on the map, please draw an arrow in the direction of your home.)

b. On the map, please put a "W" where you and members of your family work.

c. On the map, please put an "S" where you and members of your family go to school.

INFORMATION ABOUT THE RAILROAD IN YOUR COMMUNITY

4. Overall, do you feel that having the railroad in your community is good? (circle one)

1 NO
2 YES

Explain why or why not:

_____

_____

5. Do you have to cross the railroad tracks on your way to and from work? (circle one)

1 NO
2 YES

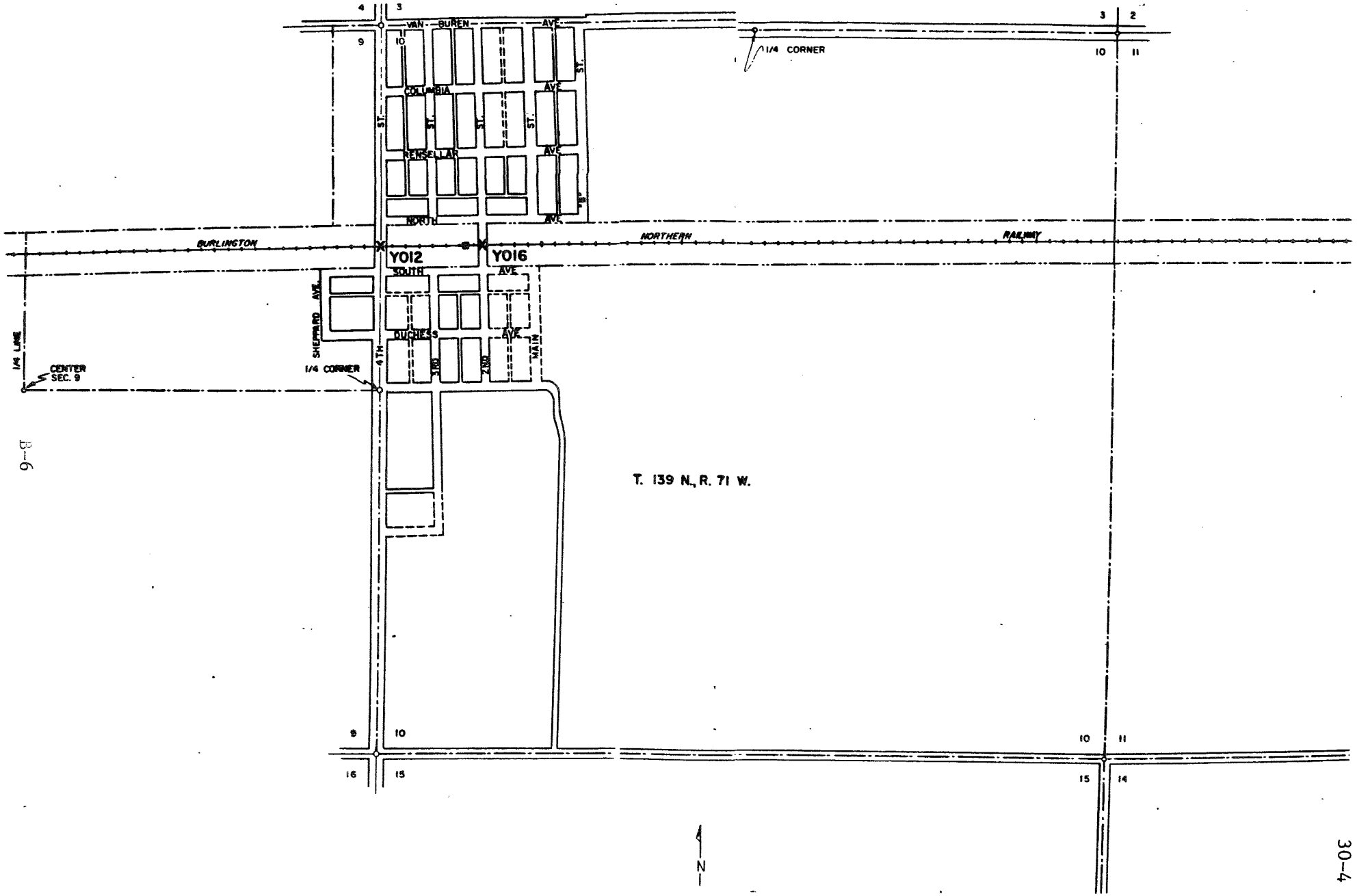
6. Do you usually cross the railroad tracks to do your shopping? (circle one)

1 NO
2 YES

7. Do you or your children have to cross the railroad tracks to get to and from school? (circle one)

1 NO
2 YES

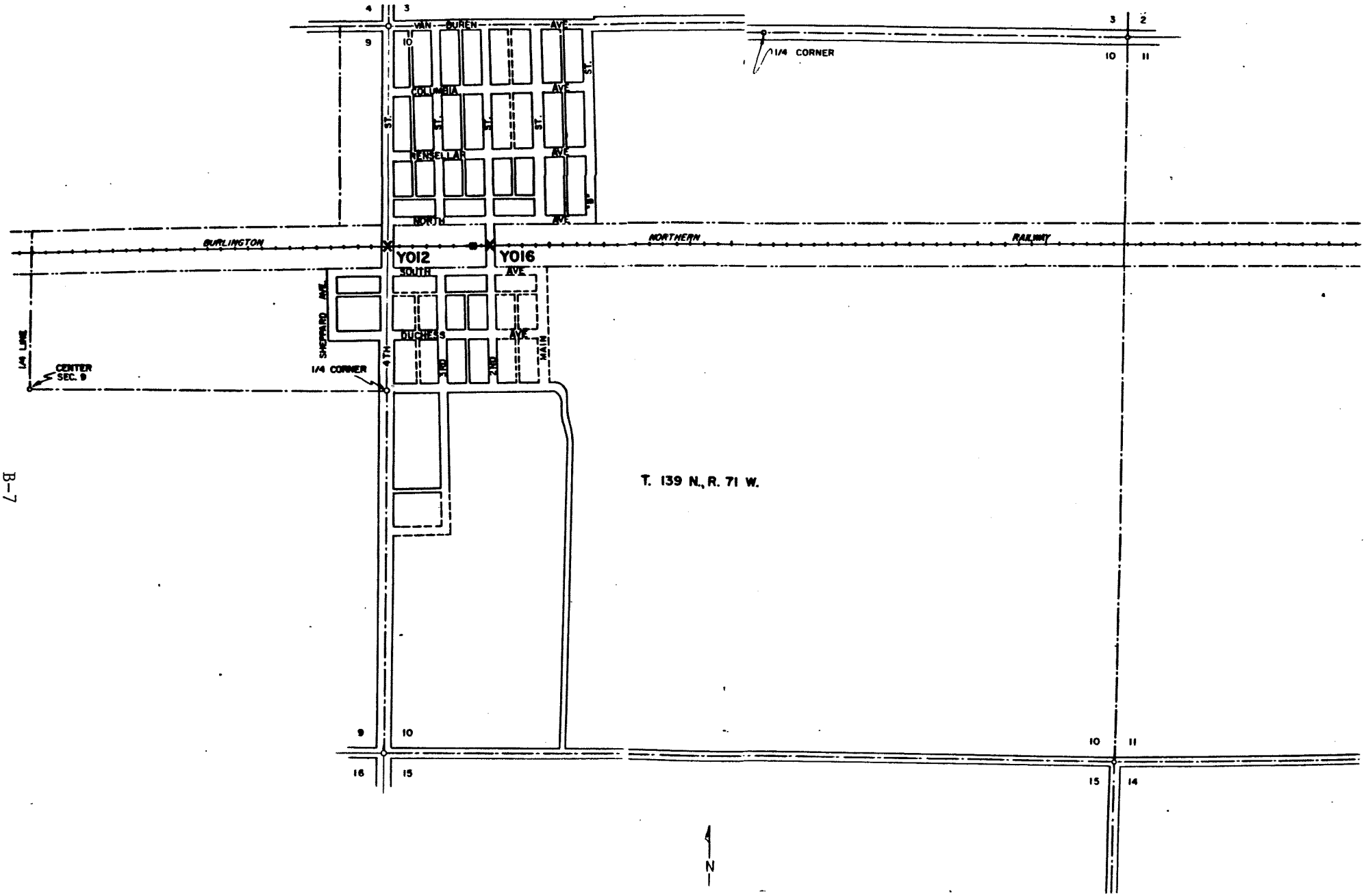
MAP OF TAPPEN



B-6

30-4

MAP OF TAPPEN



Ernst & Ernst

1225 Connecticut Avenue, N.W. • Washington, D.C. 20036 • Phone 202/296-8300

TO: Management Board

FROM: Chip Taggart

RE: Communities to be Surveyed (Task 6)

DATE: 12/12/78

A random sample of residents of each of the communities listed on the attached page will be surveyed during January. The purpose of the survey is to obtain the residents' opinions concerning the significance of railroad operations in their communities, the impacts resulting from railroad operations/community activity conflicts, and how these conflicts may be resolved. The purpose and use of this survey is further described in Task 6 of our work program. The communities listed below were selected from a complete list of corridor communities by applying the following procedures. These procedures were approved by the Management Board at the November 27, 1978 meeting and subsequent telephone conversations with individual board members.

1) One-third of the communities are to be North Dakota communities, the other two-thirds are to be Minnesota communities. This is the approximate distribution of corridor communities between the two states.

2) All rail traffic task force communities are to be surveyed.

3) Communities representing each of four community population size groups are to be surveyed. These groups are 50-999; 1,000-2,999; 3,000-15,999; 16,000 and above. These groups were established based on the distribution of corridor communities by population size. They are considered to be representative of the different types of communities in the corridor. All communities in the 16,000 and above and the 3,000-15,999 groups are to be selected. An approximately even number of communities from each of the smaller population groups are to be selected.

4) Only those communities through which the Burlington Northern mainline passes are to be selected. (To fulfill this condition the mainline must pass through the corporate boundaries and/or the populated area of the community. U.S.G.S. maps--Series 1:250,000--were used to determine the populated area of each community.)

5) Communities are to be selected randomly unless other procedures above indicate otherwise.

