

1005-1545

DRAFT WORKING PAPER
NOT FOR PUBLICATION

HE
215
P7
A3

"THE VIEWS EXPRESSED
IN THIS REPORT
ARE NOT NECESSARILY
THOSE OF DREE"

"LES OPINIONS EXPRIMEES
DANS CE RAPPORT
NE SONT PAS NECESSAIREMENT
CELLES DU MEER"

MEMORANDUM REPORT ON TRANSPORTATION
FOR
PRINCE EDWARD ISLAND
PREPARED FOR
THE DEPARTMENT OF REGIONAL ECONOMIC EXPANSION
AND
INDUSTRIAL ENTERPRISES INCORPORATED

DEPT. OF REGIONAL ECONOMIC EXPANSION
LIBRARY
JUL 17 1975
OTTAWA
BIBLIOTHEQUE
MIN. DE L'EXPANSION ECONOMIQUE REGIONALE



ADI Limited

PROJECT NO. 575-
APRIL, 1973

TABLE OF CONTENTS

| <u>SECTION</u> | <u>TITLE</u> | <u>PAGE NO.</u> |
|--|----------------------------------|-----------------|
| 1.0 | INTRODUCTION | 1 |
| 1.1 | SCOPE | 1 |
| 1.2 | STUDY METHODOLOGY | 2 |
| 1.3 | SUMMARY AND RECOMMENDATIONS | 3 |
| PART ONE | | |
| AN EVALUATION OF THE PRESENT TRANSPORTATION SYSTEM | | |
| 2.0 | HIGHWAY TRANSPORTATION | 5 |
| 2.1 | GENERAL | 5 |
| 2.2 | ALL WEATHER ROADS | 6 |
| 2.3 | MOTOR CARRIER OPERATIONS | 7 |
| 3.0 | AIR TRANSPORTATION | 9 |
| 3.1 | GENERAL | 9 |
| 3.2 | AIRPORT ACCESS | 10 |
| 3.3 | AIRPORT TERMINAL FACILITIES | 10 |
| 3.4 | OTHER AIR SERVICE | 10 |
| 4.0 | WATER TRANSPORTATION | 11 |
| 4.1 | FERRY SERVICE | 11 |
| 4.2 | SEA PORTS | 13 |
| 5.0 | RAIL TRANSPORTATION | 16 |
| 5.1 | GENERAL | 16 |
| 5.2 | WEIGHT LIMITATIONS | 16 |
| 5.3 | RAIL FREIGHT PROBLEMS | 16 |
| 6.0 | RATES TO MAJOR MARKETS | 18 |
| PART TWO | | |
| 7.0 | CAUSES OF TRANSPORT DIFFICULTIES | 21 |
| 8.0 | TRANSPORT IMPROVEMENT - GENERAL | 22 |
| 9.0 | FERRY SERVICE IMPROVEMENT | 24 |
| 10.0 | AIR TRANSPORTATION IMPROVEMENT | 28 |
| 10.1 | CHARLOTTETOWN AIRPORT | 28 |
| 10.2 | AIR EXPRESS | 29 |
| 11.0 | MOTOR CARRIER IMPROVEMENT | 30 |
| 11.1 | GENERAL | 30 |
| 11.2 | CENTRAL TRUCKING TERMINAL | 32 |
| 12.0 | RAIL FREIGHT IMPROVEMENT | 35 |
| 12.1 | GENERAL | 35 |
| 12.2 | PIGGYBACK SERVICE | 36 |

APPENDICES

1. MAP OF ALL WEATHER ROADS AND CN RAIL LINE
2. TRANSCRIPT OF AIR PASSENGER BOARDINGS AT CHARLOTTETOWN,
P.E.I. FOR YEARS 1968 TO 1971 INCLUSIVE

MEMORANDUM REPORT ON TRANSPORTATION
FOR
PRINCE EDWARD ISLAND

1.0 INTRODUCTION

1.1 SCOPE

The following reports a study of transportation factors affecting industrial development of P. E. I. prepared at the request of the Government of Canada as represented by the Minister of Regional Economic Expansion and Industrial Enterprises Incorporated of Prince Edward Island.

The scope of the assignment included an assessment of the adequacy of the transportation system, with respect to both costs and quality of transportation services, as related to both present and future industrial growth. More specifically it required:

- i) an appraisal of the present system of all modes of transportation (i.e., rail, road, air and water), as related to the needs of businesses now operating in the Province, as well as possible new industries;
- ii) an assessment of the changes in transportation which would promote better integrated services at lower costs, i.e., the possible improvements and the relation of such changes with respect to private and public programs and policies.

1.2 STUDY METHODOLOGY

The study included the following:

- (1) Collection of some of the available data on the transportation system (i.e., rail, road, water and airport facilities). These data were collected from the appropriate transportation agencies as well as selected shippers.
- (2) Determination of schedules and rates for selected commodities from/to P.E.I. to/from the major national market centers. Services to centers in the Atlantic Provinces, New England and Montreal-Toronto are considered of prime importance.
- (3) Appraisal of the status of the present transportation system.
- (4) Postulation of the future demands on the system and of the changes which could be used to improve service and efficiency.
- (5) Suggestions of programs and policies which, if implemented, provide better transportation services and reduce transportation costs.

Part One of the report presents a factual evaluation of the present transportation system and how it affects the present and future growth of industry in the Province.

Part Two suggests programs and policies which will help reduce and/or improve the rise of transportation costs and effectively improve service in the next ten to twenty years.

1.3 SUMMARY AND RECOMMENDATIONS

The following is a list of recommendations which should be considered to promote better integrated transportation services at lower costs.

1. Continue to investigate and review the feasibility of a highway-rail or highway only direct connection by some combination of bridges, causeway and tunnel.
2. Continue to press for low ferry tolls.
3. Continue to press for a close match between available ferry capacity and strait crossing traffic loads.
4. Revise the toll structure on the ferries to give equitable treatment to all types of vehicles and modes by treating at least trucking and rail on the same basis. Consider a toll structure based on deck space occupancy.
5. Institute a truck space reservation system on a trial basis as a means of reducing trucking delays.
6. Support the Charlottetown airport as the main air service.
7. Maintain a continuing dialogue with EPA and any other carriers that may use the Charlottetown airport and the Regional office of the Ministry of Transport to ensure that the airport facilities are maintained at a comparable level with other Canadian airports with similar characteristics.
8. Encourage EPA to maintain schedules which provide convenient and economical connections with Air Canada and other carriers for travel to points not served by EPA.

