

CHEBOYGAN COUNTY  
RAIL-TRUCK MULTIMODAL  
FEASIBILITY STUDY

May 1982

Cheboygan County  
Economic Development Corporation

Prepared and published by the:

NORTHEAST MICHIGAN COUNCIL OF GOVERNMENTS  
Gaylord, Michigan

\*\*\* Your Regional Service Agency \*\*\*



## ACKNOWLEDGMENTS

This report was prepared by the Northeast Michigan Council of Governments for the Cheboygan County Economic Development Corporation. The study was funded by a grant from the Region 9 Private Industry Council of the Northeast Michigan Manpower Consortium to the Cheboygan County EDC to defray expenses incurred and by a grant from the Michigan Department of Transportation, Multi-Regional Planning Division to NEMCOG to provide staff support to the project.

Special thanks is given to the Detroit and Mackinac Railway Company and to the Rail Planning Division of the Michigan Department of Transportation for data and background information used in the report. Sincere appreciation is also directed to the individual members of the Cheboygan County Economic Development Corporation, who collectively took the responsibility to undertake this study and assisted in the various components of the report.

NEMCOG staff who contributed to the preparation of the final document include Lew Steinbrecher, Economic Development/Transportation Planning Director and Project Coordinator; Ken Lashuay, Local Government Services Coordinator; Sandy Fish, Regional Planner; Nancy DeGroot, Secretary; and Gina Crawley, Secretary.





TABLE OF CONTENTS

	<u>Page</u>
ACKNOWLEDGMENT . . . . .	i
TABLE OF CONTENTS . . . . .	ii
FIGURES and TABLES . . . . .	iii
INTRODUCTION . . . . .	1
DETERMINING FEASIBILITY . . . . .	4
ANALYSIS AND OBSERVATIONS OF QUESTIONNAIRE RESULTS . . . . .	6
Cheboygan Area . . . . .	10
Eastern Upper Peninsula . . . . .	11
Sault Ste. Marie, Ontario . . . . .	12
SITE LOCATION ANALYSIS . . . . .	13
Cheboygan Ball Street Site . . . . .	13
Cheboygan Industrial Park . . . . .	15
Mackinaw City Location . . . . .	18
Alternative Ramp Designs . . . . .	20
OTHER CONSIDERATIONS . . . . .	23
Mackinac Bridge Traffic . . . . .	23
International Bridge Traffic . . . . .	25
Cross-Straits Rail Ferry Service . . . . .	26
The Bulk-Break Concept . . . . .	28
Management of the Facility . . . . .	29
Foreign Trade Zone . . . . .	31
POTENTIAL FUNDING SOURCES . . . . .	33
SUMMARY AND CONCLUSIONS . . . . .	36





### LIST OF TABLES

<u>Table #</u>		<u>Page</u>
1	Tabulated Questionnaire Responses	7
2	Potential Rail Traffic Annually From Questionnaire Respondents	9
3	1981 Mackinac Bridge Crossings	24
4	Range of Potential Rail Carloads Generated by Cheboygan Rail- Truck Multimodal Facility	36
5	Annual Carloads Generated at Cheboygan Station	37

### LIST OF FIGURES

<u>Figure #</u>		<u>Page</u>
1	Ball Street Location	14
2	Cheboygan Industrial Park	16
3	Mackinaw City Location	19
4	Alternative Multimodal Ramp Design	21





## INTRODUCTION

The movement of goods and commodities has long been directly related to the economy of Cheboygan County and Northeast Michigan. Local officials recognize that business and industrial location decisions are not only made on the basis of access to raw materials, but also on the basis of dependable transportation facilities. The private sector views transportation as a critical link between points of material supply and points of product distribution.

Traditionally, the movement of goods has been thought of in terms of the use of one mode of transportation. That is, shippers have used either one of several principal modes, such as rail, truck, water or air, to move commodities between localities. More recently, however, the business/industrial community is beginning to seriously consider a combination of transportation modes to more efficiently move their goods. This is especially true for companies that use trucks to disperse products from or collect goods at a central rail terminal. What this means is that even truck dependent manufacturers and businesses are placing more and more importance on the availability of rail access in location decisions. In fact, many company planners and marketers are looking for transportation savings on the end of trips rather than en route by seeking multimodal sites.

This project is an attempt to determine if businesses and industries in the Cheboygan, Eastern Upper Peninsula and Sault Ste. Marie, Ontario areas are experiencing economic burdens as a result of inefficient or insufficient goods movement facilities and to determine if a rail-truck bimodal loading/unloading facility in the Cheboygan area would be feasible. The market research study is a joint effort of the Cheboygan County Economic Development Corporation, the Northeast Michigan Council of Governments,





and the Northeast Michigan Manpower Consortium - Region 9 Private Industry Council.

The rail-truck multimodal facility as defined for the purposes of this study is a community-operated freight loading and unloading dock with a rail turnout and siding designed to accommodate piggyback (loaded truck trailers on rail flatcars) and direct boxcar shipments. The concept of such a facility is not new, but it has not been extensively adopted in northern Michigan. Several years ago, the six communities of Cheboygan, Gaylord, Grayling, West Branch, Alpena and Tawas City were identified as having potential for such a facility. Grayling was selected by the Michigan Department of Transportation as a pilot site for the first facility, but no funds have been appropriated for its construction. Cheboygan was selected by the Northeast Michigan Council of Governments for the focus of this study because of its potential as a transloading site for businesses and industries in both the Eastern Upper Peninsula and Sault Ste. Marie, Ontario in addition to servicing their local community.

This study hopes to accomplish the following specific objectives: to identify potential users of the facility, to determine the most appropriate location for the ramp, to determine shipping volumes and types of commodities to be transported and to investigate potential sources of funding. The Cheboygan County Economic Development Corporation believes that a rail-truck multimodal freight facility would not only enable the community to provide existing businesses with a potentially more cost effective transportation service, but would also enhance their efforts to attract new industry by offering a more comprehensive transportation package.

It is important to point out at this time that the focus of this study is to preceive what the attitude for such a bimodal facility is among the private businesspeople in the area. While some statistics will be presented and analyzed in the report, this attitudinal approach has been emphasized for several reasons. The





primary reason is that it is very difficult, if not impossible to quote a rate to any shipper when no such facility is in place and without detailed information as to the type of commodity, weight and volume, and the origin and destination of the commodity. Secondly, the current economic conditions which exist, particularly in Michigan, has resulted in fewer commodities being transported to and from companies in the geographical region under consideration in this study. Therefore, it becomes important to better understand what shippers think and to find out if they will at least take the time and effort to compare the difference in cost of combining modes rather than relying on only one mode of transportation to move their goods.

Finally, before turning attention to the text of this report, it is important to pose a chicken-egg type of question which not only addresses the need for such a transportation facility, but also involvement by the public sector. Which comes first - the transportation facility or the demand for transportation. A good argument can be made, that in any area where the demand exists, transportation facilities will be developed to meet the demand. However, from the point of view of the manufacturer or businessman, particularly those companies which are not large enough to significantly influence the construction of necessary transportation facilities to satisfy their needs, they are dependent on using facilities already in place. This is especially true for the smaller communities of Northeast Michigan that must presume that transportation services have to be developed in response to the needs of shippers. Additionally, this study may very well determine that the demand for such a bimodal transportation facility already exists in northern Michigan. Historically, the development of all modes of transportation has had a great deal of government involvement. Therefore, the role of local, state and federal governmental agencies in the development of a better, more efficient and comprehensive transportation network to be used by the private sector is justified.