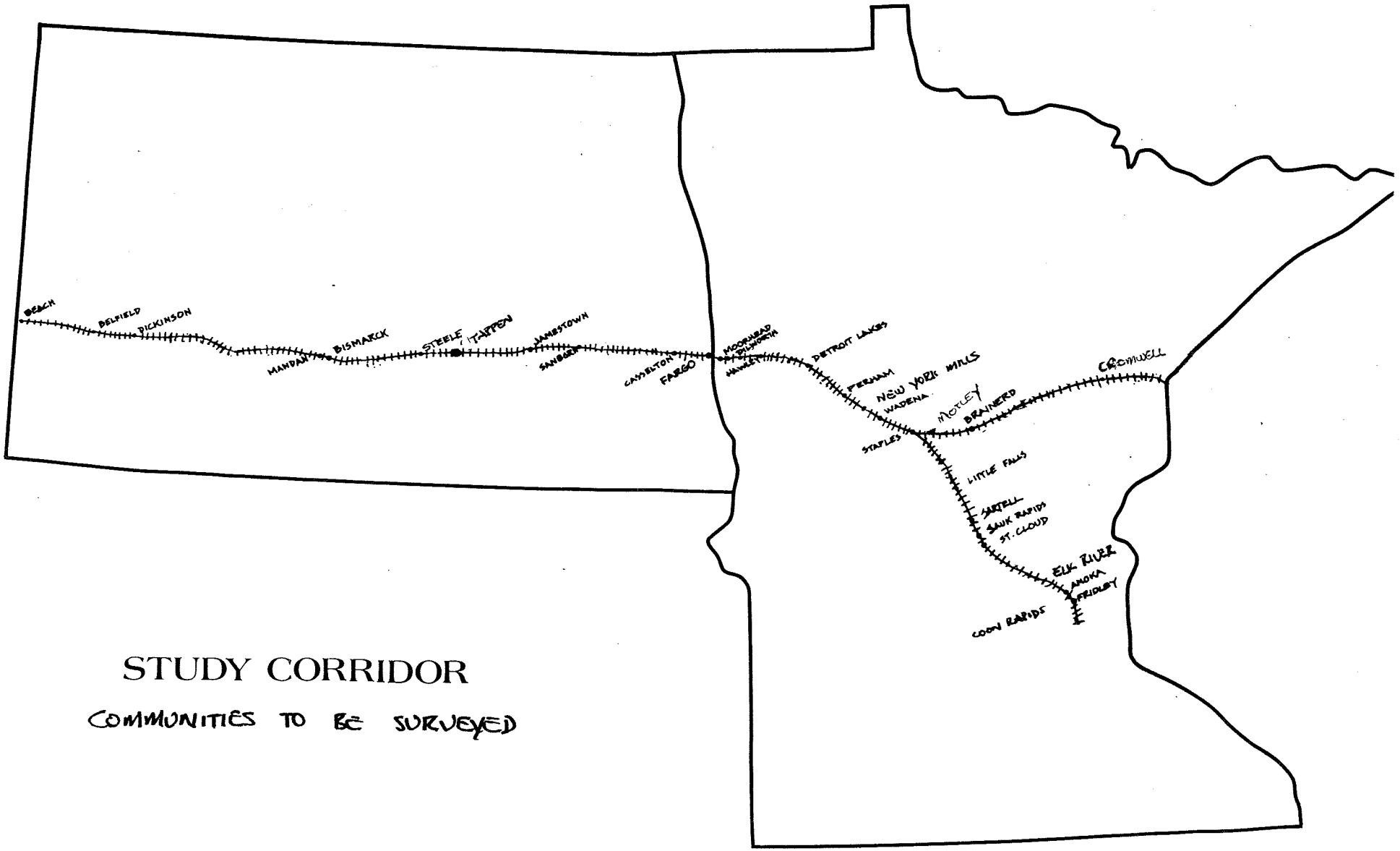
6) The designated contact for each community must agree to allow his or her community to be surveyed.

COMMUNITIES TO BE SURVEYED[1/2/]

MINNESOTA	NORTH DAKOTA
*Moorhead (30,000)	*Fargo (53,000)
*St. Cloud (42,000)	Bismarck (34,000)
Coon Rapids (30,000)	Dickenson (12,500)
Fridley (29,000)	Mandan (11,500)
*Detroit Lakes (7,000)	Jamestown (15,000)
*Wadena (4,600)	Beach (1,400)
*Little Falls (7,900)	Belfield (1,100)
*Sauk Rapids (5,200)	Casselton (1,500)
Anoka (14,800)	Sanborn (260)
*Brainerd (11,700)	Steele (700)
Elk River (7,000)	Tappen (150)
Dilworth (2,300)	
*Hawley (1,400)	
*Perham (1,900)	
*Staples (2,800)	
*Sartell (2,700)	
New York Mills (800)	
Motley (350)	
Cromwell (175)	

1/ The number in parenthesis is the approximate population size of the community.

2/ The asterisk (*) indicates that the community is a member of the Rail Traffic Task Force as of November 27, 1978.



STUDY CORRIDOR

COMMUNITIES TO BE SURVEYED

RANDOM SAMPLE PROCEDURE

1) Create files of the motor vehicle registrations for the thirty cities including only those people whose address has a street number or P.O. box; thus eliminating people on rural routes outside the city limits.

2) Count the number of registrations for each city and record the number. This number will be the value of "P" in the following formula for each city:

P/80=I

where:

I=skip interval

if "I" is not an integer round down

Note: if "P" is 400 or less go to step 6.

3) Select five (5) different random start numbers between 1 and the skip interval (I) for each city. Use these for the beginning of each pass through each city file.

4) Pass through all the items in each city file five (5) times using a different start number each pass and selecting every I^{th} item.

5) Print on a mailing label the name and address (including zip code) of each person whose vehicle registration was selected in the sample. Skip step 6.

Note: Three (3) sets of these labels are needed for each city.

6) Print on mailing labels, the names and addresses of all people with vehicle registrations in that city.

EXAMPLE

1) The total number of motor vehicle registrations in city A=4500

2) 4500/80=56.25=I

rounded down I=56

3) The five random start numbers are:

10
13
28
52
18

4) Pass through the city file five times. The first time select the 10th name in the file, i.e., the start number, and every 56th name thereafter (i.e., the skip interval).

After the end of file has been reached, go back to the beginning and select the 13th name and every 56th name thereafter...etc.

DETERMINATION OF SAMPLE SIZE AND DATA

FOR CONDUCTING STATISTICAL ANALYSIS OF RESPONSES

To determine the appropriate sample size for the distribution of the mail survey, the following equation was used:

$$n = \frac{p(1-p)}{\left(\frac{SE}{t}\right)^2 + \frac{p(1-p)}{N}}$$

where: p = estimated probability distribution of responses to a given question
SE = desired sample precision
t = desired confidence level factor
N = community population
n = required number of responses given other parameters

example: Brainerd, Minnesota
p = .5 (assumes worst case)
SE = .10 (assumes 90% confidence)
t = 1.65 (assumes 90% confidence and normal distribution)
N = 11,700

$$n = \frac{.5(1-.5)}{\left(\frac{.1}{1.65}\right)^2 + \frac{.5(1-.5)}{11,700}} = 68$$

That is, 68 responses were required from Brainerd residents to achieve the desired level of confidence and precision parameters. Assuming a response rate of 25%, a minimum of 272 survey recipients were required.

This same formula can be used to determine the precision of the mail survey responses if it is in the following form:

$$SE = t\sqrt{\left[p(1-p)\right]\left[\frac{1}{n} - \frac{1}{N}\right]}$$

where: t = confidence level factor
p = percent of yes answers per question
N = population
n = number of responses

Sources of the information required to use this equation are:

t = desired confidence level; selected by the analyst
p = See Appendix D
N = See Table B-1
n = See Table B-1

For example, the confidence intervals for Brainerd residents' responses are presented below in the right hand column. The calculations assumed t = 1.65 (assuming a 90% level of confidence); the expression $\left(\frac{1}{n} - \frac{1}{N}\right)$ equals .0133 in this case.

Question	p	p(1-p)	SE	Range
8A	.25	.1875	±.08	.17-.35
9A	.21	.3534	±.11	.10-.32
10A	.12	.1056	±.06	.06-.18
11A	.18	.1476	±.07	.11-.25
12A	.19	.1539	±.04	.15-.23
13A	.08	.0736	±.05	.03-.13
14A	.08	.0736	±.05	.03-.13

Thus, it can be stated with 90% confidence that 17% to 33% of Brainerd residents believe that pedestrian safety is a severe or very severe problem in their community (i.e., the response to question #8). This information also can be used to determine whether the difference in response rates of two communities are significant statistically and thus can be used to further establish the difference in problem severity between the communities.

TABLE B-1

SURVEY STATISTICS

	POPULATION	NUMBER RECEIVED	RESPONSE RATE
Anoka	14,800	66	17.5%
Beach	1,400	162	34.9%
Belfield	1,100	67	13.2%
Bismarck	34,000	72	19.4%
Brainerd	11,700	107	29.7%
Casselton	1,500	103	19.6%
Coon Rapids	30,000	85	21.3%
Cromwell	175	62	16.7%
Detroit Lakes	7,000	80	22.8%
Dickenson	12,500	83	24.0%
Dilworth	2,300	80	20.2%
Elk River	7,000	103	27.0%
Fargo	53,000	75	21.6%
Fridley	29,000	64	16.8%
Hawley	1,400	77	20.4%
Jamestown	15,000	106	28.4%
Little Falls	7,900	126	34.3%
Mandan	11,500	54	14.3%
Moorhead	30,000	103	28.3%
Motley	350	67	17.2%
New York Mills	800	67	26.0%
Perham	1,900	96	26.4%
Sanborn	260	40	9.9%
Sartell	2,700	102	26.0%
Sauk Rapids	5,200	93	24.1%
Staples	2,800	135	34.3%
Steele	700	112	18.4%
St. Cloud	42,000	69	19.7%
Tappen	150	75	16.0%
Wadena	4,600	76	21.1%

APPENDIX C

INTERVIEWS AND PUBLIC MEETINGS - LOCATIONS AND DATES, QUESTIONNAIRE

INTERVIEWS AND PUBLIC MEETING SUMMARY

DATE	LOCATION	COMMUNITIES INTERVIEWED	COMMUNITIES REPRESENTED AT PUBLIC MEETINGS
1/8/79	Casselton, N.D.	Buffalo, N.D. Tower City, N.D. Oriska, N.D. Casselton, N.D.	Casselton, N.D.
1/9/79	Moorhead, Mn.	Fargo, N.D. Dilworth, Mn. Moorhead, Mn.	Dilworth, Mn. (mayor) Moorhead, Mn. Riverside, Mn. (mayor) Hawley, Mn. (mayor)
1/10/79	Detroit Lakes, Mn.	Perham, Mn.	Frazee, Mn. (councilman) Audobon, Mn. (councilman) Detroit Lakes, Mn. (councilman)
1/11/79	Staples, Mn.	Little Falls, Mn.	Wadena, Mn. Little Falls, Mn. Staples, Mn.
1/15/79	Brainerd, Mn.	Brainerd, Mn. Carlton, Mn.	Brainerd, Mn. Baxter, Mn.
1/16/79	St. Cloud, Mn.	St. Cloud, Mn. Sauk Rapids, Mn. Sartell, Mn. Big Lake, Mn.	St. Cloud, Mn. Sauk Rapids, Mn. Minneapolis, Mn.

INTERVIEWS AND PUBLIC MEETING SUMMARY

DATE	LOCATION	COMMUNITIES INTERVIEWED	COMMUNITIES REPRESENTED AT PUBLIC MEETINGS
1/17/79	Coon Rapids, Mn.	Coon Rapids, Mn. Anoka, Mn. Elk River, Mn.	Coon Rapids, Mn. Ramsey, Mn. Fridley, Mn.
1/22/79	Jamestown, N.D.	Jamestown, N.D. Sanborn, N.D.	Jamestown, N.D.
1/23/79	Bismark, N.D. (interviews)	Glen Ollin, N.D. Steele, N.D. Bismarck, N.D. Mandan, N.D.	
	Mandan, N.D. (meeting)		Bismarck, N.D. Mandan, N.D. New Salem, N.D.
1/24/79	Beach, N.D. (interviews)	Medora, N.D. Belfield, N.D. Gladstone, N.D. Beach, N.D. Sentinel Butte, N.D.	Beach, N.D. (impromptu meeting)
	Dickernson, N.D. (meeting)		Dickenson, N.D. South Heart, N.D.
1/25/79	Hebron, N.D. (interviews)	Richardton, N.D. Hebron, N.D.	

