January 18, 1978

Mr. W. L. Smith

Attached is a copy of a report covering an evaluation of the railroad's plant west of Miles City, Montana. The report is the third of a series in the "Rationalization of Plant" project. Previous reports covered Light Density Lines, the Kansas City and Council Bluffs gateways, and the Chicago-Louisville operation.

The report submits the following conclusions:

- o The railroad probably should not have extended its lines to the Pacific Northwest at the time it was done.
- o There is no economic justification in continuing transcontinental service to the west coast.
- o A long range objective should be to phase out most, if not all, operations west of Miles City.

The methods of evaluation in this report, as in the others, are based on contribution and contribution as a percent of cost. This may leave some reviewers uncomfortable, but, if not contribution, what should be used -- certainly not just gross revenue or carloads which have no relation to cost of service. As this report points out, contribution can be used for comparative purposes, and analysis is needed of the entire traffic base so that a full comparison of all sections of the railroad's plan could be made.

RATIONALIZATION OF PLANT

Study of the Line
between
Miles City, Montana and Portland, Oregon

January 18, 1978

INTRODUCTION

This study is an evaluation of the railroad's lines west of Miles City, Montana. Miles City was selected as the cut-off point in order to include transcontinental traffic but to exclude unit coal train traffic between Miles City and Columbia (Portage), Wisconsin and between Gascoyne, North Dakota and Ortonville, Minnesota.

The study is a continuation of an overall "Rationalization of Plant" project. Previous reports have covered Light Density lines, the two major gateways of Kansas City and Council Bluffs, and the Chicago-Louisville operation including the Louisville gateway.

The studies of the Kansas City and Council Bluffs gateways included an anlysis of traffic through those two points that had quite widely diffused origins and destinations over an entire system of 10,000 miles of railroad. The studies presented, for the most part, a comparison of the relative value, as measured by revenue contribution over variable costs, of various types of traffic through these gateways. The objective of this west end study is to attempt to assess the total value of a major section of the railroad.

GENERAL

The railroad was divided into 60 line segments to assist in developing variable costs for the various plant rationalization studies. The lines west of Miles City are separated into three sections as shown on the map marked Exhibit I. These three sections include 12 of the 60 segments as shown in Table 1 below. Appendix A provides a listing of all segments.

Table 1
SEGMENTS AND OPERATED MILES

	Miles Operated	
	Milw Main	Total
Miles City, Montana to St. Maries, Idaho		
Miles City - Harlowton, Montana	217	217
Harlowton - Great Falls, Montana	-	344
Harlowton - Deer Lodge, Montana	226	269
Deer Lodge - St. Maries, Idaho	256	293
	699	1,123

Exhibit I
Lines West of Miles City

Miles City - St. Maries
St. Maries - Black River Jct.
Portland - Sumas

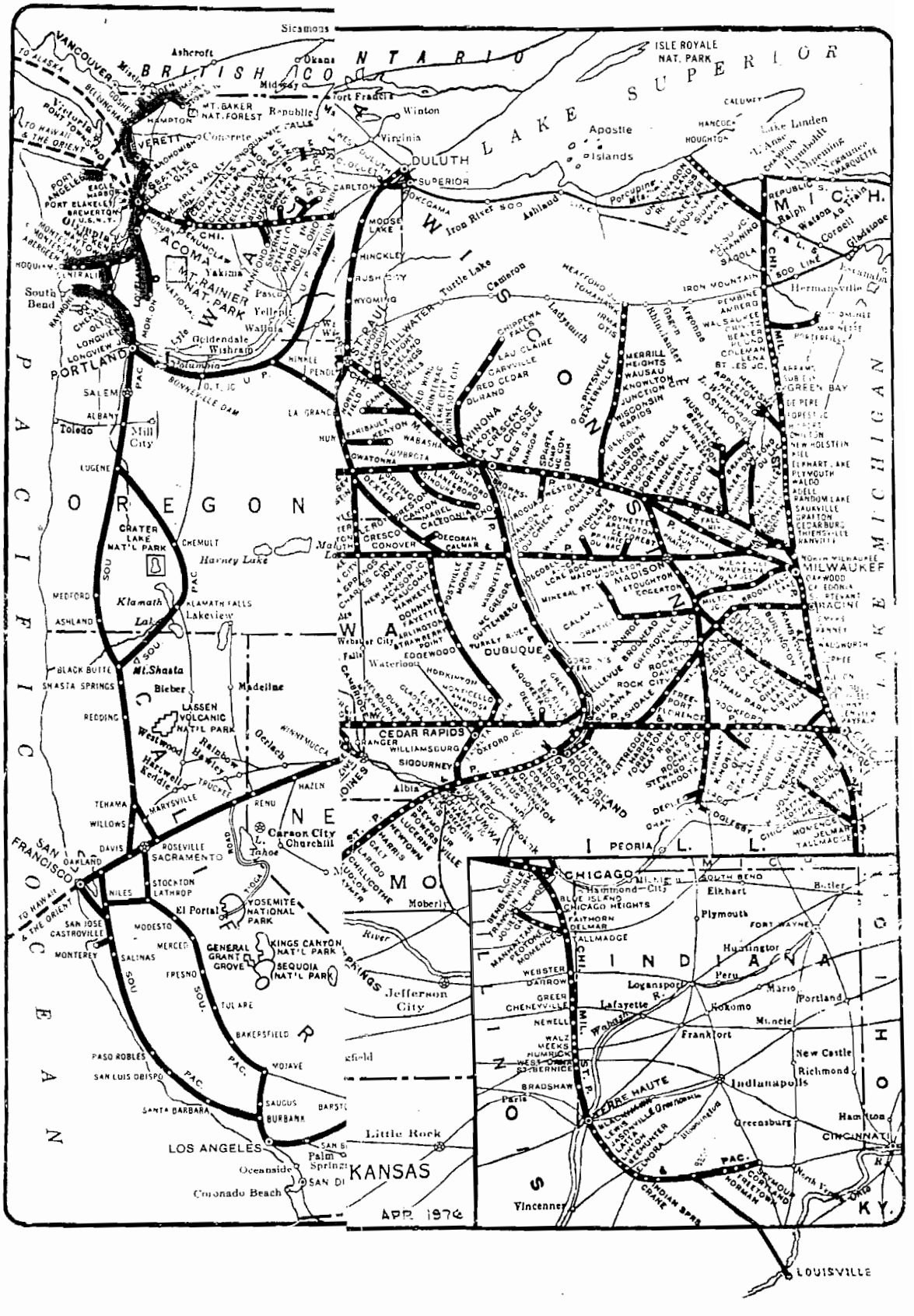


Table 1
(continued)

	Miles Operated	
	Milw Main	Total
St. Maries to Black River Junction, Washington		
St. Maries - Othello, Washington	167	300
Plummer Junction, Idaho - Spokane	37	123
Othello - Black River Junction	179	235
	383	658
Sumas, Washington to Portland, Oregon		
Renton, Washington - Sumas	-	145
Seattle - Tacoma	37	37
Port Angeles - Port Townsend, Washington	-	51
Tacoma - Longview Junction, Washington	69	279
Longview Junction - Portland, Oregon	-	49
	106	561
TOTAL MILES	1,188	2,342

Note: Branch lines are included in the mainline segment to which they connect.

Traffic data for 1976 was used in the analysis and includes all traffic west of Miles City. Duplication resulting from origins and destinations both within the territory studied were eliminated by crediting traffic to one station only as outlined below:

Local - Credit to originating station if originating west of Miles City.

- Credit to terminating station if originating east of Miles City.

Interline Forwarded - Credit to originating station if originating west of Miles City.

- Credit to Off Junction station if originating east of Miles City.

Interline Received - Credit to terminating station if On Junction west of Miles City.

- Credit to On Junction station if terminating east of Miles City.

Intermediate - Credit to On Junction if On and Off Junction west of Miles City.

- Credit to Off Junction station if On Junction is east of Miles City.

SUMMARY OF 1976 REVENUES

A series of exhibits have been prepared to summarize carloads, revenues, costs and contribution for each of three sections and 12 segments between Miles City and Portland. To put the data into proper perspective as it relates to the railroad system, consider that in 1976 these three sections provided:

202,547 carloads or 22 percent of the system total; and

$160,600,000 revenue or 37 percent of the gross system revenues.

The 2,342 road miles in the 12 segments represent 23 percent of the 10,074 road miles operated in 1976. It is more significant to compare the 1,188 miles of mainline operated and maintained between Miles City and Portland over five mountain ranges which is equal to 50 percent of the 2,275 miles of other trunk lines between Chicago and Miles City, Council Bluffs, Kansas City and Louisville.

Exhibit II has been prepared to provide a summary of 1976 revenues generated west of Miles City. The purpose of the exhibit is to show the magnitude of revenues by each of the three general sections and also to show the magnitude of the various sources of revenues within each section. Some highlights of the exhibit show:

- 65 percent of the total revenue or $103.5 million comes from the Portland-Sumas section at the extreme end of the railroad system. 35 percent of the revenues are about equally divided between the two interior sections with $30.2 million between Black River and St. Maries, and $27 million between St. Maries and Miles City.