9. Proceed with an immediate review of existing zoning and land use regulation adjacent to the airport and make sure that the regulations and their enforcement recognizes the future effects of increased airport use and prohibits development which could lead to the obsolescence of the present airport facilities.
10. The Public Utilities Commission of Prince Edward Island should continue to enforce the Motor Carrier Act Regulations. However consideration should be given to the concept of motor carrier regulation on a Maritime Provinces basis if Provincial interests can be protected.
11. A study should be initiated to determine the feasibility of construction of a central trucking terminal or terminals on P.E.I. to improve user transport costs and reduce delays.
12. A small number of well located rail terminals on the Island should be chosen as collection points for potatoes and other goods.
13. The present method of piggyback service should be revised to the extent that a fleet of tractor trailers be located in Amherst or some other suitable point to serve the Island rather than the present location at Moncton. Construction of a central trucking terminal in Charlottetown could possibly justify the placement of a fleet of tractor trailers there.

PART ONE

AN EVALUATION OF THE PRESENT TRANSPORTATION SYSTEM

2.0 HIGHWAY TRANSPORTATION

2.1 GENERAL

Prince Edward Island has approximately 3360 miles of road of which 1749 miles are paved. Very few, if any, new roads have been constructed in the last few decades. Not many areas of P.E.I. are more than 5 miles from an improved road at the present time.

Since approximately 95 per cent of the land in P.E.I. is privately owned, it is difficult for highway officials to plan the construction of new roads. However, there appears to be an abundance of roadway which can adequately serve the Island's commercial and passenger-traffic. There are preliminary plans for the construction of an extension of the Trans Canada Highway to bypass Charlottetown. This by-pass would improve the flow of passenger and commercial traffic in the Charlottetown area.

Most of the Province's peak traffic is generated from the tourist industry which has its season from May to October. Although this tourist traffic does not materially affect the commercial traffic on the highways, it does provide congestion and delay problems at the ferry crossings to and from the mainland especially in July-August and on holiday weekends in May, June and September. This impediment to motor carrier operations will be discussed later.

2.2 ALL WEATHER ROADS

In past years P.E.I. has been plagued with poor roads due to frost susceptible soils, high costs of road materials and the effect of the spring thaws. This resulted in weight limitations and restrictions being placed on many of the roads and complete failure of poor or unimproved roads. Commercial trucking operations were hindered during this season, which coincides with major movement demands for some commodities.

Recently, P.E.I. has had many miles of its roads reconstructed and improved to serve as all-weather roads. These include Routes 1, 1A, 2, 3, 152, 153 and 151 (see Appendix I) which serve as trunk routes and service a large percentage of the industrial sites of the Province as well as providing good transportation links to the major market areas of the Island.

Although many of the collector roads are subject to spring weight restrictions, a large percentage of the industries and the potential industrial sites are on or near the all-weather roads. Unless a site is chosen some distance from one of the all-weather roads there should be no delays due to this cause.

P.E.I.'s size and weight restrictions for commercial vehicles are identical to that of New Brunswick with the exception that the total gross weight of a vehicle cannot exceed 80,000 pounds. In New Brunswick gross weights to 125,000 pounds can be transported on certain specified routes. Nova Scotia's maximum gross allowable weight is 81,000 pounds. Both New Brunswick and Nova Scotia allow a truck length combination of 65 feet while P.E.I. allows 70 feet. A combination of more than one truck unit, commonly known as trains, can be operated on P.E.I., New Brunswick and Nova Scotia highways although

in P.E.I. and Nova Scotia the trains are of limited usefulness because of the limitations imposed by gross vehicle weight.

Certain of the ferries have loading and unloading restrictions which hindered the use of long trucking units. Very long units as well as trains which require the use of a tractor trailer are difficult to maneuver and are not convenient if the units must be backed onto the ferries. Drive-on-drive-off ferries however, offer no obstacle to such operations.

2.3 MOTOR CARRIER OPERATIONS

It can be deduced, from information received from truck freight service users from P.E.I., that the trucking service is alleged to be below desirable standards. Some users have no complaints about the trucking industry in general, while others feel that equipment and handling techniques are of poor quality and in some instances obsolescent. Such shipper criticism is not uncommon and there appears to be top quality service available for movements of sizable volume.

Because trucking is the major transport mode for outgoing/incoming as well as intra-provincial shipments a good level of service is essential and rates must be kept minimal if P.E.I.'s products are to compete in the markets of Canada and New England. It appears that the motor carrier rates and service are superior to those of rail for all but bulk movements. Under certain conditions trucking can produce lower total distribution costs for ranges up to 1500 miles.

The major impediment to trucking is the delay and uncertainty associated with ferry crossings to and from the mainland. Under the best conditions the crossing requires about one hour. However, ferry schedules are impeded by winter conditions and summer tourist traffic.

The ferry also offers impediments to rail shipments due to time losses in waiting, loading, unloading and making up trains after the crossings because of limited ferry accommodation and infrequent train service. These delays are in addition to delays experienced in the Moncton hump yard.

The Ministry of Transport maintains the ferry service so as to minimize delays during most of the year but the characteristics of ferry operations are difficult to overcome completely.

1.0 AIR TRANSPORTATION

3.1 GENERAL

Air passenger transportation to and from Prince Edward Island has improved over the last few years since the introduction of Eastern Provincial Airways direct flights from Charlottetown to Montreal. Air Canada does not serve P.E.I. except via E.P.A. flights from Moncton, Halifax and Montreal.

Before the introduction of the direct Montreal flights, the residents of the Province as well as visitors had to use E.P.A. service from Moncton or Halifax. Since a large fraction of the total traffic was associated with Montreal or west this provided a rather poor level of service.

In 1971, E.P.A. obtained permission from the Canadian Transport Commission to withdraw its service to Summerside for a two-year trial period. Because of the relatively small numbers of passengers using the Summerside airport, and because of the proximity of Summerside to the Charlottetown Airport and the provision of a subsidized ground transportation service between the two centers, this move has not hindered the general level of P.E.I. air service to any great extent. The Charlottetown catchment area is the principle generator of air traffic on the Island. Appendix II shows a historical review of passenger boardings at Charlottetown from 1968 to 1971.

Presently there are no regular all cargo flights to Prince Edward Island and it appears none will be needed in the next ten years. "Beneath the floor" space (on scheduled passenger flights) should be adequate for air cargo movements. Air cargo flows to P.E.I. are heavier

than those from the Province. Users of air express service to P.E.I. have experienced poor service because of interline delays. Much of the cargo travels some distance by Air Canada who tend to interline at Moncton rather than Montreal. Any shipments from west of Montreal are presently not transferred at Montreal from either Air Canada or Canadian National Railways to E.P.A.'s direct jet service to Charlottetown. The shipment continues on Air Canada's flight to Moncton where it is eventually transferred to E.P.A.'s flight to Charlottetown. This has caused delays of up to four days or more. Serious attempts are being made to overcome these difficulties and good service appears practical.