INTERVIEWS AND PUBLIC MEETING SUMMARY

DATE	LOCATION	COMMUNITIES INTERVIEWED	COMMUNITIES REPRESENTED AT PUBLIC MEETINGS
1/12/79	Minneapolis, Mn.	FHWA John G. Ohrn, Planning & Research Engineer Mn/DOT Lawrence McNamara, Dir. Railroad, Ports and Pipeline Administration Gordon Boldt, Chief of Railroad Operations William Merrit, Asst. Commissioner for Field Operations	
1/25/79	Bismarck, N.D.	NDSHD Commissioner Walter Hjelle Chief Engineer Robert Bradley Transp. Services Dir. Buane Bentz Communications Division Director Floyd Robb FHWA Division Director George Seaworth	

PHASE I INTERVIEW SCHEDULE

COMMUNITY: _____

DATE: _____

CONTACT: _____

INTERVIEWER: _____

PARTICIPANTS:

Name	Position	Phone

Questions 1-4 deal with problems your community may be experiencing as a result of conflicts between community activities and railroad operations.

1. What problems is your community experiencing as a result of railroad operations--community activity conflicts? (List)

Problem	Seriousness

2. Please indicate the seriousness of these problems to your community (i.e., high, medium, low).

3. For each problem cited above, and taking the most serious problems first, answer each of the following:

   a. What is the location of the problem? (Use map.)

   b. When did this become a problem?

   c. Does this problem occur, or is it more severe, at specific times of the day or year?

   d. What individuals or groups are most affected by this problem?

e. What causes the problem? (Use map if helpful, e.g., to identify separation of residential and employment locations).

f. Do you have any documentation of the problem which would be useful to us (e.g., accident statistics, vehicle delay time, surveys,etc.)?

g. What has been done to lessen the problem? Who was involved in funding and implementing these actions? How much did they cost? How successful have these actions been?

h. What actions have been proposed to lessen or eliminate this problem? Who was proposed to fund and implement these actions?

i. What other things, particularly low-cost things, could be done to lessen or eliminate this problem? Who should fund and implement these actions?

4. What problems from railroad operations--community activity conflicts have you had in the past that have been resolved? How were these resolved? Who funded and implemented actions taken?

5. Up to now we have discussed problems in your community caused by railroad operations--community activity conflicts. Let's discuss for the next few minutes whether the railroad benefits your community. Is the railroad important to your community? If so, in what ways does your community benefit from the railroad?

APPENDIX D

SUMMARY OF PROBLEMS BY COMMUNITY

ANOKA

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	20	8	
Vehicle Safety	36	15	
Environmental Problems	17	3	
Emergency Vehicle Delay	32	15	
Access to Work/School	20	3	
Access to Shopping/Recreation	15	0	
Community Development Problems	5	5	
TOTAL ALL PROBLEMS	145	49	26

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	26
% of respondents willing to allocate part of local budget to finance implementation of solution	20
% of respondents will to increase local taxes to finance implementation of solutions.	15
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	11
State Government	21
Federal Government	30
The Railroad	59
Local Businesses	8

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Anoka is located south of the Becker Sherco Power generating plants. Coal movements are limited to three south bound trains a week for the NSP Riverside plant in Minneapolis. Anoka officials estimate train traffic at 25-30 per day. Anoka's major problems have been resolved with the construction of the 7th Avenue underpass. The community is divided north-south by a river with at-grade crossings existing on the west side and separation on the east side. Development is expanding into the northerly area including the abutting township of Ramsey, which is essentially a bedroom community funneling all of its traffic through Anoka, through at-grade intersections which are growing in crossing volumes.

As a result of these conditions, blockage remains a diminished but their most serious concern. Fire protection is provided from a fire hall located south of the tracks serving the bulk of the established community. Fire services are mixed volunteer and paid. They serve two cities as well as seven townships stretching to the north. They have central communications with the county dispatcher and do not maintain regular communications with the railroad.

Blockage essentially occurs from through-train movements. Because of their proximity to the make-up yards in Fridley, local railroad service is provided by small trains minimizing blockage concerns. The city is proposing new development north of the railroad track for an industrial park which will be requiring and requesting an additional at-grade crossing. They have a crossing maintenance concern and have established contact with Burlington Northern with responsiveness for maintaining crossings increasing. Most development along the tracks is not residential.

Audubon

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

NOT SURVEYED

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Audubon was represented at the public meeting by a city council person. He indicated that one to two years ago many crossing delays were experienced as a result of stopped trains which blocked the crossings in the community. He stated that the problem is considerably less serious now as the result of actions taken in cooperation with the Burlington Northern. He also indicated that noise from railroad operations is not a problem in Audubon. He stated that the community has grown up with the railroad operations and is used to the noise. He did indicate that at one grade crossing, there is a vision blockage problem. There is the possibility of accidents occurring at the crossing given that motorists are unable to clearly see approaching trains.

Baxter

SURVEY RESULTS

PROBLEM		2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems		NOT SURVEYED	
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . .

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . .

% of respondents will to increase local taxes to finance implementation of solutions. . . . . .

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . .

State Government . . . .

Federal Government . . . .

The Railroad . . . .

Local Businesses . . . .

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

BEACH

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	78	58	
Vehicle Safety	90	77	
Environmental Problems	41	15	
Emergency Vehicle Delay	91	73	
Access to Work/School	60	42	
Access to Shopping/Recreation	83	38	
Community Development Problems	31	14	
TOTAL ALL PROBLEMS	474	317	1

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	85
% of respondents willing to allocate part of local budget to finance implementation of solution	38
% of respondents will to increase local taxes to finance implementation of solutions.	36
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	29
State Government	38
Federal Government	44
The Railroad	89
Local Businesses	7

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Beach (population 1,400)
Located on the North Dakota/Montana border, Beach is experiencing considerable growth due to the energy development occurring in the area. Both sides of the community, as determined by the railroad tracks, are developing and adding to the list of the problems experienced in the community. There are only two crossings in the City and they are frequently blocked simultaneously by idling trains waiting on the siding for the mainline track to clear. In cases where only one crossing (Second Avenue) is blocked while the other is clear (Central Avenue), visual obstructions are created for northbound traffic on Central. In particular, motorists cannot see approaching trains to the east. However, because of the length of time they are forced to wait at the crossings, motorists will risk colliding with an approaching train in order to complete their crossing. On the north side of the tracks, visual obstructions are created by the depot (along the alignment of First Avenue Northeast) and storage yards in the railroad right-of-way for the Hanson Lumber Company.

In instances where Central Avenue is not blocked by an idling train, the cross street traffic is still not allowed sufficient time to clear before the idling train accelerates onto the mainline.

Pedestrian and school bus traffic create additional problems for the community in the sense that school children crawl under trains in order to cross the railroad property. Furthermore, because the high school on the north side does not have a hot lunch program, the children are bussed to the elementary school on the south side at lunch time. This frequently causes delay in starting classes in the afternoon.

BELFIELD

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	24	18	
Vehicle Safety	18	6	
Environmental Problems	19	15	
Emergency Vehicle Delay	18	9	
Access to Work/School	18	9	
Access to Shopping/Recreation	15	9	
Community Development Problems	21	5	
TOTAL ALL PROBLEMS	133	71	20

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	19
% of respondents willing to allocate part of local budget to finance implementation of solution	9
% of respondents will to increase local taxes to finance implementation of solutions.	6
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	8
State Government	15
Federal Government	15
The Railroad	61
Local Businesses	6

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Belfield (population 1,150)
Located approximately 45 miles east of Beach, Belfield is fortunate to have a grade separated crossing in the City along U.S. 85. Consequently, few problems arise in connection with vehicle delay and related problems. However, the City has experienced brush fires caused by the ignition of dry weeds and grass in the railroad right-of-way. Consequently, maintenance of railroad right-of-way is the biggest problem.

Big Lake

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

NOT SURVEYED

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Big Lake is a community of 2,000 population. They have been subjected to some major derailments and as a result have consolidated access via at-grade crossings to Eagle Lake Road and Lake Street (TH 25). Because of the lake home nature of the area, summer time population doubles.

The Eagle Lake Road crossing is roughly 4 blocks east of the main crossing at Lake Street. It has been kept open but is in bad repair making crossing difficult. The Lake Street crossing carries 7,000 ADT. Existing downtown development is on the north side of the tracks and close to the tracks creating an exposure problem during derailments. They experience 28 to 30 trains daily operating at high speeds.

Safety is a major concern due to the high speed movements and the four derailments which have occured in the recent past. They are moving their fire department further north to get away from any exposure from the tracks. Many buildings are adjacent to the tracks. They had an 8 mph train speed limit ordinance which has been withdrawn. A number of school crossings occur including pedestrians and buses. They do have a school classroom safety crossing program but it is not reinforced with any crossing guards. TH 25 has a gate arm crossing protection device.

Crossing blockage is also a major concern. Emergency services include one police car and a fire hall location north of the tracks. They have not recorded a blockage hindering fire protection. Ambulance service is provided from north of the tracks with the hospital being located south in Monticello. Again no record of blockage has occured. They have experienced 20-25 minute blockages as a result of track maintenance activites. The community has a double track running through it with a switching location within the community which permits transfer of trains from one track to the other during periods of maintenance. This switching activity does not have to occur within the city, but has occured because it is our historical switchover location. Automobile back-up from the switching activities does affect mainline TH 10 traffic operations. They do have a siding spur track which is used but at a minimal level. As an example, in the summer of 1978 the railroad closed down Highway 25 during the July 4th weekend for routine maintenance without advance notice to the city.

Environmental concerns are related to vibrations for a number of residential units which exist in proximity to the railroad. Especially during the winter, high speed travel transmits a vibration through the frozen ground and has cracked walls. New sewer and water systems are in the planning The city anticipates development both north and south of the tracks. The proximity of thr rail line constrains CBD growth along TH 10, which as a result is moving to the east side of town incrementally.

BISMARCK

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	26	3	
Vehicle Safety	42	19	
Environmental Problems	17	7	
Emergency Vehicle Delay	31	6	
Access to Work/School	18	4	
Access to Shopping/Recreation	25	1	
Community Development Problems	10	1	
TOTAL ALL PROBLEMS	169	41	28

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	28
% of respondents willing to allocate part of local budget to finance implementation of solution	29
% of respondents will to increase local taxes to finance implementation of solutions.	15
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	21
State Government	22
Federal Government	22
The Railroad	76
Local Businesses	11

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Bismarck

The second largest city in North Dakota (population 35,000) along the corridor, Bismarck suffers from several problems related to crew change operations in Mandan, across the Missouri River to the west. This is because east bound trains are accelerating on a positive grade through Bismarck and decelerating on a negative grade on their way to the Mandan yards, causing speeds to be low and noise levels to be high. The most frequently reported problems are vehicle and pedestrian delay along cross streets, particularly at Third and Fifth Streets. Vehicle delay along Third, in turn, causes congestion north of the tracks in the CBD. Rough crossings at Third and Fifth are also frequently cited problems, as are vehicle accidents caused by the substandard design of the underpass at Main Street. Additional problems related to sight distance and crossing protection are recorded at 12th, 24th, 26th Streets and Centennial Road to the east.