## DETERMINING FEASIBILITY

Before it can be determined that the rail-truck multimodal facility for Cheboygan is feasible or not, there is a need to establish some criteria on which to base this determination. It is very difficult to establish a specific number of rail cars which must be generated by the facility as the standard on which to justify the practicality of such a facility. There are a number of intangible elements which must be considered, particularly from an economical point of view. For example, should this facility create one full-time employment opportunity, the State of Michigan would realize a savings of thousands of dollars through discontinued unemployment benefits, increased income tax revenues and increased sales tax revenues. Then there is the ripple effect as that new payroll turns over in the community.

Another factor which contributes to the difficulty of establishing a firm standard is the public sector involvement. If Cheboygan County is successful in securing State and/or Federal grants to finance construction of the rail-truck multimodal ramp, then the start-up costs are virtually non-existent to the community. This leaves only operational expenses which could be considered minimal compared to the capital improvement costs of putting the facility in place.

Still another factor which should be examined is a comparison of what standards private businesses use to measure the feasibility of constructing private rail sidings. Without identifying individual companies, it is known through discussions with the Detroit and Mackinac Railway that private investment has been made in similar facilities based on the generation of 30 to 80 railcar shipments annually.

Based upon the above information and after discussions with various private rail users, railroad officials and Michigan Department of Transportation personnel, it is generally acceptable







to state the following as the criteria on which to judge the feasibility of a rail-truck multimodal facility for Cheboygan County:

"If a rail-truck multimodal facility can generate forty to fifty rail carloads or more on an annual basis, then one should be constructed in Cheboygan County".





## ANALYSIS AND OBSERVATIONS OF QUESTIONNAIRE RESULTS.

A review of the tabulated survey responses reveals some valuable information in determining the feasibility of a rail-truck multimodal ramp for Cheboygan County. The Table on the next page indicates a total of 161 questionnaires mailed to businesses in the three geographical areas which this study focused on. From this total, however, 27 surveys must be subtracted to account for undeliverable as addressed envelopes, questionnaires sent to companies, governmental agencies or other non-shippers where no response was expected or received, and for surveys sent to businesses where it was learned later that they were out of business or were a subsidiary of a parent company which had also received a questionnaire. Therefore, the total potential responses to the questionnaire form is 134. Of this figure, the study experienced a 30% return overall from the three geographical areas with the highest percentage response from Cheboygan area businesses (47%).

A telephone follow-up to the questionnaires increased the overall response level to 53%, the Eastern Upper Peninsula being the most extensively covered of the three areas. The telephone interview revealed very few surprises, with most interviewers indicating that they did not return the questionnaire because they did not ship sufficient volumes to economically justify rail transportation. The Table indicates that the overall response was good in both Cheboygan and Eastern Upper Peninsula regions, but relatively poor from businesses in Sault Ste. Marie, Ontario. The primary reason for the low response level can be attributed to the fact that, according to local governmental officials and Chamber of Commerce representatives from the Canadian Sault, many of the companies identified on the questionnaire mailing list were small businesses with virtually no connection with U.S. suppliers or markets.

Generally, what the survey revealed is that there are many small shippers which usually cannot fully load a truck trailer and, consequently, do not have sufficient volume to utilize a railcar.





TABLE 1  
TABULATED QUESTIONNAIRE RESPONSES

	Cheboygan Area	Eastern Upper Peninsula	Canadian Sault	Total
Questionnaires Mailed	38	51	72	161
Not Deliverable	-1	-2	-2	-5
Inappropriate Contacts *	-4	-2	-6	-12
Out of Business/Duplicated **	-1	-5	-4	-10
Total Potential Questionnaire Responses	32	42	60	134
Surveys Returned	15	9	16	40
% Returned	47%	21%	27%	30%
Telephone Follow-up Contracts	9	19	3	31
Total Responses to Rail-Truck Survey	24	28	19	71
% of Total Potential Responses	75%	67%	32%	53%
Number of Companies Expressing Interest in Facility	7	8	6	21
% of Total Responses	29%	29%	32%	30%

\* Includes Railroad Companies, local governmental agencies and other non-shippers who received questionnaire for informational purposes only. Response to survey not appropriate.

\*\* Includes businesses out of business and subsidiaries of parent company also receiving questionnaire.





This was by far the major concern expressed by companies contacted in the survey. However, the survey also indicated that the relatively few businesses that did express an interest in the rail-truck multimodal ramp were large shippers. Therefore, even though only 30% of all respondents could be identified as real potential users of such a facility in Cheboygan County, the overall shipping volumes were larger than expected.

Additional questionnaire tabulations revealed a total of 25,005 tons were shipped annually by all respondents from the three geographical areas. Of this total, nearly 15,000 tons were from companies expressing an interest in using rail transportation. In other words, 30% of the companies accounted for 60% of the total tonnage being shipped into or out of the three geographical regions. This further documents the observation that the facility will be predominately used by the larger shippers.

Information provided by the Detroit and Mackinac Railway indicate that most boxcar shipments will average between 30 and 80 tons in commodity weight. Based upon these figures, it can be calculated that the rail-truck multimodal facility for Cheboygan County could generate between 186 and 498 rail carloads per year if companies expressing an interest in the facility were to fully utilize it. It should also be pointed out that these estimates do not include projected use by two other potentially large shippers that have also expressed interest in the proposed Cheboygan facility.

These figures are indeed impressive and would clearly indicate that the rail-truck multimodal facility for the Cheboygan area is truly feasible. These estimates should be considered long-range projections for the use of the facility on an annual basis. Actual carloads generated by the facility in its first year of operation would probably not achieve these estimates which more accurately reflect the use of the facility after a period of time. The facility should, however, easily generate forty to fifty carloads in its first year based solely upon the survey results.



TABLE 2

POTENTIAL RAIL TRAFFIC ANNUALLY FROM QUESTIONNAIRE RESPONDENTS

	<u>Cheboygan</u>	<u>Eastern Upper Peninsula</u>	<u>Canadian Sault</u>	<u>Total</u>
Total Annual Tonnage of all Questionnaires	6,245*	9,490	9,270	25,005
Annual Tonnage from Companies Interested in Facility	5,050	4,690	5,220	14,960
Number of Potential Rail Carloads Per Year Averaging 30 Tons Per Load **	168	156	174	498
Number of Potential Rail Carloads Per Year Averaging 80 Tons Per Load **	63	58	65	186

\* Does not include two survey responses from Christmas tree shippers with potential of 55-75 rail carloads each per year.

\*\* Information provided by Detroit & Mackinac Railway indicates that most boxcar loads will average between 30-80 tons in commodity weight.





The following narrative describes other observations from the tabulated questionnaire responses from the three geographical areas individually.

#### Cheboygan Area

Just under half of the respondents (47%) were manufacturers of durable goods. The remainder was divided fairly evenly between wholesale, retail, agriculture, forestry, construction and non-durable manufacturing businesses. Seventy-seven percent of the respondents currently do not use rail for shipping or receiving.

Outbound shipments are transported to markets in the south, east and midwest, with tonnage ranging from 120 to 1500 annually. Sufficient tonnage for shipping was generally accumulated in one to three days. Major shipping seasons occurred from spring or summer through fall or winter with less than 20% of the respondents noting year-round shipping. Sixty-two percent of the respondents said their customers had facilities to receive goods with about half indicating that rail facilities were available to their customers.

Incoming freight originates in the west, northwest, south and midwest. Forty-six percent of the respondents had suppliers with access to rail for shipments to Cheboygan, while none noted suppliers without rail access. The remainder did not know if their suppliers had access to rail transportation.

Local trucking is available to 62% of those responding. Sixty percent felt that rail transportation would reduce their shipping costs, 27% felt it would not, and 13% noted that they had insufficient volume to take advantage of rail shipping. Sixty percent felt that they would not use a rail facility if one were located in Cheboygan, noting lack of volume or having their own siding as the major reasons. Of the 40% who would use such a facility if it were available, there was an almost equal response for the need of flatcars and boxcars.