3.2 AIRPORT ACCESS

The Charlottetown Airport is approximately 5 miles from Charlottetown and is served by a collector road which, although below desirable quality in surface, is sufficient for present day needs. However, future local and air traffic will probably warrant that the road be improved. Ground travel to and from the airport under present conditions is excellent and no future difficulties are foreseen.

3.3 AIRPORT TERMINAL FACILITIES

The Ministry of Transport operates the Charlottetown Airport and a new terminal building has been recently constructed. The building while not luxurious is adequate for present traffic volumes.

3.4 OTHER AIR SERVICE

Daily air service to the Magdalen Islands is available from the Charlottetown Airport.

4.0 WATER TRANSPORTATION

4.1 FERRY SERVICE

As is typical of most islands, P.E.I.'s transportation system has a weak link in the form of a body of water between the Island and the mainland. Since a causeway or other land link between New Brunswick and P.E.I. is not foreseeable in the near future, the Island must rely on its ferry service to provide the major transportation link between itself and the rest of Canada. The causeway, long a desirable addition to P.E.I. transportation, will require at least three years to construct after a decision to proceed is made.

The two major ferry crossings to and from the Island are the Borden-Cape Tormentine crossing and the Wood Island-Caribou crossing. Other links include a steamer to the Magdalen Islands from Charlottetown, a car ferry to Magdalen Islands from Souris, a distance of 84 miles, and a weekly shipping service between Charlottetown and St. Johns, Newfoundland.

The Borden-Cape Tormentine crossing, which is 9 miles, is operated on a year-round basis by C.N. for the Ministry of Transport. During the winter only two ferries are usually operated because of ice conditions. These two, the John Hamilton Gray and the Abegweit have capacities of 180 and 125 vehicles respectively. Both of these ferries are equipped to handle rail cars. However, neither one has drive-on drive-off facilities. The M. V. Confederation is not an ice-breaker but does have a strengthened hull for operation in ice. It is usually used during the winter in all but severe ice conditions.

... ..
... ..
... ..

... ..
... ..
... ..
... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..
... ..
... ..

Many shippers believe a causeway should be built with a second preference to increasing more reserved space for trucks on ferries. Obviously increased peak flow capacity is what is desired. The 1973 summer ferry schedule will provide an increase of 37% over 1972 in guaranteed space for trucks during the peak traffic period. The application of this rate to the summer schedule produces a guaranteed space of 740 feet per hour minimum for both terminals. Those shipping by rail would like to see the use of more rail carrying ferries, especially during the peak shipping periods.

4.2 SEA PORTS

The five major sea ports in Prince Edward Island are Charlottetown, Summerside, Souris, Georgetown and Montague. The largest of these ports is Charlottetown.

The Port of Charlottetown has five principal wharves that are used for shipping. The following is a short summary of each one.

(1) Railway Wharf

The west side berthing length is 730 feet with a low water depth of 24 feet. The east side berthing length is 700 feet with the same low water depth. The wharf is 300 feet wide.

This wharf is used for loading and discharging general cargo and is equipped with railway tracks, two heated freight sheds (one 380 feet x 50 feet and the other 380 feet x 66 feet) electric light, water main, oil and gasoline pipelines. There are no cranes.

(2) Ministry of Transport Wharf

There is berthing on the west side only which is 450 feet long and 300 feet wide. The low water depth is 26 feet. It is equipped with offices and stores, buoy test shop, etc. The use of this wharf is restricted to the Ministry and other government vessels.

(3) Texaco Canada Ltd. Wharf

This wharf is 365 feet long with a low water depth of 28 feet. There are four large oil storage tanks nearby.

(4) Buntain, Bell & Co. Wharf

Berthing is on the east side only with a length of 440 feet long and low water depth from 12 to 21 feet. It is equipped with electric light and water main but there is no railway tracks or cranes.

(5) Irving Oil Co. Ltd. Mooring

This mooring has a number of oil storage tanks but there are no other facilities. It is used strictly for the handling of oil.

The entrance to the port of Charlottetown is approximately one half mile wide and has a controlling depth of 32 feet at low water. The port can be used with suitable vessels all year round except under extreme ice conditions. Normal operation now avoids icing periods from December to April because strengthened hulls and ice breaker service would be required for continuous operation.

The major exports loaded at the port are potatoes, butter, fertilizer, oats, cheese, livestock and petroleum products.

Unloaded imports include coal, steel, cement, fertilizer, petroleum products and general merchandise.

In 1969 the Port of Charlottetown unloaded 568,540 tons of cargo while loading 186,896 tons. In 1972 from the period January to October, the port handled 463,422 tons of cargo. Although this figure represents cargo handled for the period January to November of 1972, it appears that the total cargo handled for 1972 will not be as great as that for 1969.

Most of the petroleum products unloaded at Charlottetown have their origin at the refinery in Saint John, N. B. Other products, including petroleum products, leaving Charlottetown by water have destinations to such places as Grand Bank, Halifax, Pictou, Bathurst, Campbellton, Newcastle, Saint John, Forestville, Grindstone, Matane and the Island of St. Pierre-MIQ. Charlottetown is therefore used as an intermediate storage and transfer depot.

5.0 RAIL TRANSPORTATION

5.1 GENERAL

Canadian National Railways operates the rail service on the Island. However, only freight service is provided in rail cars on the Island with passenger connections provided to mainland trains at Amherst by a daily bus service. The total inter-provincial rail traffic in 1969 was 23,334 carloads while in 1972 it was 18,286 carloads. This represents a decrease of 21.6 per cent over this period.

5.2 WEIGHT LIMITATIONS

The weight limitations on C.N. rail line on the Island are somewhat more restrictive than their main line in the rest of Canada. The rail line from Linkletter to Charlottetown and Albany to Borden have an allowable gross weight per car of 220,000 pounds while the rest of the line has an allowable gross weight of only 142,000 pounds per car.

This low allowable weight restricts many of the Island's shippers from moving products in large cars. This is especially true of potatoes and other bulk commodities that could benefit from larger cars. The equipment presently used for shipping potatoes is not limited by track capacity and larger equipment could be used within present limits.

5.3 RAIL FREIGHT PROBLEMS

Many shippers feel that C.N.'s piggyback rail service, although high in transport costs, provides good access to Montreal and Toronto. However, some feel that

freight service in general is poor because of slow turn around times for trailers due to delays encountered in the rail movements. Again it is difficult to determine if the complaints are justified.