BRAINERD

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	18	6	
Vehicle Safety	51	26	
Environmental Problems	22	3	
Emergency Vehicle Delay	84	58	
Access to Work/School	48	12	
Access to Shopping/Recreation	55	11	
Community Development Problems	16	4	
TOTAL ALL PROBLEMS	294	120	11

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	62
% of respondents willing to allocate part of local budget to finance implementation of solution	44
% of respondents will to increase local taxes to finance implementation of solutions.	21
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	35
State Government	39
Federal Government	40
The Railroad	84
Local Businesses	12

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Brainerd is divided east-west down the middle with the BN mainline to Superior. The Little Falls north-south trunk has limited traffic. Downtown lies south of the railroad tracks and contains the fire hall and emergency services center. Ambulance is also located on the south side. The hospital is located on the north side as well as major summer time lake area resort population, which is serviced by Brainerd. East-west train movements include two loaded coal trains daily and two freight trains.

The most severe problem is blockage in that they have no separated intersections in the city. There are four downtown at-grade crossings and one at-grade crossing near the Burlington Northern operations. Trunk Highway 25 on the easterly edge of the community does have a separated track crossing.

The railroad is improving and replacing the bridge across the Mississippi River which will permit increased train speeds through the community. Switching is not a major blockage problem. Burlington Northern by policy, holds coal trains at Staples to avoid peak hour movements of coal trains through the community. Peak hours were defined as the noon hour and 4:00 p.m. peak.

The fire department has a full-time chief and seven full-time firefighters with 35 volunteers. A referendum for funding a new fire hall on the north side failed. The fire department provides services both ot the urban and rural residents, covering 340 square miles, 10 townships, and 2 villages. They indicate a 25,000 resident coverage. In January, they had 25 urban runs and 14 rural runs which they believe are evenly split between north and south. A crossing blockage hinders the provision of emergency services for the community.

They are establishing a regional medical center with the addition of 23 new doctors. Hospital expansion is anticipated at the existing site, which is north of the downtown area and the railroad tracks. They also have indicated a growth center identification and are eligible for EDA special funding. Constant questions were raised about funding availability. A grade separation study has been completed by a consulting engineer and presented to the Council. The location is essentially one which facilitates separation but has limited serviceability to the community and extensive costs estimated at 2.5 million dollars.

Emergency services communications are consolidated through the sheriff's office and have a special hook-up to the railroad special agent. Through this contact, a train can be slowed or speeded up depending upon the

situation. The Fire Chief indicated that the time to communicate results in lost time and, therefore, is not of much value. Burlington Northern indicates that at train break, the police and fire are notified immediately.

The only noise and vibration issue was a result of the engine layover which occurs in downtown and often lasts for a duration of 8 hours. The vibrating of these trains idling does affect neighboring properties. The train is refueled downtown by truck but the engineer's duties during layover are unknown.

The railroad is viewed as important to the economics of the city and an important feature to be able to have service for the area. They indicated that the paper mill received two trips per day of pulp which originated in Cloquet.

Previous accident locations were at 13th Street, Northwest 4th Street, and 1st Street. However, the Minnesota PSC and MnDOT Crossing Improvement Programs have been made minimizing the problem.

School transportation is provided by one company which operates 78 buses.

The City Council indicated that the City has partial responsibility for funding improvements. However, they indicated that there is a need for outside resources. They felt the involvement of City funding would lead the local government to set priorities and therefore the city needs to fund all projects so that they are real projects as opposed to imaginary ones. Areawide participation was just as important as well.

Buffalo

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

NOT SURVEYED

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . .

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . .

% of respondents will to increase local taxes to finance implementation of solutions. . . . . .

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . .

State Government . . . .

Federal Government . . . .

The Railroad . . . .

Local Businesses . . . .

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Grain elevator facilities adjacent to the mainline near one crossing obstruct motorists' vision of train traffic and thus create a vehicle safety problem in town.

Traffic using the state highway located at one end of town is frequently blocked by standing trains. Train crews stop the trains in the crossing while they take breaks in town. The highway traffic is diverted through town to avoid the blocked crossing. This traffic, especially truck traffic, tears up the town streets.

Trains idle over night on a siding located partly in town. This creates a noise distrubance in residential areas near the mainline, particularly in the summer months when people leave their windows open. These standing trains also block crossings to the east of town. This may block access to emergency situations.

An anhydrous ammonium storage tank is located adjacent to the mainline in town. The town is concerned about the danger of a derailment which might explode the storage tank and cause a major disaster in the town.

New warning signals (gates and flashers) were installed at a crossing in town last year. However, the crossing right-of-way is narrow and allows only one lane of traffic to cross at a time. At the same time the new crossing signals were installed, another crossing was closed because it was a safety hazzard. The enclosure was poorly done and remains unsightly.

Carlton

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems		NOT SURVEYED	
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . .

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . .

% of respondents will to increase local taxes to finance implementation of solutions. . . . . .

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . .

State Government . . . .

Federal Government . . . .

The Railroad . . . .

Local Businesses . . . .

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Carlton has a major problem with the blockage of County Road 1, which is a connection of the traditional old center of the city with the expanding population south. They do not have development expansion potentials to the north, east, or west from the existing town. Those locations are hampered from development by swamp, rocks, and lakes.

The blockage problem in Carlton is accentuated by the taconite train movement coupled with coal and freight movements. Taconite trains are 180 cars in length which operate at 90 car trains during the winter time. Six loaded and three unloaded taconite trains pass through the town daily, two loaded coal trains, and two freight trains. The taconite movements are called turn-outs from the Fourth Division and Fifth Division and average 20 miles an hour on the turn-our movement. The east-west mainline operates at 40 mph with taconite trains operating at 40 mph in the winter and 30 mph in the summer probably due to train length. Switching activities have been greatly reduced recently and do not contribute significantly to the blockage question on County Road 1. The depot does maintain radio contact from Superior with all trains in the area.

Emergency services are located north of the railroad tracks and provide areawide service to the county, primarily to the south. They estimate 60 to 70% of the service calls are south of the tracks from the existing location of the fire hall and ambulance. They have provided their volunteer firemen with emergency kits which permit them to reach the scene of the fire without having to cross the railroad tracks. They do not have alternate crossings within 3 miles. They are anticipating growth south including schools, and utilities which are in that location. Development opportunities in other directions do not exist. Their present speed limit ordinance requires trains to operate through the community at 5 mph.

A big question is safety in that Wrenshall Refinery bound oil trucks to the refinery, which is located south of Carlton, results in 100 transports per day. These transports apparently have a difficult time in making the right turn onto County Road 1 from CR 61 and frequently run the gates increasing accident and major disaster exposure.

Limited residential development occurs along the tracks and no complaints have been received with respect to noise and vibrations. They do not have industrial parks nor do they plan industrial development. Downtown expansion southerly is limited by the spur track to the grain elevator.

CASSELTON

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	53	32	
Vehicle Safety	68	45	
Environmental Problems	40	13	
Emergency Vehicle Delay	84	52	
Access to Work/School	44	18	
Access to Shopping/Recreation	41	12	
Community Development Problems	20	9	
TOTAL ALL PROBLEMS	350	181	5

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	67
% of respondents willing to allocate part of local budget to finance implementation of solution	18
% of respondents will to increase local taxes to finance implementation of solutions.	18
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	16
State Government	27
Federal Government	28
The Railroad	73
Local Businesses	7

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Local switching trains and through trains, standing while the crew takes a lunch break, often activate the warning signals at the crossings in town despite the fact they will not use the crossings. Often the gates remain down for twenty to thirty minutes. Besides the aggravation this creates, it has also become a safety hazzard as people are ignoring signals and weaving between the gates with increasing frequency. Accidents have resulted from this behavior. School buses do not cross against the signals even though a train may not be coming. This causes students to be late for school. Vehicle delays are also experienced at the crossings in town due to local switching operations. Local switching operations have been known to block crossings for 15 minutes at a time. Delays at grade crossings are a particular concern for emergency vehicles. The community has recently established a volunteer ambulance service with the service area equally divided on both sides of the mainline. The volunteer fire department has a similar service area. When the standing trains and local switching operations block all the crossings, the only route to the other side of the mainline from the ambulance and fire stations is two miles east of town. This kind of delay can be critical in an emergency situation. Again, the delays at the crossings are caused by standing trains and local switching operations. Through trains do not create a problem because they clear the grade crossings quickly.

A grain elevator is located adjacent to the mainline at one of the crossings. The elevator obstructs the motorists' view of trains and adds to safety problems created by the "falsely" activated crossing signals.

One of the crossings in town is not well maintained. This makes crossing hazardous--school buses have stalled in the middle of the tracks due to the rough crossing.

At another crossing, the approach gradient is quite steep. People get up speed to get over the crossing in icy weather and won't or can't stop if the warning signals are operating. Also, the steep incline obstructs motorists' vision of the trains which makes the crossing more hazardous.

The community is just completing construction of a swimming pool on the south side of the tracks. It is part of a recreation area which includes a golf course. Most of the people reside on the north side of the tracks. Residents are concerned about the potential safety hazard to children crossing the mainline in order to reach the pool.

The community relies on the railroad for transportation of grain to market. But they perceive that the grain shipments have become of secondary importance to the railroad as coal traffic increases. Rail service to grain shippers in the community has declined significantly in the last couple of years.

There is a lot of pedestrian traffic crossing the mainline to reach the shopping area on the north side of the tracks. This pedestrian traffic will increase in the future as new development is occurring on the south side of the mainline away from the business and shopping area of the community.

The community has complained to the railroad about the operating practices which "falsely" activate the crossing signals, the poor maintenance of the grade crossing mentioned earlier and other problems. They stated that the railroad has been largely unresponsive to these complaints.

COON RAPIDS

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	15	7	
Vehicle Safety	37	11	
Environmental Problems	35	11	
Emergency Vehicle Delay	33	9	
Access to Work/School	31	11	
Access to Shopping/Recreation	35	11	
Community Development Problems	15	4	
TOTAL ALL PROBLEMS	201	64	24

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	27
% of respondents willing to allocate part of local budget to finance implementation of solution	14
% of respondents will to increase local taxes to finance implementation of solutions.	6
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	6
State Government	17
Federal Government	27
The Railroad	71
Local Businesses	13

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Coon Rapids is located south of the Becker plant. The Burlington Northern rail line through the community severs the established part of the community from the new and expanding portions. Its location is such that it does not directly parallel major highways in close proximity creating blockage spill-over onto major arerials, The city has a separated crossing on the eastern edge and gate arm protected crossings at Hanson, Egret, 85th and Lake. Their major issue again is blockage. It centers on its impact for community growth and development.