## Eastern Upper Peninsula

Primary respondents were firms involved with durable goods manufacturing and forestry commodities. Lesser concerns included those in wholesale trade, construction and agriculture. All respondents need their commodities shipped across the Straits of Mackinac. Nearly all involve transport via trucking across the Mackinac Bridge. Annual tonnage transported in this manner varies greatly, from 3900 tons maximum ranging downward to only 100 tons.

Inbound commodities originate primarily from lower Michigan and the immediate southern states of Ohio, Indiana, and Illinois. The primary destination of commodities shipped south is Detroit. The shipping season appears to be equally divided between year-round and from spring through fall. Most firms indicate it takes them one to two weeks to accumulate sufficient tonnage for shipment.

All the firms' customers and suppliers have access to rail for inbound and outbound commodities. Mixed feelings were expressed regarding whether shipping cost savings would be realized by converting to rail after crossing the Mackinac Bridge by truck. However, the results indicate this is due to the fact that most shipments are less than a truck load. Combining shipments of several firms onto one rail car would make rail shipment more practical for these firms. If these firms were to use rail shipping and utilize a multimodal rail-truck facility, most indicate that Cheboygan would be a convenient location for such a facility (nearly all said that Mackinaw City would be better, but indicated they would be willing to travel 30-60 miles from the south end of the Mackinac Bridge to gain access to such a facility). Most firms are of the opinion that, if such a facility were feasible for their shipping needs, they would indeed consider utilizing it due to the potential of lower shipping costs by rail rather than by truck. The various firms would equally need boxcars and flatcars for their piggyback rail shipments.





## Sault Ste. Marie, Ontario

Businesses involved with durable goods manufacturing represented nearly half of the total number of responses. The remainder were evenly split between wholesale, retail or construction businesses. Only 40% of these businesses receive or ship commodities which are transported across the Straits of Mackinac. These commodities are all transported by truck over the Mackinac Bridge, with each firm's annual tonnage transported ranging from only two tons for small equipment manufacturers up to 5,000 tons for an aluminum company. Inbound commodities originated from Detroit, New Jersey, and the southern United States. New York was listed as an outbound destination by one manufacturer.

The months from spring through fall are the busiest in terms of shipping for the Canadian Sault firms. Some accumulate sufficient tonnage for shipment in 1-2 days, while others need two weeks to three months. Of those firms shipping out their goods about half ship to customers having access to rail facilities. Of those receiving inbound commodities, two-thirds indicated that their suppliers have access to rail. Of those customers and suppliers having rail access, half were within one mile of a rail siding and half have a rail siding at their business location.

All but one of the responding firms were doubtful that their physical distribution costs would be lowered by converting to rail after crossing the Mackinac Bridge by truck, but several indicated they would consider using such a facility if it were available. Mackinaw City was considered a better location for the facility than Cheboygan, although a majority stated that a Cheboygan location would be convenient and that they would be willing to travel up to 25 miles from the southern end of the Mackinac Bridge to gain access to such a facility. If they were to utilize such a facility, 60% indicated they would need boxcars, and 40% would require flatcars. Nearly all felt that establishment of a foreign trade zone office in the northern lower peninsula of Michigan would be of little value to their operations.







## SITE LOCATION ANALYSIS

One of the primary objectives of this study is to examine potential sites for a rail-truck multimodal ramp, analyzing the advantages and disadvantages of each location and then determining the most desirable site. Prior to examining specific geographical sites, the Cheboygan County Economic Development Corporation was somewhat confined to a limited area for two major reasons: first, the site had to be located adjacent to the Detroit and Mackinac Railway line so as to ensure service and secondly, the site had to be located in the northern part of Cheboygan County in order to accommodate potential rail users from the Eastern Upper Peninsula and Canadian Sault. Within these limitations, three primary sites have been identified for a more detailed analysis in this report.

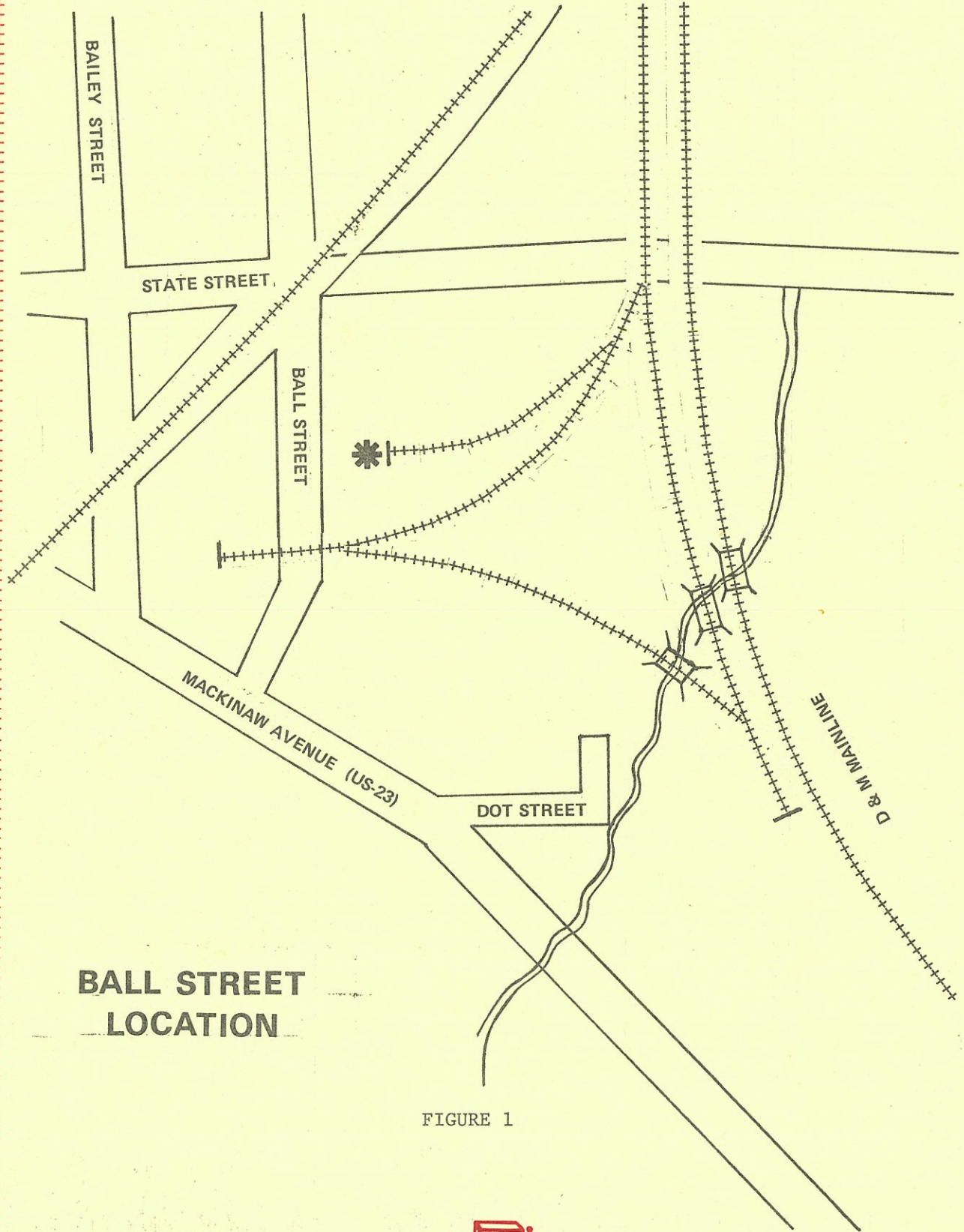
The three sites which are addressed below are referred to as the Cheboygan Ball Street Site, the Cheboygan Industrial Park Site, and the Mackinaw City Site.