- Two-thirds of the total revenue or $106.5 million comes from originated traffic, with $54 million or one-third from terminated.

- 85 percent of originated traffic is loaded on line -- $91.8 million. 90 percent of the terminated is unloaded on line -- $48.9 million.

- $20 million or 12 percent of the revenues comes to or from other carriers and is related to movements east of Miles City -- $14.8 million originated from connections and $5.2 million terminated to connections.

MILES CITY - PORTLAND

1976 Revenues by Sources of Traffic

	(000)			
	Portland Sumas	Black River St. Maries	St. Maries Miles City	Total
ORIGINATED				
Loaded on Line				
Local	$ 26,766.7	$ 6,901.7	$ 13,191.6	$ 46,860.0
Interline Fwd.	23,284.8	12,710.3	8,938.0	44,933.1
Total	$ 50,051.5	$ 19,612.0	$ 22,129.6	$ 91,793.1
From Connections				
Interline Rec'd.	$ 2,763.0	$ 1,051.6	$ 378.4	$ 4,193.0
Intermediate On	8,723.5	1,620.6	215.9	10,560.0
Total	$ 11,486.5	$ 2,672.2	$ 594.3	$ 14.753.0
TOTAL ORIGINATED	$ 61,538.0	$ 22,284.2	$ 22,723.9	$106,546.1
TERMINATED				
Unloaded on Line				
Local	$ 15,590.7	$ 851.0	$ 909.2	$ 17,350.9
Interline Rec'd	21,937.0	6,433.8	3,176.7	31,547.5
Total	$ 37,527.7	$ 7,284.8	$ 4,085.9	$ 48,898.4
To Connections				
Interline Fwd.	$ 3,903.6	$ 477.1	$ 90.2	$ 4,470.9
Intermediate Off	501.2	144.3	71.9	717.4
Total	$ 4,404.8	$ 621.4	$ 162.1	$ 5,188.3
TOTAL TERMINATED	$ 41,932.5	$ 7,906.2	$ 4,248.0	$ 54,086.7
TOTAL ALL TRAFFIC	$103,470.5	$ 30,190.4	$ 26,971.9	$160,632.8

EXHIBIT II

- 40 percent of all revenues are strictly local to the railroad with $47 million local originated and $17 million local terminated.

In summary, the data in Exhibit II shows that this part of the railroad is strongly oriented toward originating traffic with relatively little related to interchange activities west of Miles City. Additionally, a major share of the revenues are generated at the extreme west end of the system while each of the two interior sections generate quite limited amounts.

EVALUATION

The evaluation of the sections west of Miles City are based to a large extent on determination of the relative and absolute contribution the traffic generated makes to constant costs. This is the same approach as used in the Light Density Lines and the Gateway studies. Variable costs of all traffic were determined from cost factors developed by the Economic and Cost Analysis Department and applied by computer programs used in the previous studies. An explanation of the major cost elements are included as Appendix B.

Variable cost factors used represent approximately two-thirds of fully allocated (variable and constant) costs. In this study, as in the other studies, part of the total evaluation includes a determination of the percent of contribution over cost (COC). Both absolute contribution and the factor COC, when viewed alone, can cause considerable discomfort because it is difficult to interpret their overall significance. They can be used for at least two significant purposes:

- Percent contribution over cost can be used to make comparisons and preliminary evaluations. For example, in theory, traffic with COC of less than 50 percent is not carrying its share of constant costs. Traffic with higher COC should be more desirable than lower COC.

- Absolute contribution used with other data has some meaning also for comparison. A major operating area or type of traffic may have lower COC but, because of volume, have a greater absolute contribution. It may be that, given greater market potential, the opportunities for improving absolute contribution could be better even with the lower COC.

It is true that, in order to have full comfort and to be able to better use contribution for evaluating segments of the plant or types of traffic, additional studies are needed.

- Costs and contribution of the entire traffic mix should be developed. Given this it should then be possible to validate costing procedures by comparing computed total system variable costs with actual.

- There is a need to address questions such as what is an acceptable contribution? What is a desirable contribution for an area or segment? What is the effect on variable costs and its relationship to constant costs of major changes in traffic volumes over major sections of the railroad?

Given the discomforts and uncertainties of present costs and resulting contribution exhibits summarizing revenues, costs, contribution and COC have been prepared for traffic west of Miles City. Exhibit III summarizes this type of data for each segment in the three major sections west of Miles City and shows:

- The Portland-Sumas section provides 60 percent of the total contribution. Two segments in this section, Renton-Sumas and the Port Angeles line, have relatively low percent of contribution over cost. The Sumas segment has a large amount of low revenue traffic local to the segment. The Port Angeles line has higher overall costs because of barge expenses between Seattle and Port Townsend.

- Black River Junction-St. Maries section has COC comparable to Portland-Sumas but volume is low and total contribution small.

- The section between St. Maries-Miles City has the best COC but also has almost half the total line miles. This section cannot be self-supporting with an average of 22 carloads per mile over the entire section. Its justification must come from the overhead transcontinental traffic.

Before attempting to draw any preliminary conclusions about contributions from traffic west of Miles City, some general comparisons could be made with Kansas City and Council Bluffs gateways and with the section of line between Chicago and Louisville. The following table has been prepared for that purpose:

MILES CITY - PORTLAND

1976 Revenues-Costs-Contribution

Segment	Miles	Cars	Revenue	Contribution Total	Contribution % Cost
Portland-Sumas					
Portland-Longview Junction	49	10,848	$ 18,555.3	$ 6,883.7	59%
Longview Junction-Tacoma*	279	48,822	15,095.3	3,052.9	25%
Tacoma-Seattle	37	49,399	54,701.6	17,429.1	47%
Renton-Sumas	145	19,203	10,291.0	1,573.2	18%
Port Angeles Line	51	4,950	4,827.3	668.3	16%
Total	561	133,222	$103,470.5	$29,607.2	40%
Black River Junction-St. Maries					
Black River-Othello*	235	2,271	$ 1,897.9	$ 521.1	38%
Othello-St. Maries	300	30,868	16,280.8	3,946.5	32%
Plummer-Spokane	123	11,081	12,011.7	4,376.0	57%
Total	658	44,220	$ 30,190.4	$ 8,843.6	41%
St. Maries-Miles City					
St. Maries*-Deer Lodge*	293	10;324	$ 8,513.8	$ 3,280.7	63%
Deer Lodge-Harlowton*	269	3,483	4,052.1	1,665.5	70%
Harlowton*-Great Falls	344	8,763	12,494.4	5,518.5	79%
Harlowton-Miles City*	217	2,535	1,911.6	508.9	36%
Total	1,123	25,105	$ 26,971.9	$10,973.6	69%
Grand Total	2,342	202,547	$160,632.8	$49,424.4	44%

Dollar Amounts in (000)

EXHIBIT III

Table 2
Comparison of Cars, Revenues and Contributions

Section	Cars	Revenue (000)	Contribution Total (000)	Contribution % Cost
Portland-Sumas	133,222	$103,471	$29,607	40%
Black River-St. Maries	44,220	30,190	8,843	41%
St. Maries-Miles City	25,105	26,972	10,974	69%
Total	202,547	$160,633	$49,424	44%
Kansas City Gateway	82,184	$ 47,273	$12,073	34%
Council Bluffs Gateway	62,465	28,646	8,365	41%
Chicago-Louisville	107,226	38,779	10,314	36%

It should be understood that all the data in the table cannot be correctly totalled. Each of the four areas were separate studies and no attempt was made to eliminate the duplication from movements between them. An analysis of the entire system would be designed to eliminate such duplication and as a result the total contribution from each section would be reduced. Contribution as a percent of cost should not change materially with a system analysis.

It can be observed from Table 2 that, based on contribution as a percent of cost, there is very little choice between two of the three sections west of Miles City and the other areas studies. St. Maries-Miles City has the highest COC but probably the lowest potential because of narrow and limited markets. It is difficult to assess the relative value of the absolute contribution -- however, consider the comparison between Chicago-Louisville and Portland-Miles City. In the first instance, 340 operating miles produced $10.3 million contribution. By comparison, Portland-Miles City has 2,342 miles with $49.4 million contribution -- seven times the mileage and five times the contribution. This is very rough comparison but it does illustrate the need for a total system evaluation.

Exhibit IV has been prepared to analyze the revenues and contribution for the three sections by general origins, destinations and traffic flows. This exhibit separates transcontinental traffic from that traffic moving totally within the limits of the three sections west of Miles City. Transcontinental traffic includes all carloads where at least a part of the movements involved some movement east of Miles City. Transcontinental traffic is separated between eastbound and westbound movements and further divided into five general categories with origins or destinations east of Miles City as follows:

Aberdeen - All traffic between Miles City and Hopkins, Minnesota. All traffic generally routed north from or south to Mitchell including traffic on lines in South Dakota and in Iowa west of Perry.

St. Paul - All traffic to and from the Twin Cities, Duluth and between St. Paul and LaCrosse. All traffic generally routed north from or south to Austin.

Kansas City - All traffic originating, terminating or interchanged at Kansas City.

Chicago - All traffic originating, terminating or interchanged at Chicago.