Major new development is occuring in the northern parts of the city which need to cross the tracks to access the older parts in the commercial strip of Coon Rapids. However, long-range commuting trips into Minneapolis or St. Paul do not need to cross the railroad tracks so regional access is not impeded. The mayor indicated that 30 cars per minute move through an intersection, that train counts are increasing, that coal trains are a small proportion of the train movements, and that the Duluth and Fargo-Moorhead operations merge within Coon Rapids creating a double impact. There are no switching operations within the city therefore blockage impacts result from through trains.

Train travel speeds range from 40-60 mph. However, it was pointed out that trains having been made up in the Fridley yards are moving up-grade through Coon Rapids and do not reach top speeds until after they pass through the city.

The city has a full-time fire department operating in two locations, one on each side of the tracks. They have a county dispatcher for police and fire, but apparently do not have regular communication with the railroad. Trains also apparently wait or slowly move into the marshalling yards on the southbound or eastbound approach again intensifying the amount of time which blockage occurs.

Environmental issues are not significant and even though the train is noisy, it has been accepted. The city has a little over 3 miles of railroad frontage property which is undeveloped. The area is residentially planned. Zoning provisions provide for set-backs of an increased 30 feet or an earth berm adjacent to railroad tracks. However, a recent development proposal was denied financing by FHA unless a 6 ft. berm with a fence was also introduced as well as an increased set-back. Berming in Coon Rapids is extremely difficult and expensive because the community has sandy soils and high water table requiring fill to be purchased and brought in from other locations. As a result, they are exploring the policy questions of how to dampen noise and design and who should bear the costs in order to secure the desired development pattern.

The safety aspects of the at-grade crossings were also emphasized primarily in terms of the dampening affect they have on the development expansion desired by the community. The community has historically been economically distressed and is an eligible EPA community accounting for their prodevelopment attitude. There is some fear in the neighborhoods due to train speeds. Also the railroad has done a marginal job of maintaining the crossings causing severe vehicle abuse. Egret is the most accident prone crossing. Evidently the gate arms come down long before it is deemed necessary, at least by the people stopping at the crossings, causing them to avoid the gates.

The city has collected alot of data and is cooperative in providing it. In terms of financing, most of the road crossings the tracks are county roads and viewed by the city as more of a county concern and obligation. The nature and geographical layout of the community makes Coon Rapids much different (except for Anoka) than the other communities visited. Their blockage problems also appear less severe and emergency services are not severely hampered. They appear to possess the most opportunity for addressing adjacent development considerations, both existing and undeveloped areas.

CROMWELL

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	10	3	
Vehicle Safety	18	6	
Environmental Problems	23	6	
Emergency Vehicle Delay	24	3	
Access to Work/School	10	2	
Access to Shopping/Recreation	7	0	
Community Development Problems	16	8	
TOTAL ALL PROBLEMS	108	28	30

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	19
% of respondents willing to allocate part of local budget to finance implementation of solution	8
% of respondents will to increase local taxes to finance implementation of solutions.	7
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	5
State Government	16
Federal Government	19
The Railroad	55
Local Businesses	3

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

DICKINSON

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	36	16	
Vehicle Safety	49	14	
Environmental Problems	22	13	
Emergency Vehicle Delay	37	18	
Access to Work/School	22	2	
Access to Shopping/Recreation	18	12	
Community Development Problems	17	11	
TOTAL ALL PROBLEMS	201	86	16

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	39
% of respondents willing to allocate part of local budget to finance implementation of solution	23
% of respondents will to increase local taxes to finance implementation of solutions.	11
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	24
State Government	16
Federal Government	24
The Railroad	67
Local Businesses	7

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Dickinson (population 12,500)
Located some 65 miles east of the Montana border, Dickinson is the last crew change location in North Dakota for westbound trains. There is one grade-separated crossing in the City and some five other grade crossings. Safety is the major concern at these five crossings, along with vehicle delay. Because motorists are afraid to encounter trains at the grade crossing, they often use the Main Avenue underpass creating congestion on the approaches to that crossing. There is additional concern on the east side for school children crossing the tracks on their journey to and from school. Sight distance problems are caused at two crossings on the east side, especially at the Sixth Avenue crossing. There is fear that the crossbuck control is inadequate at the crossing southwest of the City to the recreational area.

DETROIT LAKES

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	21	7	
Vehicle Safety	38	11	
Environmental Problems	26	4	
Emergency Vehicle Delay	61	23	
Access to Work/School	35	8	
Access to Shopping/Recreation	29	3	
Community Development Problems	11	5	
TOTAL ALL PROBLEMS	221	61	25

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	31
% of respondents willing to allocate part of local budget to finance implementation of solution	20
% of respondents will to increase local taxes to finance implementation of solutions.	15
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	13
State Government	20
Federal Government	24
The Railroad	71
Local Businesses	11

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

People from Detroit Lakes indicated that the coal trains average time to pass a grade crossing is one and three-quarters minutes. They stated that they can not complain about that small amount of time. They also indicated that there are no significant switching operations occurring within the community which cause delays at grade crossings. They also indicated that an overpass constructed in one part of the community about ten years ago has eliminated most of the vehicle delay problems occurring in the community. One community resident indicated that Burlington Northern trains create a lot of noise and some vibrations in their residential area as the trains cross the intersection with the Soo Line. They suggested that the situation could be improved with construction of noise barriens. The safety problem in the community was stated to be the result of motorists' frustration with delays at the grade crossing. This frustration sometimes causes motorists to take a chance to beat the train across the grade crossing intersection. It is not however a frequent phenomena.

DILWORTH

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	20	4	
Vehicle Safety	34	11	
Environmental Problems	36	15	
Emergency Vehicle Delay	50	23	
Access to Work/School	38	20	
Access to Shopping/Recreation	45	13	
Community Development Problems	30	11	
TOTAL ALL PROBLEMS	253	97	15

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	46
% of respondents willing to allocate part of local budget to finance implementation of solution	24
% of respondents will to increase local taxes to finance implementation of solutions.	16
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	24
State Government	36
Federal Government	44
The Railroad	73
Local Businesses	14

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

The "hotel crossing" is the only crossing and is at-grade. Current development and emergency services are located north of the railroad tracks. A new 57 acre residential development is being established south of the tracks. They have a planned crossing for County Road 9 located westerly of the existing crossing about ½ mile which has as yet not occured. Railroad operation/community conflicts will obviously increase as a result of these developments. Current switching and signals for the Dilworth siding are not automatic, causing train slow-downs and back-ups in Dilworth and adjacent communities (i.e., Moorhead and Fargo). It was also suggested that a number of the Dilworth activities may be moved to west Fargo During harvest time, a large number of farmers, located south of Dilworth, pass through this community to transport their produce to the sugar beet factory. Crossings blocked by trains slow these movements and creat congestion in the community. Officials also reported delays to school buses which transport students living in rural areas south of the tracks to the Dilworth school.

ELK RIVER

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	49	29	
Vehicle Safety	63	35	
Environmental Problems	39	13	
Emergency Vehicle Delay	62	33	
Access to Work/School	38	11	
Access to Shopping/Recreation	49	13	
Community Development Problems	33	20	
TOTAL ALL PROBLEMS	333	154	8

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	58
% of respondents willing to allocate part of local budget to finance implementation of solution	25
% of respondents will to increase local taxes to finance implementation of solutions.	17
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	17
State Government	26
Federal Government	29
The Railroad	75
Local Businesses	14

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Elk River has recently consolidated with the surrounding township and now encompasses 43 square miles.

A number of derailments have raised the safety issue to a level of recognition. Present train speeds have been reduced from 60 to 50 mph but Amtrack still operates through the area at 75 mph.

The derailments are viewed by community representatives as reasonable problems which have been remedied. In the first case, there was a joint failure which has been remedied through track upgrading. The second case, the train experienced bolster failure which is now remedied through x-ray of each of the bolsters. The third case was a matter of human error where a train was operated too fast and ran into a parked train. The engineer is under suspension.

A number of school buses cross the tracks at grade. The Amtrack follow-through in conjunction with a previous train has resulted in near misses at Main and Jackson crossings which are not gate arm controlled. In addition, the approach grades are such that they hinder visibility and start-up acceleration.

Blockage is also a major concern which has occured up to 20 minutes, particularly at Jackson which is the most heavily used route. Fire and ambulance services are provided from the fire station which is located north of the tracks. Fire services are totally volunteer with split reporting (some volunteers going to the station and some to the scene of the fire).

The Proctor crossing is blocked by switching activities and by the up-grade slower movement of the northbound or westbound Burlington Northern. Traffic stacking for this crossing occurs out onto TH 10. The condition is compounded by the lumber yard activity practice of unloading box cars within the street right-of-way.

Jackson is an at-grade crossing which results in some stacking particularly lefthand movements from TH 10. The traffic signals between the railroad crossing and the intersection with TH 10 are coordinated but evidentially confusing resulting in some back-up across the track causing accident exposure. Maintenance work along the tracks has compounded the blockage problem because of trains slowing down to 10 mph.

The downtown area is constrained by TH 10 and the railroad. The city has presently 7,000 people with 300 new units being developed each year. The development thrust is to the north of the tracks where the bulk of the community area exists. The area south of the tracks contains downtown, is small and is limited by the river to the south.

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Major employers in the community include Federal Cartridge, Elk River Concrete, and United Power Association and 300 teachers located in the educational campus just north of the tracks.

Elk River officials cited an increasing cooperative interest developed by the railroad over the last 4 or 5 years including increased contact initiative by the railroad.

Noise is not cited as a major problem again with the feeling that they become accustomed to it.

FARGO

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	33	25	
Vehicle Safety	49	21	
Environmental Problems	28	12	
Emergency Vehicle Delay	57	18	
Access to Work/School	40	19	
Access to Shopping/Recreation	32	8	
Community Development Problems	25	8	
TOTAL ALL PROBLEMS	264	111	12

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	49
% of respondents willing to allocate part of local budget to finance implementation of solution	41
% of respondents will to increase local taxes to finance implementation of solutions.	25
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	32
State Government	17
Federal Government	32
The Railroad	71
Local Businesses	18

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Frazee

SURVEY RESULTS

PROBLEM		2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

NOT SURVEYED

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . .

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . .

% of respondents will to increase local taxes to finance implementation of solutions. . . . . .

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . .

State Government . . . .

Federal Government . . . .

The Railroad . . . .

Local Businesses . . . .

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

In Frazee, the Burlington Northern is currently rehabilitating the Mississippi River rail bridge. Until this rehabilitation work is completed, train speed through the community will be limited to ten miles an hour. The consequences of this limited speed is that trains passing through the community will take longer to clear grade crossings than is the normal situation and consequently will cause more lengthy vehicle delays.

A resident of Frazee indicated that he has frequently experienced significant delays. He stated that standing trains often block both crossings in the community. He suggested the train stop short of the crossing to avoid creating vehicle delays. There are no safety problems currently in the community of Frazee. Gates and flashers have been installed at the grade crossings and have resolved the safety problems.