### Cheboygan Ball Street Site

The Ball Street location within the City of Cheboygan offers a number of advantages for the construction of the rail-truck multimodal facility. As can be seen on the map on the next page, this site is located immediately between Mackinaw Avenue (Highway US-23) and State Street. US-23 is the primary highway connecting the City of Cheboygan to Mackinaw City and the Mackinaw Bridge. State Street turns into Levering Road at the City Limits and this route interchanges with the I-75 Expressway about seven miles from the site. This location appears very desirable in terms of accessibility to highway traffic and both routes have considerable truck volumes. Ball Street itself would require reconstruction to accommodate the increased traffic volume and weight loads as a result of the facility. Approximately 320 feet would need to be rebuilt with twelve inches of reinforced concrete to a width of 40 feet.

With regards to rail service, the site is considered by the Detroit and Mackinac Railway to be excellent. It is located





**BALL STREET  
LOCATION**

FIGURE 1





near the Cheboygan switching yard with locomotives on site for ready handling of railcars to or from the facility. A combination piggyback-boxcar ramp would require the construction of a rail turnout whereas a boxcar only siding could be placed along side of the existing track.

The site itself would also require some preparation to adequately handle truck-trailer traffic. Soils are somewhat poorly drained, thus requiring the installation of catch basins to connect to a city storm sewer along State Street. Mucking would also be needed to remove approximately 15 inches of soil and place 18 inches of gravel, the top six inches being salt stabilized. Gravel could be transported to the site via the Detroit and Mackinac Railway from a commercial gravel quarry also located along the Lake Huron Shore route. There are approximately 10 acres of land available, but only three or four would need to be improved. The site is currently zoned residential and the property would require rezoning by the City of Cheboygan to industrial. Some greenbelting and landscaping may also be required to buffer the site from nearby residences.

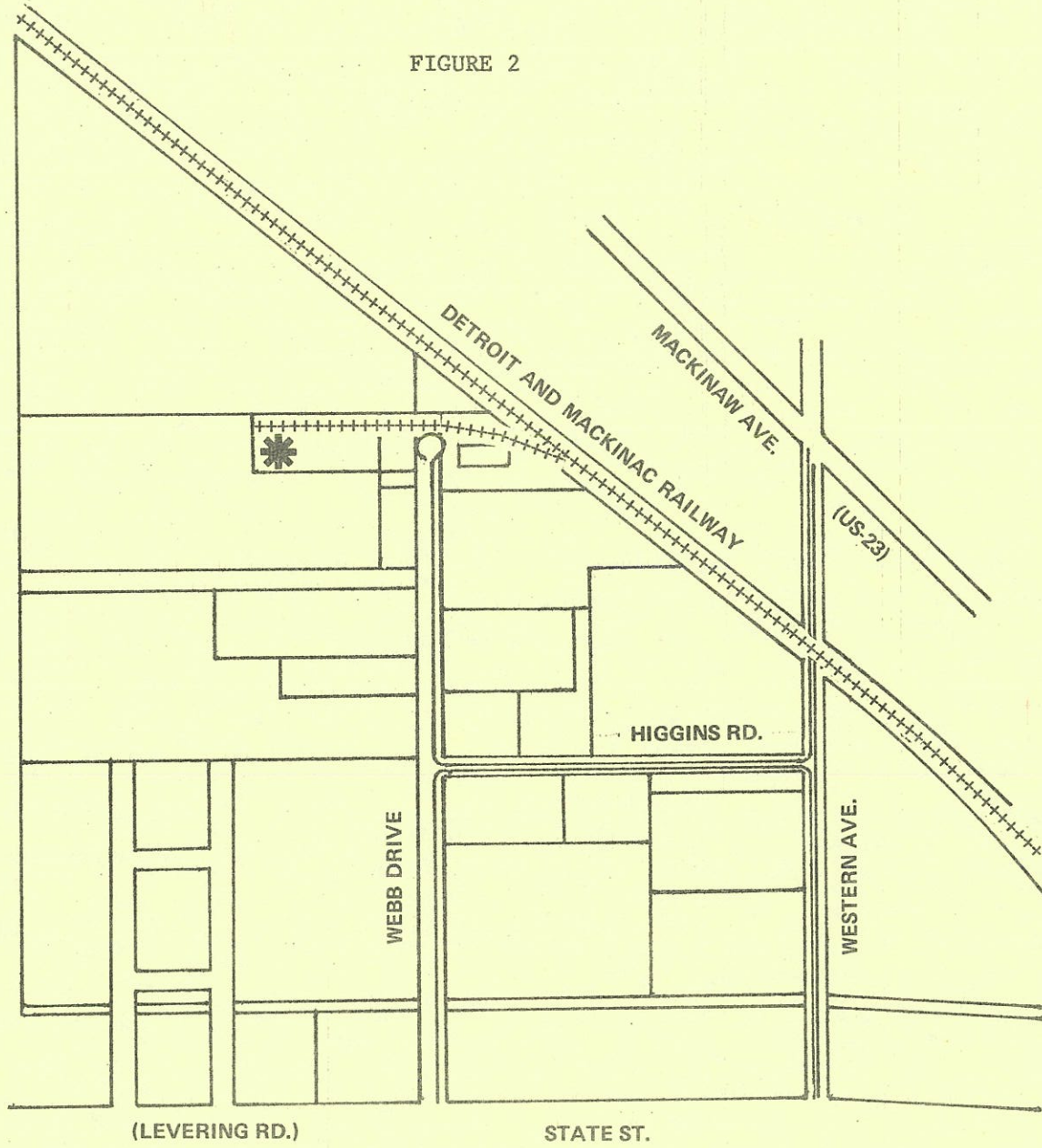
Preliminary engineering has estimated the total project cost for the piggyback-boxcar facility, including construction of the rail turnout to be around \$95,000. Estimates for the boxcar only ramp constructed along the existing track are projected to be near \$55,000, including site preparation.

#### Cheboygan Industrial Park

The Cheboygan Industrial Park is another prime location for the proposed rail-truck multimodal facility. The Park is located within the City Limits of Cheboygan, bordered by State Street to the south and the Detroit and Mackinac mainline to the north, as illustrated on the map on the next page. This site is less than a mile away from the Ball Street location previously described. Along the northern edge of this 55-acre industrial park, there is an old Penn Central rail turnout which connects to the mainline but



FIGURE 2



# CHEBOYGAN INDUSTRIAL PARK



is not used by the D&M Railway. Although the track and ties which comprise this turnout are in a state of disrepair, the site could readily accommodate the proposed intermodal ramp.

The site is accessible to truck traffic along the same two major routes as the Ball Street site, those being Highway US-23 (also known as Mackinaw Ave.) and State Street. The site connects to State Street via Webb Drive, one of the main streets in the industrial park. State Street provides access to Levering Rd. to the west which interchanges with the I-75 corridor and to downtown Cheboygan and US-27 to the east. Access to the site from US-23 can be gained along Western Avenue to Higgins Road and then Webb Drive. These roadways currently handle truck traffic and would most likely serve increased traffic volume with no significant adverse impacts.