The refrigerator cars used to transport potatoes to mainland markets and to mainland ports are considered in poor mechanical condition as well as being obsolesent. The capacity of these cars is 55,000 pounds which is considerably under the allowable weight limit of the rail line between Linkletter and Charlottetown. It does however appear doubtful if net savings all around can be achieved at this time with new cars due to the additional equipment investment required. Rail shipment of potatoes in temperature controlled cars however appears critical to this industry and continued service seems assured.

RAILS TO MAJOR MARKETS

Prince Edward Island suffers, as do the rest of the Atlantic Provinces, from long transport distances and resulting high transportation costs to the major markets of Eastern Canada and the Eastern United States. The Maritime Freight Rates Act and the Atlantic Region Freight Assistance Act provide subsidies on westbound and intra-regional shipments to railroads and motor carriers. The net effect of the subsidies does not always overcome the disadvantage to P.E.I.'s products which must travel great distances with resulting high transport costs as compared to competitors closer to the market.

The following table lists current freight rates from P.E.I. to its major markets for some of the major products.

TABLE 7

| MARKET AREA | MOST COMMON MODE | | PRODUCT | RATE \$/CWT |
|--------------------|------------------|--------|------------------------|-------------|
| | T-TRUCK | R-RAIL | | |
| Nova Scotia | T | | Fresh and Frozen Meats | .75 - 1.75 |
| New Brunswick | T | | | .75 - 1.75 |
| Newfoundland | T | | | 3.00 |
| Toronto, Ont. | T | | Fresh and Canned Meat | 1.00 |
| Boston, Mass. | T | | | 1.20 |
| Springfield, Mass. | T | | | 1.30 |
| North Haven, Conn. | T | | | 1.35 |
| Hartford, Conn. | T | | | 1.30 |
| Providence, R.I. | T | | | 1.30 |
| New York, N.Y. | T | | Fresh Vegetables | 1.55 |
| Montreal, Que. | T | | | 1.10 |
| Ottawa, Ont. | T | | | 1.35 |
| Saint John, N.B. | T | | | .75 |
| Moncton, N.B. | T | | | .65 |
| Halifax, N. S. | T | | | .75 |
| Sydney, N.S. | T | | | 1.00 |
| Toronto, Ont. | R | | Potatoes | .77 |
| Montreal, Ont. | R | | | .58 |

| MARKET AREA | MOST COMMON MODE | | PRODUCT | RATE S. CNT |
|----------------------|------------------|---------------|---------------------------------------|--|
| | T-TRUCK | R-RAIL | | |
| Port Willisam, N. S. | | R | | .45 |
| Newfoundland | | R | | 1.60 |
| Montreal, P. Q. | | R | Canned Goods, Groceries | .95 |
| Toronto, Ont. | | R | | 1.00-1.06 |
| Montreal, Que. | | T | | 1.10 |
| Boston, Mass | | T | | 2.90 |
| Toronto, Ont. | | T | Frozen Foods | 1.17 |
| Hamilton, Ont. | | R (piggyback) | | 1.84 (24,000 lbs. Min.) 1.75 (30,000 lbs. Min.) |
| London, Ont. | | R (piggyback) | General Rates | 1.89 (24,000 lbs. Min.) 1.82 (30,000 lbs. Min.) |
| Toronto, Ont. | | R (piggyback) | | 1.77 (24,000 lbs. Min.) 1.72 (30,000 lbs. Min.) |
| Montreal, Que. | | R (piggyback) | | 1.14 (24,000 lbs. Min.) 1.11 (30,000 lbs. Min.) |
| Montreal, Que. | | R (piggyback) | Canned Fish | .97 (24,000 lbs. Min.) |
| Toronto, Ont. | | R (piggyback) | | 1.06 (24,000 lbs. Min.) |
| Montreal, Que. | | R (piggyback) | Frozen Foods | 1.05 (40,000 lbs. Min.) |
| Toronto, Ont. | | R (piggyback) | (Rates include refrigeration charges) | 1.25 (40,000 lbs. Min.) |
| Hamilton, Ont. | | R (piggyback) | | 1.25 (40,000 lbs. Min.) |
| London, Ont. | | R (piggyback) | | 1.50 (40,000 lbs. Min.) |

PART TWO

PROGRAMS AND POLICIES TO IMPROVE TRANSPORTATION SERVICE

7 9 CAUSES OF TRANSPORT DIFFICULTIES

The main elements of weakness in the P.E.I. transportation scene are considered to be as follows:

1. The fact that P.E.I. is an island and the difficulties of securing land transport service connections over water.
2. The relatively small population and volumes of products moved.
3. The difficulties of constructing and maintaining roads.
4. The long overland distances required to reach markets for P.E.I. products once they have reached the mainland.
5. The great fluctuations in the various people and goods movements associated with P.E.I. according to the various seasons.
6. The main products produced are agricultural and while of high quality they are not unique and suffer from competition from similar products which are produced nearer to prime markets.
7. The difficulties which result from the climatological conditions characteristic of the region.
8. Technological and other improvements in production and transportation which in some instances favour P.E.I.'s competitors more than the people of the Island.

B.0 TRANSPORT IMPROVEMENT - GENERAL

Since all modes of transport except pipelines are used to connect P.E.I. to the mainland as well as service the Island itself, the whole range of transport service, technology and operation warrants some examination in expectation of possible improvement.

If a restrictive definition of improvement is adopted then the task of finding ways and means to effect improvement is somewhat easier than if a comprehensive view is taken. The restricted view could be the apparent increase in the quality of transport service for the same P.E.I. oriented user cost or the reduction of user costs for the same level of service or some combination of each. Such a definition is confined to "a P.E.I. point of view" and will be so named. On the other hand a "Canadian point of view" will be used as a definition if the transport and/or other well being of the nation is taken into account.

Very simply the P.E.I. point of view can be considered to be improved whenever the apparent cost per unit of service goes down. This may be accomplished by either some real net improvement such as a gain in efficiency or by direct or indirect subsidy. From the P.E.I. point of view the same amount of improvement from either basic reason will appear equally attractive. However, in terms of general acceptance, gains in overall efficiency will have a higher probability of implementation due to the wider distribution of benefits and apparent absence or minimization of benefits.

Because of high transport costs for shipment of goods to and from the Atlantic Region to the major markets of Eastern Canada and the Eastern United States it is imperative for the present time that subsidies paid for transport of commodities by the truck and rail industry be continued for most commodities. P.E.I.'s geographical location places the

Province at a serious disadvantage with its competitors in the major markets of Eastern Canada. Without subsidy payments user costs for transport service could be too high to allow the Island to market its products in Montreal and Toronto. Even today many of the products produced in P.E.I. must rely to a large extent on their quality and consumer appeal to compete successfully against such competitors as the products of New Brunswick and Quebec.