FRIDLEY

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	17	11	
Vehicle Safety	20	16	
Environmental Problems	23	9	
Emergency Vehicle Delay	19	8	
Access to Work/School	11	8	
Access to Shopping/Recreation	13	6	
Community Development Problems	13	8	
TOTAL ALL PROBLEMS	116	66	22

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	20
% of respondents willing to allocate part of local budget to finance implementation of solution	13
% of respondents will to increase local taxes to finance implementation of solutions.	5
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	14
State Government	17
Federal Government	19
The Railroad	75
Local Businesses	6

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Gladstone

SURVEY RESULTS

PROBLEM	2	3
Pedestrian Safety	NOT SURVEYED	
Vehicle Safety		
Environmental Problems		
Emergency Vehicle Delay		
Access to Work/School		
Access to Shopping/Recreation		
Community Development Problems		
TOTAL ALL PROBLEMS		

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Gladstone (population 320)
Located to the east of Dickinson, Gladstone experienced two serious derailments in or near the community in January. Consequently, the fear associated with derailments is very strong. Aside from that, blocked access is the next greatest concern. Because the siding running into town from the west is constrained by the Heart River, the trains block the one and only crossing in town. In addition, children crawl under the trains in order to cross the tracks. The signal at the crossing is outdated since it often flashes and rings without a train being present. Westbound trains travel at high speed because of the downgrade, causing concern about safety.

Glen Ullin

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety		NOT SURVEYED	
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Glen Ullin (population 1,000)
The main problems in Glen Ullin, 45 miles west of Mandan, are related to blocked access, vehicle delay and the hazards associated with high train speeds in the community. A siding through the community where idling trains sit block two of the three crossings, causing vehicle delay and emergency vehicle access problems. There have been attempts to contact the BN concerning impacts but the local station is closed.

HAWLEY

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	18	10	
Vehicle Safety	8	5	
Environmental Problems	18	4	
Emergency Vehicle Delay	8	5	
Access to Work/School	8	5	
Access to Shopping/Recreation	8	4	
Community Development Problems	13	9	
TOTAL ALL PROBLEMS	81	42	27

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	21
% of respondents willing to allocate part of local budget to finance implementation of solution	21
% of respondents will to increase local taxes to finance implementation of solutions.	9
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	14
State Government	27
Federal Government	27
The Railroad	65
Local Businesses	18

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

The mayor of Hawley emphasized the safety and vibration factors. He indicated that eastbound trains were loaded while westbound were empty. The curve in their community offered the apprehension of derailment. He indicated that the Burlington Northern employee in the local station left the building for each approaching westbound train. He also indicated that the community was built on bad soils and that the train movements caused goods to fall off the shelves in downtown stores.

Hebron

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety		NOT SURVEYED	
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Hebron (population 1,100)
Located some 40 miles east of Dickinson, Hebron has four grade crossings and a host of reported problems. There is a siding to the south of the mainline from the west to a point located westerly from Elk Street so that idling trains sitting on the tracks cause visual obstructions for northbound motorists on Elk looking westward. Emergency vehicle access and vehicle delay are the greatest concerns. The fire station is located north of the tracks while 50 percent of the City is located to the south. Because of the extensive delay caused by idling and through trains, both pedestrians and motorists are taking considerable risks. There is concern about school buses crossing the West Street crossing because of the lack of automatic signal control at that point. Maintenance of railroad right-of-way is also a big concern, including mowing weeds and patching up crosswalks in the summer to clearing the snow in the winter. The City feels that the BN is negligent in doing this. There is also concern that train speeds are too fast, adding to the already unsafe conditions in the community.

JAMESTOWN

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	43	19	
Vehicle Safety	50	29	
Environmental Problems	32	13	
Emergency Vehicle Delay	84	53	
Access to Work/School	44	19	
Access to Shopping/Recreation	53	14	
Community Development Problems	23	9	
TOTAL ALL PROBLEMS	329	156	7

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	66
% of respondents willing to allocate part of local budget to finance implementation of solution	45
% of respondents will to increase local taxes to finance implementation of solutions.	21
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	33
State Government	34
Federal Government	40
The Railroad	76
Local Businesses	14

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Jamestown

Jamestown is one of the larger cities along the BN route, with a population exceeding 15,000. Located at approximately 100 miles west of Fargo and 100 miles east of Bismarck, it is a crew change location for the BN. Its location in the James River valley creates a difficulty for eastbound trains negotiating a grade of approximately 1%. This occurs because trains are accelerating from rest in the lowest part of the valley and the combination of loaded trains, a positive grade and accelerating from rest means considerable blockage at grade crossings. This has been exacerbated because some trains are unable to fully negotiate the grade, necessitating backing down into the City which adds to the blocked time. Jamestown has only one grade-separated crossing, an underpass at Fourth Street. This becomes flooded, upon occasion, during rainstorms. There is a height restriction, as well, of 12'1", meaning that heavy snow and ice buildups cause some fire and snow removal rigs to use grade crossings instead. During blocked periods, travelers attempt to use the underpass instead of waiting, causing the underpass to be congested, which causes additional problems for emergency vehicles, located on the north side. Several truck routes converge on First Avenue, creating potential hazardous situations because of the number of trucks and trains involved and because of the hazardous materials carried as well. The signal at Seventh Avenue Southeast was reported to flash even with no trains present or moving, which causes safety and delay problems with motorists either violating the signal or waiting without reason. Vehicle delay and emergency vehicle access appear to be the two most commonly cited problems.

LITTLE FALLS

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	27	11	
Vehicle Safety	53	30	
Environmental Problems	32	8	
Emergency Vehicle Delay	92	74	
Access to Work/School	52	33	
Access to Shopping/Recreation	82	37	
Community Development Problems	34	21	
TOTAL ALL PROBLEMS	372	214	2

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	79
% of respondents willing to allocate part of local budget to finance implementation of solution	43
% of respondents will to increase local taxes to finance implementation of solutions.	18
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	19
State Government	43
Federal Government	55
The Railroad	83
Local Businesses	9

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Little Falls is divided into two parts by the Mississippi River. 50% of the population resides on each side of the river. Also separating the two parts of the city is the Burlington Northern mainline which runs adjacent to the river. Twenty to twenty-five trains use this mainline on an average day. Two S-curves and the two trussels which cross the river prevent trains from operating at speeds greater than 20 miles per hour. Thus, the trains take longer to pass through a crossing than in the normal situation. The BN is in the process of straightening one of the S-curves to allow speeds of 30 miles per hour. Also, traffic using the north line may be diverted to another route in the near future thus reducing traffic through the community and reducing vehicle delays. A bridge over the Mississippi River is the only connection between the two city parts which is located within the city limits. It crosses the BN mainline at grade. A bypass was recently completed around the city. It requires an additional five to ten minutes to use the route to cross from one side of the town to the other. Yard operations occur just west of the bridge crossing. Access to the yard is from the East. Consequently, local switching operations often block access between the city's two parts and contribute to the access problem experienced by the community. The city's main fire station, ambulance service, hospital and the school complex are located on the north side of the city. A lesser fire station was built in the south side of the city to control fires until the main fire station can reach the cite. The consequences of the community development pattern, transportation system, the river and the railroad operations described are: (1) serious delays in responding to medical, fire and policy emergencies; (2) significant non-predictable delays in travel to and from work, school, business and social activities. The community of Little Falls has documented the problems which they have experienced as a result of community activity/ railroad operation conflicts in considerable detail. This material is included in this package.

MANDAN

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	19	11	
Vehicle Safety	15	9	
Environmental Problems	37	17	
Emergency Vehicle Delay	7	6	
Access to Work/School	11	8	
Access to Shopping/Recreation	4	2	
Community Development Problems	30	17	
TOTAL ALL PROBLEMS	123	70	21

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	29
% of respondents willing to allocate part of local budget to finance implementation of solution	28
% of respondents will to increase local taxes to finance implementation of solutions.	15
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	15
State Government	17
Federal Government	24
The Railroad	65
Local Businesses	4

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Mandan

Located next to the Missouri River, Mandan (population 11,000+) is a major crew change location for the BN. In addition, the yards at Mandan are being expanded to accommodate a new repair facility, which will consist of a round house, fuel tanks, switchyard and other support facilities. This expansion has caused problems for the residents immediately to the south of the yards along First Street Southwest. The residents complained that the BN removed the row of trees and vegetation serving as a barrier between the residential area and the yards, causing much greater problems with noise, dust and particulates, drifting snow, vibrations and drainage problems. The yard expansion has also removed access to the only existing pedestrian tunnel (underpass), used by school children to walk to school located north of the tracks. Other problems arise in connection with congestion and emergency vehicle access to the south because of the inadequacy (structural and from a capacity point of view) of the two grade separated crossings at Eighth Avenue (overpass) and Sixth Avenue (underpass). The additional traffic on the Killdeer branch north of Mandan (Duke Spur at 43rd) has reportedly caused blockage to residents to the east of the track.

Medora

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety		NOT SURVEYED	
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	
% of respondents willing to allocate part of local budget to finance implementation of solution	
% of respondents will to increase local taxes to finance implementation of solutions.	
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	
State Government	
Federal Government	
The Railroad	
Local Businesses	

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Medora (population 130
Located in the North Dakota Badlands, Medora lies in the Little Missouri River Valley and experiences considerable summertime peaks in highway traffic when the daily population increases to over 1,000 persons. The biggest problems arise because of idling trains on the siding in town which block traffic to and from the campground and tourist attractions to the south. In addition, the bells associated with the signal on East River Road are frequently activated without a train in motion.

MOORHEAD

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	33	13	
Vehicle Safety	40	15	
Environmental Problems	28	7	
Emergency Vehicle Delay	74	40	
Access to Work/School	59	32	
Access to Shopping/Recreation	53	11	
Community Development Problems	40	20	
TOTAL ALL PROBLEMS	327	138	9

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	63
% of respondents willing to allocate part of local budget to finance implementation of solution	50
% of respondents will to increase local taxes to finance implementation of solutions.	31
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	43
State Government	43
Federal Government	50
The Railroad	81
Local Businesses	20

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

The basic issue in Moorhead is crossing blockage for both emergency services (primarily fire) and downtown accessibility. It was pointed out that downtown revitalization programs were based on the premise (before the merger of the Great Northern and Northern Pacific) that rail traffic would be decreasing. The two main lines sandwich downtown Moorhead. However, rail operations have increased rather than decreased. Members of the community contend that this has rendered the renewal project less than successful. Business activity continues to decline in the CBD, in part because of the access problems people have in traveling to and from downtown.

It was indicated by a city official that the City's primary goal was to establish a bypass for rail traffic. He indicated that there were 26 through train movements, 11 of which were coal trains. Local switching operations and accelerating and decelerating trains entering and leaving the Dilworth yard also contribute significantly to the access problems. He also indicated that the City transit system corsses the railroad 238 times daily. The unpredictable delays at the rail crossing creates problems in maintaining a reliable schedule.

The Moorhead Fire Chief indicated that fire services are provided from a station immediately north of the tracks and from a south side location 2½ miles from downtown. Consequently, downtown service is hindered by rail blockage. They have established telephone contacts with the railroad to determine when trains are entering the area or will potentially be blocking crossings. However, such arrangements are not on a regular basis probably due to the frequency of train movements and infrequency of fire calls. Direct radio contact with engineers is not possible.

It was determined that trains can be slowed down or held up by central railroad operations if notified. In fact, ambulance service in Fargo is provided by a railroad buff who has knowledge of train movements and calls railroad central for cooperation when making emergency runs.