Because of the existing rail turnout, the site would be ideally suited for the combined piggyback-boxcar loading/unloading ramp. Considerable rebuilding of the track, including replacement of numerous railroad ties and possibly roadbed improvement, would have to be undertaken. Reconstruction would not be as expensive as building a new rail turnout, but this particular turnout is longer than what a new one would have to be to service the multimodal ramp. The turnout would have to be rebuilt its entire length because it must pass by an existing industrial building before reaching land of sufficient size to accommodate truck-trailer maneuvering. An access road, approximately 400 feet in length, from Webb Drive to the site would have to be constructed in addition to the truck lot adjacent to the rail siding. However, site preparations, including drainage, greenbelting and mucking would not be nearly as extensive compared to that required at the Ball Street location. The land is presently zoned to allow for the multimodal facility and is available through the Citizens National Bank of Cheboygan.





### Mackinaw City Location

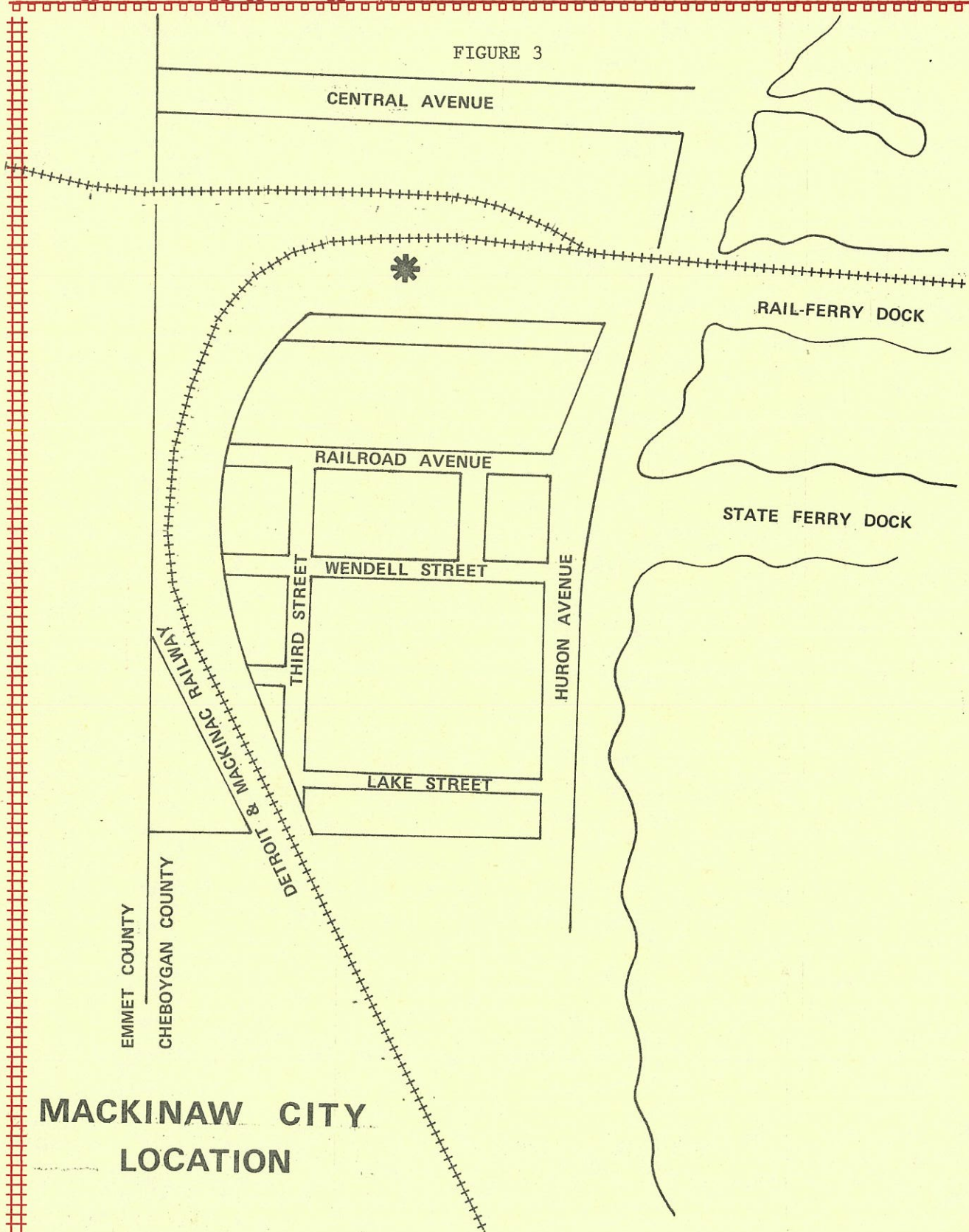
The third possible site for the proposed Cheboygan County rail-truck multimodal facility is located in the Detroit and Mackinac rail yard within the Village of Mackinaw City. This site would require the construction of a new rail turnout for the combined piggyback and boxcar intermodal ramp, similar to that required at the Ball Street location in Cheboygan.

The site would be accessible to truck traffic from both US-23 and I-75 via Huron Avenue. The rail switching yard is located directly across from the rail-ferry dock which services the Chief Wawatam. While the site is ideal for southbound truck traffic crossing the Mackinac Bridge, serving companies in both the Eastern Upper Peninsula and Canadian Sault, the Detroit and Mackinaw Railway, delivery, pick up or switching of rail freight cars to or from the ramp would require a locomotive from the Cheboygan yard. The D&M does not have a locomotive stationed in Mackinaw City because there is no rail traffic generated in that community and cross-Straits ferry service has been temporarily halted. Additionally, the ramp would be inconveniently located for most of the potential users, many of whom are in the Cheboygan area. Finally, as indicated on the questionnaire results, while many Eastern Upper Peninsula and Canadian Sault businesses thought Mackinaw City would be the best possible location for the facility, most did not feel Cheboygan would be too far away to prohibit trucking to the ramp.





FIGURE 3



**MACKINAW CITY  
LOCATION**





## Alternative Ramp Designs

In addition to selecting the most appropriate location for the rail-truck multimodal facility, some consideration should be given to the layout or design of the loading/unloading ramp. The graphics on the following page illustrate three basic conceptual designs for the multimodal dock. Each ramp has its own advantages which should be highlighted.

Ramp A is by far the most versatile of the three designs. It will easily accommodate two railroad cars, whether it be two flat cars, two boxcars or one of each. This particular ramp will also allow for the two railcars to be loaded or unloaded simultaneously. The incline is wide enough to enable a truck tractor and its trailer to be loaded onto or unloaded off of a flat car while at the same time providing ample space for a forklift truck to gain access to a boxcar and trailer. The facility is more expensive to construct and requires a rail turnout.

Ramp B is considerably less expensive than either Ramp A or C and can be constructed alongside an existing track, thereby eliminating the need for a rail turnout. However, this ramp will not accommodate piggyback shipments nor other commodities such as farm tractors and implements which are transported on flatcars and normally require unusual loading/unloading techniques. Additionally, this facility will only allow for one rail car to be served at a time, thereby complicating scheduling for individual shippers. It should be pointed out that boxcars can be moved without the use of a diesel locomotive and this ramp could accommodate two and perhaps three or even four boxcars being loaded or unloaded over a 24 hour period.

