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A Report -

Chicago North Shore and Milwaukee Railroad

May 6th, 1933

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James Walker
Consulting Engineer
Chicago

APPRAISALS
REPORTS
INVESTIGATIONS

JAMES WALKER
CONSULTING ENGINEER
35TH FLOOR BANKERS BUILDING
105 WEST ADAMS STREET
CHICAGO

RAILROADS
PUBLIC UTILITIES
INDUSTRIES

Messrs. A. A. Sprague and Britton I. Budd,
Receivers for Chicago North Shore &
Milwaukee Railroad Company,
Chicago, Illinois

Dear Sirs:

In connection with your application for a loan from the Reconstruction Finance Corporation there have arisen questions relating chiefly to the ability of the Chicago North Shore & Milwaukee Railroad to regain all, or the major part of its passenger revenue received prior to 1930.

The answer to these questions is found in the following report as shown by the character of the property itself, its location, management, relation to its territory, development of the population and business, and above all by the past record of the road's performance in the face of all forms of competition. (Appendix I).

The road has been built with good alignment and easy grades according to the best construction standards to accommodate heavy metropolitan railroad traffic, and the property is well maintained.

Its location along and through a populous territory, with easy access to large and important terminal cities like Chicago and Milwaukee, is unusually favorable.

It enjoys the benefit of an experienced management which has brought the road to a high degree of operating efficiency.

In relation to its territory it may be said that its geographical location is such as to play a very important part in the economic development of the communities it serves.

Within the last three decades the terminal population has doubled, and the intermediate population has increased three and one-half times, and this company's passenger revenues, which are its principal business, have increased in large proportion until they represent more than three-fourths of all the railroad passenger carriage in the territory between Chicago and Milwaukee. From 1920 to 1929 the passenger revenue of this road increased from \$3,573,506. to \$5,691,200; the freight revenue from \$471,496. to \$1,731,572; and the passenger and freight revenue from \$4,045,002. to \$7,422,772.

In spite of the competition of other railroads, automobiles, bus lines, motor trucks, and boats, the operating revenue of the North Shore Line increased from the years 1920 to 1929 during a time when the passenger revenue of practically all steam railroads declined regardless of the cause to which such decline might be attributed. There was no substantial decrease in the operating revenue of the North Shore Line until the year 1930 when the depression really became universal. (Appendix I).

In view of this extraordinary record which emphasizes the importance of the North Shore Line in the life of its territory, and in view of my long familiarity with the property itself, I believe there is no question but that the North Shore Line will regain its former earnings and will even extend its usefulness as a transportation agency in the Chicago - Milwaukee territory.

James Walker.

Consulting Engineer

Chicago, Illinois
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James Walker
Consulting Engineer
Chicago

General The following pages show the vital part that the Chicago North Shore & Milwaukee Railroad occupies in the economic life of the communities it serves between Chicago and Milwaukee. For a distance of 85 miles the road parallels the western shore of Lake Michigan and traverses a series of thickly settled municipalities. The railroad furnishes transportation service indispensable to these communities, supplying as it does frequent and high speed passenger service to more than a score of cities between the loop district of Chicago and the business district of Milwaukee; local street railway service in Waukegan; and fast and dependable freight service between all points on its line, as well as providing terminal service on shipments to and from steam railroads using standard M. C. B. equipment.

The railroad has served these communities for more than a generation and constantly increasing patronage has rewarded the studious efforts that have been made to supply a distinctly better transportation service. It handles more than three-fourths of all the rail passenger traffic between Chicago and Milwaukee. So remarkable have been its efforts to keep abreast of the times that it was the first Interurban Railroad to receive the Chas. A. Coffin medal as the most outstanding electric railroad in the United States.

Description of Property The Company operates, exclusive of street railways, 138 miles of first main track, 133 miles of other main, and 43 miles of yard and siding tracks, a total of 314 miles of track.

The main line route is a high speed double track electric line extending from Chicago, Illinois to Milwaukee, Wisconsin. A double track branch in Illinois extends from Lake Bluff to

Mundelein.

An additional line known as the Shore Line doubles the route from Howard Avenue to North Chicago Junction, a distance of 23 miles, traversing the eastern part of the territory through the Shore Line towns.

Street railway service is supplied to the cities of Waukegan and North Chicago. The city cars operate as far south as the United States Naval Training Station at Great Lakes, Illinois.

The tracks are standard gauge, laid principally with 100# A.S.C.E. Rail. The ballast is largely crushed stone. Ties are chiefly creosoted red oak. Trolley wire is 4/0 grooved copper, supported on wooden poles except on the entire Skokie Valley section of the main line, which has the latest type of steel bridges supporting catenary construction.