Other - All traffic not included in four categories listed above.

Sectional traffic was separated between intersectional traffic or movements between each of the three areas and intrasectional or movements totally within each section.

Exhibit IV has a considerable amount of data and some of the significant points are listed below:

Total (extreme right section.)

- The most significant revenue and contribution is generated from transcontinental traffic -- 80% or $129 million revenue, 87% or $42.8 million contribution.

- Transcontinental traffic has a striking difference between eastbound and westbound movements. Westbound carloads are roughly 40% of eastbound (26,379 versus 60,498), revenues roughly 60% ($47.2 million versus $81.8 million), and contribution about equal ($20.3 million versus $22.5 million).

- Approximately half of the transcontinental traffic in both directions is related to Chicago and must be predominantly interchanged with other carriers through that point. St. Paul provides 20% of the cars and the balance is quite widely dispersed. Kansas City connections add little significance to transcontinental traffic and the eastbound Kansas City traffic is relatively undesirable with 10% COC.

- Total sectional traffic represents 57% or 115,700 carloads, 20% or $31.7 revenue, and 13% or $6.6 million contribution. Intrasectional part of that traffic is undesirable with high carloads, low revenues and little or no contribution.

Portland-Sumas.

- This section develops the major part of the transcontinental traffic in both directions. The difference in contribution over cost between the east and west traffic stands out. Also, COC is lower than the two interior sections.

- There is heavy intrasectional traffic which includes 35,000 carloads of logs out of Chehalis and off the Morton line, and 10,000 carloads of limestone on the Bellingham line. Revenues from logs are extremely low and add little to the overall contribution of the section. The limestone movements have a negative contribution.

Black River Junction-St. Maries; St. Maries-Miles City.

- Transcontinental traffic from both sections is predominantly eastbound and extremely light, averaging roughly 40 carloads per day on each section.

- Intrasectional traffic of 19,777 carloads on the Black River Junction-St. Maries section includes 14,000 carloads of logs off the Elk River line with revenues averaging $56 per car and generating negative contribution in excess of $800,000.

- Sectional traffic between St. Maries-Miles City and Portland-Sumas of $8.8 million revenue and $3.9 contribution is primarily from grain off the northern Montana line to Portland and Tacoma.

- Considering the 1,000 miles of main line over the Belts, Rockies, Bitter Root, Saddle and Cascade Mountains, these two sections can only be justified with a substantial amount of transcontinental traffic between the midwest and the Pacific Northwest.

Some preliminary observations can be made based on data included in Exhibits II, III and IV.

- The revenue is primarily transcontinental, with the westbound being the most desirable from a contribution point of view but with the eastbound volume predominating.

CARS, REVENUES AND CONTRIBUTION

BY ORIGINS, DESTINATIONS AND GENERAL TRAFFIC FLO

	PORTLAND - SUMAS				BLACK RIVER JCT. - ST. MARIES				
	Cars	Revenue	Contribution Total	% Cost	Cars	Revenue	Contribution Total	% Cost	Ca
Transcontinental									
EB to ABDN	897	$ 1,254.8	$ 288.2	30%	530	$ 418.5	$ 129.6	45%	
ST. PAUL	5,858	8,205.5	2,420.4	42	1,964	2,925.6	1,210.7	71	4,
K. CITY	3,973	5,216.6	32.0	1	2,224	3,614.1	645.9	22	
CHGO.	25,371	29,324.2	6,874.9	31	4,122	7,005.6	2,449.3	54	2,
OTHER	4,951	8,232.5	2,024.4	33	1,317	2,748.3	855.1	45	1,
TOTAL	41,050	52,233.6	11,639.9	29%	10,159	16,712.1	5,290.6	46%	9,
WB fr. ABDN	3,002	$ 6,606.7	$ 3,154.7	91%	163	$ 384.5	$ 239.6	165%	
ST. PAUL	3,479	4,963.8	1,571.0	46	366	670.0	308.8	85	
K. CITY	704	1,290.3	483.2	60	150	244.5	54.3	29	
CHGO	11,017	20,716.1	9,594.9	86	1,632	3,716.2	1,865.6	101	
OTHER	3,234	5,277.7	1,828.6	53	431	666.2	219.3	49	
TOTAL	21,436	38,854.6	16,632.4	75%	2,742	5,681.4	2,687.6	111%	2,
TOTAL	62,486	$91,088.2	$28,272.3	45%	12,899	$22,393.5	$7,978.2	55%	11,
Sectional									
PTLD-SUMAS	-	$ -	$ -	-	9,390	$ 4,469.9	$1,328.6	42%	5,
B.R.-St.M.	844	413.5	129.8	46%	-	-	-	-	3,
St.M.-M.CTY	1,561	1,275.1	393.1	45	2,157	691.3	(6.5)	-	
TOTAL	2,405	1,688.6	522.9	45%	11,547	5,161.2	1,322.1	34%	9,
INTRASECTIONAL	68,331	10,694.3	794.5	8%	19,777	2,641.2	(456.9)	(-)%	4,
TOTAL	70,736	$12,382.9	$ 1,317.4	12%	31,324	$ 7,802.4	$ 865.2	12%	13,
GRAND TOTAL	133,222	$103,471.1	$29,589.7	40%	44,223	$30,195.9	$8,843.4	41%	25,

Note: Dollar amounts are in 000's - ( ) indicate negative figures.

- Sectional traffic alone would probably not support the lines west of Miles City.

- There is not sufficient transcontinental traffic to offset the effect of low revenue and low contribution from sectional traffic and provide an attractive overall contribution.

HISTORY

To this point, the evaluation of the lines west of Miles City has been based on analysis of 1976 carloads and revenues. The evaluation is representative of conditions as of that point in time. In order to reach conclusions, it is necessary to be reasonably certain that the period selected for study is representative of the past and, that there are no significant foreseeable changes in the future.

The extension of the lines of the Chicago, Milwaukee and St. Paul Railway Company from the Missouri River to Tacoma was completed in 1909. The Milwaukee was the last of four railroads to build into the Pacific Northwest. The Northern Pacific completed its line in 1883 and Great Northern ten years later in 1893. The O.W.R.&N. (Union Pacific) had also reached the Northwest prior to 1900 and all three roads were well established by the time the Milwaukee completed its line.

Because detailed traffic data is not available prior to 1970, revenue comparisons cannot be made for earlier years. The only data available for prior years were reports made by each of the four railroads of loaded freight cars handled east and west by the:

Milwaukee through Avery, Idaho
Great Northern through Troy, Montana
North Pacific through Paradise, Montana
Union Pacific through Reith or Huntington, Oregon

Records of these carload movements are available from 1936 through 1966. Although they may not be precisely accurate, the records can be used to show broad trends in transcontinental carloadings.

Exhibit V, prepared from this carload data, contains three graphs showing for each year 1936 through 1966: (1) total carloads of all four railroads; (2) total Milwaukee carloads; and (3) the Milwaukee percent of total carloads. The exhibit shows:

EXHIBIT V

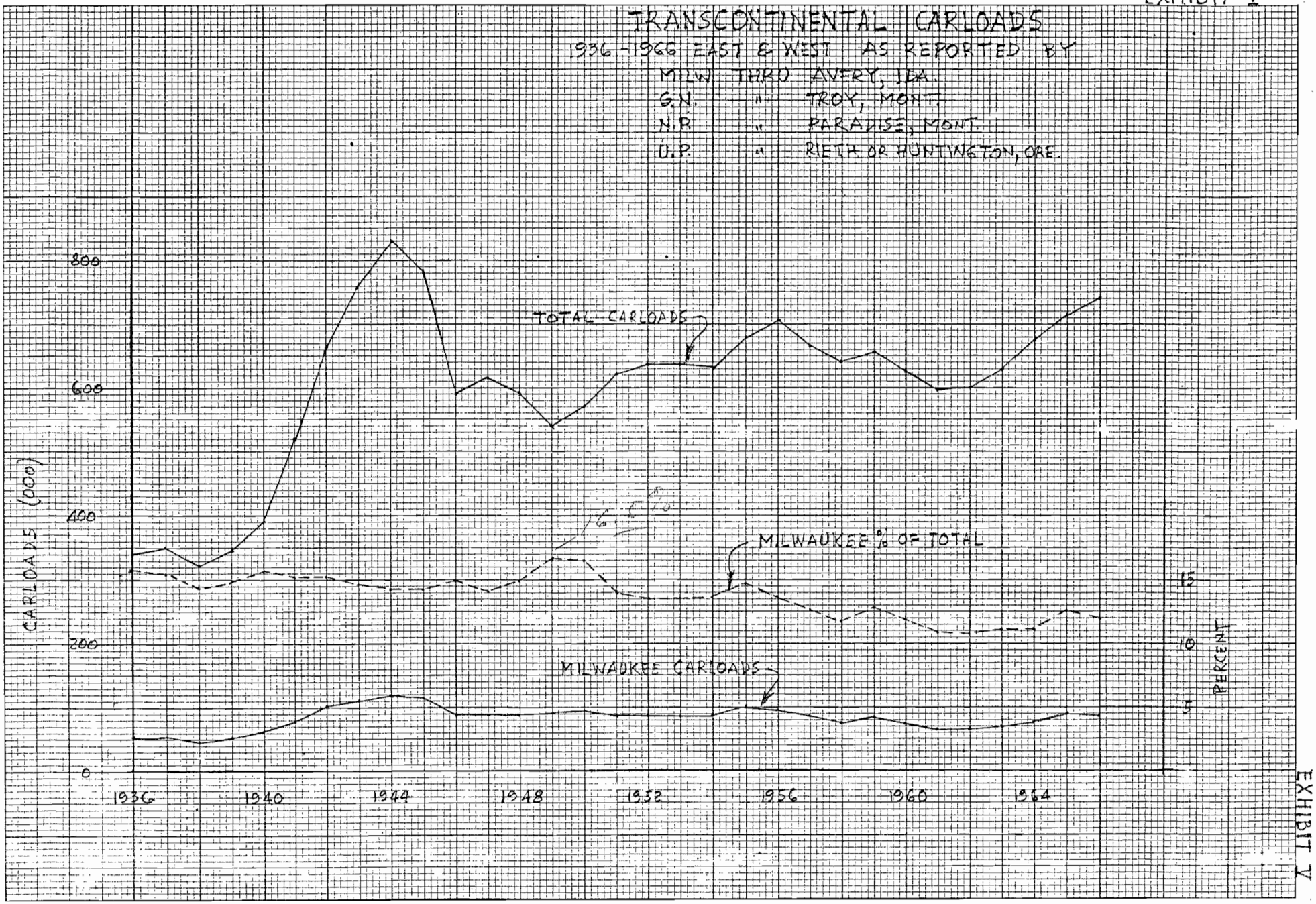


EXHIBIT V

- Major changes occurred between 1940 and 1946 when total loads increased from 400,000 in 1940 to 830,000 in 1944 and then dropped to 600,000 in 1946. Milwaukee carloads increased from 60,000 to 115,000 and then dropped to 90,000 during the same period. There are probably two reasons for the change:

  1. Carloadings in 1940 may not have fully recovered from the depression of the 1930s.

  2. 1944 loads were unnaturally stimulated by military activities related to the war in the Pacific.

- After 1946, total carloads leveled off and in the following 20 years showed some increase. Milwaukee loads after 1946 actually declined to some extent as did the Milwaukee's share of the total transcontinental market.

Exhibit VI shows the same graphs with the data indexed to the year 1936 so that annual change could be shown. The same major change between 1940 and 1946 is illustrated but also the magnitude of change in total carloads after 1946 is more apparent. It can be noted that:

- Total loads indexed at 1.75 in 1946 and generally moved up to 1.90 by 1959, a 10% increase in 13 years or less than 1% a year. In the same period, Milwaukee loadings moved from an index of 1.65 to 1.60, or in essence, no change.

- Between 1959 and 1966, ignoring the 1961-62 dip, total loadings increased from 1.90 to 2.15 or 13% while Milwaukee loadings in the same period increased from 1.60 to 1.65 or again no change.

- The index of Milwaukee percent of total loadings shows a decline from .95 in 1946 to .75 in 1966, a 20% loss in the railroad's share of the total rail market in 20 years.

No data was available for the years 1967 through 1969, however, carloadings and revenue data were available for eight years -- 1970 through 1977. Exhibits VII and VIII were prepared to show summuaries of annual carloads and revenues for each of these years.

Total annual carloads generated between Miles City and Portland are tabulated by segments in exhibit VII. Total carloads for all segments show quite a large variation with

EXHIBIT VI

TRANSCONTINENTAL CARLOADS
INDEXED - 1936 = 1.0

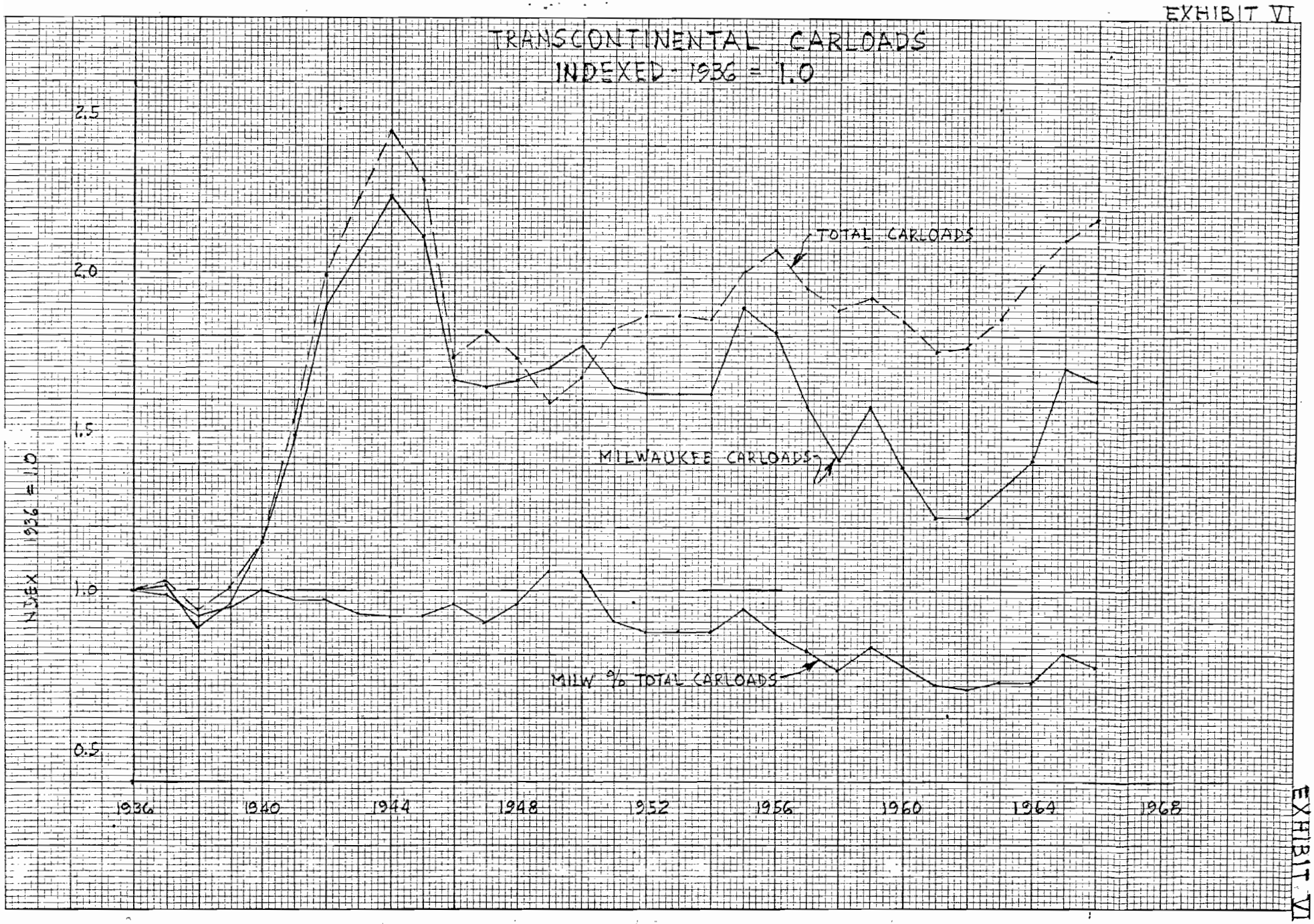


EXHIBIT VI

a low of 156,600 in 1970 and a high of 202,500 in 1976 -- an increase of 30 percent. These annual totals are influenced by two major items:

-- The extension of the operating system with entry into Portland in 1971 shown in the Portland-Longview Junction segment; and

-- The heavy increase in log loadings resulting from the starting of a Weyerhaeuser-Milwaukee log movement plan in 1976 as reflected in the Longview Junction-Tacoma segment.

Table 3 below shows the annual carloads with the effect of these two factors removed:

Table 3
ANNUAL CARLOADINGS

Year	Total Carloads	Effect of Portland	Effect of WAM Plan	Net Carloads
1970	156.6	-	-	156.6
1971	173.7	9.3	-	164.4
1972	186.4	16.6	-	169.8
1973	198.1	18.7	-	179.4
1974	175.2	15.7	-	159.5
1975	156.7	11.0	-	146.7
1976	202.5	10.8	25.0	166.7
1977	197.9	12.4	30.0	155.5

Note: All data shown in (000)

Exhibit VII and Table 3 show that, considering net carloadings, the railroad's traffic was basically static. The entry into Portland increased loadings in the west end section 12 to 15 percent but other loadings were unchanged. Loadings in the two inland sections between Miles City and Black River Junction declined. Carloadings in the 1975 recession year were only equal to 1970 even with the added traffic from the Portland segment. If the log loadings from the WAM Plan are not considered, total loadings in 1976 and 1977 never recovered even to 1972 levels.

In Exhibit VIII annual revenues for each of the eight years 1970 through 1977 have been tabulated. All revenues are adjusted to 1976 rate levels so that proper revenue comparison can be made.