A grade separation also exists along the Red River in Moorhead which is substandard in terms of its clearance and operating capabilities.

It was reported that 8th Street in Moorhead is the sixth highest state accident rate crossing. They also indicated that switching activities cause gates to go down when trains are not moving which causes people to avoid the crossing arms to make traffic movements.

The public service director of Moorhead, emphasized the snow removal delays from downtown created as a result of the railroad activities. He also questioned the impact of deleting Milwaukee Road and the potential to shift more traffic to the Burlinton Northern increasing train movements.

MOTLEY

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	28	12	
Vehicle Safety	55	34	
Environmental Problems	9	9	
Emergency Vehicle Delay	39	11	
Access to Work/School	18	5	
Access to Shopping/Recreation	18	5	
Community Development Problems	5	0	
TOTAL ALL PROBLEMS	172	76	18

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	36
% of respondents willing to allocate part of local budget to finance implementation of solution	10
% of respondents will to increase local taxes to finance implementation of solutions.	6
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	8
State Government	18
Federal Government	25
The Railroad	52
Local Businesses	5

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

New Salem

SURVEY RESULTS

PROBLEM		2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

NOT SURVEYED

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . .

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . .

% of respondents will to increase local taxes to finance implementation of solutions. . . . . .

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . .

State Government . . . .

Federal Government . . . .

The Railroad . . . .

Local Businesses . . . .

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

New Salem (population 1,000)
Located some 28 miles west of Mandan, New Salem experiences problems with through trains. The impacts resulting from these trains cause blockage to automobiles and pedestrians (mainly school children) and to emergency vehicles. One incident in early January saw the slaughterhouse (to the south along First Street) burn down because the fire truck was delayed 20 minutes in reaching the site. The siding in town crosses Fifth Street (the only other crossing in town) and stretches to the west. Trains using the siding often completely block Fifth Street while waiting for through trains to pass. In such cases, motorists are diverted to First Street, where the gates are down well in advance of the arrival of the through train. This results in frequent violation of the signal, creating hazardous conditions. The Fifth Street crossing has associated sight distance problems associated with an adjacent grain elevator and a crest vertical curve.

NEW YORK MILLS

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	21	5	
Vehicle Safety	45	18	
Environmental Problems	24	3	
Emergency Vehicle Delay	49	11	
Access to Work/School	22	2	
Access to Shopping/Recreation	21	0	
Community Development Problems	6	0	
TOTAL ALL PROBLEMS	188	39	29

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	30
% of respondents willing to allocate part of local budget to finance implementation of solution	16
% of respondents will to increase local taxes to finance implementation of solutions.	12
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	10
State Government	16
Federal Government	25
The Railroad	69
Local Businesses	5

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Oriska

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

NOT SURVEYED

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Significant traffic delays are experienced at the crossing on state highway 32. Delays are the result of both through trains (30 trains on the average day) and local switching operations. Significant delays are experienced at the other crossing in town because the road is less trafficked.

At the state highway crossing, swirling snow is churned up by the passing trains which makes it difficult to see the warning signals. This problem is part due to the closeness of the warning signals to the mainline. A new warning signal (gates and flashers) was recently installed at one of the grade crossings. It is believed the improvement will reduce the long standing safety problem at this crossing. It is estimated that the crossing experienced one fatality per year as well as other accidents.

Officials stated the mainline is not in good shape in the town. The consequences are significant amounts of noise created by passing trains which is a disturbance, particularly in the summer when people keep their windows open.

Less relevant to this study, community officials also stated the supply of grain cars from the railroad has not been adequate to meet the community's demand for shipment of grain to the market. This has required community shippers to increase their use of trucks to transport goods. The truck traffic breaks up the community roads and creates dust pollution in the community.

PERHAM

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	50	29	
Vehicle Safety	81	66	
Environmental Problems	40	13	
Emergency Vehicle Delay	65	40	
Access to Work/School	42	21	
Access to Shopping/Recreation	45	18	
Community Development Problems	19	7	
TOTAL ALL PROBLEMS	342	194	3

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	69
% of respondents willing to allocate part of local budget to finance implementation of solution	31
% of respondents will to increase local taxes to finance implementation of solutions.	14
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	14
State Government	21
Federal Government	21
The Railroad	73
Local Businesses	22

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Two city officials represneting the community of Perham were interviewed. They indicated that several problems occur in their community as a result of railroad operation/community activity conflicts. First, they indicated that the flashers and gates at the two main crossings in the community are frequently activated for twenty to thirty minutes by local switching trains even though the trains will not occupy the crossing. One consequence of this situation is that many people drive around the gates when they preceive that a local switching train is what is causing the gates to be activated. This can create a safety problem if there is a through train operating in the line which motorists do not see. A second problem is delay of school buses bringing children from the north side of the tracks to the south of the tracks where the school is located. The third problem is a particularly hazzardous crossing. The hazzard is created by the severe angle from which the road approaches the grade crossing. Improved signal devices have been scheduled to be placed at this grade crossing this summer. A final problem is the potential blocked access to emergency vehicles particularly in answering fire emergencies in the industrial area of town. The industrial area is located on the north side of the tracks while the fire hall is located on the south side of the tracks. City officials were able to recall one incident in which fire emergency vehicles were unable to respond to a fire emergency in a timely fashion.

Ramsey

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	NOT SURVEYED		
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	
% of respondents willing to allocate part of local budget to finance implementation of solution	
% of respondents will to increase local taxes to finance implementation of solutions.	
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	
State Government	
Federal Government	
The Railroad	
Local Businesses	

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Richardton

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety		NOT SURVEYED	
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Richardton (population 800)
The main concern is Richardton, some 25 miles east of Dickinson, is related to access by emergency vehicles to the manufacturing plants on the south side of the tracks. There is a siding in town where idling trains sit while the cross street traffic is blocked at the only crossing (B Street) in town. This causes considerable delay at arrival and departure times at the plants. There were also complaints about the roughness of the grade crossings.

Riverside

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety		NOT SURVEYED	
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

The mayor cited a number of delay problems which he perceives to exist including 27th and Main in Fargo where Steiger Tractor production releases 1000 employees causing traffic delay because of coincidental train movements. He also indicated that recent residential development adjacent and south of the tracks was experiencing noise and vibration disruptions.

SANBORN

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	23	18	
Vehicle Safety	43	18	
Environmental Problems	18	0	
Emergency Vehicle Delay	48	20	
Access to Work/School	38	8	
Access to Shopping/Recreation	38	10	
Community Development Problems	3	0	
TOTAL ALL PROBLEMS	211	74	19

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	30
% of respondents willing to allocate part of local budget to finance implementation of solution	8
% of respondents will to increase local taxes to finance implementation of solutions.	5
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	8
State Government	15
Federal Government	18
The Railroad	70
Local Businesses	5

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Sanborn:
Located some 24 miles east of Jamestown and approximately 70 miles west of Fargo, Sanborn residents are bothered mostly by the simultaneous blockage of their only crossings (two in number). This creates problems for emergency vehicles, in attempting to respond to calls to the south of the tracks. One of the routes, First Street, is a County Highway carrying approximately 85 percent of the traffic. In addition to the blockage along the County Highway, there is a sag vertical curve at the grade crossing which becomes dangerous during the winter because of the icy roadway. There is too little sanding done on the roadway.

SARTELL

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	23	10	
Vehicle Safety	33	18	
Environmental Problems	43	14	
Emergency Vehicle Delay	52	33	
Access to Work/School	34	9	
Access to Shopping/Recreation	38	8	
Community Development Problems	29	15	
TOTAL ALL PROBLEMS	252	107	13

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	50
% of respondents willing to allocate part of local budget to finance implementation of solution	33
% of respondents will to increase local taxes to finance implementation of solutions.	17
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	15
State Government	31
Federal Government	46
The Railroad	69
Local Businesses	9

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Sartell is a growing community of the north side of the St. Cloud metropolitan area. The population has grown from 662 in 1950 to 3,063 in 1978.

Sartell is split by the river and reinforced by a riverfront location on the east side for the Burlington Northern railroad. They have one crossing location within the community which is 10 feet wide and carries 5,000 ADT and crosses the river as well as the rail making alternate locations difficult. This city is in two counties--Sterms and Benton. The fire hall is located on the west side of the river and is volunteer in nature with a 23 person strength and has or maintains no communication with the railroad. They have coordinated communications with the county and presently have five volunteer firemen on the east side of the river which report to the station for alarms. The nearest crossing is 13 miles to the north in Rice and 4 miles to the south in Sauk Center. 1979 construction on the west side link to St. Cloud will increase crossings with Sartell and compound the problem.

Two trains operate within the community at 55 to 60 mph which have verified through radar checks. No local ordinance exists to regulate train speeds. Significant switching activities occur for the St. Regis Paper Company which is adjacent to the one river crossing. The ship pulp in and products out. Apparently these activities (due to internal production) occur between 11 a.m. and 4:30 and between 5:00 p.m. and 6:00 p.m. Major industries in the town include Regis, Hatchery, Zurich Coke and utilize less than car-load rail service. These industries are large job providers to outside residents. For example, St. Regis employs 325 people of which 45 are local residents.

Recent development trends are somewhat scattered although a new nursing home with 200 beds has been provided on the east side as well as recent annexation activities on the east side. Ambulance services are provided from St. Cloud. City hall, fire hall, municipal water supply, and municipal treatment facilities are all located on the west side of the river.

The one crossing has gate arms which create a conflict as they are faulty and are activated when no train is in the vicinity. This manfunction requires sending a Little Falls stationed BN employee to correct which results in some difficulty and delay.

Noise was not indicated as a problem. Most of the development adjacent to the railroad tracks is commercial and industrial with major community growth occuring north and west. St. Regis does plan an expansion adjacent to the railroad tracks and in the center of the city.

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

A major problem will be occuring during 1979 when the so-called Heim Mill bridge on State Aid Route 1 on the west side will be closed for three months, diverting traffic utilizing that route through Sartell and across the one bridge crossing.

The city, in conjunction with Sterns and Benton county, is planning for a new bridge location to be placed south of the existing bridge as a bridge relocation and replacement program. They would anticipate that the bridge would replace the current bridge. However, plans for its connection on the east side of Sartell do not include a railroad grade separation.

SAUK RAPIDS

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	39	24	
Vehicle Safety	63	41	
Environmental Problems	53	23	
Emergency Vehicle Delay	74	47	
Access to Work/School	65	23	
Access to Shopping/Recreation	65	19	
Community Development Problems	37	16	
TOTAL ALL PROBLEMS	396	193	4

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	62
% of respondents willing to allocate part of local budget to finance implementation of solution	39
% of respondents will to increase local taxes to finance implementation of solutions.	25
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	22
State Government	34
Federal Government	42
The Railroad	82
Local Businesses	13

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Sauk Rapids is located along the east side of the Mississippi River across from and north of St. Cloud. Trunk Highway 10 and Benton Drive provide separated access into St. Cloud in a somewhat circuitous but nonetheless free-flow operation. A small southerly leg of Sauk Rapids is divided from the city by the railroad tracks. Additionally, the hospital and ambulance service are provided from St. Cloud. The principal access is via one northerly river crossing at County Road 15, which enters the heart of the city. The city is fixing up the approaches to that river crossing to provide greater storage and capacity during times of railroad movements. Industrial and development expansion is to the east and north, away from rail conflicts.