There is some concern expressed by the industrialists on the Island about the present method of subsidy payment. It is felt by the shippers that the original intent of subsidization was to create industrial incentive and therefore subsidy payments should be given directly to the shipper. Although this idea has its advantages, it appears that presently it is not possible because of the additional administrative and other costs involved. The precise purpose of the present subsidy is somewhat unclear but the effect is fairly comprehensible. There may be some situations where effective rates would remain the same but these are probably rare. More likely the rates charged by the carriers would be increased at least the amount of any subsidy loss and probably more for obvious reasons. It is definitely in the interest of P.E.I. to support the maintenance of the present subsidy levels and patterns and to increase the amount and scope if possible.

However, support of a subsidy policy is not an argument against reducing transport costs by gains in efficiency and thereby providing a basis for lower rates and lower subsidy payments. This type of improvement is both in the P.E.I. and the Canadian interest.

7.0 FERRY SERVICE IMPROVEMENT

The ferry services are by any measure the key transport links in the life of P.E.I. Their operation at present leaves much to be desired in terms of modern day speeds, availability and reliability. The basis for current comparison is a modern highway. Highways easily allow speeds of a mile a minute (or 10 minutes for a distance comparable to the Borden-Tormentine crossing), are available 24 hours a day except for stoppages and slowdowns due to unfavourable weather and have capacities of 1500 or more passenger car equivalents per hour per lane. Good Tormentine-Borden ferry performance is one hour block time or a minimum with present operations of about 45-50 minutes. It is difficult to foresee significant improvements in this time in the future. The ferries also have a toll and while the cost is low it is not insignificant. These factors make the ferries costly and inconvenient even though capacity is such that delays due to waiting for ferry service is practically nil. Since it is not practical to have capacities large enough to reduce average delays much below 30 minutes, the overall effect of the crossing is very objectionable by contemporary standards.

The obvious attractive alternative is some sort of continuous flow connection such as a bridge, tunnel or causeway (or a bit of all three as the rejected design proposed by Northumberland Consultants). The amount of capital investment required for such a project has always defeated it. It is uncertain what a satisfactory facility would cost but if 100 million dollars is used the annual costs would exceed 10 million dollars per year forever. This is about \$100/capita of P.E.I. population or about \$500 per family. Such an amount is probably only a good proposal if a major share can be assigned to the nation as a whole rather than to P.E.I. in particular.

The revenue from the present ferry tolls fails to meet costs by about five million dollars per year. It is beyond the scope of this report to conclude whether this is good or bad from a Canadian point of view. Obviously it is to some extent good from a P.E.I. point of view because if the ferry subsidy were to be reduced the ferry tolls would probably have to be increased and the traffic would probably drop as a result. It appears advantageous for P.E.I. to keep the tolls at their present level or somehow reduce them. A case can be made for the reduction of the truck tolls when they are compared with rail tolls. In modern times there is less reason to have a differential between the two modes because the ton-mile rates for movement by trucks are lower than for rail for short to medium distance movements. The present rates for large loads are about .85¢/cwt for rail and 2.2¢/cwt for trucks. On a 60,000 pound load the difference is (\$13.20 - \$5.10) \$8.10. It seems reasonable to bring these closer together or equalize them. A suitable compromise is suggested at 1.0¢/cwt.

An alternative method of pricing which better reflects the utilization of ferry capacity at peak traffic periods is a charge per square foot or per lineal foot of deck space. Such a pricing system would encourage short loads which would assist the problem of providing sufficient ferry capacity and penalize low weight density loading. A charge per lineal length of deck (assuming constant width) space for loaded, or unloaded vehicles of any mode appears to provide the best pricing system for providing equitable treatment to all and to encourage efficiency by the carriers. A surcharge for non standard widths would also be required.

Other ferry service improvements which would aid truck transport would be a truck space reservation service. Such a service could be operated by telephone to the ferry operation control center and the reservation made in detail as to

time, type of load, unit length, etc., and the availability of space made known to the truck operator. Reserved space should carry a small extra charge and failure to meet or cancel should be subject to a fee or else the space can be forfeited if the truck does not arrive by a certain time to pick up the reservation. It is considered that such a reservation service would be worth a trial and evaluation as a possible improvement over the present fixed deck space scheme presently in effect. Care would be required in the operation of such service to limit the amount of deck space available during the daytime of periods of high holiday traffic. Also it might be necessary to provide some protection for trucks not operated by the CN against CN or CN subsidiary trucks in times of short truck space supply so that all would get their fair share.

Obviously the ultimate in ferry service improvement from the P.E.I. point of view is to eliminate the ferries with a highway and rail crossing. P.E.I. should keep pressing for review of the feasibility of such a crossing on a regular basis and should seriously consider if rail service is indeed necessary and if rail service is eliminated whether this would reduce the costs to the point where a highway crossing is practical. It is apparent that the role of rail service continues to diminish as far as P.E.I. is concerned and this should not necessarily be considered objectionable. Any overland connection would change the whole P.E.I. transport and distribution system by reducing the need for storage facilities on the Island. A highway connection only would change it even more and the loss of rail service would force major changes in the movement of such commodities as potatoes. The net benefit of an overland crossing even if it was only highway would on superficial examination appear to offset the disadvantage of the

loss of an island rail service. Good highway connections could provide rail interchanges at Tormentine, Amherst or other points which proved advantageous.

10.0 AIR TRANSPORTATION IMPROVEMENT

10.1 CHARLOTTETOWN AIRPORT

To ensure that Prince Edward Island will be able to cope with present and expected air passenger and air cargo traffic growth as a result of industrial development and higher standards of living it is important that some form of a land use plan and related zoning regulations be prepared and followed to protect the Charlottetown Airport. This would ensure that future utilization and development of land in and around the Charlottetown Airport would be restricted to those activities which will allow continuous use and some expansion of airport activity. Without such a plan, growth could go unchecked and future use and possible expansion of the airport would be jeopardized. Presently development is continuing along the Brackley Road near the airport which could interfere with the airport's future development.

As air traffic increases, more and/or larger planes will be needed resulting in required expansion of existing facilities such as runways, apron widths, terminal handling facilities for both passenger and cargo and so forth. Although such expansions will probably not be required in the next five years it is important that a land use plan be implemented now to allow for future expansion. This land use plan could allow for development of light industry or other activities with low noise sensitivity.