Total revenues from all segments increased by $50 million or one-third between 1970 and 1973 -- half of which came

EXHIBIT VII

MILES CITY - PORTLAND

Annual Carloads by Segments
1970-1977

	1970	1971	1972	1973	1974	1975	1976	1977
Portland - Sumas								
Portland-Longview Junction	-	9,256	16,576	18,715	15,732	10,958	10,848	12,384
Longview Junction-Tacoma	26,971	28,568	29,391	34,766	25,907	21,131	48,822	50,078
Tacoma-Seattle	33,429	35,654	40,850	45,234	46,746	43,809	49,399	49,870
Renton-Seattle	14,434	17,786	19,984	19,110	20,024	19,654	19,203	18,335
Port Angeles Line	4,730	4,870	5,160	5,016	4,900	4,799	4,950	4,495
TOTAL	79,564	96,134	111,961	122,841	113,309	98,351	133,222	135,162
Black River - St. Maries								
Black River-Othello	5,810	6,672	7,226	6,441	5,069	4,120	2,271	2,097
Othello-St. Maries	28,015	26,192	25,420	26,313	21,847	24,696	30,868	26,654
Plummer-Spokane	12,531	14,415	13,758	13,413	8,650	6,436	11,081	10,160
TOTAL	46,356	47,279	46,404	46,167	35,566	35,252	44,220	38,911
St. Maries - Miles City								
St. Maries-Deer Lodge	12,830	13,087	10,075	9,998	8,684	9,238	10,324	8,554
Deer Lodge-Harlowton	5,392	5,522	5,049	5,913	4,600	3,228	3,483	5,728
Harlowton-Great Falls	9,728	8,173	8,454	9,752	9,961	7,709	8,763	8,523
Harlowton-Miles City	2,720	3,461	4,491	3,424	3,053	2,917	2,535	1,054
TOTAL	30,670	30,243	28,069	29,087	26,298	23,092	25,105	23,859
TOTAL - ALL SEGMENTS	156,590	173,656	186,434	198,095	175,173	156,695	202,547	197,932

EXHIBIT VII

MILES CITY - PORTLAND

Annual Revenues by Segments
1970-1976
Adjusted to 1976 Rate Levels

	1970	1971	1972	1973	1974	1975	1976	1977
Portland - Sumas								
Portland-Longview Junction	$ -	$ 12,618.2	$ 20,016.7	$ 25,655.6	$ 22,916.7	$ 16,013.0	$ 18,555.3	$ 17,594.7
Longview Junction-Tacoma	20,742.3	21,919.1	22,840.2	21,979.5	15,346.7	12,720.6	15,095.3	14,391.5
Tacoma-Seattle	46,295.9	49,480.3	53,578.7	63,047.3	59,249.8	51,453.4	54,701.6	58,463.6
Renton-Sumas	10,454.3	12,326.3	13,391.1	11,996.7	11,198.9	8,862.7	10,291.0	8,584.6
Port Angeles Line	4,914.4	5,628.5	5,637.8	5,600.6	4,780.1	4,162.4	4,827.3	4,527.7
TOTAL	$ 82,406.9	$101,972.4	$115,464.5	$128,279.7	$113,492.2	$ 93,212.1	$108,470.5	$103,562.1
Black River - St. Maries								
Black River-Othello	$ 3,573.4	$ 4,020.8	$ 4,321.9	$ 4,053.1	$ 2,979.8	$ 2,642.8	$ 1,897.9	$ 1,967.9
Othello-St. Maries	24,269.5	20,328.2	18,989.0	20,108.9	16,577.2	13,772.4	16,280.8	14,862.4
Plummer-Spokane	12,830.5	14,430.6	14,705.1	15,689.6	7,034.2	5,290.9	12,011.7	10,235.9
TOTAL	$ 40,673.4	$ 38,879.6	$ 38,016.1	$ 39,851.6	$ 26,591.2	$ 21,706.1	$ 30,190.4	$ 27,066.2
St. Maries - Miles City								
St. Maries-Deer Lodge	$ 9,290.6	$ 9,075.4	$ 8,112.2	$ 10,255.6	$ 9,706.5	$ 9,076.9	$ 8,513.8	$ 7,674.4
Deer Lodge-Harlowton	5,159.0	5,562.0	5,190.7	6,598.8	5,034.9	3,776.4	4,052.1	5,129.6
Harlowton-Great Falls	12,113.3	10,751.8	10,928.2	13,254.5	12,694.7	10,593.3	12,494.4	11,173.4
Harlowton-Miles City	1,964.0	2,555.1	2,967.6	2,683.4	2,086.5	2,056.6	1,911.6	755.6
TOTAL	$ 28,526.9	$ 27,944.3	$ 27.198.7	$ 32,792.3	$ 29,522.6	$ 25,503.2	$ 26,971.9	$ 24,733.0
TOTAL - ALL SEGMENTS	$151,607.2	$168,796.3	$180,679.3	$200,923.6	$169,606.0	$140,421.4	$160,632.8	$155,361.3
Conversion Factor for 1976 Rates	1.7416	1.5617	1.5172	1.4747	1.2506	1.0782	1.0000	0.9476

from the Portland entry. 1975 was low as expected but 1976 and 1977 did not recover in total dollar amounts to even 1974. The greatest variations were in the Portland-Sumas section while the two inland sections showed a gradual decline parallel with carloadings.

Table 4 has been prepared to show revenues with the Portland segment removed and also show the general trend in revenues per car.

Table 4
ANNUAL REVENUES

Year	Loads (000)	Revenue (000)			Revenue Per Car
		Total	Portland	Other	
1970	156.6	$151.6	$ -	$151.6	$ 968
1971	173.7	168.8	12.6	156.2	972
1972	186.4	180.7	20.0	160.7	969
1973	198.1	200.9	25.7	175.2	1,014
1974	175.2	169.6	22.9	146.7	982
1975	156.7	140.4	16.0	124.4	896
1976	202.2	160.6	18.6	142.0	794
1977	197.9	155.4	17.6	137.8	785

It can be noted that other revenues in 1976 and 1977 were under 1970 and that total revenues including Portland were only two to six percent higher. Total carloads in 1976 and 1977 were 25 percent to 30 percent greater than 1970 (see Exhibit VII and Table 3). Revenues per car declined from $968 in 1970 to $790 in 1977 or approximately 20 percent probably because of the increase in low revenue log movements. Although no detailed study was made of other years, there is nothing in the data to conclude that 1976 is not representative.

In summary, Exhibits V through VIII were basically intended to show what had happened to the Milwaukee Road's rail market in the west. The exhibits provide a very general view of carloads and, in part, revenues over the 32 years between 1946 and 1977 except for three years -- 1967 through 1969. The exhibits show:

-- In the 20 years to 1966 the total transcontinental rail market had little growth much less, in fact, than would be expected from long-run growth in GNP. In the same period, the Milwaukee Road's traffic was flat and its share of the total market declined.

-- In the eight years since 1969, carloadings were basically flat except for increases from service extension to Portland and additional log movements. In the same period and on a 1976 rate base, revenues would have declined for most years without the extension of service to Portland.

-- There are no known future prospects that could be expected to change a static market.

As a final historical note, some freight gross ton-mile statistics were found for the mainline between Harlowton and Tacoma starting in 1914 -- five years after the extension to the West Coast was completed. These statistics show that in the 20 years between 1916 and 1936 annual gross ton miles on the mainline declined roughly 35 percent. This is so far back in history that the statistics really have little significance, but apparently volume of traffic was somewhat of a problem even at that time.

GENERAL SUMMARY AND CONCLUSIONS

The study and evaluation of the lines west of Miles City may be summarized as follows:

-- While the contribution from transcontinental movements is relatively good, revenues and resulting contribution from intrasectional movements reduce the overall average to a level that makes traffic from the entire area no more attractive than other areas studied.

-- Present transcontinental traffic is too limited in volume to justify the line from Miles City to the Coastal section where most of this type of traffic is generated.

-- Traffic patterns over the past 30 years, and probably longer, show that the total transcontinental rail market is not a strong growth market; that the Milwaukee Road's share has always been small; and that the share of the market is in fact diminishing.

-- Given the small present market share, the strong rail competition and the apparent limited total market, the Milwaukee Road cannot expect to increase its share of the traffic enough in the future to justify maintaining transcontinental service.

On the basis of this study and analysis, the following conclusions are drawn:

-- The railroad probably should not have extended its line to the Pacific Northwest at the time it was done.

-- There is no economic justification in continuing transcontinental service to the West Coast.

-- A long-range objective should be to phase out most, if not all, operations west of Miles City (a difficult assignment).