Ramp C is somewhat of a combination of Ramps A and B in that it has some of the versatility and limitations of the other two. This design will allow for both piggyback and direct boxcar shipments but can only accommodate one rail car at a time. Additionally, railcars servicing this facility would require a locomotive



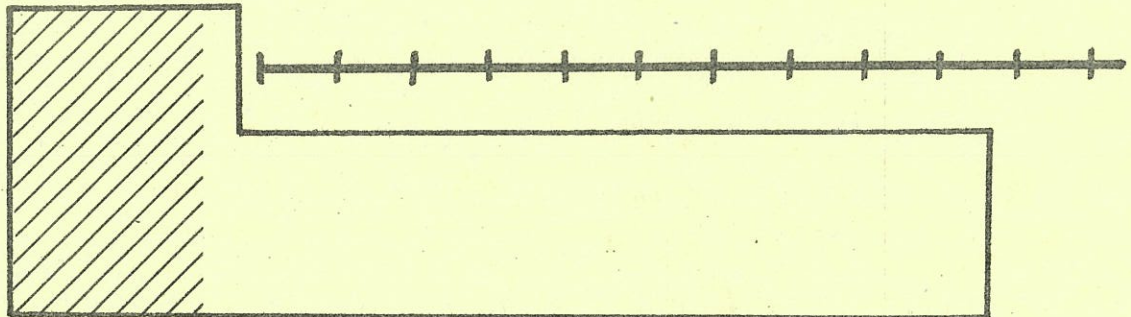




FIGURE 4

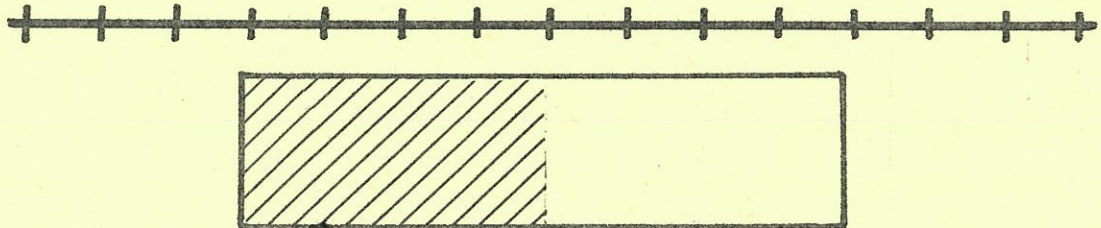
RAMP A

ALTERNATIVE MULTIMODAL  
RAMP DESIGNS



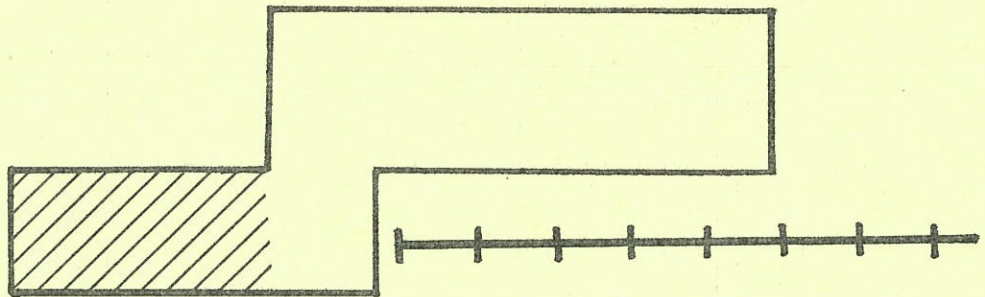
Approximately 205 feet long - 2 rail cars

RAMP B



Approximately 100 feet long - 1 rail car

RAMP C



Approximately 155 feet long - 1 rail car





because of switching which is necessitated by the rail turnout. Consequently, this ramp would service only one railcar over a 24 hour period, making it the lowest capacity of the three.

Based upon these observations, it is the recommendation of this study to pursue construction of the Ramp A multimodal facility for Cheboygan County. The ramp would have an expected life of at least 50-60 years and probably longer with minimal maintenance requirements. This feature would be a valuable factor to the community for attracting potential rail users to the area.



## OTHER CONSIDERATIONS

### Mackinac Bridge Traffic

Another factor which should be considered in determining the feasibility of a rail-truck multimodal dock in Cheboygan County is the volume of truck crossings over the Mackinac Bridge. Since a major element of this study is to examine the potential of servicing businesses in the Eastern Upper Peninsula and Sault Ste. Marie, Ontario by transloading freight from truck to rail, some attention should be given to the amount of southbound truck traffic across the Straits of Mackinac.

As depicted in the table on the next page, there was a total of 127,481 truck combinations which traveled over the Bridge in 1981. These trucks ranged from five to eleven axles which would usually vary in weight from 40 to 75 tons loaded. Of this total, 63,557 (or 49.9%) was southbound traffic. The Mackinac Bridge Authority attributes the additional 367 northbound crossings to the transport of mobile homes manufactured in the lower peninsula and sold in the upper peninsula which are reported in the same category as truck combinations.

Unfortunately, no data is available as to whether the trucks are loaded or unloaded, but figures would appear to indicate that there may be a sufficient number of trucks crossing the Mackinac Bridge to provide for a moderate use of this facility. Even if it is assumed that only 1% of the trucks crossing the Straits could have their cargo transloaded into a boxcar or have the trailer loaded into a rail flatcar, this would account for about 635 truck shipments. Then applying the formula of two truckloads for one boxcar load or two truck trailers per one rail flatcar, it can be calculated that 317 rail shipments could be made from the facility servicing companies in the Eastern Upper Peninsula, Canadian Sault, and points west such as Wisconsin and Minnesota that are currently trucking



TABLE 3

1981 MACKINAC BRIDGE CROSSINGS  
Truck Combinations (5-11 Axles)

<u>Month '81</u>	<u>Northbound</u>	<u>Southbound</u>	<u>Total Crossings</u>
January	4316	4290	8606
February	4158	4135	8293
March	5252	5223	10,475
April	5472	5441	10,913
May	5791	5758	11,549
June	6118	6081	12,199
July	5820	5787	11,607
August	5714	5680	11,394
September	6183	6148	12,331
October	6155	6120	12,275
November	4911	4884	9795
December	4034	4010	8044
TOTALS	63,924	63,557	127,481

Source: Michigan Bridge Authority (MBA)

NOTES: MBA accounts for the additional 400 or so northbound crossings as mobile homes transported by trucks.





over the Bridge. Additionally, the potential also exists for businesses to receive freight by shipping via rail to Cheboygan where cargo is then transported to its destination across the Mackinac Bridge northbound by truck.

### International Bridge Traffic

Information obtained from the International Bridge Authority, although somewhat limited, does provide for some observations and general conclusions. Total traffic volumes for commercial vehicles, comprised mainly of truck-trailer combinations, amounted to 59,669 in 1980. For the calendar year 1981, which was considered a good year for bridge crossings, commercial traffic totaled 63,062.

According to Bridge authorities, this traffic was within a fraction of 1% to being equally divided with regards to traffic direction. Consequently, southbound commercial traffic for 1981 is estimated to be about 31,500. Another unrecorded observation by International Bridge Authority staff indicates that most in-bound truck traffic has loaded trailers then returns to Canada empty.

This observation may have a beneficial application to the purpose of this study. It is known by American and Canadian officials that many companies in Sault Ste. Marie, Ontario have U.S. markets for their products. The statistics cited above bear out this statement. The analysis of the Sault, Ontario questionnaires in another section of this report will provide more detailed observations, but suffice it to say here that some of these commodities entering the United States across the St. Mary's River, are destined for markets to the south. Clearly, a portion of the truck-trailer combinations that cross the International Bridge will also cross the Mackinaw Bridge. These elements should be taken under consideration when determining the feasibility of the rail-truck transloading ramp. The completed questionnaires identify specific companies and trucking firms currently shipping goods from the Canadian Sault as well as their potential for using such a facility in the Cheboygan area.



### Cross-Straits Rail Ferry Service

Continued operation of rail ferry service across the Straits of Mackinac via the Chief Wawatam is another factor which should be considered when determining the feasibility of a Cheboygan rail-truck multimodal facility. The Chief Wawatam is a train ferry that has transported railroad freight cars the 8.7 miles between Mackinaw City and St. Ignace since 1911. The Chief was operated by the Mackinac Transportation Company prior to the Penn Central bankruptcy in 1976. The State purchased the Chief Wawatam for \$102,400 that same year and the ferry has been operated by the Straits Carferry Service Corporation, a subsidiary of the Detroit and Mackinac Railway, under Michigan's rail assistance program since that time.