Exposure to aircraft noise is currently the most important factor used to determine boundaries for zoning in the vicinity of an airport. Two methods presently used to measure the noise level are the Composite Noise Rating and the Noise Exposure Forecast. Previous to 1967 the Ministry of Transport had adopted the

Composite Noise Rating method which is based on the average aircraft noise level measured in perceived noise decibels (PNdB). This method takes into account the number of movements per day, runway orientation and utilization and the time of day and year.

Recently the Ministry of Transport has adopted the NEF method which measures noise level in effective perceived noise decibels (EPNdB). EPNdB is a refinement of PNdB to account for signal duration and the presence of discrete frequency components.

Central Mortgage and Housing Corporation, realizing the importance of zoning by-laws in the vicinity of airports, has accepted the NEF technique as a measure of noise level and has prepared standards for development around an airport as well as producing a Compatible Land Use Table. The table provides guidelines as to the type of new construction which should be allowed in the proximity of an airport.

10.2 AIR EXPRESS

At the time Part One of the report was written many shippers had criticized the air express service on the Island because of seemingly unnecessary delays. Recently negotiations with CN, Air Canada and EPA have been completed and a solution arrived at.

Shipments west of Montreal will be transferred at the Montreal Airport to EPA's direct flight to Charlottetown. Since Moncton has been eliminated as an intermediate transfer point for such shipments time savings of up to two days are expected.

11.0 MOTOR CARRIER IMPROVEMENT

11.1 GENERAL

Although shippers have criticized trucking service on P.E.I. there are many companies that do offer good service both from the point of view of pick-up and delivery as well as handling techniques. Some of the shippers interviewed were of the opinion that control of road transport by the Public Utilities Commission should be eliminated and that this would promote the use of better equipment and improve service to the shippers. This may improve service between Charlottetown, Borden and Summerside, since it is between these points that the greatest volume of goods are transported by truck. However, the level of service to other parts of the Island might suffer since the trucking industry could be interested primarily in the high volume routes and would not be required to service the low volume ones. Smaller trucking firms might be unable to compete with the large ones and could be forced to provide service to the lower volume, low profitability routes. This could result in higher rates charged to the shippers in these areas as well as the use of poorer handling techniques.

Presently the Public Utilities Commission of Prince Edward Island is responsible for the enforcement of the Motor Carrier Act Regulations. It is the responsibility of this Commission to enforce and improve existing regulations to the end that all highway carriers would be required to provide adequate service to the areas designated on their licenses and have suitable handling equipment for all types of commodities offered for carriage. Reasonably strict enforcement of the motor carrier regulations is desirable particularly in respect to rate filing,

adherence to filed rates and to the route and service provisions of the franchises.

It is through this provincial agency that efforts should be made by the shippers to correct any criticisms they may have of the trucking service. Proper enforcement of the motor carrier regulations would ensure every shipper on the Island an equal opportunity to transport his goods to the markets.

There are benefits to shippers that could arise from a broadening of the Provincial view of motor carrier regulations to a regional basis. There is some danger however, to small truckers on P.E.I. It is judged that there would be an overall net benefit accrue to P.E.I. to participate in a regional motor carrier regulation organization provided that adequate protection of provincial interest was assured. Since the other provinces would have similar interests any danger would be in terms of the P.E.I. point of view being overwhelmed by the others. This is not considered to be serious enough to reject the concept of motor carrier regulation on a Maritime Provinces basis.

The same stand should be taken on the matter of vehicle standards, licencing, weight limits, etc.

11.2 CENTRAL TRUCKING TERMINAL

Because of the relatively short distances that separate one part of the Island from another, one of the possible ways of improving highway transportation service, and reducing user transport costs by improving the means of assembling and dispersing loads, would be the construction of a central terminal or terminals. If there is only one terminal it should be located in the Charlotte-toen area on land zoned for industrial use with suitable area for truck and trailer parking expansion and possible container handling.

The main role of the central trucking terminal would be to provide for the transfer of goods between pickup and delivery trucks and larger highway trucking units as well as transfers from one trucking line to another. A terminal also performs other services such as storage, breaking of bulk and consolidation of shipments. Consolidation of shipments could assist shippers by reducing the number of less than truckload lots and the high costs associated with such shipments, as well as providing a means of minimizing the numbers of truck movements, etc.

The use of a common distribution center should reduce costs of local warehousing and encourage the development and growth of pooling services. A terminal also provides a practical means of controlling routing of certain movements which can permit larger unit sizes on certain routes where traffic and road conditions combine to permit gains in transport efficiency.

- There are four basic requirements for a central trucking terminal:

- (1) the location of the terminal must be convenient and readily accessible to both pick-up and delivery vehicles as well as large heavy highway tractor trailer rigs. Accessibility to and combination with rail facilities should also be examined to promote intermodal transfer if there appears to be positive advantages. The main emphasis should however be on trucking.
- (2) the facilities at the terminal must have adequate capacity to provide quick service during peak periods.
- (3) cooperation between shippers and carriers is essential to efficient operation.
- (4) facilities for packing, unpacking and handling containers should be considered in the planning and provided for when and if required.

The philosophy that the shipper must adjust his operation to meet the operating conditions and convenience of the carrier is outdated.

The shipper and the carrier must work together. It is the responsibility of the shipper to ensure that his shipments are ready to be picked up at the time he has requested the carrier to be there and it is the responsibility of the carrier to pick up and deliver the shipment on agreed schedules.

Careful control over loading and unloading practices and the continuous seeking of ways to eliminate loss and damage are two other ways that cooperation between carriers and shippers can help lower overall transportation and distribution costs.

It should be pointed out that although the terminal could be used as a common distribution center for most products, potatoes are an exception. This will be discussed later in the report.

The success of central trucking terminals is closely associated with the ferry service from and to the Island. It is important that highway carriers experience little or no delay at the ferry terminals. As mentioned previously a reserved space system for trucks could help reduce delays. The success of this system would be enhanced by improving the reliability of trucking operations. The loading of motor carriers with destinations on the mainland must be organized such that no delays are experienced to prevent the trucks from arriving at the ferry terminal on time.

Also mentioned earlier was the suggestion that highway transport tolls paid for the use of ferry service be reduced to equal or closely approach rail ferry rates. The present system of charges obviously to some inhibits the growth of the trucking industry by adding a penalty to goods moving by motor vehicle as compared to rail. The ferry toll system suggested and the use of truck terminals to concentrate loads, etc., should provide an environment which will stimulate improvements in transport efficiency by improving the potential for cost savings by trucking operations.