Equipment. As of September 30, 1932 the Company operated equipment as follows:

<u>Description</u>	<u>Number</u>
Electric locomotives	7
Passenger cars, with electric equipment . . .	194
Passenger cars, without electric equipment . .	32
Freight cars	205
Express cars, with electric equipment	41
Express cars, without electric equipment . . .	20
Service cars	18
Totals	<u>517</u>

Power The Company purchases electric energy in Illinois from The Public Service Company of Northern Illinois, generated principally in plants at Waukegan, Illinois. In Wisconsin the energy is supplied by The Milwaukee Electric Railway & Light Company, Milwaukee, Wisconsin.

Connected with its distribution lines are 27 substations, with a combined capacity of 36,000 kilowatts.

Shops And Stations

The Company owns a modern passenger and merchandise despatch terminal in Milwaukee, and has numerous stations along its line ranging from frame shelter sheds to pretentious passenger stations. Among the latter may be mentioned Ravinia, Lake Forest, Zion, Libertyville, Kenosha, Mundelein, Niles Center and three Chicago stations. The principal shops of the company are located at Highwood, adjacent to the general offices of the company, and in Milwaukee.

Service.

The Company operates in Chicago, over the elevated railroads of the Chicago Rapid Transit Company, express and limited trains. This service was inaugurated to the Union Loop of Chicago on August 6, 1919, and to the south side of Chicago on February 15, 1922. Hourly passenger service is maintained between Chicago and Milwaukee with a 30-minute express service between Chicago and Waukegan, and with 30-minute intermediate local service between Chicago and Highwood, thus giving the Shore Line towns 15-minute service to Chicago. The daily service both ways between Chicago and Milwaukee includes 37 trains, and that between Chicago and Waukegan on the Shore Line, 91 additional trains.

Parlor cars of the latest all-steel type are carried on certain limited trains, some of which now make the run from Milwaukee to Chicago Loop in one hour and forty minutes, a time not equalled by either of the road's two steam competitors. A fast merchandise dispatch service is maintained between Chicago

and Milwaukee in cars specially constructed for the purpose. In order to supply the demand for store-door delivery the company has a fleet of motor trucks and trailers in Chicago and Milwaukee. Loaded trailers are taken from the shippers' premises and placed on specially constructed "ferry cars" which are made up into trains and hauled to the terminals by electric locomotives or motor cars. Upon arriving at the destinations the tractors take the loaded trailers to the premises of the consignee.

In order to further extend its service the company recently inaugurated the plan of loading shippers' motor trucks on specially constructed flat cars and taking them by rail to Milwaukee or Chicago, after which the trucks proceed by their own power to consignees' premises.

Population
and Develop-
ment of Terri-
tory.

During the 30 years in which this railroad has been in operation the population of its territory has more than doubled, ranging from 2,069,001 in 1900 to 4,257,639 in 1930. The terminal population in the cities of Chicago and Milwaukee naturally forms the major part of the aggregate, but in the development of the intermediate territory there is embodied a striking testimonial of the part that this railroad has played, since while the terminal population has doubled, the intermediate population has increased three and one-half times.

Appendix III to this report contains photostatic copies of Government maps showing the distribution of the population in the North Shore towns in 1900 and in 1930. While up to 1900 these towns had received only steam railroad service for something

like 50 years, this suburban population was scattered in small isolated communities, whereas in 1930, after 30 years of North Shore Line service, these suburban towns had grown into continuous cities. This growth itself was the principal reason for the construction of the Skokie Valley Line to the west, in order that a myriad of difficulties involved through increasing congestion of traffic, necessarily accompanied by future track elevation and grade separation, might be avoided thereby and provision be made for maintaining the high speed operation that has continued to be one of the principal objectives in the operation of the railroad.

The North Shore Line was constructed from Waukegan to Milwaukee in 1907 and at that time its route lay west of the cities of Racine and Kenosha and in the western portion of the city of Waukegan. The growth of these cities has been so influenced by the existence and operation of this line that their developments have extended west until the line itself is now well nigh the central axis of their activities. (Appendix IV.)

Value of Property The Chicago North Shore and Milwaukee Railroad
Company property values, as of December 31, 1922,
1927 and 1932 are shown in the following tabulation:

<u>Item</u>	<u>December 31, 1922</u>	<u>December 31, 1927</u>	<u>December 31, 1932</u>
Way & Structures	\$11,593,392.	\$27,127,748.	\$28,783,906.
Equipment	2,540,019.	6,196,173.	7,471,960.
Power	983,850.	2,095,290.	583,446.
Genl. & Misl.	1,989,591.	5,231,274.	5,375,823.
Misc. Physical Prop- erty	-	-	2,082,724.
TOTALS	\$17,106,852.	\$40,650,485.	\$44,297,859.