APPENDIX A
MAJOR LINE SEGMENTS

Number	Name
10	Portland
20	*Portland-Tacoma*
30	Tacoma-Seattle
40	*Renton-Sumas
41	Port Angeles Line
50	Black River-Othello*
60	Othello-St. Maries
70	Plummer-Spokane
80	*St. Maries-Deer Lodge*
90	Deer Lodge-Harlowton*
100	*Harlowton-Great Falls
110	Harlowton-Miles City*
120	Miles City-Mobridge*
130	Mobridge-Ortonville*
140	*Aberdeen-Mitchell*
150	*Mitchell-Rapid City
160	*Sioux City-Mitchell*
160	Sioux City-Canton
160	Canton-Mitchell
170	*Jackson-Madison
180	*Ortonville-Fargo
190	Ortonville-Minneapolis*
200	Minneapolis-St. Paul
210	Duluth Line
220	*Ramsey-Jackson
230	*St. Paul-Austin
231	Shakopee-Mankato
240	*St. Paul-LaCrosse*
241	Eau Claire-Durand
250	LaCrescent-Ramsey
260	*Mason City-Sioux Falls
270	*Marquette-Mason City
280	*Calmar-Austin
290	*Green Island-River Junction
300	LaCrosse-Portage*
310	*New Lisbon-Heafford Junction
320	*Madison-Prairie du Chien
330	Portage-Milwaukee*
340	*North Milwaukee-Oshkosh
350	*North Milwaukee-Green Bay
360	*Green Bay-Ontonagon
370	Milwaukee Terminals
380	*Rondout-Madison
390	*Sturtevant-Kittredge*
400	*Janesville-Oglesby
410	*Elgin-Savanna
420	*Deerfield-Milwaukee*
430	Chicago Terminals
440	*Savanna-Nahant
450	*Savanna-Atkins*
460	*Nahant-Kansas City*
470	Kansas City
480	Atkins-Perry
490	*Herndon-Des Moines
500	*Perry-Council Bluffs*
510	Council Bluffs-Omaha
520	*Herndon-Spencer*
530	*Manilla-Sioux City
540	Faithorn-Fayette*
541	Fayette-Latta
550	*Latta-Bedford
560	Louisville
570	*Madison-Portage*

*Indicates Station is NOT included in the segment described.
Branch lines are included in the segments containing their junction stations.

METHOD OF COSTING

Conclusions to be reached, strategies to be evaluated and decisions to be made as a result of this and other similar studies should be related to the long-run future of the company. Cost factors used to determine contribution must also reflect long-run variable costs as much as possible. With this in mind, the Economics and Cost Analysis Department developed the cost elements used in this study. The major elements of variable cost include:

Line Haul

"Capacity" cost models are used for line haul unit costs. In this method, costs are developed from the economic capacity of trains rather than historical average trailing tons. Economic capacity is the train size that operating personnel feel can be efficiently handled with normal locomotive power assignment and meet schedule requirements.

Components of line haul unit costs include train crew wages based on actual costs including payroll additives. Fuel costs are based on computer simulation runs with economic capacity at scheduled speeds. Locomotive costs include investment based on current replacement costs at ten percent capital cost, normalized repairs based on manufacturer's recommended maintenance practices over the economic life of a unit, and servicing on a system average. Maintenance of way costs cover normalized maintenance for 1973 traffic density on each line segment. Line haul joint facility costs are included as a part of gross ton mile unit costs.

Terminal

Terminal (including joint facilities), station and other similar expenses are based on system average costs per movement. Terminal costs are related to types of traffic, i.e., local, interline forwarded, interline received, overhead or bridge, and include road train to industry or vice versa, interchange, and inter/intra train activities.

Freight Car Costs

The philosophy related to car cost maintains that the variable cost should cover the replacement of cars at current replacement values. System and foreign cars are treated alike assuming that time-mileage costs are equivalent to replacement costs. Car costs for move-

ments in private ownership are based on current mileage rates.

All railroad-owned AAR car types are summarized into 12 classifications weighed on cost of replacement and daily ownership costs developed for each class. Repair costs per mile are developed for each class giving recognition to normalized level of repairs and system average annual miles.

Total car days developed for each load include three days at origin, four days at destination, one-half day for interchange, 600 miles per day for transit time, inter/intra train switching every 400 miles. Empty car days are determined by applying empty return ratios by car type to total loaded car days previously determined. It is assumed that empties generally move half as fast as loads, except for autos, TOFC and refrigerated equipment which are assumed to move as fast as loads.

Other Costs

Train supplies, car inspection and other miscellaneous expenses are applied to car miles using system average unit costs. Accessorial charges, such as auto unloading, pickup and delivery on TOFC, barge expenses, are charged to appropriate movements.

Variable Costs Excluded

Expenses related to loss and damage, gross earnings taxes, accessorial charges other than those mentioned above, such as car cleaning or grain doors, mechanical protection service, are excluded because of inability to properly apply them through computer programming.

Computer programs have been developed to apply unit costs to each individual shipment involved in a particular evaluation. The Economics and Cost Analysis department developed unit line haul costs for each major segment of the railroad and then further developed total unit costs between a segment under study and all other segments on the system. For example, in costing traffic through Kansas City, unit line haul cost factors were developed to cover movements between that gateway and each of the other 59 segments on the system.

The cost factors can be accepted as valid long-range costs for evaluating types of traffic and general movements between areas and origins-destinations segments. As more detailed analyses related to individual point-to-point movements by commodities are required, further refinement in the costing process should be considered -- depending on the type of decision to be made.

ALTERNATIVES FOR ACTION RELATING TO
THE KELLOW REPORT ON LINES WEST OF MILES CITY

A. Continuation of present Milwaukee operations:

Continuation of present operations will require a substantially higher allocation of maintenance money than we have been able to generate in order to arrest the steady decline in service capability experienced on the main line. To restore the line to a posture of being an effective competitive alternative vis a vis BN and UP will require an expenditure of approximately $71 million from Miles City west. It is not realistic to expect that this amount can be internally generated in the short term, i.e. 2-4 years, to be available for discretionary spending, over and above total demands for maintenance expenditures on the balance of the plant.

If this amount were invested in the line west of Miles City, we would expect to hold Milwaukee's historic 15% of the market, but it is questionable that holding this share will equate to viability in the long run. To significantly improve Milwaukee market share requires taking away from BN and UP some of their present and future business. To do this would probably require an increased allocation of resources for cars, locomotives and plant, over time, beyond the $71 million required to restore the plant to the level of a recent competitive status quo.

Because the Milwaukee was not completed into the Pacific Northwest until 1909-11 to the important cities of Tacoma, Seattle and Everett, and even later in adjoining territory, it serves an area in which other transcontinental lines had been well-established prior to Milwaukee's arrival. The Northern Pacific was completed in 1883, the Great Northern in 1893. The Union Pacific had established itself as a full transcontinental carrier by the late 1890's through control of the Oregon Short Line and the Oregon Railroad and Navigation Company. Consequently, Milwaukee is physically excluded from many important areas, is at best a 1/4 to 1/2 participant in the business of others and has very few significant plants or areas that it serves exclusively. This is a fundamental fact that must be recognized in projecting how much present and future business can realistically be diverted from other railroads regardless of how much money is invested in the transcontinental line.

If it is assumed the Milwaukee should continue its full present operations west, and if it is agreed the required funds cannot be generated internally, then the Milwaukee must look to some form of public financing in order that it can be maintained as a competitive rail alternative in the Northwest. This public financing would require not less than the initial $71 million for west of Miles City, but may require some amount of continuing subsidy to avoid another cycle of maintenance deterioration, once restored.

Such an investment is a very questionable business decision. However, it may be viewed as a reasonable political decision. Rehabilitation of the Twin Cities - Pacific Northwest corridor is not contemplated under 4R funding as this is not presently designated as a corridor of coordination potential. Therefore, some additional legislative action would be required to allocate public funds under Title V for this line. Support for this political investment is more likely to come from the states and Congress, rather than from the Administration which is charged with implementing the 4R Act through FRA.

Absent successfully attracting public investment in the transcontinental line, we do not possess the resources, nor can we otherwise attract them, to make the required investment in order to maintain an effective competitive posture through a fully Milwaukee owned operation to the Northwest.

B. Major main line coordination with BN:

Logically, the westward extention of Milwaukee lines from Terry, Montana to Puget Sound should have been coordinated with the existing Northern Pacific when the line was built. There was some discussion of this at the time but nothing was concluded. Several subsequent attempts were undertaken and abandoned over the years. Coordinated use of portions of the two line would have been, and still would be, very beneficial to both companies by eliminating the burden for both by maintaining hundreds of miles of closely parallel railroad. Recently, another feasibility study was carried out, found to be beneficial to both, and then shelved because of the adversary relationships relating to the BN inclusion situation.

If maintaining our own operation to the Northwest is economically unfeasible, and if the prospect of a public investment in the line is unrealistic, then placing the BN into a full-scale main line coordination for all, or most, of the territory from Miles City to Seattle would enable continued Milwaukee operations at some reduction over present costs. Coupled with this would be the need to abandon and remove as much of the Milwaukee main track as operationally feasible. This would produce cash through sale of material and excess property as well as provide much valuable, reusable material.

Whether such a coordination, and its resulting benefits, would in and of itself prove to be the key to long-term viability of the transcontinental line must be carefully assessed, but such a step might buy some valuable time. The coordination would not foreclose any future option in connection with the line.

Given past attitudes, BN would probably be unenthusiastic. Milwaukee would be helped competitively by use of a better maintained line. BN has serious capacity problems at two locations now, i.e., Miles City-Hysham, Sandpoint-Spokane, and potential problems between Garrison-Missoula and Spokane-Lind. Critical to our evaluation would be the cost basis offered Milwaukee for this use.