12.0 RAIL FREIGHT IMPROVEMENT

12.1 GENERAL

Although CN's rail lines on Prince Edward Island are not at as high load capabilities as the main lines in other parts of Canada, they provide a reasonable allowable gross weight between Linkletter and Charlottetown and from Albany to Borden. Since there has been a decrease of approximately 5,000 car loads over the last four years it seems unlikely that CN will upgrade their track load capability to any great extent. However, there are some improvements which can be made to reduce delays and increase efficiency, especially for shipments of potatoes.

As a result of "Agreed Charge No. 75", 85 per cent of all west-bound shipments of potatoes must be tendered to CN. The rates of 58¢ per cwt to Montreal and 77¢ per cwt to Toronto are quite good. It is very unlikely that highway transport with or without piggyback service could match these rates. However, slow car turn around times have caused concern to potato shippers who wish to be able to obtain service that more closely matches their immediate market situations.

To decrease delays presently experienced a small number of well located central collection points along the CN line should be used rather than the approximately 70 that are now in existence. Some of the time lost in the building of trains, the stops at numerous sidings and the switching involved could be reduced. Various possibilities of reducing loading and unloading times should also be considered. The above comments could also be applied to shippers of other goods.

12.2 PIGGYBACK SERVICE

In the last ten to twenty years the highway trailer on flat car concept of inter-modal transportation has emerged as an economical means of moving commodities between shipper and receiver over long distances. The piggyback method combines the long haul economies of rail with the convenience of door-to-door pick-up and delivery. It has become a popular method of transporting goods which are more costly to move by highway only or which gain advantage by shipping a highway trailer rather than by transferring the load between rail cars and trailers. Information obtained from CN railway officials indicate that the demand for piggyback service on the Island has been increasing steadily over the last few years. The products most commonly shipped by piggyback include frozen foods, tobacco, canned fish and canned goods. Many shippers feel that this method of transport could be an efficient way of delivering their products to major markets if user costs and shipment times can be improved.

An important factor in the economic success of such a method would be the structuring of traffic patterns to secure a high load factor, that is, a high percentage of payload in both directions. This requirement immediately suggests a pattern of incentive rates to cover and encourage strictly timed turn around loaded movements which shippers can be encouraged to employ at a saving to themselves and the carriers. The economies come from increased equipment utilization and more regular operations.

CN has a number of piggyback plans with varying rates which can be used by the shipper. The plan most commonly used by the Island shippers is the pick-up and delivery of products by CN tractors and trailer movement by CN

rail. So called Plan 1 is the same as the CN plan with the exception that commercial carrier tractors and trailers are used. Plan 2½ involves the use of CN trucks, with only pick-up or delivery by CN. Shippers that use their own tractors and trailers would qualify for Plan 3. The user transport costs vary with the degree of involvement of CN.

The following are a number of alternatives which could help reduce user transport costs as well as improve times to transport products to the major markets. The efficiency and economics of these alternatives depend on the ability of the motor carriers and shippers to have the required shipments at the rail terminal on time. The penalty of delays or poor timing can be very costly and could discourage any given alternative.

- (1) The first alternative would be to revise the present method of piggyback service. Presently shippers wishing to transport their product by piggyback contact the CN office in Moncton to request the number of CN trailers required for the shipment. CN requires that advance notice of at least 48 hours be given to ensure that the shipment is picked up on time.

The trailers are loaded on freight cars in Moncton, transported to Charlottetown, which has the only loading ramp for piggyback operations on the Island, unloaded here and then transported by trucks to the shipper's door. The trailers, once loaded, return to Charlottetown and are again transferred on to freight cars and eventually delivered to their destination. It is this complicated operation that is time consuming and costly. Delays are also encountered at ferry terminals since there is only

one rail car carrying ferry that can handle piggy-back service due to height restrictions. Additional delays occur at the Moncton hump yard.

Delays could be reduced with this present method if CN were to have available for the shippers a fleet of trailers at Amherst or other suitable point on the main rail line. As the trailers are required, they could be delivered by tractor from the interchange point to the shippers' door, loaded, then brought back to be transferred on to flat cars all in one day. The choice of loading ramps for the trailers would depend on whether savings in user transport costs and time could be realized if the trailers were taken across on the ferry by truck. Reserved space for trucks on each ferry crossing as well as reduction in truck fares would be two critical factors affecting this operation. The net result would also be a decrease in the number of flat cars and rail operations between Charlottetown and the main line.

- (2) A second alternative which would reduce delays and user transport costs would be the use of commercial trucks and trailers in conjunction with CN rail freight service. A shipper could request from a commercial trucking firm on the Island that his shipment be picked up and delivered to the loading ramp at Charlottetown or other loading point and transferred to rail flat cars. This alternative would depend primarily on the cooperation between the shipper and the trucking firm to meet train schedules. It would also be important for arrangements to be made to secure loads for trailers in both directions and to ensure speedy rail handling of trailers.

(3) This alternative would involve the use of commercial trucks, CN freight service and a loading ramp on the mainland. The shipper could have his products picked up by a trucking firm, transported to the main line loading point by tractor trailer and loaded on to flat cars to travel piggyback to its destination. The success of this alternative would depend on a number of factors. First of all there must be available space on the ferries for trucks at any given time. The system of reserved space would help to ensure this. Secondly, ferry fares for trucks must be reduced to equal that of rail fares. This would help to improve user transport costs to some extent. Finally, it is important that schedules be met. The shipper and trucking firm must work together to prevent late arrivals at the train terminals. Also, back haul arrangements would have to be made to reduce costs.

A benefit-cost analysis of each of these alternatives would be necessary to determine the arrangement which best meets the improvement objectives.

The three alternatives mentioned above do not specifically assume that there would be a central trucking terminal on the Island. However, if one were built the details of the alternatives would change somewhat and user transport cost might be further improved. CN piggyback total charges now depend to a great extent on the weight of the shipment. Table I in section 6.0 of the report lists rates which vary with the weight of the shipment.