This tabulation shows that the value of the property of this carrier has steadily increased throughout the ten year period and now stands at more than double the amount of the value in 1922.

Employes
and Wages

For the years 1920 to 1932 inclusive, are shown
herewith the total number of employes and the

wages paid:

<u>Year</u>	<u>Total Number Of Employes</u>	<u>Payroll</u>
1920	1,285	\$2,294,445.
1921	1,400	2,143,047.
1922	1,607	2,308,246.
1923	1,848	2,798,089.
1924	1,803	3,027,929.
1925	1,876	3,282,094.
1926	2,235	3,691,045.
1927	2,127	3,737,450.
1928	1,984	3,681,265.
1929	1,935	3,720,177.
1930	1,682	3,282,460.
1931	1,557	2,698,490.
1932	1,355	2,092,136.

Taxes,

Following is a statement of Taxes for the years
1920 to 1932:

<u>Year</u>	<u>Taxes (Less Federal)</u>	<u>Federal Taxes</u>	<u>Total Taxes Including Federal</u>
1920	\$ 133,681.	\$ 49,387.	\$ 183,068.
1921	162,817.	52,226.	215,043.
1922	167,804.	54,326.	222,130.
1923	194,485.	90,934.	285,419.
1924	230,412.	115,662.	346,074.
1925	264,471.	113,060.	377,531.
1926	238,529.	100,941.	339,470.
1927	276,220.	134,017.	410,237.
1928	327,257.	40,848.	368,105.
1929	257,975.	95,468.	353,443.
1930	375,582.	33,737.	409,319.
1931	425,241.	1,983.	427,224.
1932	447,687.	4,753.	452,440.
TOTALS	\$3,502,161.	\$ 887,342.	\$4,389,503.

Passenger
Traffic

The total passenger revenue for the years
1920 to 1932 is shown below:

<u>Year Ended</u> <u>Dec. 31.</u>	<u>Passenger</u> <u>Revenue</u>
1920	\$ 3,573,507.
1921	3,884,999.
1922	4,119,974.
1923	4,714,315.
1924	4,900,923.
1925	5,074,634.
1926	5,621,608.
1927	5,863,134.
1928	5,673,382.
1929	5,691,200.
1930	4,706,855.
1931	3,626,555.
1932	2,569,855.
TOTALS	\$ 60,021,146.

There was a substantial increase in passenger revenue up to and including the year 1927. The years 1928 and 1929 maintained this high level, and thus this road retained its passenger revenue in spite of competition until the depression became universal.

From 1920 to 1929, as noted in Appendix I, the passenger revenue of practically all steam railroads substantially declined, while during the same period the revenue of the North Shore Line increased very materially. The principal cause of the difference of these trends is attributed to the ability of this carrier to better meet competition of the private automobile and motor bus by combined high speed, frequency of train service, and convenience of delivery. It was economically possible to perform this service on account of the flexible electric operation of this carrier,

whereby the length of train could be varied to meet the demands of the service, with multiple unit control making possible quick acceleration and deceleration and thereby maintaining fast schedules in spite of frequent station stops. Due also to this type of equipment it is possible for this railroad to economically maintain off-peak hour trains through ability to use short trains and minimum crews, thus giving a practically continuous service at close headway and accommodating the needs of the territory. It is thus also possible to handle parcel and news paper distribution at frequent intervals, making news paper deliveries as promptly as the editions are off the press. These services and economic advantages of electrification of railroad lines in the Metropolitan areas are becoming increasingly recognized, as exemplified by the large advances made by the United States Government in the present depression to enable eastern steam lines to complete electrification projects under way, and it should be recognized that the North Shore Line is an electrified railroad of superior construction and service.

The value of the North Shore Line in its territory is emphasized by the large proportion of the passenger patronage that it has been able to command. The convenient location of terminals is recognized as an important contributing factor in its securing this large proportion of business. The situation in these terminals is illustrated by Sheets 3 to 6 in Appendix I. Also, due to its two main lines through the suburban territory it is able to well serve many communities where no steam carrier provides adequate service.