In February of 1982, the Michigan Northern Railway discontinued service along the Petoskey to Mackinaw City line because the State not only stopped paying to lease the track from Penn Central (the owners of the line), but also halted its subsidy to Michigan Northern to operate over this section of railroad. This connection was essential to western shippers who were utilizing the "flag-out" rates being offered by Michigan Northern. Without the service between Petoskey and Mackinaw City, nearly all western shippers re-routed rail traffic to other carriers, most of which were directed through Chicago. As illustrated in the table below, rail traffic across the Straits of Mackinac (Michigan Northern Railway's connection for western rail users) declined 87% between January and February of this year. This February figure represents a more natural traffic flow for the Chief Wawatam with the Detroit and Mackinac Railway as the connecting rail carrier.

TABLE 6  
CHIEF WAWATAM TRAFFIC VOLUMES

<u>Month/Year</u>	<u>Loads</u>	<u>Empties</u>	<u>No. of Crossings</u>
December 81	311	174	20
January 82	239	36	16
February 82	31	28	3½





While these figures may appear to be relatively low, it is important to note that this rail connection is essential to those shippers presently using the service. Additionally, the possibility of attracting new industries to Michigan, particularly the northern lower and eastern upper peninsulas may depend on the State's ability to offer rail transportation across the Straits of Mackinac.

Ferry service could very well complement the rail-truck intermodal ramp by providing a bulk break facility for western shippers. Commodities such as lumber could be transported by rail to Cheboygan where it could be transloaded to truck for local distribution in northern Michigan.

In conclusion, it appears that cross-Straits rail ferry service will impact on the feasibility of the proposed Cheboygan rail-truck multimodal ramp. Certainly, current southbound rail users would be forced to either re-route rail shipments or abandon rail as a transportation mode without this connection. The rail-truck multimodal facility would offer a viable alternative to these shippers. The rail-truck multimodal facility would serve businesses currently trucking across the Mackinac Bridge where commodities could be transloaded from truck to rail. Existing rail users could also take advantage of the facility providing rail to truck transloading for regional distribution. Finally, it cannot be overlooked that discontinuing the rail ferry across the Straits of Mackinac would result in the loss of a historically significant transportation link between Michigan's two peninsulas. The proposed rail-truck intermodal facility would do much to strengthen this important connection.





## The Bulk Break Concept

Another important element to be seriously considered in determining the feasibility of the rail-truck multimodal ramp is the concept of the bulk break facility. This term refers to the trend within the railroad industry where two or more small shippers from the same vicinity join together to fill one rail boxcar with different commodities that are destined for the same general location. This cooperative effort results in each shipper paying his proportionate share of the freight charges on a full boxcar rather than paying the less-than-carload (LCL) rate individually. This concept is being embraced by numerous railroad companies that view this approach as a viable means of competing with the trucking industry.

The Detroit and Mackinac Railway Company, the rail carrier serving the Cheboygan area, has expressed a willingness to work with the smaller shippers in an effort to reduce their transportation costs. If the proposed rail-truck multimodal ramp were constructed in the Cheboygan area, the D&M could expand their marketing effort to provide this type of transportation service to businesses with small shipping volumes which now are heavily dependent on local trucking firms as their only method of shipment.

It is important to note that such a service could not be offered without the bulk break facility existing. The multimodal ramp would provide that function and is therefore essential for initiating such a marketing effort.







## Management of the Facility

The two most likely governmental entities that would be responsible for the management of the community operated rail-truck multimodal facility would be either the Cheboygan County Economic Development Corporation or the City of Cheboygan. There are, however, a number of possible arrangements which these two entities could pursue that would result in efficient management of the ramp operation.

There would be little, if any, need for on-site supervision, thereby eliminating the need and expense of employing a full-time manager. Because the facility would be used on a part-time basis, arrangements could be made with the Detroit and Mackinac Railway or some other private concern to oversee the operation and administer any needed paper work generated by the use of the ramp. It is anticipated that a small users fee will be charged to off set maintenance and overhead costs. Interest has been expressed by two private businesses in the Cheboygan area, both potential big users of the facility, to contract for the overall management of the ramp.

Maintenance of the site, including snow removal during the winter months and periodic grading of the access road and lot, could be the responsibility of the City of Cheboygan's Department of Public Works or the Cheboygan County Road Commission. Additional maintenance and security would be required should it be decided to provide a forklift truck on the premises for loading and unloading, including the construction of a small storage building and overhead light. It is anticipated at this time, however, to have users of the facility provide their own loading/unloading equipment or encourage the private sector to provide such equipment on a rental basis.

It appears very likely that the ownership and management of this multimodal facility could be a joint public-private venture. It will be necessary to have local government involvement in order to secure State or Federal funding assistance for the project. The



private sector will be the primary users of the facility and the railroad which will service the ramp is a private carrier. The local governmental entities do not have the capability, at this time, to provide staff support toward the operation of the facility and the private sector has indicated they will accept this responsibility. Additionally, the Detroit and Mackinac Railway will know the shippers using the facility by arranging for the delivery and pick-up of rail freight cars. This information could easily be incorporated into a bookkeeping record specifically for users of the facility without revealing unneeded data collected by the railroad.





## Foreign Trade Zone

Another aspect of the rail-truck multimodal facility would be the possibility of establishing a foreign trade zone in the same location, primarily for Canadian shippers. A noncoastal foreign trade zone is a facility or location that has been designated by the United States Government which will permit the importation of foreign goods for processing, assembly, or fabricating where they are not subject to customs duty. The goods are taxed only after they leave the trade zone. It is important to note that a foreign trade zone will not eliminate duty on goods imported into the United States, it merely postpones duty on the commodities.

This type of facility would allow a company to process its goods in such a way as to obtain lower duties and/or lower freight charges, particularly if it were used as a collecting point until sufficient volume or tonnage had been accumulated to receive lower shipping costs. Foreign trade zones may also be used to gain economic benefits by exercising other options available to importers and exporters in such a facility.

However, there are some disadvantages to a foreign trade zone which should be carefully examined before a community decides to pursue such a facility. The Cheboygan community would be responsible for the cost of staffing and operating a trade zone, estimated to be a minimum of \$150,000 annually. Additionally, a full-time Customs Officer would have to be employed and there are currently no federal funds available to help the community with this cost. The filing period to become a designated foreign trade zone would average between three to five years. Perhaps most significantly, however, is the fact that less than 2% of all non-coastal foreign trade zones in this nation are profitable operations to the community. Additionally, discussions with various resource and business people in the Canadian Sault have reflected a feeling of uncertainty as to what can and cannot be done in such



a trade zone. Finally, and perhaps most significantly, is the fact that 94% of the questionnaire respondents of the Canadian Sault survey form indicated that they would have no use for a foreign trade zone in northern lower Michigan. The general consensus appears to be that where there exists a lack of understanding or uncertainty, the more conservative attitude among Canadian companies in relation to their American counterparts, is that they will shy away from such things. This would be particularly so among the smaller businesses that cannot afford the luxury of legal people to advise them in such matters.

The possibility of establishing a sub-office of the Sault Ste. Marie Foreign Trade Zone does not appear to be a viable alternative to Cheboygan at this time, primarily because of the low use which the facility would probably have. At this time, it would appear that the establishment of a foreign trade zone in the Cheboygan area would have limited potential and would most likely not be feasible.

One feasible alternative, however, to a foreign trade zone would be a bonded warehouse. Such a facility would offer many of the advantages of a foreign trade zone but would not have the high costs associated with it. It is suggested that, if and when a rail-truck multimodal facility is in place in the Cheboygan area, the County Economic Development Corporation more closely examine the advantages and disadvantages of a bonded warehouse for use by Canadian companies with U.S. markets for their goods.