The feasibility of effecting a major coordination depends upon what leverage can be brought to bear on BN. Potential leverage appears to be in two areas: 1) external shipper/political pressures; or, 2) BN self-interest.

There is a reservoir of shipper/policital interest which is fairly well defined. The States of Montana and Washington would probably support the plan, Congressional members could be enlisted, and the ICC has been publicly committed to an independent Milwaukee offering competition to BN.

BN self-interest may be the more effective route to success. The opportunity to test this is presented by the filing of the BN-Frisco merger application. A "front-end", early coordination agreement may ameliorate the Milwaukee position in the proceeding, but it must be all-inclusive and quickly accomplished.

C. Sale of lines to other railroads:

Assuming neither of the other alternatives is feasible, or can be implemented quickly enough, consideration must be given to sale of Milwaukee lines as a unit, or in segments from Miles City or Harlowton, west; or, at least, from Three Forks west. There are three logical buyers of all or part of these lines: BN, UP, SP.

BN would be the least palatable purchaser to many shippers, probably the State of Montana, the ICC and Department of Justice. UP should be acceptable because of maintaining a competitive alternative to BN. SP could be very acceptable, particularly to shippers west of the Cascades, but would be fought stenuously by both UP and BN. There is also the problem of how SP would transverse BN track from Portland to Chehalis to get to present Milwaukee-owned trackage.

All of these companies would benefit from purchasing Milwaukee markets or routes, and, therefore, there should be an opportunity to sell at an approximation of going concern value instead of net liquidation value.

Disposal of a major section of the plant would allow concentration of equipment and marketing effort elsewhere, release of locomotives, reallocation of cash into the balance of the plant and probably deferral of a great portion of new equipment purchases/leases for some time to come.

Timing and implementation of such a drastic step would be critical to minimize premature revenue loss to other routes and to maximize cost reduction opportunities.

WLS
1-27-78

CHART F

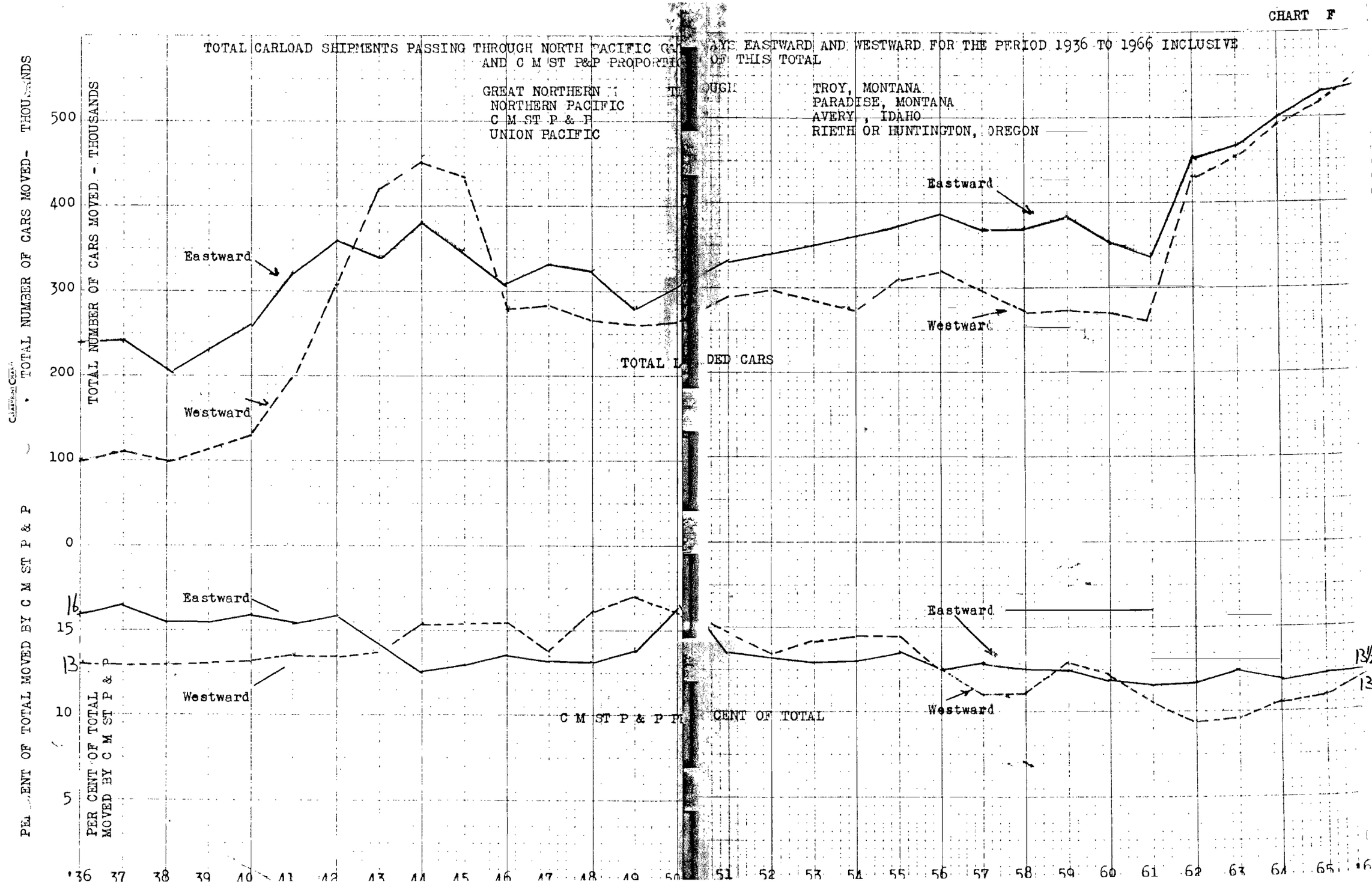

TOTAL CARLOAD SHIPMENTS PASSING THROUGH NORTH PACIFIC GA
AND C M ST P&P PROPORTIO
GREAT NORTHERN
NORTHERN PACIFIC
C M ST P & P
UNION PACIFIC
AYE EASTWARD AND WESTWARD FOR THE PERIOD 1936 TO 1966 INCLUSIVE
OF THIS TOTAL
UGH
TROY, MONTANA
PARADISE, MONTANA
AVERY , IDAHO
RIETH OR HUNTINGTON, OREGON
TOTAL NUMBER OF CARS MOVED - THOUSANDS
TOTAL NUMBER OF CARS MOVED- THOUSANDS
PER CENT OF TOTAL MOVED BY C M ST P & P
PER CENT OF TOTAL MOVED BY C M ST P & P
Eastward
Westward
TOTAL L DED CARS
C M ST P & P PE CENT OF TOTAL
500
400
300
200
100
0
16
15
13
10
5
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65

CHART E

TOTAL NUMBER OF LOADED FREIGHT CARS HA[illegible]LED EASTWARD AND WESTWARD BY YEARS - 1936 to 1966 INC.

1. C M ST P & P THRO [illegible] AVERY, IDAHO
2. GREAT NORTHERN " TROY, MONTANA
3. NORTHERN PACIFIC " PARADISE, MONTANA
4. UNION PACIFIC " RIETH OR HUNTINGTON, OREGON