The representatives of Sauk Rapids believe that they are the most severely impacted community in the state. A great deal of data has been collected through the Areawide Planning Organization. They indicated that the problems have increased with the consolidation of the Northern Pacific and Great Northern and that the increase in coal traffic could approach 20 future trains from the existing 3-5 per day. The Burlington Northern has four in-bound trains to Becker with four return movements on a daily average.

The County Road 15 river crossing carrier 17,000 ADT. The ambulance, located in St. Cloud, averages 5 crossings per day.

Fire services are entirely volunteer, including the Chief. They have a downtown location and everybody reports to the fire hall when a call is entered. They have coordinated communications with the County and serve surrounding townships on the east side of the river. Fire services to the south leg of the community could be blocked by rail operations but a mutual aid pact exists with St. Cloud which can reach the area from the other direction as well as by grade separated access into the area by a more circuitous routint.

School buses operate across the at-grade crossings, particularly at 2nd Avenue and Broadway and number some 80 daily crossings.

The blockage problem is complicated by double track which increases the duration of track blockage. They have no switching in town except for one siding which has limited activity.

A number of potential safety problems were identified. Switching activities occur in the east St. Cloud area which do not block the crossings, but do activate crossing signals. All the crossings are signalized but not gated. Consequently, switching activities activate the signals and cause a disregard for their warning. The east St. Cloud area has an uninterrupted mile long transfer track which makes it ideal for these activities. Apparently, the signal activation devices are presence activated as opposed to motion activated. They also cited that the angle of the crossing at 2nd Avenue creating visibility problems.

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Environmentally, they raised the question of air quality through delayed vehicles, although they are presently meeting standards. Noise was not an issue. A number of people from Sauk Rapids work in Waite Park which has been a major Burlington Northern facility.

From the devleopment standpoint, uses adjacent to the tracks are primarily low-density residential. They indicated that it was their feeling that river properties have not been developed because of lack of access and proximity to the rail. A mobile home park operator indicated that the rail operations, including the blowin of the crossing warning whistle, was aggravating to the residents of his development.

Sentinel Butte

SURVEY RESULTS

PROBLEM		2	3
Pedestrian Safety			
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

NOT SURVEYED

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Sentinel Butte (population 125)
Located just to the east of Beach, Sentinel Butte suffers from problems related to improper maintenance of the crossing surfaces. The City has been unable to communicate effectively with the BN, giving rise to a misunderstanding concerning the responsibility for removing snow from the crossing. In addition, the BN has been upgrading the track in the area, including building more superelevation into the track. This has caused vehicles to experience rough crossings because the approaching roadway and the surface have not been improved to a corresponding extent.

South Heart

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety		NOT SURVEYED	
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

South Heart

Located to the west of Dickinson, South Heart's main problem appears to be related to the rough crossing at Fourth Street. The roadway alignment, in addition, is a crest vertical curve causing additional safety problems. There also is inadequate drainage in the right-of-way to the west of town where rainfall collects in large quantities.

ST. CLOUD

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	15	3	
Vehicle Safety	41	16	
Environmental Problems	36	13	
Emergency Vehicle Delay	48	17	
Access to Work/School	38	13	
Access to Shopping/Recreation	36	10	
Community Development Problems	25	6	
TOTAL ALL PROBLEMS	239	78	17

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	42
% of respondents willing to allocate part of local budget to finance implementation of solution	22
% of respondents will to increase local taxes to finance implementation of solutions.	19
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	22
State Government	16
Federal Government	28
The Railroad	75
Local Businesses	7

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

The basic issues, with respect to rail impacts in East St. Cloud, are developmental. East-west tracks join the north-south coal movement tracks through a sleeping "y" configuration. The east-west tracks in conjunction with north-south tracks create an island in Sauk Rapids and St. Cloud which is unserved by emergency services or free-flow vehicular access. The track locations constrain commercial development. A solution has been proposed to tighten the west to south lake spur which would eliminate two roadway crossings (Wilson and St. Germain). Two trains utilize per day but are limited because of the curvature to 20 mph. No apparent pattern exists to their occurence with most of the problems occuring when train movements happen at peak hour. Community representatives estimated that 50% of the problem was creased by a cross river connection and not by the coal train activities. The basic direction of approach for commercial activities is from the west and wouth where grade separated accessibility to the downtown area exists. The spur modification involves some property exchanges which has been agreed to by the property owners but Burlington Northern expressed no interest. They also indicated that the 5th Street NE six-track crossing constituted a safety problem. And finally, the St. Germain back-up, even though it does not involve a major direction of approach interruption, it does constitute vehicular conflicts and frustrates business activity. An underpass has been proposed for 1st Street SE with the spur consolidation.

STAPLES

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	36	13	
Vehicle Safety	33	12	
Environmental Problems	24	7	
Emergency Vehicle Delay	91	66	
Access to Work/School	39	19	
Access to Shopping/Recreation	52	16	
Community Development Problems	39	25	
TOTAL ALL PROBLEMS	314	158	6

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	71
% of respondents willing to allocate part of local budget to finance implementation of solution	37
% of respondents will to increase local taxes to finance implementation of solutions.	24
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	18
State Government	46
Federal Government	45
The Railroad	76
Local Businesses	7

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

There are only two crossings in Staples, both of which are at grade. The crossings are separated by only one block. Consequently, when one crossing is blocked, typically so is the other. The situation in Staples is perhaps worse than many other communities because Staples is crew change point. Each train stops here, which means their speed through town is slower than in other communities as they decelerate or accelerate. (The people to whom we spoke said that switching traffic is not a problem since it occurs beyond the location of the crossings and therefore does not block them.)

The results of crossings blocked by railroad operations are several. There are emergency vehicle difficulties, blocked access to work and shopping, traffic delays and congestion. However, the city's primary concern is the isolation of the south side of the tracks from the rest of the community. Currently, about 25-30% of the population is located on the south side of the tracks. On the north side of the tracks is the remainder of the population and the central business and shopping area of the community. Increasingly the south side of the mainline fits the old cliche. It is becoming an undersirable place to live. Lower income and elderly people are locating there given the lower real estate values and rents. The city contends that delays in access to the central community caused by the railroad operations are a significant factor in this development. They are concerned about the future of this part of the city: isolation of the elderly population from the major portion of the community and potential repercussions of a large low income area within the community.

In the area of emergency vehicle delay, primary concern is for medical emergencies. Since part of the community is separated from emergency services by the mainline, the city has reduced problems in responding to fires by constructing a second fire hall on the south side of the tracks. The function of this fire hall is to contain a fire until the main fire station vehicles, which are located on the north side of the tracks, can arrive at the emergency situation.

STEELE

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	30	11	
Vehicle Safety	51	13	
Environmental Problems	30	8	
Emergency Vehicle Delay	52	21	
Access to Work/School	29	5	
Access to Shopping/Recreation	27	5	
Community Development Problems	12	3	
TOTAL ALL PROBLEMS	231	66	23

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	38
% of respondents willing to allocate part of local budget to finance implementation of solution	13
% of respondents will to increase local taxes to finance implementation of solutions.	7
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	10
State Government	15
Federal Government	24
The Railroad	68
Local Businesses	5

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Steele (population 700)
Safety appears to be the major problem in Steele, located approximately 43 miles east of Bismarck and 58 miles west of Jamestown. There are three crossings in the community and the easternmost crossing along Third Avenue Northeast is plagued by visual obstructions caused by buildings on both sides of the tracks, a sag vertical curve which becomes icy during the winter. The township does not properly maintain the crossing and the crossbucks are not adequate to protect motorists. On the positive side, the present mayor enjoys good relationships with the BN agent which results in fewer emergency vehicle problems than one might expect.

TAPPEN

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	29	16	
Vehicle Safety	63	40	
Environmental Problems	24	16	
Emergency Vehicle Delay	27	12	
Access to Work/School	16	8	
Access to Shopping/Recreation	20	8	
Community Development Problems	9	4	
TOTAL ALL PROBLEMS	188	104	14

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	43
% of respondents willing to allocate part of local budget to finance implementation of solution	23
% of respondents will to increase local taxes to finance implementation of solutions.	12
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	13
State Government	17
Federal Government	21
The Railroad	68
Local Businesses	8

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Tower City

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety		NOT SURVEYED	
Vehicle Safety			
Environmental Problems			
Emergency Vehicle Delay			
Access to Work/School			
Access to Shopping/Recreation			
Community Development Problems			
TOTAL ALL PROBLEMS			

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe. . . . . [ ]

% of respondents willing to allocate part of local budget to finance implementation of solution . . . . . [ ]

% of respondents will to increase local taxes to finance implementation of solutions. . . . . [ ]

% of respondents who think the following should contribute to financing implementation of solution:

Local Government . . . . [ ]
State Government . . . . [ ]
Federal Government . . . . [ ]
The Railroad . . . . [ ]
Local Businesses . . . . [ ]

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

Increased through traffic has reduced local switching services to the grain elevator in town. Switching trains must leave the community every time a through train approaches because the siding is not adequate to station switch engine and cars off the mainline. Service has become less frequent as a result. The inadequate rail service has required grain shippers to increase the use of trucks. The trucks cause noise problems in town and tear up the town streets particularly in the winter when there are frost boils. A community representative also indicated that the speed of Amtrak trains through town creates a noise problem in the community.

WADENA

SURVEY RESULTS

PROBLEM	1	2	3
Pedestrian Safety	38	22	
Vehicle Safety	41	22	
Environmental Problems	33	7	
Emergency Vehicle Delay	86	49	
Access to Work/School	42	18	
Access to Shopping/Recreation	34	9	
Community Development Problems	13	7	
TOTAL ALL PROBLEMS	287	134	10

1 - % of respondents who perceive this problem to be experienced by their community.
2 - % of respondents who perceive this problem to be severe or very severe in their community.
3 - Rank among communities in terms of severity of impact--based on responses reported in column #2.

% of respondents who perceive at least one problem to be severe or very severe.	61
% of respondents willing to allocate part of local budget to finance implementation of solution	25
% of respondents will to increase local taxes to finance implementation of solutions.	18
% of respondents who think the following should contribute to financing implementation of solution:	
Local Government	22
State Government	25
Federal Government	20
The Railroad	70
Local Businesses	7

SUMMARY OF PUBLIC MEETING COMMENTS AND INTERVIEWS:

There are three at-grade crossings located in the city of Wadena. All are within 1,000 feet of each other. Therefore when one is blocked by a train, all are blocked. The community is discussing the possibility of a new grade crossing at 11th Street which would provide an alternative route to the three crossings in the major part of the community and therefore reduce the delay problems which are experienced in the community. Blockage problems at the existing grade crossings are caused by both through and local trains. Difficulties experienced as a result of crossing delays include traffic congestion and emergency vehicle delay problems. The hospital and ambulance service is located on the north side of the mainline. The fire hall and police facilities are located on the south side of the mainline. In each situation, access to the other side of the community is sometimes blocked by railroad operations. The community does have a city ordinance limiting the time a train can block a crossing. The community has enforced this ordinance at times to encourage the railroad to take actions to alleviate the situation.