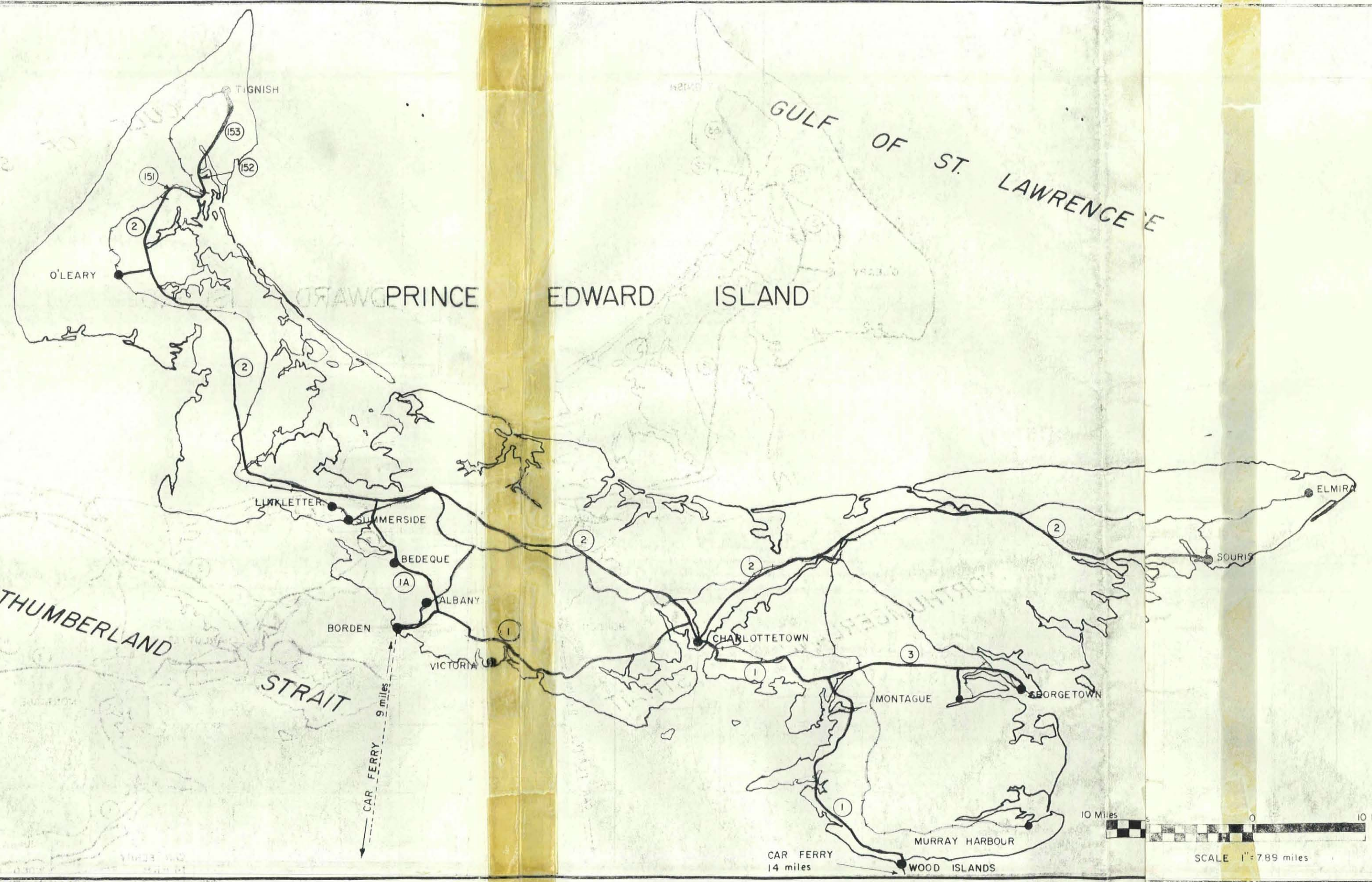
With the construction of a central terminal, smaller trucking companies could pick up and deliver the shipments to the terminal. The shipments could then be transferred to or from the trailers that may or may

not make some of the journey by piggyback. It might be economically justified to have a CN fleet of tractor trailers located in Charlottetown to serve the central terminal rather than operating a fleet from Moncton or Amherst. However with equalized ferry rates and special trucking limits between the P.E.I. terminal and the ferry it is possible that the best rail loading point is on the mainland.

With a well organized and efficiently operated trucking terminal shippers would be able to arrange high load factors on each trailer load with destinations to the major markets. Depending on the alternative chosen savings in both time and costs can be realized.

APPENDIX I

MAP OF ALL WEATHER ROADS AND CN RAIL LINE



LEGEND

- ALL WEATHER ROAD
- +—— C.N. RAIL MAXIMUM GROSS WEIGHT/CAR 220,000 lbs.
- +—— C.N. RAIL MAXIMUM GROSS WEIGHT/CAR 142,000 lbs.
- ⑥ ROUTE NO.

REPORT ON TRANSPORTATION
FOR
PRINCE EDWARD ISLAND

MAP OF ALL WEATHER
ROADS AND C.N. RAIL LINE

FIGURE 1

DATE: FEBRUARY 9, 1973



CAR FERRY 14 miles
WOOD ISLANDS

CAR FERRY 9 miles

APPENDIX II
TRANSCRIPT OF PASSENGER BOARDINGS
AT CHARLOTTETOWN, P. E. I. FOR
YEARS 1968 TO 1971 INCLUSIVE

APPENDIX II

TRANSCRIPT OF PASSENGER BOARDINGS AT CHARLOTTETOWN, P.E.I.
FOR YEARS 1968 TO 1971 INCL.

| M | 1968 | 1969 | % Chnge | 1970 | % Chnge | 1971 | % Chnge |
|---|-------|-------|---------|-------|---------|--------|---------|
| J | 1377 | 1174 | -15% | 2505 | 113% | 2702 | 8% |
| F | 1287 | 1094 | -15% | 2366 | 116% | 2233 | - 6% |
| M | 1023 | 1252 | 22% | 2815 | 125% | 2423 | -14% |
| A | 1375 | 1280 | - 7% | 2476 | 93% | 3093 | 25% |
| M | 1284 | 1181 | - 8% | 2758 | 134% | 2687 | - 2% |
| J | 1040 | 2464 | 135% | 3223 | 31% | 3087 | - 4% |
| J | 2141 | 4136 | 92% | 5322 | 29% | 5985 | 12% |
| A | 2295 | 5242 | 130% | 6546 | 25% | 7608 | 16% |
| S | 1679 | 2943 | 75% | 3730 | 27% | (4100) | (10%) |
| O | 1263 | 2478 | 95% | 3023 | 22% | (3300) | (9%) |
| N | 1290 | 2385 | 85% | 2799 | 17% | (3000) | (7%) |
| D | 1080 | 2695 | 150% | 3212 | 19% | (3350) | (4%) |
| T | 17134 | 28324 | 65% | 40775 | 44% | 43568 | 7% |

NOTE:

Passenger Figures include Summerside and Magdalen Islands Traffic Routed through Charlottetown. Comparison Base for 1971 against previous years must be done in this way due to change in gathering of statistics on January 1, 1971 from Sector O & D's to True O & D's.

1971 Passenger Traffic (8 months) has increased 9% over same period in 1970 on Charlottetown - Montreal Sector.