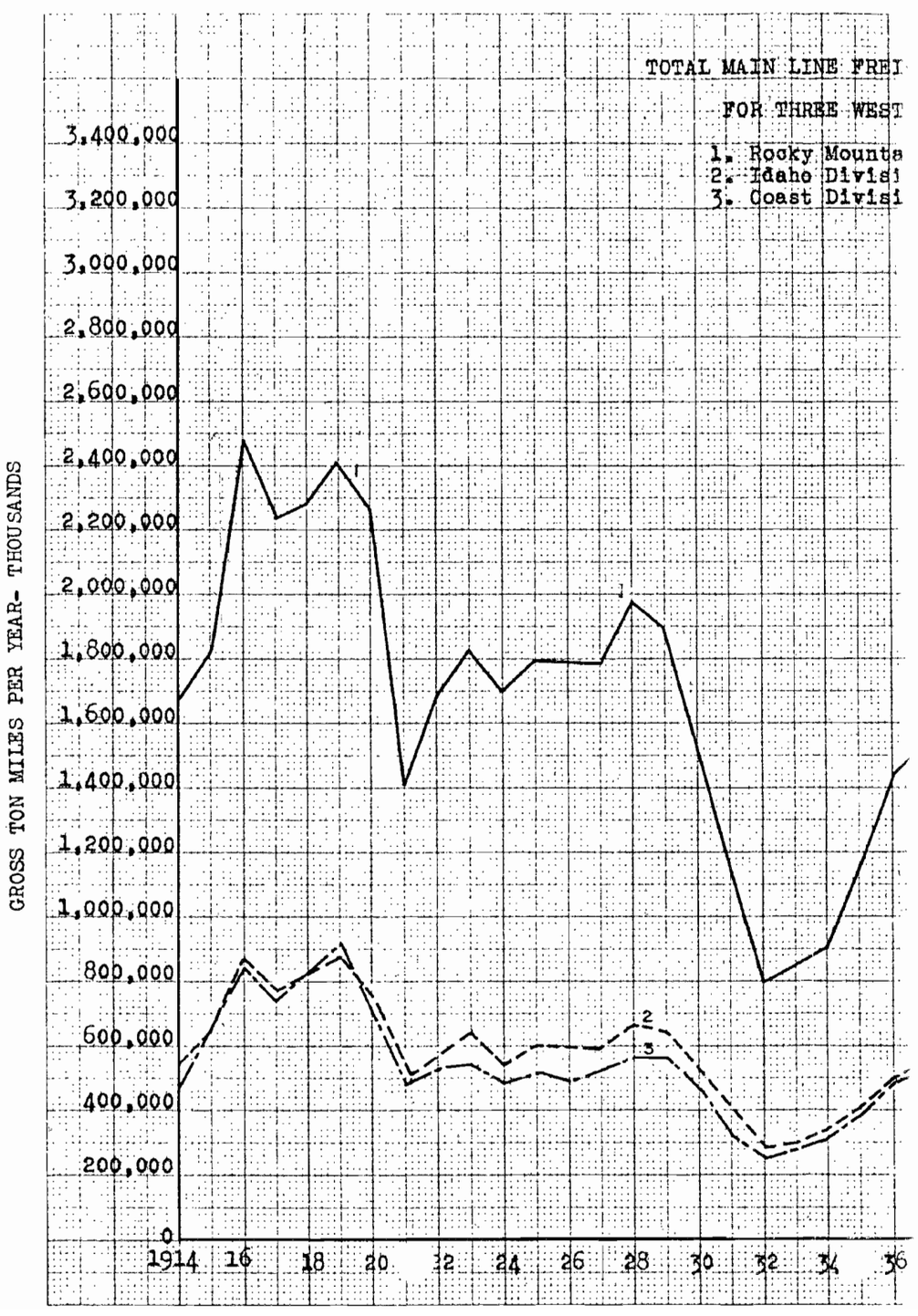
LOADED CARS HANDLED EACH YEAR - THOUSANDS

LOADED CARS HANDLED EACH YEAR - THOUSANDS

340 320 300 280 260 240 220 200 180 160 140 120 100 80 60 40 20

1936 37 38 39 40 41 42 43 44 45 46 47 48 49 [illegible] 51 52 53 54 55 56 57 58 59 [illegible] 61 [illegible] 63 [illegible] [illegible]

CHART D


TOTAL MAIN LINE FREI
FOR THREE WEST
1. Rocky Mounta
2. Idaho Divisi
3. Coast Divisi
GROSS TON MILES PER YEAR- THOUSANDS
3,400,000
3,200,000
3,000,000
2,800,000
2,600,000
2,400,000
2,200,000
2,000,000
1,800,000
1,600,000
1,400,000
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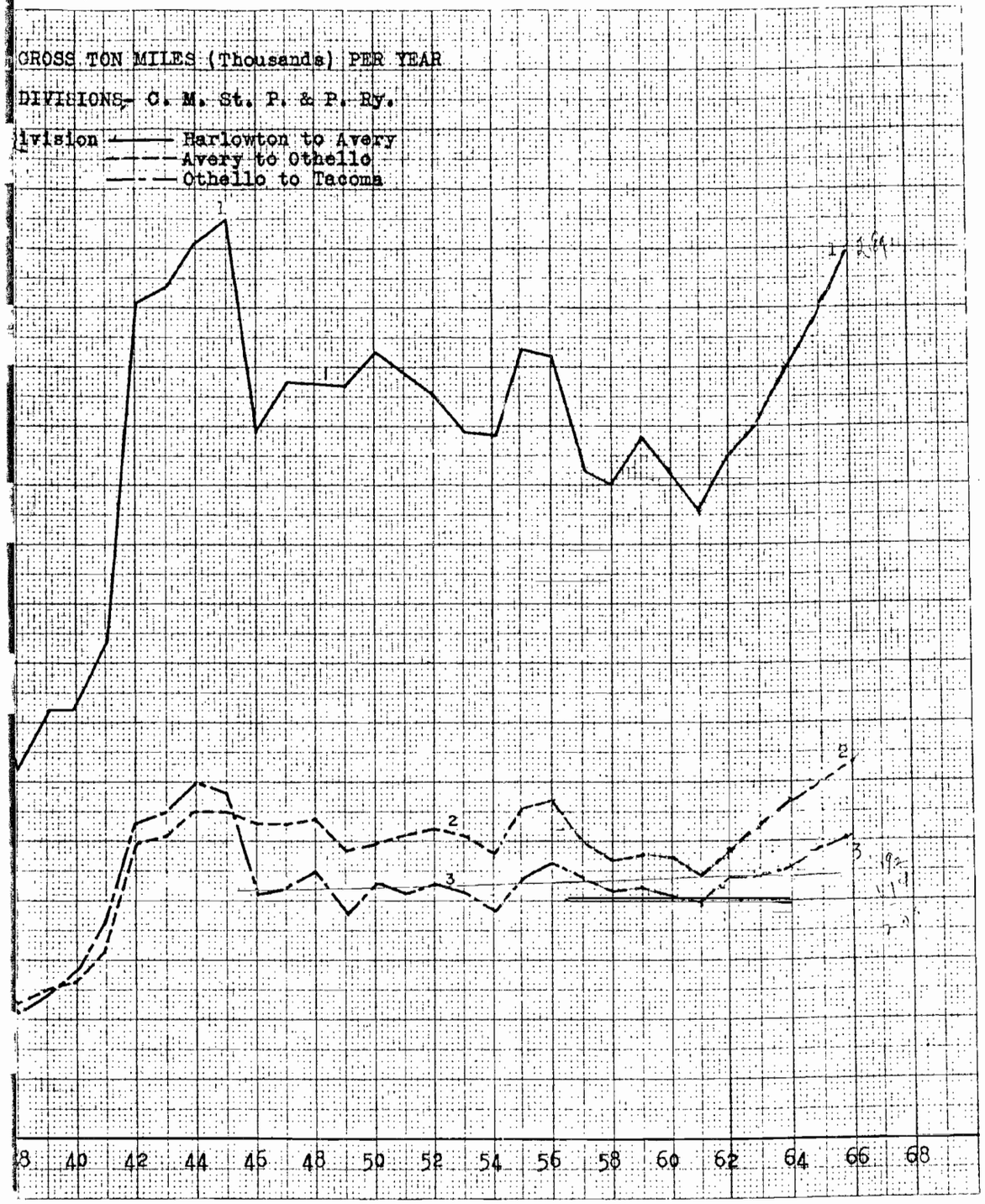
1914 16 18 20 22 24 26 28 30 32 34 36


GROSS TON MILES (Thousands) PER YEAR
DIVISIONS- C. M. St. P. & P. Ry.
Division —— Harlowton to Avery
---- Avery to Othello
—— Othello to Tacoma
38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68

Chicago - January 23, 1978
233

MR. P. F. Cruikshank:

Please refer to your letter of January 17, 1978, requesting estimate of cost to rehabilitate the railroad from Minneapolis to Tacoma.

Attached is rough estimate of cost to rehabilitate the track on the following basis:

1. Relaying of all rail less than 112# with new 115# rail.

2. Renewal of an average of 1600 ties per mile.

3. 2" smoothing lift, excluding 136 miles of ballast work.

4. Ballasting - Lennup - Hamen
   Moyne - Maudlow
   Cedric - Newcomb
   St. Regis - Roland
   Easton - Hyak
   Garcia - Maple Valley

Enc.

ESTIMATED COST TO UPGRADE TRACK
MINNEAPOLIS - MAPLE VALLEY

Minneapolis - Miles City (MP 423.5 - MP 1120)	
Install 1600 ties/mi. - 2" Track Raise-min. Ballast Total Miles, incl. dbl. trk = 713.4 Miles 1,141,440 Ties to Install & Track Raise =	$34,243,200
Highway Crossing Work	713,400
Turnout Work	360,000
Relay 7.3 mi. rail 115#/100# Up	635,100
Total Minneapolis - Miles City	$35,951,700
Miles City - Maple Valley (MP 1120 - MP 2154.2)	
Install 1600 ties/mi. - 2" Track Raise-Min. Ballast Relay Rail 100# & Less - Ballast in Mtn. Areas Total Miles - Ties & Min. Ballast - 897.9 Trk. Mi. " " Ballast Work (1800 ties/Mi.) 136.3 " " Rail Relay - 195.2	
1,436,640 Ties to Install & 2" Trk. Raise	43,099,200
136.3 Miles Ballast Work (8" Raise & 1800 Ties/Mi.) (Lennup - Hamen) (St. Regis - Roland) (Moyne - Maudlow) (Easton - Hyak) (Cedric - Newcomb) (Garcia - Maple Valley)	8,859,500
Relay 195.2 Mi. Rail 115#D - 100#/90# Up	16,982,400
Highway Crossing Work	1,034,200
Turnout Work	600,000
Total Miles City - Maple Valley	$70,575,300
GRAND TOTAL	$106,527,000

Chicago, Illinois
January 23, 1978