The facilities of steam railroads have been so located and developed as to serve commercial and industrial concerns whose products have national and world wide distribution. Their passenger service has been primarily developed and conceived to supplement this business by serving large centers widely distributed throughout the nation. The plant and facilities to economically handle such traffic should be distinct and separate from the plant and facilities intended to handle high speed and continuous traffic of a metropolitan area. The traffic which the North Shore now enjoys is distinctly of the latter character.

Freight
Traffic

The car load and less than carload freight tonnages of the North Shore Line from 1920 to

1932 are given below:

<u>Year</u>	<u>Tons of Freight</u>			<u>Total Freight Revenue</u>
	<u>Carload</u>	<u>Less Than Carload</u>	<u>Total</u>	
1920	130,775	69,092	199,867	\$ 471,496.
1921	109,403	49,447	158,850	481,416.
1922	174,721	89,636	264,357	741,845.
1923	317,273	128,636	445,909	1,033,479.
1924	264,443	130,484	394,927	1,048,447.
1925	421,033	151,847	572,880	1,206,977.
1926	507,097	152,856	659,953	1,299,413.
1927	695,163	153,551	848,714	1,388,051.
1928	1,101,740	166,466	1,268,206	1,642,197.
1929	1,260,239	167,887	1,428,126	1,731,572.
1930	1,134,546	131,243	1,265,789	1,384,547.
1931	863,508	102,585	966,093	953,431.
1932	762,599	78,249	840,848	682,299.

Beginning with 1926 a considerable number of additional industries located on the North Shore Line, thereby largely increasing the carload freight business. A list of these industries on the North Shore Line, the location, and the revenue received from them, is shown on pages 7 and 8 of Appendix I.

The L. C. L. freight service on the North Shore Line was inaugurated on November 8, 1919 and increased regularly each year until 1930 when the decrease in general business was experienced everywhere. Numerous additions and improvements were made in this service from time to time. In order to meet the requirements of shippers off-rail stations were opened giving convenient access, and trailer trucks and tractors were provided in order to save the expense of rehandling the merchandise.

Ferry Truck Service, an operation whereby the railroad sets a trailer at an industry's door to be loaded and sealed by the industry, and transported by the railroad to its destination at the door of another industry or warehouse, was begun in 1920. This service and intensive solicitation built up the North Shore merchandise despatch business from 69,092 tons with a revenue of \$427,993. in 1920, to 167,837 tons with a revenue of \$1,073,097. in 1929.

Shippers' trucks are also handled on railroad flat cars designed for this service at a rate per truck. This eliminates many shippers' ordinary truckage risks, saves time and expense and makes it profitable for many "over-road truckers" to abandon their former method of business and devote their energies to pick-up and delivery at terminal cities. This entire service has been designed as a coordination of truck and rail and the North Shore Line has so varied this service as to meet the shippers' requirements and successfully compete with truck operation. This is the outstanding effort of any railroad to coordinate truck and rail service.

Conclusion

While the first three months of 1933 have been disappointing, that fact in itself is not sufficient to assume that there will be no prospect of a return to more nearly normal conditions during the remainder of the year. The very purpose of the Federal aid is to tide the railroads over a period beyond which we all have a right to expect improved conditions.

In view of the large proportion of the revenues of the company derived from passenger traffic in the face of unparalleled competition due to the presence of the automobile and paved highways, it is certain that the passenger revenues of this company will again equal or exceed the amounts received during better times.

It is not at all difficult to determine the extent to which the traffic losses have been due to the present business depression for the reason that it suffered no substantial loss until the year 1930 when the general effect was such that all carriers as well as every form of business enterprise suffered. Previous to this time the traffic record of the North Shore Line, both as to passenger and freight, in the face of the most serious competition ever encountered, and while other railroads were declining in passenger business, had been such as in itself to make plain to anyone the ability of the road to hold its own in the future. This record was in direct contrast to that of other railroads.

Its passenger traffic, at a maximum in 1927, suffered no serious decline until the year 1930. Its freight revenue increased to a maximum in 1929 and thereafter declined.

In spite of the fact that railroads in general have lost a large percentage of their passenger traffic to other forms of transportation, and that general business recovery will not necessarily bring a full measure of return of this traffic to them, the foregoing record of the North Shore Line, to which reference has been made, is so greatly in contrast to the record of other railroads as to assure it of substantial recovery with improved conditions.

The North Shore Line expects to experience keen competition from busses and private automobiles operating over improved highways between Chicago and Milwaukee, and has already shown what it can do in the face of such competition.

Decreased registration, ownership per capita and gas consumption with the ever increasing restriction laws in highway use, indicate a lessening of automobile competition in this territory.

James Walker

Consulting Engineer,

Chicago, Illinois
May 6th, 1933.