## POTENTIAL FUNDING SOURCES

There are several potential sources of funding for the rail-truck multimodal facility. Perhaps the most likely source is the State's Community Development Block Grant Program which will be administered by the Michigan Department of Commerce. This is one of the block grant programs recently turned back to the States by President Reagan. Approximately \$22 million, statewide, is available in fiscal year 1982 for economic development, housing and public works projects, with emphasis on economic development and job creation. Notices of Intent to apply are accepted at any time during the year by the Office of Community Development, Michigan Department of Commerce, and should include a brief description of the project and its costs. Any municipality under 50,000 population is eligible to apply for up to 100% grant funding under this program, up to a maximum grant amount of \$750,000.

The Urban Development Action Grant Program (UDAG) administered by the U.S. Department of Housing and Urban Development, could be a potential source of funding assistance if the project would also leverage other public and private funds. Applicants must meet minimum standards of physical and economic distress as set by HUD guidelines (the City of Cheboygan has been determined to be UDAG eligible by HUD). Application is made quarterly to the Regional HUD office and approximately \$150 million is available nationwide this fiscal year.

The U.S. Department of Agriculture, Farmer's Home Administration, has Business and Industrial loans available on a limited basis, but no new authorization has been made this year for the program. However, FmHA has considerable loan authority carried over from last year. Any amount can be borrowed to develop or finance business and industry and to increase employment opportunities. Loans are guaranteed up to 90%, and collateral and at least 10% equity is required. There are no application deadlines and communities under 25,000 are given priority. Applicants may be a profit





or non-profit cooperative, corporation, partnership, trust or other legal entity, or any political subdivision of a rural area.

Until two years ago, grant or loan funds could be obtained for projects of this type from the U.S. Economic Development Administration. The Reagan Administration, however, intends to have the EDA terminated this fiscal year, to be replaced by enterprise zone proposals. It is too early to determine at this time whether any enterprise zone legislation would include rural areas, how many zones the program would initially designate, and whether Cheboygan would qualify. It is also not anticipated that any grant funds would be available for economic development under the program as it currently only proposes to allow various tax breaks and other financial incentives to businesses willing to locate in a zone. However, there are many supporters of the EDA in Congress who are urging that it be revived to make available more public works grants. Alternative economic development grant programs are also being proposed in Congress at this time, any of which could have funding available to establish the rail-truck multimodal facility.

The State of Michigan Legislature is reviewing a proposal to establish a \$100 million Economic Development Fund. The fund would provide direct loans to small and medium sized businesses as well as to public entities to support economic development projects. While the Legislature has yet to take final action on the proposal, it appears that an Economic Development Fund will be available, will be administered by the Michigan Department of Commerce, and that the rail-truck multimodal facility would fit the intent of the fund.

The State Department of Commerce, Office of Economic Development, expects to soon receive U.S. Small Business Administration designation as a 503 Certified Development Company. In addition, the Northeast Michigan Council of Governments is making similar application to SBA for this designation. A Certified Development Company can package and make loans to small businesses which are





100% SBA guaranteed. This program could be a source of assistance if the private sector were to operate the facility.

The Michigan Department of Transportation has in the past made loans and grants available for such projects through its Freight Division under P.A. 51 of 1951. Unfortunately, the current budget problems of the State have reduced available assistance from MDOT. This program could be a source of funding in the future as the State's fiscal constraints are lessened.





SUMMARY AND CONCLUSIONS

A review of all pertinent information collected for the purpose of this study would indicate that a rail-truck multimodal facility for the Cheboygan area is a feasible project and should be pursued. The questionnaire results are indeed an important factor to consider when determining this type of general finding, but the surveys should not be overemphasized either. There are several other significant considerations which must be taken into account when drawing such a conclusion. Such factors include total number of trucks crossing over the Mackinac Bridge, cross-Straits ferry service, shippers known to have an interest in such a facility that did not respond to the questionnaire, the bulk break concept, and others.

TABLE 4

RANGE OF POTENTIAL RAIL CARLOADS  
GENERATED BY CHEBOYGAN RAIL-TRUCK MULTIMODAL FACILITY

	<u>Low</u>	<u>High</u>	<u>Average</u>
Questionnaire Respondents	186	498	342
Christmas Tree Shippers	110	150	130
Known Potentially Large Shippers not Responding to Questionnaire	<u>40</u>	<u>95</u>	<u>67</u>
TOTAL:	336	743	539

The Table above provides an overall projection of the potential use of the facility over a period of time. The rail-truck multimodal ramp should not be expected to generate 336 carloads annually in the first two years of operation, but rather this estimate reflects a long-range figure which would be realized after several years. The "snowball" effect will most likely take place as more shippers begin to realize cost savings, efficiency and other advantages of using the facility.







It is also important to better understand the significance of this facility to the total number of rail carloads currently being generated by the Cheboygan Station. The Table below shows recent annual shipments for Cheboygan. Based upon the projected maximum capacity of the multimodal facility to accommodate 730 carloads per year (2 railcars a day for 365 days), the ramp would only have accounted for about 10% of all rail traffic originating from or destined to the Cheboygan Station in 1981. This comparison indicates the relative significance of the ramp on the overall shipping volumes currently being experienced in Cheboygan.

TABLE 5

ANNUAL CARLOADS GENERATED AT CHEBOYGAN STATION  
1978-1981

<u>Year</u>	<u>Inbound</u>	<u>Outbound</u>	<u>Total</u>
1978	1,910	3,715	5,625
1980	2,213	5,434	7,647
1981	1,975	4,502	6,481

The study has also revealed that direct boxcar shipments would be the predominant use of the facility and that the piggyback method, at this time, would have limited application. The Cheboygan ramp could generate piggyback shipments because each shipper evaluates different costs. The decision to ship via piggyback depends on a number of varying criteria, including value of commodity, time of delivery, cost of truck driver pay and benefits, distance to market, availability and maintenance of truck tractor, and other variables. Each potential piggyback shipper would have to be considered on a case by case basis based upon the above criteria. Specific rates could be quoted to individual shippers after information as to commodity, weight and destination is known. Therefore, the facility should be designed and constructed to accommodate piggyback shipments in order to accommodate this mode for shippers desiring this





method and to provide an easy means of loading or unloading unusual commodities such as heavy farm equipment which necessitate special handling.

The most appropriate location for the facility would be the Cheboygan area, with strong consideration given to the Ball Street Site because of the cost of local street improvement necessary to gain access to the site. Increased truck traffic and weight loads over these local streets will require reconstruction for both Cheboygan locations. However, the Cheboygan County Economic Development Corporation recommends the Cheboygan Industrial Park over the Ball Street Site for the location of the facility. While this site would require reconstruction of a considerable stretch of Western Ave., site conditions are better suited for accommodating shippers and offers ample space for expansion for such improvements as storage or bonded warehouses. Over the expected life of the facility, the Industrial Park would be a much more preferable site, particularly when considering future use of the rail-truck multimodal facility. The Mackinaw City location, although appropriate, would not be as ideally situated as the two Cheboygan sites. Mackinaw City does not generate any rail traffic of its own and is serviced because of cross-Straits ferry service via the Chief Wawatam. A multimodal ramp in this community would necessitate the Detroit and Mackinac Railway to bring a locomotive up from Cheboygan. From a practical point of view, particularly for Cheboygan based companies, it is much more economical to have trucks bring commodities to Cheboygan for transloading to rail because of better rail service in that community. This would make the facility more efficient, especially should the multimodal ramp generate more than two carloads on any given day because of required switching by the railroad.

